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## **WP4 Evaluation report**

**WP4 – Testing Social Innovation**

**Evaluation Report Appendices**

**March 2016**

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**Reducing food waste through social innovation**

FUSIONS EU project is supported by the European Community's Seventh Framework Programme under Grant Agreement no. 311972.



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## **Developing Cr-EAT-ive**

**WP4 – Testing Social Innovation**

**Evaluation Report**

**Date: 21.01.2016**

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**Reducing food waste through social innovation**

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# Colophon

Title	Developing Cr-EAT-ive: Evaluation Report
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Keywords	food waste prevention, Education, Kindergartens, Food Waste Dairies, food aid, best practice, social innovation, food poverty, Guidelines
Clients	European Commission (FP7), Coordination and Support Action – CSA Contract number: 311972
Project leader	FUSIONS coordinator: Toine Timmermans, Wageningen UR - Food Biobased Research, The Netherlands Project leader for this Deliverable: David Rogers, WRAP.
Acknowledgments	The authors would like to thank Sophie Easteal, Michael Wenborn, Elaine Charlesworth & David Rogers from WRAP for coordinating the work package/feasibility studies; along with Dora Paschali from Anatoliki who undertook the feasibility study and was very accommodating during the evaluation visit.

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# 1 Introduction

## 1.1 Background to FUSIONS

Under the EU FUSIONS programme<sup>1</sup>, seven feasibility studies were implemented to test socially innovative projects across Europe. One of the seven feasibility studies, titled 'Cr-EAT-ive', focuses on educating kindergarten aged children in Thessaloniki Greece about food waste prevention and awareness of sustainable eating. Educating children about food waste issues and sustainability serves to not only raise children's, and their families' awareness about this issue, but also to influence long term behaviour change.

## 1.2 Aims of the Evaluation Report

The aim of the evaluation is to identify the projects that are most applicable for replication and scaling up, and to support the planning of replication approaches. This document provides the findings from an evaluation of the feasibility study titled 'Cr-EAT-ive', and impartially considers the success of the project which was undertaken in 2014/5.

This report is part of a deliverable within FUSIONS Work package 4, which sets out to test & evaluate the impact of social innovation on reducing food waste detailing the results and impacts of the implemented feasibility studies.

## 1.3 Background to the 'Cr-EAT-ive' feasibility study

The feasibility study was managed by Anatoliki<sup>2</sup>, a partner in the FUSIONS programme, based in Greece. Anatoliki is an environmental organisation that works with a number of stakeholders and sectors within Greece to achieve environmental goals. The study started March 2014 and ended September 2015; however some activities (and relationships) are continuing for the foreseeable future.

Anatoliki had previous experience of working with kindergartens to raise awareness of environmental issues outside of the topic of food waste. Their previous work identified that the topics of food, nutrition and cooking were popular amongst families with children. To build upon their experience and to scope out the Cr-EAT-ive project Anatoliki conducted a literature review into household food waste. They found families tend to throw away more food than other householders. This resulted in Anatoliki identifying their target audience for the project as the 'family'. Anatoliki identified that a variety of factors can influence the amount of food waste within the home; however a large proportion of this is due to families' behaviour. That is households have a lack of

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<sup>1</sup> <http://www.eu-fusions.org/>

<sup>2</sup> <http://www.anatoliki.gr/en/home>

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knowledge about food prevention measures and therefore have behaviours which are 'wasteful'; for example lack of planning, inappropriate storage habits, inappropriate packaging conditions, and misinterpretation or confusion over labels.

The overall objective of the Cr-EAT-ive project was to raise awareness and influence behaviour of children at kindergartens, and their parents, on food waste prevention. Anatoliki sought to educate kindergarten children and their parents to enable them to adopt food behaviours that prevented food waste in the home and helped them eat healthier food. This was delivered through the Cr-EAT-ive project. This project worked with six kindergartens (four of which were municipal kindergartens, and two were private ones) across four municipalities, with children aged between 3 to 5 years. Kindergarten aged children (aged 5 and under) were targeted as Anatoliki claimed that children's eating behaviours begin at infancy and continue through life. Therefore it is important to influence behaviours at this key stage. It is the parents and teachers of pre-school children that play an important role in establishing these food behaviours.

Anatoliki worked with the kindergartens to produce, implement and promote a suite of innovative educational materials for both the children and their parents. The materials designed for the children were intended to be delivered in class (such as educational games etc.); whereas the material designed for the parents were guide books to take home. All the materials were disseminated through the kindergarten, with the parent's materials being delivered at events, seminars and through incorporating the materials into lesson plans where parents then helped their children with.

Parents were encouraged to organise their cooking and menus according to the kindergartens menu, this would reduce the need for additional cooking in the home and food waste (for example if the child ate a large meal at kindergarten thus did not need a large meal in the evening also). The children were taught about food waste and the impact it has on the environment. Nutrition is touched upon but primarily the material seeks to instil sustainable living, valuing food and food waste prevention behaviours into children.

Anatoliki wanted to instil food waste prevention strategies into the kindergartens through developing a stronger collaboration between food service employees, school administrators and teachers. Guidance was developed for canteen staff on how food could be reduced within the kindergarten during meal times.

This project aimed to minimize food waste by changing the behaviour of families and children; therefore contributing to environmental benefits of food waste prevention within the household and within the Kindergarten itself. This project was expected to have socio-economic benefits, such as the potential financial savings at the household level, which is particularly relevant at present in the context of the financial crisis in Greece.

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# 2 Methods

This section details the project evaluation methods; firstly outlining the process and actions taken, in chronological order, by Anatoliki in order to implement the Cr-EAT-ive project in Greece. A sub section of this will also cover how Anatoliki evaluated the pilots to measure their success. The second part of this section will detail the evaluation method adopted by the EU FUSIONS team to determine the successfulness and replicability of this project as a whole.

## 2.1 Feasibility study methods

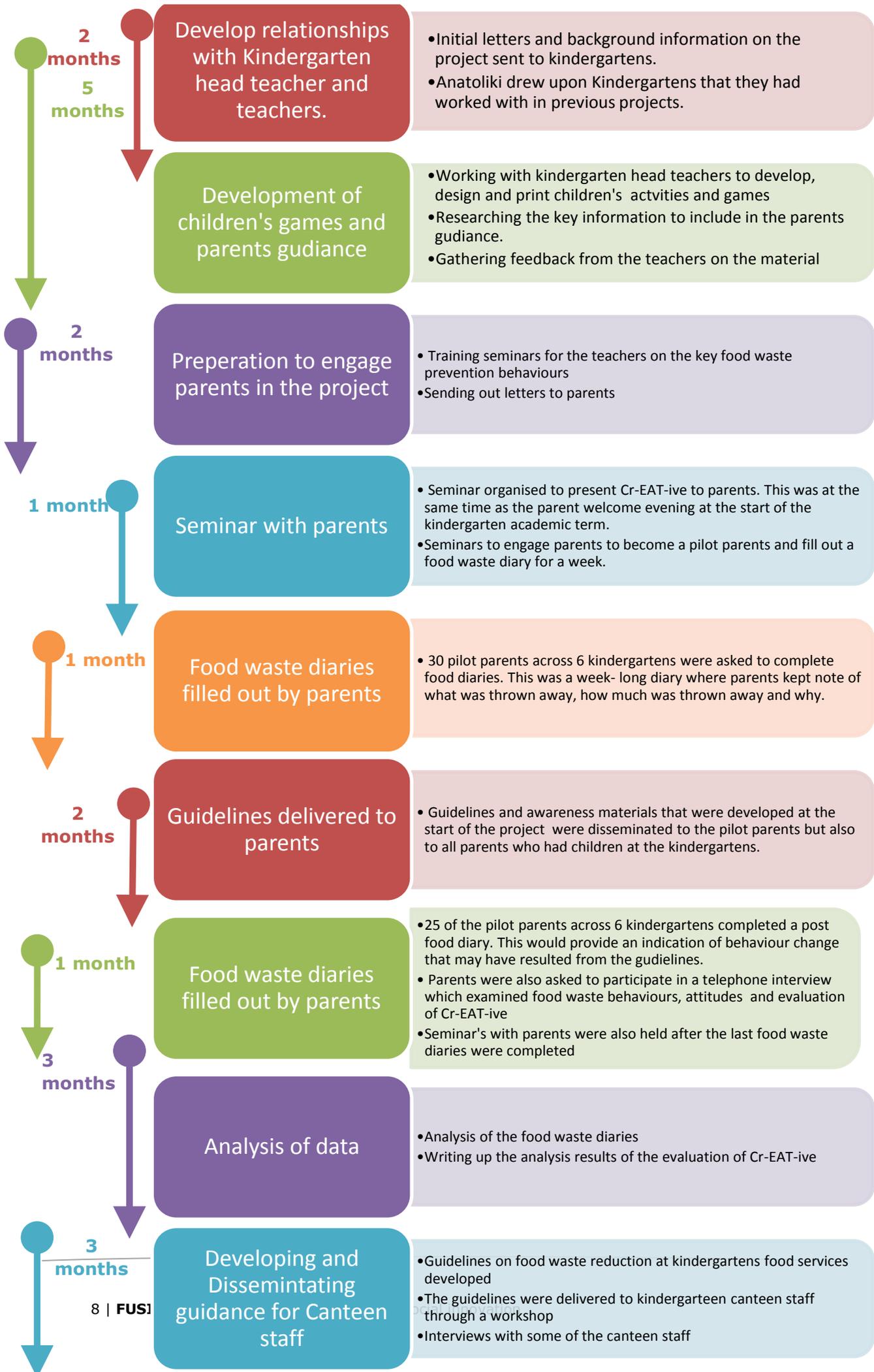
The feasibility study was separated into four implementation stages. Before any of these stages could begin however Anatoliki had to contact the President of the Social Protection, Education and Culture Municipal Department to obtain official authorisation to enter the kindergarten. The president proposed a number of kindergartens which Anatoliki could enter. Therefore the selection was based on access, the number of children that each kindergarten hosts on their premises<sup>3</sup> and the presences of a kindergarten canteen. Once this was complete the four stages could be implemented.

The first stage was activities that related to gaining involvement of kindergarten head teachers and teachers, and working with them to develop and produce the educational materials. The second stage included developing and organising food waste awareness activities and events with families that had children attending the kindergartens. The third stage included engaging families to be involved in measuring their own food waste through a food waste diary, and a semi structured interview to gain feedback about the project and any behaviour change. The final stage included translating the materials developed in stage one from Greek to English in order for the project to be replicated internationally. Some of these stages overlapped and Figure one provides an overview of the steps in the project method by Anatoliki.

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<sup>3</sup> The proposal was to involve kindergartens with approximately 100 children per kindergarten to reach 500 children in total.

Figure 1 Project Method



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## 2.2 Evaluation method- How FUSIONS is evaluating the work

Initial feedback on the project during implementation indicated that Cr-EAT-ive might have strong potential for replication. It was therefore selected for a detailed evaluation, including a visit to Thessaloniki Greece in order to interview stakeholders and to discuss ideas for replication. The evaluation visit took place from 9<sup>th</sup> May-11<sup>th</sup> May. See Appendix 2 for a list of the meetings. Anatoliki have written a final report outlining their conclusions from the project, this was taken into account during the evaluation<sup>4</sup>.

## 2.3 Evaluation method- How Anatoliki is evaluating the work. Cr-EAT-ive evaluation method

Throughout the Cr-EAT-ive feasibility study Anatoliki evaluated the progress of the study through key indicators and methods which are detailed in Table 1.

**Table 1 Evaluation indicators**

<b>Evaluation indicator in project plan</b>	<b>Comments</b>
Key performance Indicators such as; number of participants involved in the study. And their demographic information (Position- such as teacher, parents etc; age; gender; socio-demographic information.)	Measured throughout the project. These are explained in more detail in section 3.3 of this report, table 2.
Feedback from parents	Measured at the end of the project through a semi-structured telephone survey.
Changes in food waste levels at kindergarten school canteen	The initial proposal was waste audits before and after the intervention; however due to time and resource a post in-depth interview was conducted.
Change in food waste levels of the parents of the children at the kindergartens.	A small sample of the parents completed a food waste diary before and after the intervention/ Cr-EAT-ive project.

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<sup>4</sup> <http://www.eu-fusions.org/index.php/cr-eat-ive-schools>

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The Key performance indicators such as the number of kindergartens participating were collected by the project manager throughout the project. On the other hand three key areas required specific research methods to collect information that monitored the progress of the study. These were to measure any change in household food waste, to gather feedback about the Cr-EAT-ive programme and to measure the level of change of food waste in the kindergarten school canteens. The following explores these methods in more depth.

### 2.3.1 Food Waste Diaries (FWD)

The level of change in the household waste levels was measured through food waste diaries<sup>5</sup> (FWD). Six kindergartens participated in the Cr-EAT-ive feasibility study; five of these participate in the FWD's. The participants were provided with a diary and each day for a week before and after the intervention of the guidelines (two weeks in total) the households recorded the following:

1. The foods that they threw away after each meal and at other times of the day- for example in between meals or after clearing out cupboards, fridge or freezer.
2. The type of food they threw away- e.g. cereal, toast, ham etc.
3. How much is thrown away, e.g. a handful, a quarter of a bowl, half a packet etc.
4. Why the food was thrown away- e.g. because it has gone past its use-by date
5. Whether they haven't had to throw food away- for example because they skipped a meal etc.

The initial plan was that five households per kindergarten engaged in FWD. This would equate to a total of 30 households in total. 29 households engaged in the FWD but 24 of these completed the FWD throughout the course of the project (that is a pre and post diary). However as two of the kindergartens had parents that did not participate in the post FWD, the whole kindergartens have been excluded from the final results<sup>6</sup>. A total of 18 families results were included in the final overall figures reported.

There was not an equal distribution of households participating in the food waste diaries across the kindergartens<sup>7</sup> due to complexities in recruitment<sup>8</sup>. (For a clear break down of the amount of families participating in the food waste diaries by kindergarten and the sampling complexities at each kindergarten, please see the Cr-EAT-ives final report Appendix II<sup>9</sup>.)

Due to the complexities of recruitment and managing households across six different kindergartens not all the food waste diaries were completed during the same time period (that is some diaries were completed in different months). These results are therefore ambiguous when comparing data across the kindergartens due to the possible seasonal effects in the data; however this does not invalidate the results. Two of the kindergartens had parents that did not participate in the follow

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<sup>5</sup> <http://www.lovefoodhatewaste.com/sites/files/lfhw/2013%20-%20Love%20Food%20Hate%20Waste%20food%20waste%20diary.pdf>

<sup>6</sup> Due to the layout of the raw data, it was difficult to reliably remove some families' data from the final results.

<sup>7</sup> That is in some kindergartens 4 families participated whilst in another 2 families participated.

<sup>8</sup> Most families refused to participate, claiming it was a time intensive task.

<sup>9</sup> <http://www.eu-fusions.org/index.php/cr-eat-ive-schools>

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The food recorded in the FWD was calculated into Kg and also into finance by Anatoliki, which is detailed in their feasibility report<sup>10</sup>. The raw data provided Anatoliki with a figure that described the total amount of food waste at each kindergarten per week. This figure was then used to calculate

1. The total amount of food waste per week across the kindergartens
2. The estimated amount of food waste per year across all the kindergartens.
3. The estimated total amount of food waste per day, week, month and year per household at each kindergarten.

Point three was calculated through the following.

The total amount of food waste at each kindergarten per week was divided by the number of participant families to find the average household figure. This was then divided by 7 to calculate how much each family wastes per day. This figure was multiplied by 365 to calculate how much the household wastes per year; then it was divided by 12 to calculate how much the household wastes per month.

**A column**=Total Food Waste Recorded per Kindergarten and per week from all participant parents

**B column**=A/number of participant families per week

**C column**=B/7 (7 days per week) to estimate food waste produced per day

**D column**=E×12 (12 months per year) to estimate food waste produced per month

**E column**=C×365 (365 days per year) to estimate food waste produced per year

Please refer to 3.1.1 in the Cr-EAT-ive feasibility report to explore the methodology in greater depth<sup>11</sup>.

### 2.3.2 Semi-Structured interviews

The change in the food waste levels at a kindergarten school canteen was due to be measured through a waste audit before and after the project was implemented; however, due to resource and time limits an alternative measurement was conducted. An in- depth semi structured interview was conducted with the two canteen cooks at two separate kindergartens to establish an understanding of what food waste as produced, at what point does the waste arise, why there was food waste and to identify interventions that could be effective in reducing food waste. For a full analysis of the method please see the Cr-EAT-ive feasibility final report Appendix III<sup>12</sup>.

### 2.3.3 Semi-Structured Questionnaire/interview

At the end of the FWD and the Cr-EAT-ive intervention the householders that participated were requested to participate in a semi-structured phone interview. The questionnaire was changed from being sent to parents via a paper version to a phone interview in order to gather a higher response rate. Originally the phone interview was going to take a structured format, with the interviewer reading out the questions and providing multiple choice; however this was not found to be effective, with parents opting for more of a less

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<sup>10</sup> <http://www.eu-fusions.org/index.php/cr-eat-ive-schools>

<sup>11</sup> <http://www.eu-fusions.org/index.php/cr-eat-ive-schools>

<sup>12</sup> <http://www.eu-fusions.org/index.php/cr-eat-ive-schools>

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structured interview where they could discuss the project. The questionnaire was used as discussion points and the overall questionnaire moved towards a semi structured interview. The purpose of this questionnaire/interview was to identify the usefulness of the guidelines and Cr-EAT-ive project along with capturing consumer behaviour and views. The 23 households that participated in the FWD completed the semi structured questionnaire. The majority of the participants were women with the responsibility of cooking and shopping. For a full break down by kindergarten please see appendix II in the Cr-EAT-ive final report<sup>13</sup>.

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<sup>13</sup> <http://www.eu-fusions.org/index.php/cr-eat-ive-schools>

# 3 Project results

This section provides an overview of the results of the Cr-EAT-ive feasibility study, including that generated from the final report and the evaluation visit.

## 3.1 Project outputs

Aside from the engagement with the six kindergartens to deliver the project Cr-EAT-ive, Anatoliki's main output is a knowledge base and guidance documents. Below is a list of the various documents that Anatoliki generated throughout the project

1. Anatoliki produced games for kindergarten classes. In particular the book-board game entitled "Think if it is edible.... Before you throw it away" (see figure 3). Along with other kitchen games (See figures 4, 5, 6 and 7). These games were used in class.

Figure 5 Children's board game



Figure 5 The kitchen game- cut and stick the fruit and vegetables in the correct position in the kitchen



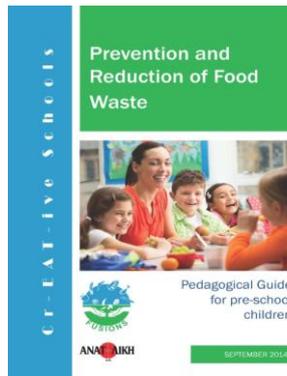
Figure 5 Progressive Game- children connect the leftover with a solution.



Figure 5 Matching Game- children connect the food with the compost bin



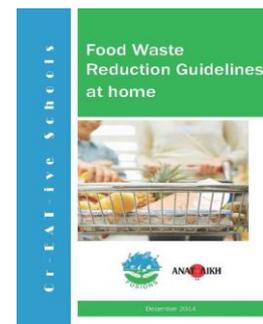
Figure 6- Guidance for teachers



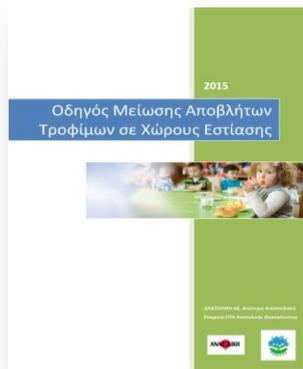
2. Anatoliki produced a guidance document to teachers (see figure 8). The guide contains the objectives and the description of the Cr-EAT-ive schools, all the terms and requisite information to help teachers understand fully the important issues of food waste.

3. Anatoliki produced a set of guidelines on food waste reduction at home for parents (Figure 9). The guidelines contain general advice about shopping, storing and preservation of food, use of leftovers, explanations of the expiration dates and information about composting. It offered leftover recipes based on the kindergarten’s menus.

Figure 7- Guidance for parents



4. **Figure 8- Guidelines for canteen staff**



5. Anatoliki produced some guidance to use in workshop aimed helping canteen staff reduce food waste within the kindergarten. This guidance was called 'Guidelines to reduce food waste at food services' (See figure 10)

6. As an reward for parents to completing the Food Waste Diaries, Anatoliki produced a meal and shopping planner (see figure 11)

Figure 9- Meal and shopping planner, seasonal cycle of fruit and vegetables



7. Anatoliki produced a report of the pilot impacts<sup>14</sup>  
 8. Anatoliki delivered a set an overall guidance document that outlines the key aspects for replicating the Cr-EAT-ive project<sup>15</sup>.

<sup>14</sup> <http://www.eu-fusions.org/index.php/cr-eat-ive-schools>

<sup>15</sup> <http://www.eu-fusions.org/index.php/download?download=190:guidelines-to-reduce-food-waste-at-home>

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## 3.2 Project Events

In addition to these outputs created by Anatoliki a number of events were also held both as part of the Cr-EAT-ive project but also as an 'add on'.

### 3.2.1 Seminar's with Kindergarten Heads

As part of the Cr-EAT-ive project some seminars were organised with the teachers at the kindergartens. The first seminar was organised with all the kindergarten head teachers at the premises of Anatoliki. This meeting was to discuss and identify the most compatible way to integrate Cr-EAT-ive into their schooling. It covered the presentation of the Cr-EAT-ive schools, the indicative timetable and a catalogue of existing educational material covering food waste through the literature review Anatoliki had conducted, along with some ideas for games. At the end of this meeting the teachers were asked to review the available material and propose any modifications ready to feedback at the next seminar. The second seminar consisted of discussing each kindergartens proposal on how the Cr-EAT-ive project could be better implemented. It was during this process that it was identified that the project timescale should be modified in order to be compatible with the curriculum of the kindergartens. These seminars were also important for developing the relationships with the kindergarten heads.

### 3.2.2 Seminar's with Kindergarten Parents

As part of the implementation of the Cr-EAT-ive project several seminars were organised with parents. It was during these seminars that parents were informed about the guidelines, presented with the printed version and the pilot parents<sup>16</sup> provided with information on the next steps of the pilot action. These seminars were delivered at the kindergartens where the parent's children attended. This created a localised culture, where many of the parents knew, or at least knew of each other. In total 175 parents participated in the seminars, including also 7 kindergarten head teachers and 25 teachers.

Alongside these seminars some smaller introductory events were organised at 5 of the kindergartens; with only one kindergarten being unable to find an appropriate time and place to organise the event. Two of the kindergartens organised a session where the children and teachers had lunch together that was cooked with leftover recipes (See figure 12).

Figure 10 Event at two kindergartens



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<sup>16</sup> Those parents that participated in Cr-EAT-ive further by filling out Food Waste Diaries.

### 3.2.3 Feeding 5K Event Thessaloniki

During November 2014 a Feeding 5000 event<sup>17</sup> was organised to start up the Cr-EAT-ive project. Over 100 children with their parents participated in cooking lessons with fruits that were surplus. The session was led by a famous chef, Konstantinos Aivazoglou. It was during this time that a flyer was distributed advertising the Cr-EAT-ive programme. One of the kindergartens supported the event through organising different games with the children to raise awareness on reducing food waste. Events such as these generated interest (and awareness) amongst teachers, parents and children.

### 3.2.4 Presenting to the Mayor

During December 2014 some of the kindergartens involved in Cr-EAT-ive presented to the Mayor of Kalamaria. The children, along with their parents and teachers, sang carols whilst holding placards which campaigned against the level of food waste and malnutrition within Greece, and within the world. Anatoliki presented the Cr-EAT-ive programme to the Mayor, who subsequently pledged to help disseminate it throughout the area. Again this type of event generates interest and awareness, along with providing opportunities to access individuals (the mayor) that may otherwise not be engaged.

Figure 11 Presentation to the Mayor



### 3.2.5 City Hall 'don't throw it away... think if its edible event'

Towards the end of the Cr-EAT-ive project (10<sup>th</sup> May 2014) Anatoliki organised an outdoor event at the city hall in Thessaloniki called 'Don't throw it away...think if it's edible!' with a combination of stakeholders including the municipality. Anatoliki estimated that more than 1000 parents and children had the opportunity to participate in workshops organised by the kindergartens. The event consisted of 5 key activities

1. **Workshops** titled 'Take food in your hands' – these workshops were organised by Anatoliki but were ran by the kindergartens that participated in the Cr-EAT-ive project. The workshops were delivered on stalls and children were invited to engage in activities, crafts and edible treats using food that was surplus. The fruit and vegetables were surplus due to being 'ugly' in appearance and were sourced from the Central Market in Thessaloniki. This event was organised on Mother's Day. This is thought to have increased participation as the arts and crafts made from surplus food were made with the purpose to give them as presents.
2. **Group Play:** There were two group play events that took place. The first was a relay race between two groups of children and parents to

Figure 12- Event One



Figure 13- Event Two



<sup>17</sup> <http://feedbackglobal.org/campaigns/feeding-the-5000/>

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squeeze orange juice from surplus oranges. The second event was a dance performed by kindergarten children in chef outfits.

3. **Cooking Demonstration:** Chef Konstantinos Aivazoglou provided a cookery demonstration with the children to create a fruit salad with the surplus fruit.
4. **DJ:** A DJ played children's music during the whole event. This was a key component for the activities.
5. **Provision of materials:** Anatoliki distributed T-shirts to the children, teachers and Kindergartens Heads with the message 'Don't throw it away... think if it is edible'

Figure 14 Event Layout



This event was considered to be a huge success by all parties involved. A large proportion of individuals attended this event, and some participants identified it as one of the most successful aspects of the Cr-EAT-ive study<sup>18</sup>. The event was partly successful due to the layout of the venue. The circular layout meant the main entertainment could be delivered whilst the kindergarten stalls were in the surrounding area. The area had an exit at both ends, therefore would attract people who were passing. As the event was held on mother's day, this also gave a purpose to some of the crafts that were made out of the surplus food. This may have also been a hindrance with the day becoming primarily referred/remembered to as a mother's day event: rather than one which was tackling food waste. Nonetheless the event created interest from not only the kindergartens engaged in the Cr-EAT-ive study but also other kindergartens. A number of kindergartens asked to attend with their own stall. Therefore this event was deemed to be a success both in terms of delivery and creating scope for replication in other kindergartens across Greece.

### 3.2.6 American Farm School Final Event

The American Farm kindergarten was not able to attend the 10<sup>th</sup> May City Hall event and therefore organised a separate event for their kindergarten children and parents. Similar to the 'don't throw it away... think if it's edible event' this kindergarten gathered surplus fruit, vegetables and Pizza, and created a meal. After the meal and some educational games, the group gathered the unavoidable food waste and placed them in the compost bin to educate the children about composting.

## 3.3 Key Performance indicators

Anatoliki throughout the project kept a record of specific key performance indicators that are detailed in the table 2 below.

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<sup>18</sup> This was gathered from the evaluation visits when discussing the day with parents and teachers.

**Table 2 Cr-EAT-ive's key performance indicators**

Key Performance indicator	Value	Key performance Indicator	Vlaue
Number of Kindergartens involved in Cr-EAT-ive Schools	6	Number of Kindergartens Heads involved in Cr-EAT-ive Schools <i>*Bilios Stegi has two kindergarten Heads</i>	7
Number of Teachers involved in Cr-EAT-ive Schools	25	Number of Meetings	2
Number of Participants at the meetings	9	Number of Guidelines to Kindergarten Teachers produced	1
Number of Guidelines to Kindergarten Teachers printed/disseminated	50	Number of training seminars	1
Number of participants at the training seminar	29	Number of innovative games developed	13
Number of children involved in Cr-EAT-ive Schools	480	Number of Guidelines to reduce food waste at home produced	1
Number of Guidelines to reduce food waste at home printed/disseminated	500	Number of Welcoming to parents events	6
Number of Participants in the welcoming to parents Events	222	Number of Seminars to Parents	6
Number of Participants in the Seminars to Parents	207	Number of Guidelines to reduce food waste at food services produced	2
Number of workshops to canteen staff	2	Number of participants to workshops	5
Number of Kindergarten Canteen Qualitative and Quantitative Assessments	2	Number of pilot parents= people who engaged in the FWD	29
Number of Food Waste Diaries printed/disseminated	60	Number of pilot parent completed the second Food Waste Diaries	24
Number of Meal planners printed	50	Number of Shopping Planners printed/Disseminated	50
Number of Qualitative phone interviews addressed to pilot parents to identify behavioral change and evaluate the pilot and the tools produced	23	Number of Cooking Week Events	2
Number of Participants in the Cooking Week Events	1000c a	Number of Pilot Action Factsheets produced	6
Number of Parallel Events for dissemination purposes	4	Amount of ugly and surplus fruits and vegetables diverted from landfill and used for fruit salad and handcrafts	100kg

This identifies the sheer scale of work completed within the Cr-EAT-ive project, along with the high engagement from both kindergartens and the parents of the children.

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### 3.4 Cr-EAT-ive results

The feasibility study overall found there was a reduction in food waste, which correlates with the implementation of the Cr-EAT-ive feasibility. Anatoliki found that the kindergartens combined (three kindergartens- as identified in section 2.3.1 two of the five kindergartens had to be excluded from the combined overall results) wasted in the first week 62kg (*the equivalent of €225.76*) this equates to 3241kg a year (*the equivalent of €11,719.45*). During the second week of the FWD, the kindergartens reported waste of 35kg (*the equivalent of €110.26*), this equates to 1824kg a year (*the equivalent of €5749.44*). In total after the families in the kindergartens had been informed (through seminars and the guidelines), the participating families (that is those who completed the pre and post FWD) managed to reduce their food waste by nearly half. There was a 27kg reduction, which equates to a 1417kg saving a year. This is a financial saving of €114.49 a week and €5970.00 a year for all the kindergartens combined.

The data from the FWD were also used to estimate the average amount of food waste at each individual household rather than the overall kindergarten figures. Using data from only the three kindergartens that participated in both the pre and post FWD, it was calculated that on average in the first week a household wasted 3kg of food (*the equivalent of €12.32*) this equates to 177kg a year (*the equivalent of €642.77*). During the second week of the food waste diaries, a household wasted an average of 2kg (*the equivalent of €5.91*), this equates to 97kg a year (*the equivalent of €308.59*). There was a 1kg reduction, which, equates to 80kg saving a year. Therefore the kindergarten households on average saved €6.40 a week, which could, all things being equal equate to €334.00 a year. This is a huge saving yearly saving for a household.

The data collected by Anatoliki concludes that there was a food waste reduction in all kindergartens that participated in the Cre-EAT-ive project and completed the food waste diaries<sup>19</sup>. In total, after the intervention of the guidelines and seminar's with parents, Anatoliki reported that families reduced their food waste by nearly half, This is a financial saving of €114.49 a week and €5970.00 a year. This is a huge saving for the households and a positive outcome for the Cr-EAT-ive project. For a breakdown of these results at a kindergarten level, and also the calculations method please see table 4 and 5, along with the appendix II in the feasibility final report.

The most common food that was reported to be thrown away was pastries (22%). Whilst Dairy and eggs (19%), cooked meals (16%) fresh vegetables (9%) and fresh fruit (7%) were the other foods commonly thrown away. Peels-bones-roots (10%), meat and fish (7%), beverages (5%), pasta (4%) and nuts (1%) made the remaining types of food that were thrown away. The most common reason reported for the production of food waste was that participants cooked, served and prepared too much food (48% of 510 responses). 25% of respondents claimed they wasted food because the food went bad and 16% claimed they threw it away because it was not edible; whilst accidents, personal preference, and past the expiration date made up the remaining 11%. Anatoliki identified a variety of incentives which enticed the participants to reduce their food waste, with the most popular being the guilt they felt towards wasting food.

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<sup>19</sup> This excludes the two kindergartens where reliable results could not be generated due to sample drop out and intermittent completeness of the diaries due to lack of enthusiasm to complete the post diary

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Of the 23 participants that participated in the semi structured phone interview Anatoliki found that the majority of participants identified that the materials provided were helpful and informative, and urged for it to be introduced to more parents. The participants reported that the Cr-EAT-ive study had identified to them how much they wasted; with some households claiming they now formed a shopping list, checked the expiration dates, used up leftovers and also planned their food through weekly menus. This is expected to have contributed to the overall change in level of food waste between week 1 and week 2 of the FWD. This identifies that some parents made significant changes to their behavior as a result of the Cr-EAT-ive programme.

Through the semi-structured interview, Anatoliki gathered a range of feedback regarding the guidelines. Overall the feedback received about the material provided from Anatoliki (for example the guidelines) was positive. Parents identified how the material was helpful for example:

**'The material given to me was very comprehensive and helpful, something I can hold on to and try to implement from now on'** (*no demographic information available*)

**'The Material really helped me, I wish it was given to more people to implement at home'** (*no demographic information available*)

**'The guide was a useful summary of advice for all kinds of food. More people should be given such guidance'** (*no demographic information available*)

Interestingly, one parent commented on the ability to keep hold of the information, identifying the importance of the guidelines in a form that was easily assessable. Some parents went further in identifying or implying why the material was helpful, as identified below

**'A really helpful tool for housewives which motivates and incentivized to save food and money'** (*no demographic information available*)

**'The Guide helped me improve my consumption habits and the household budget'** (*no demographic information available*)

**'The material had some new advice on how to minimize waste that I wasn't aware of but I knew and implemented most things anyhow'** (*no demographic information available*)

The guidelines were seen as helpful because they provided information about how to save food and money which in turn motivated and incentivized parents to adopt some of the food waste prevention behaviors. Whilst these parents did not strictly identify the exact information they found useful, Anatoliki argued that the guidelines mostly helped parents change behavior in that they conducted a shopping visit with a list and started to meal plan. One parent identified the information on expiration dates was particularly helpful. **'I understood the difference on expiration dates, best before and use by and I will adopt to the everyday planning the regular check on expiration date'** (*no demographic information available*). Therefore these quotes identify that some parents valued the material provided and that it had a role in changing behavior which reduced food waste and provided financial gains.

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On the other hand some parents claimed that the guidance was not helpful. According to Anatoliki, one parent found that the information surrounding expiration dates was not clear whilst another claimed that the guidance did not change their behavior: **'The guide did not help me change my behavior and but I made some serious steps forward and I have tried to transfer the knowledge to family and friends'** (no demographic information available).

One parent identified that they felt the guidelines could be more encompassing of vegetarians: **'I would like the guide to contain more advice on vegetarian diet'** (no demographic information available). This identifies the use and value this individual places on tools such as recipes; however felt that the current guidelines did not necessarily cater for the vegetarians. Whilst there was not a large amount of negative feedback, due to the small sample this is inherently important. This identifies that for some that the materials or some of the content produced was not overly helpful and did not necessarily result in behavior change. Therefore a change in the delivery for some may be what is required. Further research would need to be conducted to explore further this area.

Households in the study did not identify with any of the barriers to reducing food waste<sup>20</sup>, such as not having enough time. This would suggest that the food waste prevention behaviours promoted through Cr-EAT-ive were easily adopted by the households. This highlights the effectiveness of the Cr-EAT-ive programme being easily adopted into everyday life. However these results are gleaned from a small sample size which was opportunistic; therefore there may be methodological caveats to these findings. For example

1. Anatoliki experienced difficulty in engaging parents in the follow up telephone questionnaire. Thus it may have been the case that those who participated in the questionnaire were the most engaged parents that adopted the food waste prevention behaviours. It may have been the people that could not engage in the telephone interview related more to the barriers.
2. The barriers identified in the questionnaire were very specific and there may have been other barriers that were evident but they wished not to identify
3. The participants may not have understood the question
4. There may have been an element of respondents answering in a socially desirable way.

The likelihood that there was a methodological issue is reasonable as one parent was quoted to say *'I don't think I have enough time in my daily routine to plan for this'*. This was one of the options for the barriers question. Nonetheless those that participated in the questionnaire reported to claim that there were not barriers to implementing the food waste prevention behaviours that were encouraged by the Cr-EAT-ive project. This on the outset is a positive result, but some wider research would have to be conducted for it to be conclusive.

During the semi-structured interview feedback also covered the parent's viewpoints of the Cr-EAT-ive project as a whole. Some parents claimed that the programme had made them realize how much they wasted:

**'The diary helped me to have a real picture of what I actually waste'**  
(no demographic information available)

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<sup>20</sup> see Appendix I in feasibility final report pp58

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**'During this pilot I realized how much I waste things'** *(no demographic information available)*

Whilst other parents commented about how the Cr-EAT-ive programme had allowed for them to change their habits and behaviors

**'Very organized effort, the two stages of provision of information gave enough time to reflect on possible ways to reduce food waste. At the same time the duration of the pilot wasn't long enough so as to lose interest on the topic'** *(no demographic information available)*

**'Very interesting effort. It helped me realise many important issues related with food'** *(no demographic information available)*

**'The program was very efficient. Information and awareness is useful as it helps to change our daily habits.'** *(no demographic information available)*

This is a positive result as parents are explicitly identifying that the Cr-EAT-ive programme has had a positive impact on their behaviors. This is done firstly by making them aware of the amount the waste within their home, and then by changing their behaviors to ones which reduce their food waste. Only one parent identified that they felt the programme was not long enough therefore their behavior did not (and possibility would not) change: **'The pilot duration was not enough to change my behavior. Parents need to keep on working on this on their own which is a challenge'** *(no demographic information available)*. It is evident here that the parent desired some more tutoring on the issue. The key response was that parents valued the Cr-EAT-ive project due to its involvement in their child's education.

**'The program is very good, both for parents and children. It is educational and especially incentivizes children, because of the feedback from the school and the family.'** *(no demographic information available)*

**'I like the concept of educating my child on this early on'** *(no demographic information available)*

**'The parallel education of my child in class on this topic was really helpful and incentivized me to minimize waste at home'** *(no demographic information available)*

These responses identify that for some the method of reaching parents through educating their children is one which is working, and more importantly one which is liked by the parents.

The results from the questionnaire have been affirmed by the general feedback received from both Anatoliki and during the evaluation visit. Overall the verbal feedback from both parents and teachers was that this was a useful and successful project. The FWD, which was originally designed to measure impact of the Cr-EAT-ive project, became an intervention<sup>21</sup>. This identifies the usefulness of the food waste diaries not only as a tool of measurement but as a tool of intervention.

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<sup>21</sup> During the evaluation visit, parents repeatedly identified that through completing the FWD it allowed for them to clearly see how much food they were wasting, which they were not aware of previously.

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Conversations with parents during the evaluation also elicited other key points where parents identified the usefulness of the Cr-EAT-ive project. In an interview with a mother at a kindergarten she detailed how her daughter would come home and discuss the work she had been doing on food waste, this would result in it becoming a topic they discussed at home between the mother and her daughter. However it is important to note that this discussion did not expand any further into the family unit, to the older sister or father; rather it was considered something the mother and younger daughter discussed. This identifies that for some, the Cr-EAT-ive project is meeting its goals of becoming something that is taken into the home and transferred to the parents.

Other anecdotal stories from the evaluation consisted of

1. A visit was a mother making active changes in the household, such as no longer storing milk in the fridge door.
2. After engaging in Cr-EAT-ive a mother felt she should recycle her unavoidable food waste, she found a local neighbour who would take her waste to compost
3. A mother claimed that after participating in the Cr-EAT-ive project, she organised a supermarket trip with her children, where she taught them how to shop responsibly and encouraged them to think about what they were buying.

A key finding that became apparent during the evaluation visit was that the events organised by Anatoliki were an essential part of the programme. Parents felt the events were the most successful and engaging parts of Cr-EAT-ive programme. Children were reported to have talked extensively about the events they attended. When parents discussed the Cr-EAT-ive programme they valued the social interaction that this programme had provided. That is, the opportunity to discuss topical issues such as food waste with other parents, for example within the seminars or at events. Some parents identified the usefulness of the Facebook page, where parents posted pictures of their children's work, recipes of what they could do with their leftovers and other relevant information. Anatoliki reported that some of the parents on this Facebook page had children who had moved onto Primary school yet still posted. Some parents identified they wanted more opportunities to engage in interactive sessions such as the one Cr-EAT-ive had provided. This identifies the wider social benefit of Cr-EAT-ive as parents are included in their children's learning to a greater degree.

Incorporating the programme into the curriculum, and therefore into everyday life at the kindergarten worked well. This is because the children would become more engaged in the topic and were able to witness the topic in real life. For example one kindergarten had a naming day for a child and took that as an opportunity to explain redistributing the food waste. Allowing the kindergarten heads an element of free reign of both the content (in terms of producing games and crafts) and applying Cr-EAT-ive in their own curriculum made for a successful project. This is because the kindergarten heads can adapt the study to fit their own curriculum, making it easier for them to implement the study. It also allows for the kindergarten heads to have some type of ownership over the project. This also resulted in the kindergartens enticing people to be involved differently, for example nearly all kindergartens explained to parents the positives of being involved through explaining the nutritional benefits, the environmental benefits of the programme, the correlation to feeding the hungry along with the financial savings they could make. On the other hand another kindergarten, as they already were already actively engaged in environmental issues they advertised Cr-EAT-ive to the parents as a self-development course, taking the route that it is an ethical thing to be involved in and can help you become a better person.

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Anatoliki identified that initially Kindergarten heads declared that despite their initial concerns about the implementation of the Cr-EAT-ive programme, they realised that the project was accepted well by the children and was a great driving force for behavioural change. The successful implementation of the project was achieved through the good relationships formed with the Kindergarten Heads at the beginning of the project and that Anatoliki took into consideration the timing and curriculum of the kindergartens. A key finding however was that the project was successful not only due to allowing the kindergarten heads to be engaged in the programme, but also relied heavily on the fact that the kindergarten heads wanted to be involved, without the active engagement of the kindergarten heads throughout the programme, it would not have been as successful.

In addition to addressing the parents' behaviour, Anatoliki addressed kindergarten canteen food waste behaviour. They conducted a semi structured qualitative interview with two canteen staff at two separate kindergartens. There were various findings related to what type of food was wasted at canteen level, the reasons why the food was wasted, at what point in the chain it was wasted and the possible interventions that could be put in place to reduce food waste. The most common type of food that was wasted was fruit. Winter fruits such as oranges, apples and pears were the most common type fruits to be thrown away. The staff estimated that approximately 20% of the cooked food ended up as food waste with 50% of this being considered as avoidable, whilst the other half was considered to be unavoidable such as plate waste and trimmings.

The canteen staff argued that a lot of the food is not wasted due to the food budget being reduced as a result of the economic crisis in Greece. Therefore very little food was claimed to be wasted due to the strict rules on portion sizes. Inevitably however there was some surplus and this was most frequently found during lunch, where the children had certain preferences. The most common reasons for the food waste are detailed below.

1. The variation in number of children attending kindergarten to eat due to sickness or other family reasons, resulting in surplus food being generated.
2. Children have adopted family habits (such as not eating certain parts or types of food), which are difficult to change
3. The inflexibility of meal planning due to lack of time and resources
4. A menu that has meals with unpopular sides such as rice or vegetables which then result in plate waste
5. The food does not look aesthetically pleasing to some of the children
6. A desire of the children to want to go and play instead of eating.
7. A lack of training and knowledge about good practices for the canteen staff.

Anatoliki explored intervention options to reduce the canteens food waste. Whilst doing this a number of barriers that prevent canteen staff from reducing food waste became apparent.

1. In order to comply with the nutrient and food based standards of food safety the canteen staff cannot reuse food that is considered avoidable. With this said however if there is surplus food that was not served this can be used in other recipes or donated to charity.
2. The kitchen equipment is not modern or to a high enough spec to allow for processing of raw materials and food; therefore there is limited possibilities to store leftovers.
3. The canteen chefs do not have the authority to intervene in the current arrangements with food suppliers that provide low quality raw materials due to contracts.

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The canteen staff concluded with identifying three key things that could be changed in order to help kindergarten canteen level food waste. Firstly they claimed that teachers should eat with the children more, this is because they play an important part in establishing eating behaviours such as food preferences, patterns and food acceptance, therefore the teachers can become role models through action when eating with the children. Secondly they claimed that canteen staff should attend training and seminars. Finally a cost benefit analysis should be conducted in order to identify the economic benefits which may drive the implementation of training and the correct kitchen facilities in canteens.

The results reported from Anatoliki indicate that the Cr-EAT-ive programme had a positive impact on food waste prevention behaviour; with parents making key changes to behaviour and becoming more aware of the issue. The children were identified as responding well to learning about food waste and the evidence that children brought up the topic within homes identifies some learning. However research<sup>22</sup> would have to be conducted in a longitudinal study in order to understand the long term behaviour change that Cr-EAT-ive would have on the children. Whilst these results are positive, the sample was small and opportunistic. That is those who were interested in the project participated in the FWD and questionnaire, which therefore are likely to be those most engaged in the topic of reducing food waste and willing to take the advice on board. Diary methods suffer from under-reporting of the amount of food and drink waste<sup>23</sup>. There is an element of social desirability to report positive results, especially in the case of being part of an intervention that demonises food waste; this is likely to skew the results found. Nonetheless some conclusions can be derived from these findings which do indicate a positive direction in reduction of food waste in the home once the Cr-EAT-ive guidelines and seminars were delivered.

For a detailed breakdown of the results at a kindergarten level please see the final feasibility report, Appendix II<sup>24</sup>.

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<sup>22</sup> For example pre and post drawings from children could have been completed asking them to draw What comes to mind when they think of Food Waste.

<sup>23</sup> Page 9 <http://www.wrap.org.uk/sites/files/wrap/Methods%20Annex%20Report%20v2.pdf>

<sup>24</sup> <http://www.eu-fusions.org/index.php/cr-eat-ive-schools>

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# 4 Project implementation

This section provides the findings on the project implementation process for the Cr-EAT-ive feasibility study. The section will address timescales, the project management and volunteer resource needed to develop and implement the project, the financial cost and the main constraints/unforeseen issues of the study. Anatoliki delivered each stage of the Cr-EAT-ive project to the timescale and budget set by FUSIONS.

## 4.1 Timescales

The project started in March 2014 once the budget had been finalised. Between May 2014 and June 2014 the relationships with kindergartens was established. During the period between May 2014 and September 2014 the materials and games were developed. From October 2014 onwards the Cr-EAT-ive programme was delivered in the kindergartens, this was later than original planned but the timescale was modified in order to be compatible with the kindergartens curriculum. The programme finished in September 2015; however whilst the project has 'officially ended' some kindergartens are keen to continue to implement the Cr-EAT-ive programme into the curriculum and Anatoliki are continuing to discuss with both the Greek municipalities and other countries about extending the Cr-EAT-ive programme further.

## 4.2 Project Management Resource

This next section identifies the amount of project management that is needed and in what areas during the implementation of the pilot studies. The project management was conducted by the organisation Anatoliki, with Dora Paschali being the main communication lead. Table 3 identifies the key individuals involved in the project, the main tasks and the amount of months each person spent on the project. In total Anatoliki spent 19.85 months on the project across 7 individuals; however some people spent longer on the project than others.

**Table 3- Individuals involved in Cr-EAT-ive**

Name	Organisation	Role in project	Relationship to FUSIONS	Person months
Iakovos Sarigiannis	Anatoliki	Management	Partner	1

Name	Organisation	Role in project	Relationship to FUSIONS	Person months
Dora Paschali	Anatoliki	Coordination and Elaboration of all Guidelines (Pedagogical Guide to teachers, Guidelines on food waste minimization at home and kindergartens food services) Preparation of cooking week	Partner	5.5
Thalia Bogdanou	Anatoliki	Elaboration of the Pedagogic guides Coordination of Pilot Actions Preparation of evening seminars to parents and workshops to kindergartens food services Participation to cooking week	Partner	3.4
Natassa Rizopolou	Anatoliki	Collection of relevant material Implementation of training seminars to kindergarten teachers	Partner	2.5
Ioanna Dolma	Anatoliki	Layout of games and their manuals Layout of Guidelines Follow up plan	Partner	1.45
Eleftheria Pita	Anatoliki	Contribution to the Collection of relevant material Design of games and their Manuals	Partner	1.2
Nikos Remvos	Anatoliki	Design of games and their Manuals Implementation of training seminars to kindergarten services and Evening Seminars to Parents Progress Reporting	Partner	4.8
Sophie Easteal	WRAP	Guidelines on food waste minimization at home and kindergartens food services, Evaluation Report	Partner	4.8

Anatoliki reported that in general the Cr-EAT-ive feasibility study was time intensive and more demanding than originally expected. The key activities that were the most time intensive were the design and layout of the material produced to support the implementation of all stages, for example the Games, Guidelines and Pilot action material. Monitoring the parents that completed the food waste diaries was identified by Anatoliki as an area that required more resources and time than originally scoped out, in order to provide more accurate and integrated data. This became more of an explicit issue during the second phase of the FWD where parents had lesser of an engagement in completing the diaries.

## 4.3 Financial costs

The total cost of the study was €37,474. The figures from the FWD's identified that the average Greek household saved 1kg after the Cr-EAT-ive programme was implemented, which is the equivalent to €334.00 a year. If this is scaled up to take into account the 480 children and families involved in Cr-EAT-ive, the families combined could save up to €160,320 a year. This would create a return in investment; however this is a financial saving for the families and does not fund the Cr-EAT-ive project. The amount of food surplus saved does not directly convert into financial gains. The pilot is not economically self-sustainable, no process has been implemented which generates capital to pay for project management time or equipment.

Of the €37,474 that was spent on this project, the majority was spent on staff costs €30,423 and printing cost €3,066. Although, with replication in mind, the materials are already created and therefore can be used by other organisations, printing may still be necessary. The materials could be transferred and delivered online; however feedback from parents and teachers indicate that the materials work best in printed form.

Table 4 breaks down further the cost of the feasibility study. The project does not have the capacity to generate income and therefore is not economically self-sustainable unless funding is found. Cr-EAT-ive is something however that could be integrated into a government department as part of the school curriculum.

**Table 4- costs of the Cr-EAT-ive project**

	<b>Feasibility Study Cr-EAT-ive</b>			
	Management Costs	Support	Administration	SUM
<b>Staff Cost</b>	€7,585	€20,830	€2,008	€30,423
<b>Subcontracting for the organisation of the Events</b>	€1,748			
<b>Printing Cost for Games, Guidelines and Pilot action Material</b>	€3,066			
<b>Consumables for Cooking Week Events</b>	€2,045			
<b>Travel Costs</b>	€200			
<b>Total Cost of Cr-EAT-ive Schools</b>	<b>€37,474</b>			

The cost of the event at Thessaloniki city hall (which was deemed to be one of the most successful aspects of the Cr-EAT-ive project) was approximately €2,045. This did not include venue hire, as it was provided free of charge by Thessaloniki Municipality. Participating kindergartens contributed with their own resources such as the craft materials, equipment such as tables and other materials.

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## 4.4 Main constraints and unforeseen issues

During the implementation of the feasibility study unforeseen issues arose, they key ones are identified below.

1. Difficulty of engaging kindergartens: Many of the kindergartens that participated in the project had prior connections with Anatoliki. The kindergartens that declined to participate claimed they did not have the resource or time to engage in the Cr-EAT-ive project. Some argued that they could not engage as they felt it was too difficult to fit into their programme.
2. Engaging parents: One of the biggest challenges was engaging the parents in the Cr-EAT-ive project and in particular keeping the parents engaged in order to complete the second FWD. Careful planning in order to work closely with the parents throughout the project and clear marketing of the projects benefits is needed.
  - a. Anatoliki found that in some schools parents were engaged, and communicated to, through teachers. This did not necessarily work as it prevented direct communication, with some information getting lost and communication being difficult. Therefore contact with parents should be made directly.
3. Engaging the canteen staff: This was a particularly difficult task. One chef initially would not engage in the issue of food waste and therefore in order to practice the food prevention behaviours within the kindergarten, the kindergarten head teachers had to arrive early (with their own extra food and spices) to prepare food the leftovers. Over time the chef became more engaged in the project. However without the commitment of the kindergarten heads this would not have been feasible.
4. The length of time it would take to manage the food waste diaries, particularly to monitor the pre and post food waste diaries and engage people to complete them reliably. The diaries did not ask demographic and other key information such as date of completion. This resulted in a high level analysis of the results<sup>25</sup>; however the sample size was small therefore any statistical significances would have been heavily caveated. Th FWD required more consultancy than was budgeted for.

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<sup>25</sup> As opposed to analysing levels of change per type of household etc.

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# 5 Project sustainability

This chapter covers issues surrounding the sustainability of the project based on the experience gained through the delivery of the Cr-EAT-ive programme and events across Greece.

Anatoliki successfully implemented the Cr-EAT-ive programme into six kindergartens in Thessaloniki. This demonstrates the ability to place a programme which seeks to change behaviour of both children and parents into the curriculum of Greek kindergartens. Anatoliki have conducted research which indicates the positive impact the programme had in terms of household food waste tonnage decreasing and also the social benefits of engaging parents and teachers in this issue. Although the research has caveats and further research could be done to explore the short and long terms impacts of this project, this feasibility study has provided an example of successful implementation of such a programme in kindergartens. This next section will discuss the short term and long term sustainability of the Cr-EAT-ive project both within and outside Greece.

Cr-EAT-ive has proven to be a successful and a well adopted food waste prevention programme within kindergartens. In the short term the Kindergartens already involved in the Cr-EAT-ive project will continue to incorporate some teaching on food waste prevention within their curriculum. However given the difficulties during the project in obtaining data from a large enough sample, it is highly unlikely whether the results of ongoing activities would be properly measured at the kindergartens, taking into account that project management support from Anatoliki will not be available.

From a household perspective the research conducted by Anatoliki and the feedback during the evaluation visits suggests that the food waste prevention guidance was well received and adopted by some of the parents with in the kindergartens. Some behaviour changes are likely to continue. This cannot be proven unless a follow up interview/questionnaire and food waste diaries are completed at a later stage, which is highly unlikely now that the feasibility study has discontinued.

Similar to the constraints of measuring the behaviour change of the parents, it is difficult to conclude the short term (and long term) sustainability of the Cr-EAT-ive project on the kindergarten children involved. In first instance the research suggests that the Cr-EAT-ive programme was well received and effective at engaging the children; however without a longitudinal study to assess the behaviour change compared to a control group this cannot be said with certainty.

Currently the Cr-EAT-ive project is sustainable, providing the following points are addressed.

1. They continue to work with municipalities, for the following reasons:
  - a. The municipal provided the authority to enter the kindergartens
  - b. The municipal provided a venue free of charge for the awareness event (10<sup>th</sup> May)
  - c. The municipal may be able to offer funds in the future
  - d. The municipal may be able to integrate Cr-EAT-ive into the curriculum for kindergartens and primary school children across a regional and national landscape.

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2. There is still project management of the Cr-EAT-ive project. Without further funding there will be no project management from Anatoliki to help implement the Cr-EAT-ive programme. Whilst the materials will not need to be made, project management will still be needed to a degree. This is especially the case as it was evident the food waste diaries were an important part of implementation as well as measurement; therefore ideally families would complete a food waste diary which as identified need extensive management
    - a. A possible solution to this is that a partnership with a university is made, whereby an Erasmus student or university student (who is studying primary/nursery school education) could be offered a part time or full time work placement where they become the main project manager, helping to disseminate the Cr-EAT-ive programme in kindergartens.
  3. There is a printing budget. Whilst the Cr-EAT-ive study has created a range of materials, for the project to be sustainable in the long term a printing budget is going to have to be sought. The materials could be moved online; however feedback from both the parents and teachers was that their materials worked best in paper form.

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# 6 Potential for replication of the project

The Cr-EAT-ive project has wide scope for replication both within Greece and other countries.

As identified previously, kindergartens that participated in the study are continuing to embed the material on food waste into their teaching. Anatoliki has had interest from other kindergartens, of which some attended the 10<sup>th</sup> May awareness event.

Anatoliki is currently in talks with ministers at a national and regional level to implement Cr-EAT-ive into more kindergartens and possibly primary schools. Equally Anatoliki translated the project's guidebooks, games and meal planners into English to enable the tools to be used by other countries.

The kindergarten activities were designed in a way that they could be easily incorporated into any kindergartens curriculum.

On an international context Anatoliki is working with an organisation in Italy that wants to implement Cr-EAT-ive as part of a wider project in Italy.

Therefore this programme has a wide scope for replication both regionally, nationally and internationally. The text boxes below identify key ways in which the Cr-EAT-ive project could be replicated at a regional/ local, national and international context.

**Local:** Support by Local Municipality in replication of the project by encouraging other kindergartens to be engaged. A seminar to all Kindergarten Heads and teachers of other kindergartens that are interested in implementing the project would be a useful first step, with a train-the-trainer approach.

**National:** Information Letters to all Municipal Kindergarten Representatives including the core activities and the basic results of FS Cr-EAT-ive School, annexed by the short case study document and an overview of all the available guidelines for teachers and parents. Information events addressed to Representatives of the Municipal Departments responsible for Kindergartens could be a good opportunity to present Creative School Project's and the material produced. <sup>26</sup>

**Other countries:** The replication of the project to other counties could be implemented through FUSIONS website with a short case study document and short overview guidance note on how to set up these types of projects. The core material of the project is translated into **English**. The implementation needs the involvement of a project manager to coordinate start up activities.

The following section will identify the key aspects that should be identified when considering replication of this project as a whole, which is detailed below:

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<sup>26</sup> The games are available online and in the Greek language so could easily be adopted at a regional and national level.

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1. It is essential to have a project manager running the Cr-EAT-ive programme. (see point one in section five)
  2. It is essential to have the municipalities or Local government engaged in the project, which can provide access, and grant permission, to work in kindergartens; along with assisting with the dissemination of the project more widely such as providing venues free of charge. If the organisation does not have any links with kindergartens or schools prior to starting the project, they should leave a sufficient amount of time to build these connections with both the municipalities and the kindergartens.
  3. A key component to success of the Cr-EAT-ive project was having actively engaged kindergarten head teachers, therefore it is important that any future projects leave enough time to build relationships with the kindergarten heads and have them fully on board.
  4. Individuals often work best when they have ownership over a project. The flexibility Anatoliki provided to the kindergarten head teachers, in terms of inputting into the children's games and organising the project activities in parallel with the kindergartens own events resulted in the Cr-EAT-ive programme being easily adopted into the kindergartens curriculum.
    - a. Additionally the seminar's at the start of the programme were successful with teachers, as this provides with an opportunity to feed into the material and dissemination of the project.
  5. Like any project, the benefits of the project for the individual need to be highlighted to ensure active engagement from a range of stakeholders. This project was marketed through the following messages and should be considered in future programmes.
    - a) Money savings for the household and the kindergarten canteens (although the Municipality argued that they would like to have evidence of a cost benefit analysis before they were to roll out the programme further
    - b) Improving nutrition
    - c) The positive environmental impact when reducing food waste
    - d) The moral obligation to waste less
    - e) One kindergarten channelled Cr-EAT-ive as a self- development course, therefore individualised the programme.
  6. Where feasible the materials should be printed (and in colour) for the teachers, parents, children and canteen staff.
  7. The Food Waste Diaries although originally implemented as a way to measure the food participants were wasting became a tool which allowed householders to become heavily engaged in the project and realise how much they were wasting. Therefore future Cr-EAT-ive programmes should attempt to organise and implement food waste diaries; not only to measure success but also as part of the project.
    - a. The FWD should include a numbering system and a section for demographic information and timescales to be recorded, this will help the pre and post results to be matched.
    - b. To allow for an element of anonymity within the FWD, that is only ask demographic information that can not directly link to the person, for example ask household size but not their address. The anonymity may allow for participants to be more accurate and honest about the amount of food they throw away.
    - c. There should be a definition of what Food Waste is in order for parents to understand what to record. For example avoidable and unavoidable food waste types.
    - d. All the data should be uploaded whereby it can be later analysed.
  8. Research and measurement should be conducted to identify the successfulness of the project. This could provide more opportunities for funding. Similar methods should be used as this project.
-

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9. Awareness events are very popular and memorable with those involved and played a very important role in the delivery of the Cr-EAT-ive project. However a significant amount of time is needed to organise and implement these events, especially on small resources.
    - a. Activities that involve parents should be combined with other kindergarten events (rather than a stand-alone event which invites parents) in order to ensure maximum participation.
  10. Parents should be incorporated into the project from the beginning and should be made aware of the goals and activities in order to reinforce the messages that the children are exposed to at school.
  11. All kindergartens should be made aware of the health and safety issues surrounding food redistribution.
  12. Setting up some type of network, for example a Facebook group where parents can post pictures, recipes, ideas and discuss the programme, worked well in this instance. This allowed parents to engage in a social community which was reported to be valued.
  13. The development of a website which directs parents and teachers to relevant material, for both practical use and information, was something that was highlighted to be missing within this project and could easily be adopted in a new or similar project.
  14. The Cr-EAT-ive programme works best when it is easily embedded into everyday life at the kindergarten<sup>27</sup>, as real life examples can be used and demonstrate the importance and relevance of the messages they are promoting.
  15. The Cr-EAT-ive study whilst worked with a range of kindergartens, had a cohort of mainly middle class families. Some of the kindergartens were private, whilst others were state funded. These results largely reflect the capacity of both the teachers/kindergartens and parents who may have comfortable financial situations. Therefore consideration should be taken into account the sustainability of the project in other kindergartens that may not be as financially able to place the Cr-EAT-ive programme into their curriculum.

The above points identify what is needed and should be considered when considering replicating the Cr-EAT-ive project; however certain characteristics are inherent depending on the local cultural context.

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<sup>27</sup> Rather than a short burst of two weeks discussing the project.

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# 7 Conclusions

The Cr-EAT-ive Greek feasibility study sought to address the issue of household food waste through raising awareness and influencing the behaviour of children (and parents) at kindergartens.

This age group was targeted as eating patterns and behaviours begin at infancy, and then continue throughout life. Parents and the teachers of pre-school children have an important role in establishing these behaviours therefore this demographic were also targeted within the programme.

The feasibility study was successful in organising and implementing a programme across six kindergartens, and providing a range of high quality useable outputs. The research indicates that the project was successful in reducing food waste in the household by nearly half and therefore this suggests behaviour change was evident. The research identifies not only the level of tonnage changed, but also other social benefits were apparent (such as heightened engagement of parents in their children's education on food waste and parents creating social networks/ interactions with other parents within and across kindergartens). Attitudes and awareness changed, with some individuals making real changes to their daily activities to reduce their food waste.

Apart from the feedback on the level of engagement of the children from parents and teachers, there is no other evidence to suggest the study had the desired effect on the children. This would require a longitudinal study with a control group.

Overall this feasibility to date has been successful and has a high potential for replication to widen the positive impacts to other kindergartens in other Greek municipalities, and potentially in other countries also. Whilst this project did not experience any considerable challenges, it has highlighted some key areas, which are outlined below:

1. A significant amount of project management time is needed in order to complete the necessary steps (as per Figure 1) to ensure the Cr-EAT-ive programme is delivered to a sufficient standard.
2. It is important to have the municipalities committed to the project, to ensure access to kindergartens, to replicate the material further and as a possible funding avenue.
3. It is vital to have the kindergarten head teachers engaged in the programme and to provide them with flexibility to integrate it into their own curriculum; the level of project management needed to successfully implement and manage the programme;
4. It is important to disseminate food waste diaries to parents as not only a tool of measurement but as a tool of intervention;
5. There is significance in organising a series of events alongside the delivery of the programme.
6. The cost of printing documents at kindergartens is a constraint. Whilst some of this may be covered through the replication budget, it is important that most of the outputs are made available online and can be printed as cheaply as possible.

The high-quality guideline material produced will promote replication in other cities and countries, and facilitate sharing of experiences between regional and national governments, along with between countries. Already there is interest from other

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countries not included in feasibility study. All member states of EU probably have the potential to implement similar projects.

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# 8 Recommendations

The Cr-EAT-ive feasibility study has been successful and highlighted some key areas for replication. Therefore it is recommended that this would be a highly applicable project for replication during and after the FUSIONS programme. Initially the replication process should start locally, expanding the Cr-EAT-ive project into the more kindergartens regionally<sup>28</sup>, and then at a national level. However there has been an opportunity to expand Cr-EAT-ive at an international level and therefore replication should be completed opportunistically.

In section 7 some key points were identified when considering replication; however the following recommendations are for a wider audience in terms of engaging the delivery of the project as a whole.

1. Policy Measures that would enhance the project:
  - a. Funding by Local municipality (or the Ministry of education) for printing costs of awareness materials
  - b. Support by local municipalities in replication of the project by encouraging other kindergartens to be engaged
  - c. Potential for local municipality to include the topic in curriculum for kindergartens
  - d. Potential for Ministry of Education to include the topic in curriculum for primary schools
  - e. Support from Ministry of Education to gain introduction to primary schools
  - f. Canteen staff in both kindergartens and primary schools should be trained in methods and practices that could help reduce food waste at this level.
  - g. Teachers should be encouraged to eat with children in order to disseminate by action the food waste prevention behaviours they are teaching.
2. Measurement of the Cr-EAT-ive's successfulness similar to the methods completed in this study (interviews, questionnaires and the FWD) should be used in order to identify progress. Therefore funds should be made available/sought for the delivery and analysis of this.
3. An in-depth cost benefit analysis both at a school/kindergarten level and household level to be completed in order to ensure future engagement and commitment to the programme from government officials.
4. To establish a working relationship with academics that study educational studies and/or environmental science, that may be interested in forming a partnership. This may open up avenues of funding, work placements, Erasmus students and consultancy.
5. Volunteers (such as engaged parents from the feasibility study) could be used to expand the Cr-EAT-ive programme, identifying the positive benefits; but not to deliver the concept.
6. Cr-EAT-ive could be moved online. An App or online tool could be created that could be used both within school and in the home. This could reduce printing costs.

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<sup>28</sup> The kindergartens are nearer to the feasibility project and it is therefore easy to learn from good practices. The kindergartens that participated in the feasibility study could be actively engaged in replication.

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7. Songs and books could be written which promote the messages in the Cr-EAT-ive programme. These could then be used by the kindergartens as an additional tool to the outputs already created.<sup>29</sup>

Any party interested in organising a similar programme to the Cr-EAT-ive feasibility study are strongly encouraged to take into account the `key replication characteristics identified in section 7 of this document, along with reading the Cr-EAT-ive Handbook/ Guidelines published through the FUSIONS project.

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<sup>29</sup> This was a suggestion by a kindergarten head teacher that felt this was an area missing within the Cr-EAT-ive programme.

# 9 Appendix 1

7 May 2015	<p><b>Phone call with Anatoliki</b>  Dora Paschali, Project Manager, Creative Project, Anatoliki  Sarah Bromley, WRAP  Elaine Charlesworth, WRAP  Michael Wenborn, WRAP</p>
10 May 2015	<p><b>Awareness event, Thessaloniki Municipality</b>  (organised by Anatoliki and attended by about 12 kindergartens, teachers, parents, children, local chef, and representatives from several municipalities, etc).  Sarah Bromley, WRAP  Michael Wenborn, WRAP</p>
11 May 2015	<p><b>Meeting at offices of Anatoliki</b>  Dora Paschali, Project Manager, Creative Project, Anatoliki  Lakvos Sarigiannis, Director, Anatoliki  Thalia Bogdanan, Project Team Member, Creative Project, Anatoliki  Sarah Bromley, WRAP  Michael Wenborn, WRAP</p>
11 May 2015	<p><b>Meeting with Thermi Municipality</b>  Anna Michou, Centre for Social Welfare and Pre-school Education, Thermi Municipality.  Dora Paschali, Project Manager, Creative Project, Anatoliki  Lakvos Sarigiannis, Director, Anatoliki  Thalia Bogdanan, Project Team Member, Creative Project, Anatoliki  Sarah Bromley, WRAP  Michael Wenborn, WRAP</p>
11 May 2015	<p><b>Meeting with Kindergarten Heads at municipal kindergarten, Kalamaria Municipality and also speaking with a parent engaged in Cr-EAT-ive</b>  Elaine, Kindergarten Head.  Cleopatra, Kindergarten Head.  Dora Paschali, Project Manager, Creative Project, Anatoliki  Natasha, Project Team Member, Creative Project, Anatoliki  Sarah Bromley, WRAP  Michael Wenborn, WRAP</p>

# 9 Appendix II- Food Service Surplus Solution Individual Evaluation Report



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## **Developing Food Service Surplus Solution Budapest Feasibility study**

**WP4 – Testing Social Innovation  
Evaluation Report**

**Date: 21.01.2016**

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**Reducing food waste through social innovation**

FUSIONS EU project is supported by the European Community's Seventh Framework Programme under Grant Agreement no. 311972.



# Colophon

Title	Developing Food Service Surplus Solution Budapest: Evaluation Report
Authors	Sarah Bromley, WRAP and Bart Van Gogh (Wageningen UR, FBR)
Keywords	food waste prevention, food-redistribution, Hospitality, Hot-Hot, Hot-Cold-Hot food aid, Health and Safety, best practice, social innovation, food poverty, Guidelines
Clients	European Commission (FP7), Coordination and Support Action – CSA Contract number: 311972
Project leader	FUSIONS coordinator: Toine Timmermans, Wageningen UR - Food Biobased Research, The Netherlands Project leader for this Deliverable: David Rogers, WRAP.
Acknowledgments	The authors would like to thank Sophie Easteal, Michael Wenborn, David Rogers, Elaine Charlesworth and Giorgio Bagordo from WRAP for coordinating the work package/feasibility studies; along with Balazs Cseh and Katalin Ujhelyi from the Hungarian Foodbank Association who undertook the feasibility study and was very accommodating during the evaluation visit.

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# 1 Introduction

## 1.1 Background to FUSIONS

Under the EU FUSIONS programme<sup>1</sup>, seven feasibility studies were implemented to test socially innovative projects across Europe. One of the seven feasibility studies, titled 'HFA<sup>2</sup> Budapest', focuses on connecting charities that require food donations, with organisations from the food service and hospitality sector and their food surplus. The redistribution of the surplus food to those in need has environmental as well as socio-economic benefits. On one side there is a reduction in food waste and on the other the provision of food to help tackle food insecurity<sup>3</sup>.

## 1.2 Aims of the Evaluation Report

The aim of the evaluation is to identify the projects that are most applicable for replication, and to support the planning of replication approaches. This document provides the findings from an evaluation of the feasibility study entitled 'HFA feasibility study Hungary', and impartially considers the success of the project which was undertaken in 2014/5.

This report is part of a deliverable within FUSIONS Work package 4, which sets out to test & evaluate the impact of social innovation on reducing food waste detailing the results and impacts of the implemented feasibility studies.

## 1.3 Background to the Food Service Surplus Solution feasibility study

The feasibility study was managed by the Hungarian Foodbank Association<sup>4</sup> (HFA), based in Budapest, and a partner in the FUSIONS programme. The HFA finds and collects surplus food and donates these products to specialist charities and local institutions. The core activities include non-profit wholesale and distribution of surplus food from supermarkets and food manufacturers. HFA does not offer direct donations to individuals, only to local organisations. The study started 1<sup>st</sup> February 2014 and ended 30<sup>th</sup> July 2015 (1 year 5 months); however the activities are still continuing for the foreseeable future.

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<sup>1</sup> <http://www.eu-fusions.org/>

<sup>2</sup> Hungarian Foodbank Association

<sup>3</sup> Within developed countries food security is defined as 'the ability of individuals, households and communities to acquire appropriate nutritious food at a regular and reliable basis, using socially acceptable means' (Law, Ward and Coveney, 2011:456). **Law, I. R. Ward, P.R. and Coveney, J. (2011) 'Food insecurity in South Australian single parents: an assessment of the livelihoods framework approach' *Critical Public Health*, Vol.21, No.4, pp. 455-469**

<sup>4</sup> The HFA is a non-profit organisation that works to make a link between surplus food and people facing food insecurity in Hungary. This is in order to reduce poverty, hunger and malnutrition. The HFA started work in September 2005 and is a full-fledged member of the European Federation of Food Banks (FEBA)

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The Food Service Surplus Solution feasibility study focused on the food service and hospitality sector. This sector presents a unique challenge for food re-distribution due to the food being at the end of the food chain, and therefore shorter timelines for the food to be consumed within the health and safety regulations.

HFA identify that within the hospitality sector forecasting stock can be difficult due to unforeseeable events; thus food surplus is inevitable and challenging to reduce. Part of the solution to reduce this food surplus going to 'waste' is for the food to be redistributed to individuals experiencing food insecurity.

In Hungary food redistribution is challenging for a number of reasons, among which:

1. Lack of information on whom to transfer the food to (on the donor side)
2. Lack of logistics knowledge (on recipient side)
3. Unclear food safety requirements and responsibilities (better to discard food to be on the safe side...)
4. Lack of monitoring processes (avoiding misuse)
5. Lack of time and resources both on the side of caterers and charities to develop such activities on their own

The Food Service Surplus Solution feasibility study addresses a large market that is claimed to be underexploited due to the unique challenges that this sector faces in redistribution. The overall objective was to create a structured link/ dispatcher service between charities in need of food donations and the food service sector within Budapest, Hungary. HFA sought to create a logistical model and a reliable organisational framework, to enable the re-routing of surplus food from hospitality and food services to charity organisations, along with providing support in terms of knowledge, process development, a contractual framework and monitoring. HFA identified the existence of similar projects that connected kitchens with charities but were not aware of there being any process in place that created a 'structured link' between these charities and the food service to ensure frequent and reliable donations.

The overall idea builds on the traditional foodbanking model where food manufacturers and retailers are connected with charities. It is from this model that the HFA adapted some processes and tools to make it relevant and workable for the food service sector.

A key aim of the feasibility study was to develop two working pilots that would lead to the development of a flagship process for redistribution from this sector.

### 1.3.1 Pilot One- Redistribution of surplus food from food service (Hot-Hot model)

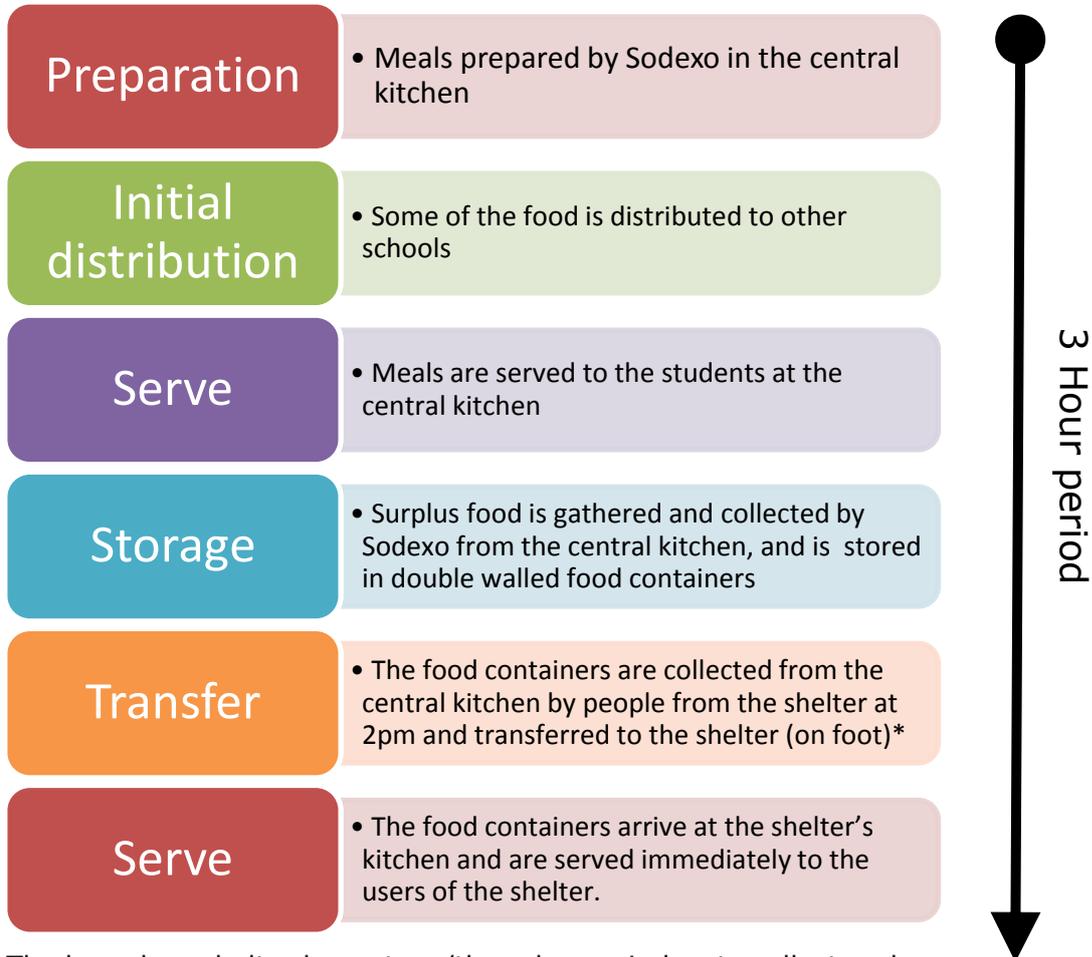
The partners in the first pilot involved Sodexo (food donor) and a homeless shelter (food recipient) run by the Charity Service of the Order of Malta<sup>5</sup> (CSOM). The Sodexo central kitchen is located in a school, where meals are prepared for 10 different secondary schools in the vicinity. Except for weekends and holidays approximately 3000 meals are produced and delivered on a daily basis from this central kitchen to the other schools. Some of these meals are not consumed, for reasons such as fussy eating or parents forgetting to cancel the food if the child is sick or on holiday. It is the surplus from the central kitchen (not the surplus from the schools it distributes to) that goes to

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<sup>5</sup> <http://www.maltai.hu/>

the homeless shelter. The shelter is a large institution with different functions such as overnight stays, washing and medical care, which caters for 50-55<sup>6</sup> people. It is a short distance from the Sodexo kitchen and is equipped with a kitchen from where the surplus meals are served. This model is defined as a hot-hot model. The food is not re-heated: rather prepared, kept at a constant heat and redistributed, at no point is the food allowed to cool. Figure 1 identifies the process.

Figure 1- Pilot One, Monday-Friday activities



\*The homeless shelter has a two /three hour window to collect and serve the food

The pilot has run for a period of 10 months during the period from May 2014 to June 2015. It was put on hold after June 2014 until October 2014 during the school summer holidays when the Sodexo kitchen was closed. Additionally there was a requirement to formally register the shelter's kitchen from where the meals were served to the users by the Hungarian Food Safety Office.

<sup>6</sup> The homeless shelter has 50 rooms for temporary residents.

### 1.3.2 Pilot Two- Redistribution of surplus food from restaurants (Hot-Cold-Hot model)

The second pilot started September 2014 and officially ended June 2015. The partners involved were WestEnd Shopping centre (food donor) and a homeless shelter (food recipient) Caritas<sup>7</sup>. Six restaurants within the WestEnd Shopping food Court retained their surplus and redistributed it to the charity, everyday including weekends. The homeless shelter is a 10-20 minute car journey from WestEnd Shopping Centre, and is equipped with a kitchen area with a fridge and microwave. This model is a hot-cold-hot model. The food is produced to be sold; when it has not sold it is cooled and stored; then re-distributed and reheated. Figure 2 explains the process further.

Figure 2 Pilot Two, Daily Activities



\* The labels include, date of production, when the food was stored in the refrigerator

### 1.3.3 Expected results

During the pilot phase HFA made a conservative estimate that the pilot would save 10,000- 20,000 meals, equating to 30-60,000 Euros during the first year. The HFA also created an ambitious estimate to redistribute over 50,000 meals equating to 150,000 Euro's during the pilot period. Overtime HFA estimated that approximately 5-10 thousand tonnes of food surplus could be saved annually through improved food

<sup>7</sup> <http://karitasz.hu/>

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redistribution activities<sup>8</sup>. Furthermore they predicted that this model would be easily replicable across Europe due to the potential surplus that the food service and hospitality sector can offer. In the UK alone, for example, a WRAP research identified that up to 1.3 billion meals are wasted in the hospitality and food service sector<sup>9</sup>.

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<sup>8</sup> Estimated based on existing number of restaurants in Hungary (appr 10.000) and an average 10-20 meals/day for redistribution

<sup>9</sup> WRAP (2013) Overview of Waste in the UK Hospitality and Food Service Sector  
<http://www.wrap.org.uk/sites/files/wrap/Overview%20of%20Waste%20in%20the%20UK%20Hospitality%20and%20Food%20Service%20Sector%20FINAL.pdf>

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# 2 Methods

This section details the project evaluation methods; firstly outlining the process and actions taken, in chronological order, by HFA in order to implement the two pilots in Budapest. A sub section of this will also cover how HFA evaluated the pilots to measure their success. The second part of this section will detail the evaluation method adopted by the EU FUSIONS team to determine the successfulness and replicability of this project as a whole.

## 2.1 Feasibility study methods

The Figure 3 provides an overview of the steps in the project method by HFA. The project included the screening of available resources; visiting other countries that have similar redistribution models, organising, implementing and evaluating the pilots; logistics process development, related documentation and IT systems, monitoring processes as well as increasing the knowledge and ability on both donor and recipient sides.

Figure 3- - Project Method



\* Dariacordar, Portugal - <http://www.dariacordar.org>  
 \*\* Last Minute Market in Italy - <http://www.lastminutemarket.it>  
 \*\*\* EVIRA (2013) Foodstuffs donated to food aid, Finnish food safety agency  
[http://ec.europa.eu/food/safety/food\\_waste/library/docs/ruoka-apuohje\\_evira\\_2013.pdf](http://ec.europa.eu/food/safety/food_waste/library/docs/ruoka-apuohje_evira_2013.pdf)  
 \*\*\*\* DRAAF (2013) Food donation guidelines for the catering sector, Direction régionale de l'alimentation, de l'agriculture et de la forêt de Rhône-Alpes [http://draaf.rhone-alpes.agriculture.gouv.fr/IMG/pdf/Guide\\_dons\\_restaurations\\_sept2013\\_cle091e14.pdf](http://draaf.rhone-alpes.agriculture.gouv.fr/IMG/pdf/Guide_dons_restaurations_sept2013_cle091e14.pdf)  
 \*\*\*\*\* Renamed in 2015 from DG SANTE - [http://ec.europa.eu/dgs/health\\_food-safety/index\\_en.htm](http://ec.europa.eu/dgs/health_food-safety/index_en.htm)  
 \*\*\*\*\*Amongst others this was the arrangement of meals for elderly people on the national day of the elderly.

## 2.2 Evaluation method- How FUSIONS is evaluating the work

Initial feedback on the project during implementation indicated that it might have strong potential for replication. It was therefore selected for a detailed evaluation, including a visit to Budapest to interview stakeholders and to discuss ideas for replication. The evaluation visit took place from 2<sup>nd</sup> June to 5<sup>th</sup> June and coincided the FUSIONS regional platform meeting. See Appendix 2 for a list of the meetings.<sup>10</sup> Additionally HFA have written a final report outlining their conclusions from the project, this was taken into account during the evaluation.

## 2.3 Evaluation method- How HFA is evaluating the work.

HFA evaluated the successfulness of the pilots throughout the delivery process. Figure 4 identifies the impact indicators that were selected at the start of the project and provides comments.

Figure 4- Evaluation indicators

Evaluation indicator in project plan	Comments
Number of portions redistributed in Feasibility study	Measured during the project; using the transfer document which records the number of portions, food type and nutrition.
Weight of redistributed food in Feasibility study	The weight was estimated on the number of portions.
Value of the food	The value of food was based on the number of portions (and estimated at 2 EUR per portion)
Type of food redistributed	Measured through interviews with the donors and recipients-

<sup>10</sup> The semi-structured interviews with stakeholders were conducted over the 3 day visit to Budapest. The stakeholders were interviewed under the provision of a HFA employee and in one case HFA was the language interpreter. The view point of those who ate the food and those that donated the food was not covered within these interviews. The 6 restaurants in WestEnd were not interviewed (due to access issues and the legal grey area) and Sodexo was only interviewed through its corporate marketing manager. Ideally further research would be evident with these stakeholders.

Number of donor organisations (type, location, green philosophy) and those who did not participate.	Measured during the project through interviews with the donor's Sodexo and WestEnd
Number of volunteer hours. Estimated and concerning only the significant task items	Measured during the project through interviews with the representatives of the recipient organisations alongside the questionnaire distributed to Donor's July 2015
Number of food saving communication activities (instances) to raise awareness of food waste, generally	Due to the legal grey area surrounding food safety this activity was postponed. (See section 'Results from mapping the legal context')
Match funding (time / financial) from project partners. Estimated and concerning only the significant task items. Add this to donor questionnaire	Collected and estimated during the donor questionnaire distributed July 2015
<b>Evidence gathering</b>	
Clarity about the diversion i.e. where the item would have been disposed of without inception.	Measured during the study through an interview with the donor's-Sodexo and WestEnd.
Data to show what the products collected are used for (which groups / individuals take them / where they are eaten (alone or in communal setting e.g. a shelter)) to confirm that they are in fact used (rather than subsequently thrown away) & to demonstrate the health benefit of those taking & eating the produce e.g. if they go to a shelter or similar.	Measured during the project. This was measured through a questionnaire sent to the charities to distribute to their users. The results have been collected and analysed.
Feedback of participants & donors – qualitative interviews to get an understanding of the benefits they accrue from the project	Questionnaire distributed July 2015
Waste levels at donor organisations – do they change their behaviours at all to reduce waste now they see what's generated? Will be automatically seen from number or portions. But will only be indicative on a longer than a year timeframe (because of e.g. seasonality of certain food surpluses)	This is calculated from the reported portion data.

Aside from gathering data through key performance indicators, as figure 4 identifies empirical research was conducted in order to gather evidence about impact. In order to gather feedback from the donors of the food, the homeless shelters and the recipients of the food a questionnaire was sent to the relevant partners (see Appendix 3 in the Food Service Surplus Solution final report). A description of the sampling technique, recruitment and how the results were analysed was not provided by HFA. Therefore these results are heavily caveated to a degree and are anecdotal.

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# 3 Project results

This section provides an overview of the results of the Food Service Surplus Solution Budapest feasibility study, including that generated from the final report and the evaluation visit.

## 3.1 Project outputs

Aside from two working pilots, Food Service Surplus Solution feasibility study's main output is a knowledge base and guidance documents<sup>11</sup>. Below is a list of the various documents that HFA has generated.

1. a document which identified and analysed the legal environment in Hungary and some other EU-member countries.
2. a donation contract for donors of surplus food to use with their recipient charities
3. a take-over / product transfer document
4. a product label proposal
5. a report of the pilot impacts
6. a set of guidance documents

In addition to the knowledge base created through the documents and guidelines, HFA also held a food waste awareness event (Feeding 5000) on the 4th June at the HFA headquarters warehouse. Volunteers gathered to chop over one tonne of fresh vegetables that would have otherwise gone to waste. This event was delivered in a similar format to Disco Soupe and Disco Boco. This format consists of individuals chopping surplus fruit and vegetables to music. On Thursday 5<sup>th</sup> June, at the same location and with some of the same volunteers, 5000 lunches were cooked from the food that had been chopped the previous day. This food was then packaged into white containers and charities<sup>12</sup> drove to the HFA headquarters to collect the food and distribute it to their users. This awareness raising event had many partners<sup>13</sup> and identifies the additional activities that interlink with the feasibility studies and their participants.

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<sup>11</sup> The guidance document is aimed at other project managers in order to aid them in replicating a similar project.

<sup>12</sup> Of which some were from the feasibility studies

<sup>13</sup> The Amateur Royal Cooks, Feedback, Ministry of Agriculture, Municipality of Budapest, Food not Bombs Budapest, HUMUSZ, Culture Gorilla, Hungarian Foodbank Association, Hungarian Charity Service of the Order of Malta, Foundation of Subjective Values, Association of Conscious Customers, and WWF Hungary.

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## 3.2 Results from mapping the Legal context

The Food Service Surplus Solution feasibility study incorporated the experience of existing projects in other EU-countries targeting kitchen/school canteen surpluses. They visited three organisations that engaged in similar activities (see figure 3) in order to understand their work process, policies, results, monitoring and food safety measures. They reviewed and explored the existing logistic processes of redistribution and some aspects of the interpretation of the EU level food safety legislation especially that related to the hot-cold-hot model (see figure 2). **HFA identified some key findings from this process that have been summarised below:**

1. The act of visiting similar activities is invaluable. The onsite visits allowed for first-hand experience and understanding of the takeover and transfer of the surplus food from donor to recipient. The consultations provided opportunities for ad-hoc questions to be asked; an understanding of the different models, and for related documentation to be shared.
2. Managing and maintaining good relations and cooperation between the coordinating organisation and the local food safety authorities is essential for success.
3. The most common model that is used in other countries is the Hot-Cold-Hot model.
4. The regulations surrounding food hygiene state

*“Where foodstuffs are to be held or served at chilled temperatures they are to be cooled as quickly as possible following the heat-processing stage, or final preparation stage if no heat process is applied, to a temperature which does not result in a risk to health.”*

(EC) No 852/2004, ANNEX II, CHAPTER IX, Section6:

From a food safety regulation point of view, the redistribution of surplus food from restaurants remains a challenge due to the process of cooling down prepared food and the re-heating of this food. Part of the difficulty is with the unclearness of the EU food safety regulations and how they are interpreted by Hungarian officials. The HFA found this to be the largest barrier, as if strictly interpreted; leftovers at the end of the day cannot be refrigerated. However there are different understandings and adaptations of the term “as quickly as possible” within the regulation. Therefore the adoption of the food redistribution model Hot-Cold-Hot is dependent on how the food law is interpreted in each country.<sup>14</sup>

5. The DG SANCO (Directorate General for Health and Consumer Affairs) does not prohibit and thus fully accepts the Hot-Cold-Hot temperature chain model<sup>15</sup>. Therefore the Hot-Cold-Hot model is not illegal within the contextual framework of the EU-guideline; it does however allow for ambiguity in some countries, as it depends how individuals interpret “as quickly as possible”.
6. It was identified that the Hungarian Food Safety Authority interpret the phrase ‘as quickly as possible’ strictly therefore this caused challenges for the pilot that adopted the Hot-Cold-Hot model.

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<sup>14</sup> [http://ec.europa.eu/food/food/biosafety/hygienelegislation/comm\\_rules\\_en.htm](http://ec.europa.eu/food/food/biosafety/hygienelegislation/comm_rules_en.htm)

<sup>15</sup> “In our view, Regulation N°852/2004 on the hygiene of foodstuffs cannot be utilised as a basis for prohibiting cooling of meals at the end of service in order to facilitate food donation from the food service/hospitality sector.” (DG Sanco 2014)

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## 3.3 Results from the pilots

Two pilots were implemented with the participation of 7 donors and 2 recipient organisations. During the study and between both pilot studies, 35,096 portions of food were redistributed away from landfill to those who are food insecure. This is the equivalent of 70,192 Euro's and 14,038.4kg<sup>16</sup>. This figure is above the conservative estimate of 10,000- 20,000 portions; however below the ideal and optimistic target of 50,000 portions. HFA carried out some interviews with the recipient charities identified and found that almost 100% of the redistributed food was utilised, thus not thrown away by the charities. Overall the HFA were happy with the success of the project and this was claimed to be the case by the donors, recipient charities and the users of the charities (those that ate the food). Their survey showed that recipients of the food were very satisfied with the quality of the food (9 out of 10), the amount of food (9.27 out of 10) and the variety of food (8.72 out of 10). The donated food was claimed to not only achieve the target of redistributing food that would have otherwise gone to waste but also achieve social goals. For example the HFA noted that some users claimed that they stopped drinking alcohol and ate regularly; they felt a sense of security that they would not starve that day; that they gained weight and felt healthier.

HFA conducted a questionnaire and qualitative interviews during July 2015 with the three out of seven donors. This included Sodexo. Each donor was satisfied with the programme, commenting that the process of collecting the food ran smoothly. The main advantages of participating in the study were identified as the waste management costs decreasing; the positive contribution to society and that it appeared to be the best way to deal with surplus. For Sodexo a key advantage was that the pilot aligned with their Corporate Social Responsibility programme. The donor's identified that they built a relationship with the charities and learned to value their hard work. The disadvantages identified were mainly around the time spent engaging in the tasks to redistribute the food; however this was considered to still be feasible.

HFA conducted a questionnaire and qualitative interview during July 2015 with both participating charities. From their perspective, the main advantage was the provision of hot food for their users.

The next section will look at the pilots from a micro level identifying the results found in each pilot.

### 3.3.1 Result of Pilot One

The pilot run with Sodexo and CSOM was successful on a number of levels in terms of logistics, the amount of food re-distributed and the social benefit of the project. 12,000 portions (4,800kg<sup>17</sup>) of food were re-distributed from the Sodexo kitchen to CSOM. On average that is 73 portions a day, therefore this pilot re-distributed a high volume of food over a short space of time, as food was not re-distributed between June

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<sup>16</sup> The average portion is calculated at 0.4kg

<sup>17</sup> The average portion is calculated at 0.4kg

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and October due to the school holidays. This food, had it not been redistributed, would have been sent to a biogas plant<sup>18</sup>, therefore the food has moved further up the food waste pyramid<sup>19</sup> to human consumption. The type of food re-distributed was soup, garnish and stews and HFA research identified that 100% of the food received was consumed.

The Food Service Surplus Solution study aimed to not only re-distribute surplus food from the hospitality sector but also to change the attitudes of those donating the surplus. To add value to what was primarily considered as waste, but also to raise awareness that surplus food within this industry is an issue. At the start of the pilot Sodexo explained that more often than not the surplus food was consumed by the family and friends of the employees, thus was often not acknowledged as waste. The feasibility study has identified that there is surplus food at Sodexo and that this food serves a purpose outside of the organisation. HFA analysed their data to find a drop in waste arising at Sodexo after the pilot was implemented, for example during November 2014 an average of 82.1 portions (32.8kg) a day was re-distributed, compared to 65.6 portions (26.2kg) in May 2015. This could suggest that the project highlighted to Sodexo the level of waste generated and thus staff within the organisation became more aware to issues of waste reducing measures leading to less surplus food. However the period of measuring is too short and the level of change is not significant enough to draw an overall valid conclusion and can be due to other factors such as seasonal effects. This is confirmed by Sodexo, claiming that they had not seen a change in the level of surplus produced.

Sodexo has a corporate sustainability strategy in Hungary and is therefore keen to engage in issues of food waste<sup>20</sup>. The pilot also had a strategic fit with programmes such as stop-hunger<sup>21</sup> and the 'better tomorrow plan'<sup>22</sup> that Sodexo participates in. This pilot was successful in terms of ensuring further support from Sodexo as they expressed enthusiasm for the project and a commitment to continue the study outside of the pilot. This identifies that engaging donor's that have corporate sustainability strategies can add value as they have a high likelihood to engage in the project and a continued engagement in the long term.

Whilst the primary aim of the project was to re-distribute surplus food, it was also evident that the concept of providing food to CSOM also had added social benefits. Previously the charity could not afford to serve a warm meal and thus relied on unreliable food donations. The provision of food to their users was considered to be a real extra and made their shelter stand out as they claimed they would be unlikely to find another shelter (outside of the FUSIONS project) that provides warm food. This pilot provided the homeless with access to at least one warm meal during the week. This was a luxury for many users of CSOM, and although the charity found that their users were not accustomed to eating warm food<sup>23</sup>, and initially experienced stomach problems at the start of the pilot, over time this ceased as the users became familiar with the food. Although not measured it was reported by the manager of the shelter that they saw a decrease in the amount of users of their facilities that were sick, to which they attributed this to the warm food received. The food was valued and was reported to be hugely missed when it was not delivered due to school holidays, it added value to the communal dynamics of the shelter and provided a chance for the users of CSOM to sit and eat together. This within itself provides a positive benefit as eating together instils a powerful

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<sup>18</sup> <http://biofilter.hu/etkezesi-hulladek-begyujtes/>

<sup>19</sup> <http://feeding5k.org/businesses+casestudies.php>

<sup>20</sup> This information was gathered from the marketing manager of Sodexo Hungary.

<sup>21</sup> <http://uk.sodexo.com/uken/corporate-responsibility/stop-hunger/home.aspx>

<sup>22</sup> <http://uk.sodexo.com/uken/corporate-responsibility/better-tomorrow/better-tomorrow.aspx>

<sup>23</sup> Eating instead cold or a very small amount of food.

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sense of well-being in us and binds people together<sup>24</sup>. This identifies the additional social benefits which re-distributing the surplus food has, outside of that which is preventing food going to landfill.

Logistically this project was successful due to the close geographical layout between CSOM and Sodexo. Minimal expense and effort was needed to transport the food. From a food safety point of view, the hot-hot model was optimal. The surplus food remained hot and did not require re-heating, thus avoiding the legal complexities of interpreting as 'quickly as possible' (see results mapping the legal context). The food was re-distributed at a minimal time cost for all parties involved. Sodexo identified that the project did not have any extra financial cost except an added hour of man power a day to collect and redistribute the surplus. CSOM, who were originally concerned about the length of time the project would require, found that not much effort was needed. CSOM was aware of some government funding they could receive in order to have a reliable employee to collect the food from the Sodexo kitchen. The model is therefore one which was relatively low cost in time resource for the parties involved; however HFA developed and maintained the relationship between donor and recipient which would have incurred project management cost.

### 3.3.2 Results of Pilot two

The pilot with WestEnd's six restaurants and Caritas was successful in terms of logistics, the amount of food re-distributed, engaging many stakeholders and also the social benefits; however, it also experienced more barriers and difficulties throughout the pilot compared to pilot 1. As of 20<sup>th</sup> September 2015, 23,096 portions (9,238.4kg<sup>25</sup>) of cooked food and 1513kg of bread and bakery products were re-distributed. On average 12 portions of food was re-distributed per restaurant per day, which is 72 portions a day in total from all the restaurants.

Due to the small amount of portions at each restaurant, for the redistribution activities to be worthwhile at least 6 restaurants had to be engaged, the grouping of restaurants was therefore essential for the success of this project. This pilot re-distributed a low volume of food over a long period of time however with Pilot 1 the food would have otherwise been sent to a biogas plant; and therefore has moved further up the food waste pyramid to human consumption.

Sending the food surplus via this channel created a cost for the restaurants of approximately 0.1 Euro per Kg; therefore the method of re-distribution was a cheap alternative and could provide an incentive.

The type of cuisine that was re-distributed within this pilot was Chinese, Hungarian, Greek, sandwiches and burgers. The Chinese cuisine was the most frequent supplier, with larger and greater number of portions, while the lowest amount of portions were delivered from the Hungarian cuisine which was however the food preferred by the Caritas shelter's users. HFA identified that this type of food had better nutritional quality than that experienced in pilot one; however HFA research identified that not all of the food (95-97%) received from this model was fit for consumption as in some cases the quality of the food was questionable<sup>26</sup>.

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<sup>24</sup> Steel, C. (2009) 'Hungry City: How Food Shapes Our lives' London, Vintage: pp. 212-214

<sup>25</sup> The average portion is calculated at 0.4kg

<sup>26</sup> This resulted in Caritas having to speak to the restaurant owners to discuss the storage and quality of the food given. Fish is no longer served at the shelter.

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Food Service Surplus Solution aimed to not only re-distribute surplus food from the hospitality sector, but also to change the attitudes of those that are donating the surplus. To add value to what was primarily considered as waste, but also to raise awareness that surplus food within this industry is an issue. HFA analysed their data to find that there was a drop in waste arising at the restaurant level since the pilot was implemented. During October an average of 14.2 portions (5.7kg) was re-distributed compared to 13.3 portions (5.3kg) in May. Whilst this small drop in portions could be attributed to a higher awareness of the restaurants, and the restaurants claimed they had experienced a drop in waste since the project, this is not a significant drop in waste arising and is likely to be due to other factors such as seasonal effects.

Similar to pilot one, the main aim was to re-distribute surplus food; however inevitably other social benefits were evident. Between 40 to 60 families benefitted daily from the meals served. Before Caritas did not provide meals to their users and claimed that they now attract more individuals to their shelter due to this incentive. The food was particularly useful as Caritas deliver sessions to help their users out of poverty<sup>27</sup> and serving food resulted in higher attendance; this is because the food is served alongside the sessions and allows for some individuals to stay longer or for additional sessions, as they do not have to leave for a meal. Similar to pilot one, the provision of the meals provided a luxury as Caritas found that many of the users were not accustomed to eating warm food. Additionally the provision of food for their users meant that other money was made available in their budgets in order to pay for other necessities.

This pilot differed from pilot one in the sense that their users were often on low-incomes rather than homeless. This meant that Caritas developed a model where some of the users could take their food home to re-heat and also share with their household. The reach of those that receive the food was larger than that could be reached within the shelter alone. This act of taking food home, allows for people to have a sense of control over the food and when they eat it. Additionally this also means we do not know how much of this food was consumed within the home.

From a logistical and food safety point of view, this model experienced more challenges. This is primarily due to the legal grey area of the hot-cold-hot model as Hungary interprets the European food guidelines strictly. Food from the hospitality and food services sector is required to be cooled down immediately; therefore donor organisations are not permitted to cool down food once it has been warmed for an hour or more. This has resulted in a number of barriers to be identified within this project, for example, the incentive of advertising for other restaurants to engage could not be deployed as HFA were not allowed to advertise the re-distribution project. This led to limited buy in from the restaurants.

Whilst a key aim of the feasibility study was to raise awareness of food waste, the planned communications had to be postponed due to legal complexities surrounding pilot 2. The hospitality redistribution activities were not advertised. HFA were however able to organise a Feeding 5000 which attracted a high level of media attention. Therefore, HFA claim there has been an increase in general awareness regarding the issues of food waste in Hungary.

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<sup>27</sup> For example CV writing workshops and help with addictions

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# 4 Project implementation

This section provides the findings on the project implementation process for the Food Service Surplus Solution feasibility study. The section will address timescales, the project management and volunteer resource needed to develop and implement the project, the financial cost and the main constraints/unforeseen issues of the study.

## 4.1 Timescales

The project started in February 2014 with a planning stage, it took the project manager roughly 3 to 5 months to build the relationships with various stakeholders to ensure buy in to the feasibility studies. The first pilot ran between May 2014 to June 2015 with a four month break between May 2014 and October 2014, whilst the second pilot ran from September 2014 until June 2015. However whilst both the feasibility studies have 'officially' ended, they both continue to operate and grow.

## 4.2 Project Management Resource

This next section identifies the amount of project management that is needed and in what areas during the implementation of the pilot studies.

### 4.2.1 Project Management Resource of the Food Service Surplus Solution feasibility study

The project management was done by HFA; this included the co-ordination and implementation of both the pilots, alongside the collection of data which monitored the successfulness of the project. The project required a substantial amount of project management time from HFA. The key activities which were most time intensive are detailed below:

1. Sourcing the donor and recipients to engage in the pilots. For example HFA spoke to 20 – 30 caterers<sup>28</sup> before they found two willing to participate in pilots, of which these already had loose connections with HFA.
2. Maintaining the relationships with the donors and charities at the start of the project
3. Identifying the donor's surplus within their organisation which could be donated.
4. Matching the donor's with the most suitable charities in terms of which charity could adopt which model/accept certain foodstuff and their geographical location.
5. Helping the charities make sure they have a certified serving kitchen
6. Organising and attending meetings with government officials to discuss the legal interpretation of food redistribution.

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<sup>28</sup> Their reasons for declining to participate in the study were that they had no surplus, or no time to participate.

## 4.2.2 Project management resource of donors and recipients

Outside the role of the HFA, financial and human resource was required from both the donors and the recipients of the food.

No data was collected on the amount of time that it took the donors to participate in the pilot. The individuals that were involved in the process of redistribution were mostly on the payroll of either the food donors or the food recipients. CSOM spent an extra one hour a day to engage in the tasks needed, with three to four of their employees engaging in the pilot. On the other hand Caritas spent a total of 8-10 hours a day involving 3-4 employees to engage in the tasks needed to re-distribute the food. Caritas required more time to re-distribute the food for the following reasons

1. Geographically they had further to go to collect the food.
2. Whilst in the same geographical area, there were six donors' to collect food from.
3. They split the portions at the shelter which required time and time spent on practical maintenance.
4. Practical maintenance was higher in this pilot on tasks such as such as washing up, collecting and recycling the plastic boxes.

## 4.3 Financial costs

The total cost of the Food Service Surplus Solution study was €52,326 compared to the estimated saved value of redistributed food which amounted to €70,192. HFA claimed that this indicated a positive return on investment; however the amount of food surplus saved does not directly convert into financial gains.

The pilot is not economically self-sustainable, no process has been implemented which generates capital to pay for project management time or equipment. For example whilst the projects are up and running, there still needs to be some project management by HFA, the project managers time is being absorbed through the HFA food bank activities- and they are currently looking for funding sources for the plastic boxes in pilot 2.

The donors reported that no extra cost was needed except for manpower to participate in the study. However it was evident that both pilots needed to source finance in order to pay for start-up costs. CSOM were required to buy four 50l double walled food containers at €95 each- total €380. Aside from the initial purchase of these there were no further running costs. On the other hand Caritas had higher costs overall, they had to purchase €176 worth of equipment (see figure 6).

Figure 4 Start-up costs

Item	PILOT 2	Unit	Unit price	No. of Input units	Input costs	Depreciation cost/yr
thermo boxes (60l.)		piece	€ 13.00	2	€ 26.00	€ 26.00
refrigerator (2nd hand)		piece	€ 100.00	1	€ 100.00	€ 20.00
microwave		piece	€ 50.00	1	€ 50.00	€ 10.00
<b>Total fixed coss</b>						<b>€ 56.00</b>

Additionally Caritas also required higher ongoing costs in terms of disposables and transport (See figure 7 and 8).

**Figure 5- Disposable costs Pilot 2**

DISPOSABLES PILOT 2	units/meal	unit price	no. of meals/yr	no. of units	input costs
plates	1	0.05	23000	23000	€ 1,150.00
utensils	2	0.0125	23000	46000	€ 575.00
alu-foil	0.1 €	0.1500	23000	2300	€ 345.00
plastic boxes	0.5 €	0.1500	23000	11500	€ 1,725.00
labels	0.5 €	0.0100	23000	11500	€ 115.00
cleaning / waste disposal materials					€ 100.00
<b>Total</b>					<b>€ 4,010.00</b>

**Figure 6- Transport costs**

TRANSPORT	unit	unit price	no. of units/day	nr. of days/yr	total units	transport costs
PILOT 1	km	€	0.15	0	165	0 € -
PILOT 2	km	€	0.15	20	320	6400 € 960.00

Due to the Hot-Cold-Hot model pilot 2 required higher disposable costs. Pilot 1 for example did not require plates as users brought their own. The main cost for pilot 2 was the plastic boxes and labels to supply to the restaurants in order to store the food until collected. The plastic boxes were funded by HFA through the FUSIONS budget and the labels funded by Well Advertising Agency. HFA are currently sourcing further funding to pay for the boxes now that FUSIONS funding has finished. As pilot 2 was not within walking distance to the restaurants the charity needed transport (a car) to collect the food which incurred running costs. Overall pilot 2 required a higher level of finance to implement, in terms of start-up costs, running costs and also labour needed.

## 4.4 Health and Safety

The HFA follows the EU good hygiene guidelines as protocol for their food safety policy and provided guidelines to the partners in the pilots regarding the consumption of the food delivered (non-chilled food to be consumed within 24 hours; fresh food to be consumed within 16 hours; hot food within 3 hours, or when cooled within 16 hours after reheating). As already highlighted the hot-cold-hot model encountered some significant issues surrounding food safety and legislation. In Hungary the interpretation of 'as quickly as possible' from the regulation (EC) No 852/2004, ANNEX II, CHAPTER IX, Section 6 is an important issue that needs to be resolved in order for pilot 2 to continue working. Additionally a further health and safety risk could be identified within pilot 2 as two thirds of the food is taken home by the users of the shelter and re-heated at home. Both the charity and HFA have therefore no control on whether the food is being re-heated correctly by users. In order to mitigate any risk the users should be provided with re-heating guidance.

Another important consideration is that the labels on the surplus food delivered by the restaurants did not contain information about allergens. The responsibility for checking the presence of allergens for specific clients who are allergic was therefore transferred to the personnel working in the service kitchen at the charities. An accurate follow up by the charities personnel on the presence of allergens, and the potential risk these may pose to some of their clients, is thus an important point to safeguard in the process; this

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however can only be controlled to some extent especially in a model similar to pilot 2 where two thirds of the food is taken home.

## 4.5 Main constraints and unforeseen issues

During the implementation of the feasibility study unforeseen issues arose, the key ones are identified below.

1. In order to re-distribute food the charities' kitchens had to be certified as serving kitchens. This caused a time delay for pilot 1; however it was an administrative obstacle that was easily overcome. Time and resources do however need to be set aside for this.
2. Caritas was and continues to be concerned that the serving of meals at the centre will divert energy and effort from the centre's core activities. It is this pilot which requires the most resource in terms of finance and man hours.
3. When HFA first encountered the legal complexities in pilot 2, they did not expect the discussions and dispute to extend as much as they did. This has resulted in less communication/advertising of the pilot study 2, thus less buy-in from restaurants. Therefore HFA spent longer liaising both with restaurants, but also with government officials regarding the legality of the pilot 2.
4. The volunteers at pilot 2 were faced with the fact that they had a large quantity of used plastic storage boxes at the end of a shift. Their recycling bin was not large enough, so they had to apply for another one, this took time.

On the other hand, the project did not encounter any problems with stakeholders or stakeholder groups. In general the project received positive feedback from the partners in the project, as well as from the respective ministries of agriculture and social affairs.

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# 5 Project sustainability

HFA successfully implemented two pilot studies to demonstrate the ability to re-distribute food at the hospitality and food service sector. This next section will discuss the short term and long term sustainability of both the pilots.

## 5.1 Pilot one

Pilot 1 had positive results from an organisational and logistical perspective. This pilot required fewer man hours and minimal finance. Both Sodexo and CSOM expressed interest to carry on the redistribution agreement after the pilot has finished. Sodexo has also expressed enthusiasm to expand this type of activity to other charities and other outlets, therefore acknowledging the sustainability of pilot 1. However the following points should be made that pose a potential risk to the long term sustainability of the pilot:

- Currently CSOM have access to government funding in order to pay someone to collect the food during the week. If this was to cease this could result in the charity struggling to find the man power to collect the food, or funds to carry on paying someone.
- Whilst this pilot signed the correct legal documents between the charity and donors, there was some discrepancy around CSOM's book-keeping (logging the donations for taxable reasons). This should be verified and the correct procedures put in place in order to have transparency. The knock on effect however could result in this task becoming a barrier to project implementation due to the time it takes to record donations.

The food is intermittent in that during weekends, half terms and the summer break food is not available. The users identified that they missed the food when it was not provided. This highlights that the project contributes to making individuals dependant on food re-distribution to feed themselves, which is a common criticism of these types of projects. Whilst in the short term this is a project that elevates immediate hunger and re-distributes food, in the long term creates dependency on surplus food for some sections within society. This is particularly an issue if one of Sodexo's long terms goals is to reduce their amount of surplus.

## 5.2 Pilot Two

The second pilot faced a greater amount of barriers and is subject to debate with the Hungarian FSA whether the process is compliant with Hungarian food law. Both the charity and the restaurants have expressed interest to continue with the redistribution project; however in the short term some changes and clarifications should be made in order to make it sustainable.

- The legislation surrounding re-heating food should be clarified and compliant with Hungarian food law. Therefore engaging and having the FSA on board with the project is vital for both short and long term sustainability.
- The restaurants had not signed a food safety contract. In order to make the pilot further in line with good practice, and thus sustainable, each restaurant should sign a legal document.
- Currently two thirds of the food is consumed in the homes of the users. This poses a potential health and safety risk as the charity cannot control whether the food is being re-heated to a sufficient standard. Therefore similar to corporate companies<sup>29</sup> guidelines for users which informs them how to re-heat the food to a sufficient health and safety standard should be provided.
- Currently HFA provide pilot 1 with the plastic boxes in order for the food to be collected. HFA have not identified another source of funding which can now pay for these boxes. As the project does not generate revenue, grants and funding will have to be found in order to pay for the boxes. This identifies a major risk to the sustainability of pilot 2, as it relies heavily on funding for the boxes. As this pilot saves the restaurants money, as they do not have to pay for the food to be sent to landfill, it could be a viable option to ask them to pay for the boxes.

In terms of long term sustainability of the outcomes of pilot 2, the following points can be made.

- As identified the legal regulations need to be met throughout the lifetime of the project.
- This project required a higher level of financial and man power costs, this is a risk to the sustainability of the project. Currently the charity absorbs the costs of transport, disposals (such as bin liners etc.) and items such as fridges etc. Additionally this pilot requires a high level of man hours to participate in the pilot. The sustainability of this project is therefore at risk if the charity can no longer fund both the logistical and man power costs.
- Caritas has already expressed a concern that this project could be removing some of the effort on their regular activities which are seeking to lift their users from poverty and addiction.
- The project relies heavily on staff members that are volunteers, this does not always make for a reliable and sustainable model. This is typically the case for this pilot due to the high level of legal complexity therefore a high turnover of volunteers may result in some granularity in the legal process being lost.
- The model is at risk of becoming unsustainable if the surplus is reduced. The restaurants may become more efficient and thus generate less surplus; currently each restaurant provides a small amount of surplus, if one restaurant was to withdraw this could dramatically influence the level of surplus; and currently the pilot works with small family owned restaurants, if West End was to commercialise to a higher degree and more multinational restaurant chains were to operate, this could make the family run restaurants redundant. It was identified that it is difficult to work with multinational corporate restaurants due to the difficulty in gaining access to managers that can authorise the re-distribution of their food surplus.

Pilot 2 has a higher level of barriers which threaten the sustainability of the model. The most important being the legal and food safety disputes, and the amount of finance and man power required in order to successfully implement the project.

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<sup>29</sup> For example UK Pizza Hut provides re-heating instructions on their take away boxes.

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## 5.3 Sustainability of the project as a whole

This model relies on the HFA as the structured link between the charities and the donors. This has been successfully implemented; however the project does not generate any income in order to pay for the role HFA play. Now that the project is set up and running minimal input should be needed from HFA, except in the instance of the legal and food safety issues. Additionally, a frequent critique of redistribution projects is that they do not provide those eating the food with much 'choice' as the food is surplus, thus what is available and therefore not necessarily offering a balanced diet. This was found to be true in both pilot studies. The food currently provided in pilot 1 is not wide ranging (soups and stews) this results in the recipients who eat the food from the shelter having little choice over what they eat and being restricted to a plain diet. Similar to Pilot 1, Pilot 2 found that most of the food re-distributed was of a certain type (Chinese food); whilst the users had a preference for Hungarian. Apart for the above considerations both pilots can be considered sustainable and successful throughout the one year and five months for which the funding was provided.

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# 6 Potential for replication of the project

Both pilots are continuing to redistribute surplus food outside of the feasibility study period. The pilot studies have been successful in creating a model which is working and has diverted a substantial amount of food from going to biogas plants or landfill; alongside providing various social benefits to those that receive the food. There have however been various constraints that have been identified throughout this document, primarily the issue around legislation and food health and safety. Nonetheless the two pilot studies identify that a similar project can be replicated further, both within Hungary and wider in the EU. This next section will identify the replicability of each pilot and the project as a whole, identifying what is needed and the barriers that need to be considered during replication.

HFA have received positive feedback from the Ministry of Agriculture on the topic of reducing food waste and the role of HFA. The Ministry of Social Affairs and Labour have provided positive feedback on the concept of redistribution of surplus food to local charity organisations. HFA hopes that the political pressure from these ministries will enable a pragmatic interpretation of the EU guidelines on food hygiene. This will result in many of the legality issues being addressed. HFA have decided that the roll-out in Hungary will not be implemented until the guidelines are accepted, as currently in the Good Hygiene Practice Guide for hospitality operations there is an existing section for donations but the current content is limited and thus is not fully in line with the new guidelines presented in Hungary.

Both pilots are progressing. The possibility of scaling these pilots up was discussed with the stakeholders, with Sodexo taking a particular interest. HFA identified that other parties are interested in adopting the concept of redistribution of surplus food but are awaiting the verdict and discussions surrounding the legality of it all. HFA are currently preparing a checklist for organisations that want to apply and roll out the concept, alongside some guidance. HFA are also currently advising Croatia, Poland and Romania foodbanks on this model, whom all have shown interest.

It is important to note that the HFA identified that the study is built upon utilising a foodbank model and thus could be easily replicated by other food banks and those related to the European Federation of Foodbank network; this has led to significant interest both locally and internationally for this project. There is great potential for this model to be replicated nationally and internationally, the delay and issues lie with the legalities of redistributing surplus food.

There are some key considerations that should be kept in mind when considering replication, they have been detailed below:

1. The two pilots worked with large, and to an extent, well-funded charities that had an adequate infrastructure; therefore when unexpected costs, such as the double walled containers in pilot 1 arose they were in the position to purchase these. They were flexible to accommodate unforeseen circumstances. Similarly due to the capacity of the charities they were able to absorb resource costs by drawing on their networks (for example in pilot 1

- 
- being aware of the government funding to pay for someone to collect the food). This should be noted in terms of replication as smaller charities may not be able to absorb some of the costs as easily.
2. A successful aspect of this project was that HFA were the structured link between the restaurants and donors. This alleviated some of the work from either side and allowed for a trusting relationship to be developed and maintained. However the funding for this work has ceased and for future replication models, thought as to how this role would be funded is needed.
  3. HFA were well aware that their main contact for food waste within the Ministry of Agriculture was only one person and there is a high possibility that the Ministry of Agriculture official will become preoccupied with other tasks. Therefore it was evident that to avoid such a risk, it is wise to have more than one contact within the Ministry.
  4. The project manager and models have to be flexible in order to adjust for unforeseen circumstances such as the legality issues and charities having their resource and funding cuts.
  5. Volunteers need to be trained on health and safety regulations and guidelines, such as re-heating food and assessing the quality and ingredients of food that arrives.
  6. Often donors claim they do not have any surplus to provide to the charities, therefore time has to be put aside to negotiate this relationship and talk to the restaurants, identifying where the surplus is.
  7. The food should be consumed on site, thus space for individuals to eat it is needed within the charity. When it is not, re-heating guidance should be provided to individuals.
  8. The Charity needs a suitable and certified kitchen
  9. The Charity and the donor need to ensure that the correct food safety certification and legal documents have been signed before trading begins.
  10. Trusting relationships are vital in replicating a similar project and thus a sufficient amount of time should be spent and allocated to engage stakeholders.
  11. Often the motivations of the donors to be involved is its CRS policy, therefore this is often an area which can be drawn on when thinking about replicating a similar project
  12. HFA ran these pilots during a period where food waste was high on the agenda, this enhanced the successfulness of the project due to Food Waste being high on the agenda, for example
    - a. In 2014-15 the EU Food Aid Programme stopped and its new structure is still under development in Hungary, therefore charitable organisation need new food aid sources and partnerships.
    - b. The HFA had experience with collecting food with short expiry date (e.g. for 2 years we have been working with METRO<sup>30</sup> to donate food that expires on the day of donation). The HFA had developed partnerships with charities that are flexible enough to receive & use short-date-coded food, and they have developed processes, quality assurance tools etc. to enable them to divert food from landfill.
    - c. In March 2014, together with the Hungarian Ministry of Rural Development, the HFA launched the Forum for Reducing Food Waste and Food Loss.
    - d. The EU project Forward (<http://foodrecoveryproject.eu/>) (that the HFA participated in) published its results including e-learning materials for food companies on how to reduce and donate food waste.
  13. When a project is replicated it is good practice to measure and evaluate the project, in order to identify the successfulness of the project and attribute impact. This can contribute to the gathering of or maintenance of funding.

The above points identify what is needed and should be considered when considering replicating a similar model; however certain characteristics are inherent depending on which model is adopted.

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<sup>30</sup> [http://elalmiszerbank.hu/en/projektjeink/aruhazi\\_expressz\\_arumentes.html](http://elalmiszerbank.hu/en/projektjeink/aruhazi_expressz_arumentes.html)

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## 6.1 Replication of Pilot One

The food re-distribution within pilot 1 is continuing outside of the FUSIONS feasibility study. As little man power was needed for both the donor and recipient, this was considered by all parties to be a worthwhile project to keep running. Sodexo also expressed an interest in expanding this model to more of their outlets within Hungary and other charities. The hot-hot model requires less resource and has less legal complexity. This is a model that could be scaled up and replicated in other areas both within Hungary and within Europe. There is however some key characteristics to this pilot that are needed in order for something similar to be replicated.

1. The charity needs to be able to buy, store and maintain double walled containers to store and transport the food.
2. Logistically pilot 1 was successful due to the close geographical layout between CSOM and Sodexo. Minimal expense and effort was needed to transport the food. The charity therefore needs to be geographically close or at least a short car journey away from the donor (if transport is needed in the form of a car, this can incur cost to the project overall)
3. The Charity needs access to a source that will collect the food, either funding to pay someone or reliable volunteers.

## 6.2 Replication of Pilot Two

The food re-distribution within pilot 2 is continuing outside of the FUSIONS feasibility study. Whilst this study has experienced the most difficulties in terms of legal regulations, time and resource, this model could easily be replicated in another country with a different set of laws concerning the interpretation of the food safety legislation. Once the legal complexities have been cleared, this model can be replicated within Hungary. It has already been identified that due to the working relationship with TriGranit, which is a globalised company, this could be extended to other establishments in Budapest and also in other countries (Poland, Romania, Slovakia and Croatia). In replicating this Hot-Cold-Hot model the following characteristics are needed:

1. The countries interpretation of 'as quickly as possible' should be scoped in order to assess whether the pilot would experience similar legal complexities
2. Ideally this type of projects works well with smaller non multinational restaurants as access to managers that can make the decisions as to whether some of the food can be re-distributed is easier.
3. The Charity needs to be able to access funds for microwaves and fridges.
4. The location between the charity and the donor can be longer compared to pilot 1; however not over a length of time which could jeopardise the quality of the food. With this model transport would be needed.
5. The Charity needs access to a recycling point for the white boxes
6. The donors ideally will be a group of restaurants rather than one restaurant due to the small quantity provided by each restaurant in this pilot.

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# 7 Conclusions

The Food Service Surplus Solution Budapest feasibility study sought to address surplus within the hospitality sector by identifying that it was possible and worthwhile to redistribute food which is often deemed to be at the end of the supply chain to those experiencing food insecurity. The feasibility study was successful in organising and implementing two pilots with separate models (hot-hot AND hot-cold-hot) to redistribute food from the hospitality sector to charities that work with food insecure individuals. The additional success is that these pilots continue to operate and grow. These pilots diverted 35,096 portions away from landfill or biogas plants. In addition to reducing food waste there were social benefits to these pilots, such as improving the food security of vulnerable people and adding to the communal dynamics of the shelters.

There were however some considerable challenges to both the pilots particularly in the case of pilot 2 in terms of project implementation, sustainability and also replication. This was largely due to the Hungarian interpretation of the regulations surrounding food safety state, which resulted in legal complexities. Therefore in order for pilot 2 to be further replicated and sustainable this legal grey area needs to be clarified and agreed with policy makers.

The high-quality guideline material produced will promote replication in other cities and countries, and facilitate sharing of experiences between these organisations. Already there is interest from other countries not included in the pilots. All EU member states of have the potential to implement similar pilots depending on their interpretation of the law.

In conclusion, the Food Service Surplus Solution pilots are a highly replicable social innovation model, and depending on the legal context surrounding food safety the materials produced through FUSIONS should help its wide uptake across EU member states.

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# 8 Recommendations

It is recommended that the law:

*"Where foodstuffs are to be held or served at chilled temperatures they are to be cooled as quickly as possible following the heat-processing stage, or final preparation stage if no heat process is applied, to a temperature which does not result in a risk to health."*

(EC) No 852/2004, ANNEX II, CHAPTER IX, Section 6:

Is made clearer and interpreted consistently across EU countries. The Food Service Surplus Solution hospitality pilot hot-hot model is considered a suitable way to ensure that at least some of the surplus within the hospitality sector is redistributed, and used to alleviate food insecurity in the short term. It is also recommended that the Food Service Surplus Solution hospitality pilot hot-cold-hot is considered; however it is important to understand the legal context and the interpretation of the law prior to the uptake of this pilot implementation.

Any party interested in organising similar pilots to the Food Service Surplus Solution are strongly encouraged to read the Food Service Surplus Solution Handbook/ Guidelines published through this project and make note of the key replication characteristics identified in this document.

# 9 Appendix 1

15 <sup>th</sup> May	<p><b>Conference call with HFA</b>  Balazs CSEHn (HFA- President of the Hungarian Food Bank Association)  Bart van Gogh (Wageningen UR, FBR)  Sarah Bromley WRAP  Michael Wenborn WRAP  Elaine Charlesworth WRAP</p>
3 <sup>rd</sup> June	<p><b>Attendance at FUSIONS RPM Meeting with Sodexo</b>  Tunde Harsanyi- (Sodexo Hungary Strategic Marketing manager)  Sarah Bromley (WRAP)  Bart Van Gogh (Wageningen UR, FBR)  <b>Feeding 5000K event (Feedback)</b>  Sarah Bromley (WRAP)  Bart Van Gogh (Wageningen UR, FBR)</p>
4 <sup>th</sup> June	<p><b>Evaluation meeting with HFA</b>  Sarah Bromley (WRAP)  Bart Van Gogh (Wageningen UR, FBR)  Katalin Ujhelyi (HFA- development director Hungarian Food Bank Association)  Balazs CSEH (HFA- President of the Hungarian Food Bank Association)</p>
5 <sup>th</sup> June	<p><b>Site visit to West End shopping Centre for Evaluation</b>  Sarah Bromley (WRAP)  Bart Van Gogh (Wageningen UR, FBR)  Katalin Ujhelyi (HFA- development director Hungarian Food Bank Association)  Balazs CSEH (HFA- President of the Hungarian Food Bank Association)</p> <p><b>Site visit to Charity Service of the Order of Malta in Budapest</b>  Manager of homeless shelter  Sarah Bromley (WRAP)  Bart Van Gogh (Wageningen UR, FBR)  Katalin Ujhelyi (HFA- development director Hungarian Food Bank Association)  Balazs CSEH (HFA- President of the Hungarian Food Bank Association)</p> <p><b>Site visit to Caritas homeless shelter in Budapest</b>  Volunteer at homeless shelter  Sarah Bromley (WRAP)  Bart Van Gogh (Wageningen UR, FBR)</p>

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	<p>Katalin Ujhelyi (HFA- development director Hungarian Food Bank Association) Balazs CSEH (HFA- President of the Hungarian Food Bank)</p> <p><b>Evaluation meeting to summarise findings</b></p> <p>Sarah Bromley (WRAP) Bart Van Gogh (Wageningen UR, FBR) Katalin Ujhelyi (HFA- development director Hungarian Food Bank Association) Balazs CSEH (HFA- President of the Hungarian Food Bank)</p>
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# 10 Appendix III- Disco Bôcô Individual Evaluation Report



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## Developing DISCO BÔCÔ

**WP4 – Testing Social Innovation**

**Evaluation Report**

**Date: 11.02.2016**

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**Reducing food waste through social innovation**

FUSIONS EU project is supported by the European Community's Seventh Framework Programme under Grant Agreement no. 311972.



# Colophon



Title	Developing DISCO BÔCÔ: Evaluation Report
Authors	Graham Moates, IFR, Bojana Bajzelj, WRAP; Sarah Bromley, WRAP
Keywords	food waste prevention, food donation, food preservation, jams, preserves, chutneys, food aid, best practice, social innovation, food poverty
Clients	European Commission (FP7), Coordination and Support Action – CSA Contract number: 311972
Project leader	FUSIONS coordinator: Toine Timmermans, Wageningen UR - Food Biobased Research, The Netherlands Project leader for this Deliverable: David Rogers, WRAP.
Acknowledgments	The authors would like to thank Sophie Easteal, Michael Wenborn, Elaine Charlesworth & David Rogers from WRAP for coordinating the work package/feasibility studies and Marine Lafon, Anna Lochard, Floriane le Roux, Aurélien Culat, Victor Chahuneau, Colette Rapp and Clément Di Cioccio from Disco Soupe and the whole Disco Soupe community who undertook the feasibility study.

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# 1 Introduction

## 1.1 Background to FUSIONS

Under the EU FUSIONS programme<sup>1</sup>, seven feasibility studies were implemented to test socially innovative projects across Europe. This evaluation report assesses the outputs from one of the seven feasibility studies, the Disco Bôcô feasibility study in France. Disco Bôcô aims to reduce food waste by organising fun, convivial and educational events with music to prepare jams, chutneys and pickles from surplus fruit and vegetables often in social residences. FUSIONS are administering an evaluation of the feasibility studies.

## 1.2 Aims of the Evaluation Report

The aim of the evaluation is to identify the projects that are most applicable for replication, and to support the planning of replication approaches. This document provides the findings from an evaluation of the feasibility study entitled 'Disco Bôcô', and impartially considers the success of the project which was undertaken in 2014/5.

This report is part of a deliverable within FUSIONS Work package 4, which sets out to test & evaluate the impact of social innovation on reducing food waste detailing the results and impacts of the implemented feasibility studies.

## 1.3 Background to the 'Developing Disco Bôcô' feasibility study

The Disco Bôcô feasibility study was developed from within the Disco Soupe community, a group of individuals in France committed to combating food waste by raising public awareness through organising community events that are non-moralising and sends positive messages. Disco Bôcô activities started in December 2013, with the main sessions running during 2014. 20 sessions of DISCO BÔCÔ were organised during 2014 in nine cities in France.

The Disco Bôcô feasibility study had four main aims, firstly to reduce the amount of surplus food going to waste/ landfill; secondly to educate and raise awareness of the edibility of this surplus food<sup>2</sup>; thirdly to create social cohesion amongst certain community groups; and finally to facilitate the expansion of the Disco Boco concept into new areas or countries by analysing the experience in several cities within France. The Disco Soupe movement had a network of farmers, groceries, supermarkets and wholesale markets that collected surplus fruit and vegetables; therefore Disco Bôcô were

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<sup>1</sup> <http://www.eu-fusions.org/>

<sup>2</sup> I.e. if the food was classified as 'ugly' or 'wonky' it was still edible.

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aware of the scale of surplus at this level and had the rationale to draw on these contacts to use the surplus food. Disco Bôcô benefited greatly from this network but also added to this, particularly in Paris, by adding stores where unsold fruits and vegetables could be collected.

Disco Bôcô, invited people to cook with surplus food in a unique, fun and often musical atmosphere<sup>3</sup>; people gather inside and/or outside to prepare and cook food to music. Disco Bôcô, instead of making soup for immediate consumption, focused on developing cooking and preservation skills by making jams, chutneys, pickles and vegetable purees to take home. They used a variety of different locations as hosts (from charity organisations to immigrant jobless households) and they worked with different demographics from children, to vulnerable women, the homeless and also immigrants to teach them perseverance and cooking skills/ know how. Through this process Disco Bôcô focused on stressing the importance of the edibility of this type of food and building social cohesion within groups; building relationships between farmers and urban consumers and also within the different groups of individuals that they worked with; as well as valuing and sharing participants' recipes and know-how. The feasibility study sought to reduce food waste through developing the Disco Soupe model but moved away from making soup to making preserved food such as jams and chutneys. They prototyped as many different formats in order to test best practice and to better develop the awareness and social benefits of the programme.

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<sup>3</sup> For example chopping fruit and vegetables whilst a DJ is playing music

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# 2 Methods

This section details the project evaluation methods. It will cover how Disco Bôcô evaluated the pilots to measure their success. The second part of this section will detail the evaluation method adopted by the EU FUSIONS team to determine the successfulness and replicability of this project as a whole.

## 2.1 Feasibility study methods

The feasibility study took the form of the organization of Disco Bôcô events in several cities within France varying the target social groups, locations and source of surplus produce. Therefore they organised various types of events (see appendix I in the Disco Bôcô final evaluation report<sup>4</sup>)

- **In different types of locations:** e.g. Immigrant jobless households, charity organisations, neighbourhoods' parties, etc.
- **With different types of citizens:** e.g. Homeless, kids, wounded women, etc.
- **With different objectives:** e.g. focus on social cohesion, on building relationships between farmers and urban consumers, on valuing some participant's recipes, etc.
- **With different sources of food waste:** e.g. Local farmers' product, 100% organic, etc.

Throughout the study, the partners have developed a general process to run an event, consisting of the following steps:

1. Identify the need and opportunity - where Disco Bôcô can meet people's need: nutritional disorder, social isolation, malnutrition, economic insecurity, etc.
2. Engage with the community - present Disco Bôcô initiative in a way that highlights that it aims to act with individuals in the community. It is important to make sure the project manager understands the needs and expectations of the community.
3. Appoint roles and responsibilities - Define the role of various people within the community. Identify key skills within the community and make sure that everyone is comfortable with their level of responsibility.
4. Plan the events - locate the source of the fruits and vegetables and plan the event, including: timing, cooking materials and jars.
5. Ensure food safety / hygiene risks are managed - carry out risk assessment and prepare posters on rules, safety and cooking precautions. Posters can be prepared which highlight the safety issues and specific cooking techniques.
6. Develop and disseminate awareness materials - Create or gather materials to promote general awareness on: Food waste, Nutrition, Hygiene.
7. Provide guidance materials
8. Create or gather materials on specific culinary techniques (lacto-fermentation, vinegar preservation, etc.)

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<sup>4</sup> <http://www.eu-fusions.org/phocadownload/feasibility-studies/Disco-boco/Feasibility%20report%20DISCO%20Boco.pdf>

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## 9. Hold the events

### 2.2 How Disco Bôcô evaluated the feasibility study

Throughout the project key performance indicators were measured for example measuring the amount of food that was diverted from landfill and the amount of participants that attended the sessions. In addition to this a small amount of empirical research was conducted. In order to gather feedback from their volunteers and participants an online survey was conducted. Some qualitative feedback was collected through conversations with customers, employees and volunteers.

The quantitative survey was designed by Sophie Eastel (WRAP), Graham Moates (IFR) and Marine Lafon (DISCO BÔCÔ). It was distributed to participants in four of the Disco Bôcô sessions:

- 5th of July – Le Comptoir Général / La Ruche Qui Dit Oui! (Paris)
- 21st of September – La Grande Migration/ La Ruche Qui Dit Oui! (Le Mans)
- 30rd of September – Disco Bôcô Lômô (Paris)
- 1st of November - La Petite Rockette (Paris)

In total 40 of the participants answered the survey, these were a mixture of both the volunteers and the participants that attended:

- 11 answers for the 5th of July session (Le Comptoir Général in Paris)
- 2 answers for the 21st of September session (La Grande Migration in Le Mans)
- 6 answers for the 30rd of September session (DISCO BÔCÔ Lômô in Paris)
- 21 answers for the 1st of November session (La Petite Rockette in Paris)

There is no further information of the sampling and recruitment techniques. Therefore there is little information as to why some sessions received such low responses. There is a mix of both volunteers and participants that were surveyed. This can not be separated, therefore caution should be made when interpreting the overall results. This is because it could be assumed that the volunteers are highly engaged and aware of the topic of food waste, compared to the participants that attended the session.

Disco Bôcô also conducted interviews with some of the participants that attended the session. No recruitment, sampling or demographic information is available of these individuals. However Disco Bôcô successfully recorded some quotes and also the ages and names of the individuals they spoke to. This provides some indication to the demographics of the individuals involved.

### 2.3 Evaluation method

All the feasibility studies have had a detailed evaluation, in the form of WP4 producing an individual evaluation report of the project. Some of the feasibility studies were selected for a detailed evaluation as they were deemed to have strong potential for replication across the EU. Disco Bôcô was not selected for an evaluation visit as most of the

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activities had ended when the evaluation took place. However a visit was made to a Disco Soupe in the UK in order to gather an experience of a similar event. Most of the information used to evaluate Disco Bôcô is from their final report<sup>5</sup> which outlines their conclusions from the project.

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<sup>5</sup> <http://www.eu-fusions.org/phocadownload/feasibility-studies/Disco-boco/Feasibility%20report%20DISCO%20Boco.pdf>

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# 3 Evaluation of project results

This section summarises the key findings from the 'Developing DISCO BÔCÔ' feasibility study and assesses their significance in terms of reducing food waste.

## 3.1 Outputs of Disco Bôcô

A key aim of the feasibility study was to create a platform for replication of other Disco Bôcô regional, nationally and internationally. Therefore along with implementing the Disco Bôcô events, the team also created some outputs, these are:

1. A tool-kit to aid and assist the organisers of new DISCO BÔCÔ events thereby encouraging its replication.<sup>6</sup>
2. A in-depth and detailed final feasibility evaluation report<sup>7</sup>

## 3.2 Key findings

The Disco Bôcô feasibility organised 20 events in Paris (n=9), Marseille (n=3), Lyon (n=2), Tours, Reims, Montreuil, Toussus-le-Noble, Le Mans and Saint Maur. These events attracted in total 627 participants and diverted 825kg of fruit and vegetables from landfill. In total, 1093 Disco Bôcô (jars) was produced by participants working for 578 volunteer hours. 50% of the food was collected from organic markets, supermarkets and local farmers. The other 50% was collected from regular supermarkets, markets and conventional farmers. It is recommended that caution should be applied towards too much emphasis being placed on the promotion of organic foods through the Disco Bôcô events. The main messages from the events are the promotion of healthy eating, food preservation and reduction of food waste. In general, the cost of certified organic foods is higher than the price of their conventional equivalents. This may limit the affordability of the organic foods to the target audience. The overarching requirement is to improve the nutritional intake of the participants, often suffering from social deprivation. The fact whether the food is organic or not is less important than ensuring that participants can gain affordable access to consume the level of fruit and vegetable recommended by the World Health Organisation (around 400 g per day)<sup>8</sup>.

The feasibility study aimed at testing various models of delivering the Disco Bôcô. In general, some of the best attended events were those that were either held in a public

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<sup>6</sup> <http://www.eu-fusions.org/index.php/disco-boco> <http://www.eu-fusions.org/phocadownload/feasibility-studies/Disco-boco/Disco%20boco%20toolkit.pdf>

<sup>7</sup> <http://www.eu-fusions.org/phocadownload/feasibility-studies/Disco-boco/Feasibility%20report%20DISCO%20Boco.pdf>

<sup>8</sup> [http://www.europarl.europa.eu/RegData/etudes/BRIE/2015/557009/EPRS\\_BRI\(2015\)557009\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2015/557009/EPRS_BRI(2015)557009_EN.pdf)

space or aimed at consumers of a community supported agriculture network. The lower attended events were claimed to allow the organisers to devote more time and attention to participants that often have complex social issues. In order to raise awareness of the scale of food waste, events in large public spaces tend to work well; however in order to directly target complex social issues a smaller, local and private setting should be acquired.

In addition to re-distributing surplus food Disco Bôcô claimed to achieve a number of social goals. These were wide ranging, including reducing tension between different groups within certain social residences, improving cooking skills, gaining knowledge of preservation techniques, improving social skills, reducing social tension between different groups; and also improving the taste education<sup>9</sup> of participants. In the case of taste education, participants were often asked to trial different recipes, e.g. Christmas Jam. This not only expanded the participants' tastes but also encouraged creativity within the kitchen.

The project report attempts to provide both a qualitative and quantitative analysis of the Disco Bôcô events. Throughout the project Disco Bôcô kept a record of specific key performance indicators that are detailed in the table 1 below.

Table 1- Key performance indicators

Indicator	Results
Number of events organised	20
Number of Participants attending	627
Number of hours volunteered	1093
Quantity of food waste diverted	825kg
Sources of the food waste	50% of the fruit and vegetables were collected from the organic markets, supermarkets and local farmers. The remainder was from regular supermarkets, markets and conventional farmers
Feedback on events	See section 3.2.1 and 3.2.2

### 3.2.1 Quantitative feedback from events

The organisers of Disco Bôcô collected some feedback through a questionnaire from both the volunteers and people that participated in the Disco Bôcô events. Whilst there are caveats within this research<sup>10</sup> they demonstrate some initial insights on the Disco Bôcô sessions.

<sup>9</sup> This is where an individual's learns new tastes in order to change eating patterns, i.e. eating more healthy food.

<sup>10</sup> See section 2.2

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Overall the majority of participants rated their sessions very highly with 82% (n=33) giving the events the highest ranking. Participants were asked on a scale of 1-5<sup>11</sup> how participating in Disco Bôcô made them more aware of the food waste topic; 85% (n=33) of the participants ticked between 2-5, thus claimed they were more aware of food waste by participating in the events. The extent of the increase in awareness was variable, for example 31% (n=12) provided the highest score and the same number of people gave a middle range score. Self-reported change in awareness due to Disco Bôcô was high.

The majority of participants claimed to varying degrees that they were likely to use the skills they learnt; 50% (n=20) of respondents claimed they would definitely use the skills they have been equipped with. 1 person claimed they would definitely not use the skills. Disco Bôcô participants were asked whether they would teach the skills they had learnt to others within their network. A high percentage, 42% (n=17), claimed they would definitely pass on the skills. Only 3 people said they definitely would not pass on the skills. The remaining 50% (n=20) were in between; however were towards the higher end of agreeing they would pass on the skills.

A key concern by the project managers were that the Disco Bôcô is made by participants but then not eaten. The research however suggests that 65% (n=11) of the participants ate all the Disco Bôcô produced, 3 people claimed they did not eat any of the Disco Bôcô. However those who answered they did not eat any of the Disco Bôcô also commented that they would do so but were waiting for it to be ready.

### 3.2.2 Qualitative feedback from events

Qualitative feedback was also provided from employees, volunteers and participants. Whilst this was a small sample size<sup>12</sup>, five key themes were evident which related to social isolation, tackling food waste, accessing healthy food, developing new taste and self-empowerment.

Respondents discussed how the Disco Bôcô session had provided them a sense of community and social interaction.

**'I am raising my two kids alone and I arrived in France a few years ago so I don't have many friends here. I never get the chance to spend such convivial and joyful moments'** (Marie, 42 years old)

**'In Paris, it is sometimes so difficult to get to meet new people. This afternoon I met...my neighbours!! It is an incredible but true coincidence! Cooking together is the best way to get to meet people!'** (Loic, 57 years old)

**'I love to cook but I always do it alone. I am discovering the social dimension of cooking and it is so nice to chat around a manual activity. I spent a wonderful time and met many nice people!'** (Marc, 47 years old)

Disco Bôcô provided for some an opportunity for make new friends and to meet their neighbours. It was identified for Marine this helped her escape social isolation in a

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<sup>11</sup> With 1 equating to no more aware than before participating

<sup>12</sup> 17 comments out of the 627 participants who took part in the events (<3%).

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country where she had recently moved to. Whilst for others they valued the social dimension of cooking as traditionally they saw cooking as something that was practiced in isolation. This identifies the importance of these sessions providing community and social interaction for some individuals.

Other participants identified that the Disco Bôcô sessions provided them with food that was nutritious along with providing them with cooking skills.

**'It makes me sick to see all these fruits and vegetables that are thrown away when we don't have the money to buy them in our daily lives.'** (Thérèse, 55 years old)

**'I never thought about preserving my fruits and vegetables in jars. I learnt so many techniques during the session! I also learnt the nutritional healthy proprieties of techniques such as lacto-fermentation. Now I want to experiment back home!'** (Matthieu, 29 years old)

**'It is very important for our kids and us to eat more fruits and vegetables. Because we have limited budget we scarcely buy some. Thanks to DISCO BÔCÔ we can get our fill of vitamins!'** (Laishi, 43 years old)

As these comments identify, some of the participants in the Disco Bôcô sessions could not afford to buy fruits and vegetables. Often those experiencing food insecurity survive on poor nutrition; Hawkes 2006 argues that poorer sections of society are culturally, financially and social excluded from an adequate and healthy diet<sup>13</sup>. Therefore for some individuals these sessions provided some participants with the opportunity to eat fruit and vegetables.

In addition Disco Bôcô sessions served to increase the confidence of those that participated in the session. In many cases this was in the form in increasing their cooking skills, which subsequently increased their overall confidence. For example:

**'We never really feel good about ourselves in our job, our daily lives... It's always quite hard. But when we're cooking, we are queens! We know what we're doing, we have stories to tell about, advices to give, we have know-how and talent. During the DISCO BÔCÔ sessions we really feel empowered!'** (Jeanne, 36 years old)

**'I loved to spice the preparations. Everybody entirely trusted me and there was a lot of spices available. I am very happy with the result!!'** (Geneviève, 48 years-old)

**'Pickles', 'Kimchi'... I always thought this was way too difficult for me to do. Now I can see it is very easy!'** (Charlotte, 29 years old)

For some, the Disco Bôcô sessions provided individuals with a sense of self-empowerment and confidence that they could cook. A key point is how the session made Jeanne feel, in a world which felt 'hard' this allowed for her to feel a sense of

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<sup>13</sup> Hawkes 2006 cited in Butler and Dixson, 2012 page 99- Butler, D. C. and Dixson J. (2012) 'Plentiful food? Nutritious food:' in Rosin C., Stock P. and Campbell H. (Eds.) *Food Systems Failure: The Global Food Crisis and The Future of Agriculture*, London and New York, Earthscan, pp. 98-113

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achievement and empowerment. For others it provided an opportunity to learn new skills and also to experiment and be creative in the kitchen, as Nadija identifies: **'My two girls are always asking me when will be the next DISCO BÔCÔ session! They enjoy it so much!! They really like the picking part and it is a nice way for me to share a joyful moment with my kids. Personally, I also really like to express my creativity through the recipes we cook during DISCO BÔCÔ. The fact that we never know before the sessions what fruits and vegetables we are going to collect obliges us to be very imaginative!'** (Nadija, 39 years old). The sense that Disco Bôcô provides individuals with the opportunity to be creative in the kitchen is a key point as Dowler, Caraher and Lincoln argue that for particularly low income, cooking new dishes is a risk. This is because the outcomes can be unpredictable, for example the family may not like the food etc. This would lead to waste which they cannot necessarily afford. Experimentation is not seen as a sensible strategy for those on tight budget<sup>14</sup>. In the case of Disco Bôcô, practicing these culinary skills in a controlled area allows for individuals to learn new techniques that they may be unable to learn at home, due to the limited know-how and the risk of getting it wrong on a tight budget.

Finally the Disco Bôcô sessions provided the opportunity to individuals to learn about food waste and the scale of the issue.

**'It is so heart-breaking to see all these fruits and vegetables that have been thrown away. There are so many! Look at this carrot: it is perfect! I don't even get why they wanted to throw it away! It is so unfair and absurd!'** (Anastasia, 11 years old)

**'When I see the quantities of vegetables we collect, I think that we should go every day in supermarkets to collect these unsold products and distribute them for free to people like my mother who don't have so much money. So that my mother could cook every day nice meals'** (Anouar, 8 years old)

**'It is so overwhelming to create together so nice recipes with unsold fruits and vegetables. We are saving them and giving them a magnificent second life!'** (Igor, 34 years old)

For some of the younger generation the Disco Bôcô sessions provided an opportunity to learn about how much waste is being generated. Whilst for others it gave individuals the sense that they were doing their bit, making their own positive impact in reducing waste. In the case of Farida, this extended to within the home also, where she claimed learning about the amount of food that was thrown away had made her reassess her own food waste: 'Thanks to DISCO BÔCÔ, I really got to realise the quantity of food that is thrown away every day. Now I am trying to be even more careful at home. I must admit that sometimes I have to throw food away because I often cook very big quantities. Now, I am much more concerned about food waste, I am trying to change my behaviours' (Farida, 46 years old). This identifies how Disco Bôcô sessions can in some cases change behaviour.

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<sup>14</sup> Dowler, E., Caraher, M., & Lincoln, P. (2007). Inequalities in food and nutrition: challenging 'lifestyles'. In E. Dowler, & N. Spencer (Eds.), *Challenging Health Inequalities: from Acheson to 'Choosing Health'* (pp. 127-156). Bristol: Policy Press.

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Whilst the empirical research has a number of caveats, the initial findings suggest that Disco Bôcô has had a lasting and positive impact. The Disco Bôcô feasibility study has been successful in organising and implementing 20 sessions that have different formats, engaging a wide range and large amount of individuals. This feasibility study was implemented very quickly and successfully due to the experience and enthusiasm of those involved, along with the favourable French context, which has prioritised the issue of food waste. This resulted in many of stakeholders being highly engaged. The study experienced few barriers and has provided impact both in terms of tonnage redistributed from landfill and social change. A set of guidelines and a detailed feasibility report providing people with information about how to set up a similar project were created ready for replication.

## 4 Evaluation of the project implementation

The Disco Bôcô activities started in December 2013, with the main sessions running during 2014. 20 sessions of Disco Bôcô were organised during 2014 in nine cities in France. The feasibility study was implemented very quickly due to the experience of the individuals and project partners working on the study and the fact that the organisers had previous experience of running similar events through the Feeding the 5000 and Disco Soupe initiatives.

The FUSIONS partners Feedback and BIO by Deloitte were responsible for the delivery of the project. Feedback played a central role as leader of the Disco Bôcô project and the employer of the project coordinator (Marine Lafon from Disco Soupe).

During the feasibility study, Disco Soupe had the following responsibilities:

- in charge of the actual realization of the project,
- responsible for the impacts of the project (insurance, etc.),
- providing the person in charge of the project (Marine Lafon),
- in charge, with Feedback, of the administrative management of the project.

BIO by Deloitte supported D Disco Bôcô's project management and various meetings were organised in Paris between BIO by Deloitte and Disco Bôcô. BIO by Deloitte supported occasionally the project with various tasks:

- Project management,
- Completion of delivery documents,
- Audit in accounting.

WRAP supported Disco Bôcô to deliver, evaluate and communicate the outcomes of the feasibility study. No project management hours were recorded.

In total €27,593 were spent through FUSIONS. This included leading the feasibility study, project management, subcontracting and buying cooking materials. The feasibility study dealt with approximately 0.8 tonnes of food waste compared with around €50 per tonne for disposal via anaerobic digestion. The approach should therefore not be considered as a waste disposal route. It is necessary to consider the much wider societal benefits which flow from the social innovation aspects of this project. The 1093 Disco Bôcô (jars)

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produced would have an estimated retail value of around 1000-1500 Euros – the exact value depending of course on the product being produced and the size of the jars.

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# 5 Evaluation of project sustainability

This chapter covers issues surrounding the sustainability of the project based on the experience gained through the delivery of the events across France as well a wider perspective on the organisational sustainability. It summarises the benefits identified in the report and highlights potential risks.

## 5.1 Opportunities and risks to project sustainability

In the short term this project is sustainable as there has been a successful pilot which has left a legacy of networks, equipment and knowledgeable project managers. However it is the long terms sustainability which has higher risk. Currently Disco Bôcô is a format that is flexible and can be adapted to various target groups, locations and social issues. The provision of an open source tool-kit and guidelines for running DISCO BÔCÔ events should ensure continued uptake of the concept. Another aspect that could support the sustainability of the project is the appealing branding created for DISCO BÔCÔ and used primarily for the branding for the jars. The creation of a strong identity and branding increases the attractiveness of the products, increases participant awareness and encourages project replication. The branding was also extended to other communication channels such as websites and social media.

The sustainability of the project is linked to a number of factors; the first one being the ability to gain access to surplus fruit and vegetables. The current networks and relationships in place will need to be maintained in order to tap into surplus when the next Disco Bôcô is organised. Additionally, there is the need to further develop links with gleaning type activities aimed at recovering surplus production from fields which may otherwise be simply ploughed back into the soil. The final feasibility report mentions that, in November 2013, a national partnership was signed with Monoprix to gain access to unsold products in all 145 supermarkets of the chain throughout France. However, it is also mentioned that some supermarkets would be keen to supply their unsold product every day. To maintain the support of larger supermarkets, it is important to try to match with their processes since the supermarket would need to have contingency plans in place for days where unsold products are not required for Disco Bôcô events.

One of the greatest risks to the sustainability of the project is that of the reputational risk caused by an incidence of poor food hygiene practices. This is perhaps most relevant to the sterilization technique which must be carried out exactly in accordance with the procedure to avoid any occurrence of botulism. It is recommended that the leader of the session has previous experience of the preservation techniques being used so that the necessary checks and instructions can be given.

One of the largest risks to the long term sustainability however is financing the project. The feasibility study needs a project manager to coordinate the various activities;

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transport to collect the food from the source; storage space; cooking materials<sup>15</sup>; a room/ kitchen; and funding for the project managers to attend health and safety training. Whilst some of these costs (such as the cooking materials) are set up costs, which can be funded by lottery funds or foundations; providing finance for on-going staff and material<sup>16</sup> costs may be a challenge. There are a couple of ways in which this can be approached:

1. Actively encourage volunteer involvement: For example the Disco Soupe movement in the UK is largely based on volunteers who organise, set up and run the sessions. A similar model could be implemented with Disco Boco across the globe. The only issue with this is that it relies on there being an actively engaged group of volunteers to take the project on; additionally, relying on volunteers can be viewed as a risk to the long terms sustainability of the project as they are unpaid and sometimes an unreliable workforce. There are numerous organisations that work successfully on a team based on volunteers; however often there is a coordinator that is paid. Therefore for Disco Boco to grow and be sustainable one individual should be employed to project manage and expand the project.
2. Partnering with other social organisations: and organising events within existing social institutions may also help to reduce costs. For instance, this may avoid the expense of room hire or, where a room is used, equipped kitchen facilities may be available.
3. Sell the product: The chutneys and jams (along with soups, chopped vegetables and fruit jerky) could be sold in order to generate income to pay for various outgoings. Currently social enterprises work in this area for example Re-belle<sup>17</sup> (France), Zero Waste Jam<sup>18</sup> (Austria) and Rubbies in the Rubble<sup>19</sup> (UK) all create jams and chutneys from surplus food and sell it online, in stores and at markets. Snact<sup>20</sup> (UK) creates fruit jerky from surplus fruit and sells it in various locations across London. Bon Bein<sup>21</sup> (France) sells soups from surplus fruit and vegetables in the French supermarket E.Leclerc. These companies, although some are small scale are all economically viable. In order to sell the products the hygiene conditions are much stricter, which Disco Boco cannot match. However they have identified that could sell fruit Jerky or prepared chopped fruit and vegetables, as there are not as many hygiene complications in these processes. However ultimately it is evident that Disco Boco would have to become a more structured model in order to sell their products. The following reasons identify why currently Disco Boco could not sell their product:
  - a. The food is produced in a communal setting, with various different people, which are not all necessarily trained.
  - b. Disco Boco is not cooked in specialised kitchens with trained chefs.
  - c. The jam and chutney jars are re-used, whilst they are sterilised they cannot be sold in this format; therefore new jars would have to be purchased which would incur a cost.
  - d. A secure and reliable logistical model would need to be developed with the farmers to collect the food; however, Disco Boco is conducted in a flexible format.
4. Sell the service: Outside of selling products there is the opportunity to sell the services that are being offered. Disco Boco explored the option of charging

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<sup>15</sup> such as cans, sterilisers, cooking pots, electric hotplates, pressure canners, water bath canners, cutting boards, knives, funnels, peelers, wooden spoons, spatulas, salad bowls, trays. These materials are essential to organise enjoyable, collective cooking sessions.

<sup>16</sup> Such as the provision of jars, lids, vinegar, sugar, etc.

<sup>17</sup> <https://www.facebook.com/ConfituresReBelles?fref=ts>

<sup>18</sup> <http://zerowastejam.com/en/>

<sup>19</sup> <http://www.rubiesintherubble.com/>

<sup>20</sup> <http://www.snact.co.uk/>

<sup>21</sup> <http://bonetbien.fr/>

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organisations to organise a Disco Bôcô session. This could be advertised as a way for individuals to learn new culinary techniques. This was tried by the Disco Bôcô team<sup>22</sup> and was considered a success. It was inspired by a UK project called Made in Hackney: Local Food Kitchen<sup>23</sup>. Similarly this could also be advertised as a team-building session and marketed to organisations as part of an 'away day'. This was successfully tested twice<sup>24</sup>. However, overall Disco Bôcô felt that the ethics of the feasibility study were being challenged as Disco Bôcô originated as a free of charge event. That moving Disco Bôcô to be more commercial was not in keeping with the ethos of the movement. The management of volunteers undertaking 'paid-for' cooking sessions requires considerable care and balancing to deliver such activities without indeed risking losing the goodwill and time of the volunteers.

5. Pay as you Feel (PEAF): Disco Bôcô has already tested a Pay As you Feel Box (PEAF) where participants choose to pay how much they feel towards the session. They found that the amounts vary but can sometimes reimburse the overhead costs. This is a unreliable source of income.

Whilst Disco Bôcô would have to make some considerable changes in order to sell their product and become economically viable they can still learn from organisations that do something similar. For example Zero Waste Jam, which is a 6 month old social enterprise in Austria, which collects surplus fruit, creates jams and sells them<sup>25</sup>, identify the market of private gardens as a source of surplus. Zero Waste Jam claim these gardens should not be underestimated. For example this season (2015) they collected over 600kg worth of food. A key barrier is that securing a reliable logistical model could not be easily developed with farmers (as they are a working business); however working with private gardens may match Disco Boco's need for flexibility, whilst also working within the local community.

Whilst Zero Waste Jam does not have a social element in that it seeks to achieve a social goal such reduce food insecurity etc., it does seek to reduce food waste. Similar to Disco Boco it creates Jams and chutneys and sources the food from farmers. Zero Waste Jam has lessons which could be adopted by Disco Boco.

1. For example Zero Waste Jam works with private gardens; these have identified another source which appears to largely be untapped.
2. The importance of health and safety. Zero Waste Jam found that people valued the project managers chef status as it gave them the confidence that she was fully equipped to use surplus food. This identifies the importance of gathering qualified, experienced project managers and the concept of health and safety training.
3. That a large proportion of the costs are spent on expanding the project, having a permanent kitchen and paying for a team.
4. A key lesson learnt is that Zero Waste Jam consumers like the personal touch, the personal story behind the jams being made. This is a good marketing strategy when selling the product. If Disco Boco did something similar they would also have the social element which could help sell the product.
5. The seasonality of the product, Zero Waste Jam found that they had extremely busy period where the harvests were in, therefore this needs to be considered when organising a Disco Boco as certain period may result in less surplus.
6. Zero Waste Jam is creating a manual about the legality of the project, which may help individuals hoping to sell the product.

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<sup>22</sup> Charing 35 Euros per participant

<sup>23</sup> <http://madeinhackney.org/>

<sup>24</sup> Charing 500 Euros each organisation.

<sup>25</sup> See appendix II

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# 6 Evaluation of potential for replication of the project

The feasibility study has demonstrated that there is major potential for replicating the DISCO BÔCÔ concept through similar projects in other cities and countries. Indeed, Disco Soupe has also been implemented in several other countries such as:

- UK,
- Spain,
- Greece,
- Sweden, Italy,
- United States and
- Korea.

The DISCO BÔCÔ concept is suitable for all groups irrespective of social background and age. Indeed, this is encouraged to reduce barriers to social integration and to encourage transfer of knowledge and skills between participants.

Key guidance points were identified for setting up other similar projects. The key factors were considered to be:

- Effective project management.
- Building a multi-disciplinary network of partners.
- Creating a community via social networks and other tools.
- Engaging with participants through leading events which are both fun and convivial, often with live music.
- Raising awareness on food waste through educational material and communication.
- Providing guidance materials, such as recipes and preservation methods.
- Ensuring food safety and hygiene issues are addressed.
- Ensuring financial sustainability.

The feasibility study has also developed an Open-source Tool-kit to capture and disseminate best practice learned through the organisation of the events. The Tool-kit has been made available through the Disco Soupe website.

Start-up costs need to be considered when replicating the event. The FUSIONS budget was able to support the Disco Bôcô feasibility study with the purchase of equipment such as cooking pots, electric hotplates, chopping boards and wooden spoons. Organising events in community halls with kitchens may allow access to some of this equipment as part of the hire charge. However, these costs are also very suitable for applications to charitable trusts and grant-making bodies – it is often easier to obtain funding for equipment and other start-up costs than for on-going staffing costs.

The feasibility study was used to trial different formats of Disco Bôcô events to test what was successful and what didn't work. The project was found to be widely replicable although it is important to adapt the recipes to the taste of the participants. It was noted, for example, that some participants found the customary sweet French-style jams to be too sweet. More savoury preparations were much more welcomed.

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Having a network for the collection of discarded fruits and vegetables is deemed as essential for the success of the project, other paramount activities included:

- The gathering of cooking materials (pots, pans, hotplates, cutting boards, cutlery etc..) as well as dressings and spices to embellish the preparations, and cereals (rice, barley, buckwheat...) and legumes (beans, peas, lentils...) to cook balanced meals;
- Researching what sources of unsold products are the most adequate for preservation activities, what techniques are best suited for festive and collaborative cooking sessions, and ensuring the most adequate preservation methods are applied during the Disco Bôcô sessions;
- The creation of educational materials on food waste, on preservation techniques and on healthy food in order to raise awareness.

Disco Bôcô clearly identified in their feasibility report that working in the French context resulted in the positive development of the Disco Bôcô concept. This was because of the various public institutions and companies which put food waste at the top of their agenda. Therefore Disco Bôcô was able to quickly ensure buy in from various stakeholder. When replicating this project it is essential that the context, laws and regulations, along with social acceptable and awareness is identified in order to understand the local, regional and national context the project is working in. If the context is not favourable, this should not be a barrier: rather should be considered when planning the amount of time to implement the project as longer may be needed in order to ensure engagement from stakeholders.

The above points identify what is needed and should be considered when considering replicating the Disco Bôcô project; however certain characteristics are inherent depending on the local cultural context.

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# 7 Conclusions

Disco Bôcô successfully organised 20 Disco Bôcô sessions across France. These sessions encompassed different locations, citizens, objectives and sources of food waste. The project has successfully recorded that there has been a high level of engagement from the participants and a large amount of food redistributed. This feasibility study was implemented very quickly and successfully due to the experience and enthusiasm of those involved, along with the favourable French context, which has prioritised the issue of food waste. This resulted in many of stakeholders being highly engaged. The study experienced few barriers and has provided impact both in terms of tonnage redistributed from landfill and social change.

The 'Developing DISCO BÔCÔ' feasibility study has provided useful insights into delivering and expanding the DISCO BÔCÔ concept. The concept was considered to be widely replicable and attractive to grant-making bodies with regards to the set-up costs.

The concept, whilst being effective at dealing with surplus fruit and vegetables on a relatively small scale, should be considered in relation to the much wider societal benefits such as reducing social tension, improving skills and taste education/nutrition. A set of guidelines and a detailed feasibility report providing people with information about how to set up a similar project have been created ready for replication.

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# 8 Recommendations

It is recommended to disseminate the learnings of this feasibility study as widely as possible and to promote the open source tool-kit to like-minded grass-roots organisations operating within the area of sustainability, food waste and social justice.

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# Appendix I

Figure 1- Disco Boco questionnaire

## **DISCO BÔCÔ Evaluation**

**Thank you for taking the time to answer our survey!**

DISCO BÔCÔ is fuelled by passionate individuals like you! To help us build on our success we would like your feedback. Perhaps you've just attended a DISCO BÔCÔ session, or maybe you've led one - your experience is important to us. Thank you.

1. How much did you enjoy the session? (1 - didn't enjoy, 5 - really enjoyed)

Your comments (optional)

2. Has participating in DISCO BÔCÔ made you more aware of the need to reduce food waste? (1 - no more aware than before participating, 5 - much more aware)

Your comments (optional)

3. Will you use the skills you've learned? (1 - won't use them, 5 - will definitely use them)

Your comments (optional)

4. Will you teach these skills to others in your network? (1 - no, 5 - yes definitely)

Your comments (optional)

5. How much of your DISCO BÔCÔ did you/your household eat? (1 - none of it, 5 - all of it)

Your comments (optional)

6. Please tell us a bit about yourself

What was the date of the DISCO BÔCÔ you attended?

How many DISCO BÔCÔ events have you attended (including this one)?

# Appendix II Zero Waste Jam



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## Developing Zero Waste Jam

**WP4 – Testing Social Innovation**

**Evaluation Report**

**Date: 11.02.2016**

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**Reducing food waste through social innovation**

FUSIONS EU project is supported by the European Community's Seventh Framework Programme under Grant Agreement no. 311972.



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# Colophon

Title	Developing Zero Waste Jam: Evaluation Report
Authors	Sarah Bromley, WRAP
Keywords	food waste prevention, food donation, food preservation, jams, preserves, chutneys, food aid, best practice, social innovation, Austria
Clients	European Commission (FP7), Coordination and Support Action – CSA
	Contract number: 311972
Project leader	FUSIONS coordinator: Toine Timmermans, Wageningen UR - Food Biobased Research, The Netherlands
	Project leader for this Deliverable: David Rogers, WRAP.
Acknowledgments	The authors would like to thank Sophie Easteal, Michael Wenborn, Elaine Charlesworth & David Rogers from WRAP for coordinating the work package/feasibility studies and Cornelia Diesenreiter who kindly participated in the evaluation.

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# Zero Waste Jam

Zero Waste Jam is a 6 month old Austrian social enterprise that redistributes surplus food fruit from private gardens and creates Jams which they sell to the general public. Zero Waste Jam was originally founded in 2012 by Evalina Lundqvist, the founder of the sustainability agency The Good Tribe. She appointed Cornelia Diesenreiter to become the new CEO and owner of Zero Waste Jam in order to expand the project as Evalina did not have the capacity. Cornelia is a chef by profession but also studied Economics and Law at undergraduate and Eco-resource management at Master level. Therefore Cornelia is fully equipped for this role.

Zero Waste Jam, like many, strongly believes in using our world's natural resources efficiently. They identified that despite growing concerns of food security an enormous amount of fruits and vegetables go to landfill due to failing the strict cosmetic standards set by the market or due to seasonal overproduction. Zero Waste Jam wants to challenge the prevailing idea of this waste, to make it social acceptable that resources have value despite being oddly shaped; resources have value and to promote treating all resources with respect, using them to their full potential. In order to portray this message Zero Waste Jam collects surplus fruit from private and public gardens; from community gardens; as well as the forest (the other ingredients used are organic and/or fair trade.) to create jams, syrups and chutneys.

Their marketing moto is 'use what you have' and they plan to have a social franchising model; however at the moment this has been unsuccessful due to certain legal requirements. Cornelia runs the project on her own but close friends help with the harvesting; she also has free mentoring from sales experts that believe in the project. Cornelia hopes that as Zero Waste Jam expands they will be able to employ a team. Currently to promote the concept they are using social media and local newspapers. Currently the cost to run Zero Waste Jam is low, with much of the money needed to cover simple things such as transport and webpage costs. Cornelia expects this will change next year as they are expecting to take a permanent kitchen and look to develop and widen the team/workforce to help with the cooking and harvesting. The project is economically viable in that they sell the product and this is invested back into the company. As this is a relatively new project they did not have any annual turnover figures.

This season Zero Waste Jam has intercepted more than 600kg of food which is expected to increase next season. Currently this is mostly sourced from private gardens, which they claim should not be underestimated as they produce a lot of surplus. Currently Zero Waste Jam has the opportunity to collect more surplus, however at the moment they do not have the capacity<sup>26</sup>. Zero Waste Jam have found that they have had a high level of engagement from fruit donors who are relieved and happy their fruits and vegetables have not gone to waste. Additionally they have found they have been well received by

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<sup>26</sup> For example the summer of 2015 a farmer offered them 800kg of pears and another a ton of tomatoes but they were not able to take the quantity.

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the people who consume their products. A key finding has been that their consumers like the story behind the jam they are consuming. This has now become a central part of their marketing strategy.

The largest challenge that Zero Waste Jam has faced to date is their capacity, there is more surplus than they can deal with. The work is largely seasonal; there is hardly any cooking from November to May, with the peak time being July and August. This means they need to be very flexible when it comes to cooking space, workforce, and storage. Additionally she found that originally she struggled with the legal requirements of the project as she did not know where to gather the specific information and the support needed. She is now planning to write a manual for the social franchise model she is developing which will help people in this area.

Cornelia identifies that the best part of the project is being outside picking the fruits in order to make a difference, in order re-connect with nature. Interesting Cornelia identified that some people have challenged the work she does due to not understanding the surplus element. For example people do not like the fact that they are eating 'waste'; others have claimed that the surplus element is just a marketing strategy as they do not believe there is surplus. Cornelia has found that being a qualified chef has considerably helped her when she is challenged. For example when people have been hesitant about surplus food because of the perception that surplus food/waste had a high risk of food poisoning. She found that people were more acceptable to the idea once they found out she was a chef. This was because of the perception that she knew what she was doing and was trained to an adequate standard. This identifies the importance in some cases of having qualified and experienced project managers.

Whilst this project does not have a social element (in that it seeks to achieve a social goal such reduce food insecurity etc), it does seek to reduce food waste. Similar to Disco Boco it creates Jams and chutneys and sources the food from farmers. Zero Waste Jam has lessons which could be adopted by Disco Boco.

1. For example Zero Waste Jam works with private gardens; these have identified another source which appears to largely be untapped.
2. The importance of health and safety, Cornelia found that people valued her chef status as it gave them the confidence that she was fully equipped to use surplus food. This identifies the importance of gathering qualified, experienced project managers and the concept of health and safety training.
3. That a large proportion of the costs are spent on expanding the project, having a permanent kitchen and paying for a team.
4. The importance of education, some people are still not aware that surplus is not necessarily 'waste' in the traditional form.
5. A key lesson learnt is that Zero Waste Jam's consumers like the personal touch, the personal story behind the jams being made. This is a good marketing strategy when selling the product. If Disco Boco did something similar they would also have the social element which could help sell the product.<sup>27</sup>
6. The seasonality of the product, Zero Waste Jam found that they had extremely busy period where the harvests were in, therefore this needs to be considered

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<sup>27</sup> This was a similar finding in the Bon Bein case.

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when organising a Disco Boco as certain period may result in less surplus. Additionally if the model became a social enterprise, that is the food was sold, the seasonality would need to be considered.

7. The manual when developed on the legality of the project may help individuals hoping to sell the product.
8. Although Disco Boco already has a branding. It is useful to note that Zero Waste Jam has attracted some negative responses due to the connotations attached to the word waste. Therefore if Disco Boco was to expand or change the logos, this is an important aspect to consider.

<http://zerowastejam.com/en/>

Meeting with Cornelia Diesenreiter

Evaluation report –  
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# 11 Appendix IV Gleaning Individual Evaluation Report



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## Gleaning Network UK

WP4 – Testing Social Innovation

Evaluation Report

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Reducing food waste through social innovation

FUSIONS EU project is supported by the European Community's Seventh Framework Programme under Grant Agreement no. 311972.



# Colophon



Title	Advancing social supermarkets across Europe: Evaluation Report
Authors	Bojana Bajzelj, WRAP; Sarah Bromley, WRAP
Keywords	food waste prevention, farm waste, food donation, social innovation,
Clients	European Commission (FP7), Coordination and Support Action – CSA Contract number: 311972
Project leader	FUSIONS coordinator: Toine Timmermans, Wageningen UR - Food Biobased Research, The Netherlands Project leader for this Deliverable: David Rogers, WRAP.
Acknowledgments	The authors would like to thank Sophie Eastel, Michael Wenborn, Elaine Charlesworth & David Rogers from WRAP for coordinating the work package/feasibility studies and Dan Whoolley (Gleaning Network UK) who undertook the feasibility study.

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# 1 Introduction

## 1.1 Background to FUSIONS

Under the EU FUSIONS programme<sup>1</sup>, seven feasibility studies were implemented to test socially innovative projects across Europe. This evaluation report assesses the outputs from one of the seven feasibility studies, which facilitated gleaning activities by four regional partners across Europe. Gleaning means picking fruits and vegetables that were not harvested by the farmer, as there is no market for them, and giving them to charitable institutions involved in food redistribution. FUSIONS are administering an evaluation of the feasibility studies.

## 1.2 Aims of the Evaluation Report

The aim of the evaluation is to identify the projects that are most applicable for replication and scaling up, and to support the planning of replication approaches. This document provides the findings from an evaluation of the feasibility study entitled 'Gleaning Network EU', and impartially consider the success of the project which was undertaken in 2014/5.

This report is part of a deliverable within FUSIONS Work package 4, which sets out to test & evaluate the impact of social innovation on reducing food waste detailing the results and impacts of the implemented feasibility studies.

Gleaning network feasibility study used the experience from the long-running Gleaning network in UK to facilitate gleaning events across Europe through regional partner organisations. The aim of evaluation report is to assess how successful Gleaning Network UK (and their parent organisation, Feedback) have been at reaching out to these partners and at enabling them to organise gleaning days, how successful the gleaning days themselves have been, and to check the quality of guideline materials produced as a part of the project. An additional aim is to assess environmental and social benefits of the activity that was carried out, and assess the replicability potential and wider uptake of this social innovation.

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<sup>1</sup> <http://www.eu-fusions.org/>

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## 1.3 Background to the Gleaning Network EU feasibility study

In order to test the feasibility of the gleaning networks across EU, the feasibility study aimed to provide support for gleaning organisations in the nascent stages in Belgium, France, Spain and Greece. This included supporting these organisations to hold pilot gleaning days in each of their regions.

The feasibility study was carried out by **Feedback** (UK-based food waste charity, who runs Gleaning network UK) and four regional partners:

- Gleaning network Belgium
- Re-bon, réseau de glanage Nantais (France)
- Boroume (Greece)
- Espigoladors (Spain)

**Feedback** is an environmental organisation that campaigns to reduce food waste at all stages of supply chain. They work with governments, international institutions, businesses, NGOs, grassroots organisations and the public to change society's attitude toward wasting food. Feedback is based in the UK, with a staff of 10 to 12 people (flexing resource as required) and an extensive network of volunteers. Their Gleaning Network UK project has five regional hubs throughout the UK, each of which is overseen by a voluntary coordinator.

Feedback/Gleaning network UK were tasked to produce a guide to setting up a gleaning network, aimed at other nascent/interested organisations or individuals. The guidelines are set to provide detailed information around:

- building relationships with the main stakeholders: growers and beneficiaries;
- building and maintaining a large volunteer base who are able to mobilise at very short notice;
- communications and marketing plans, and
- fundraising.

Activities and experiences of the pilot gleaning days in partner organisation countries helped to refine the gleaning guide – ensuring that the advice given is applicable in a number of different regions.

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# 2 Methods

Here we briefly describe the methods of both the feasibility study itself, and this evaluation report.

## 2.1 Feasibility study methods

The feasibility study's main methods were stake-holder management, capacity building and dissemination.

The following steps were undertaken. First, possible regional project partners were identified and contacted. This was greatly helped by the existing reputation Gleaning network UK had at the time. A virtual working group was created, and meetings were held in each region to understand the local context and at the stage of development of each gleaning project.

One potential gleaning partner in Poland, dropped out of the project because of the severe impact the Russian embargo had on horticulture in Poland. Gleaning activities were organised in an unusual manner, by the government and at much larger scale.

Next the experience on gleaning days run in UK was disseminated to regional partners, giving them practical advice to facilitate the organisation of gleaning days. The steps in organising a gleaning day itself are described in Section 3.2. Regional organisations later provided feedback that was incorporated into the gleaning guide.

The regional organisations that this project supported were very varied in their working model. In Greece, Boroume did not directly carry out gleaning activities, but connected farmers with surplus food to recipient organisations and volunteer groups who can collect the food. Espigoladors in Spain did not only collect produce from farms, but also wholesale market, and also process some of the produce into products such as jams. The gleaning organisations in Belgium and France were smaller, and organised and carried out the gleaning activities on farms themselves, and gave all produce to charities (similar to the Gleaning network UK).

The gleaning guide was based on these and previous experience, with the aim of being comprehensive, visual and user-friendly. In parallel, an online dissemination tool & related content were also developed.

## 2.2 Evaluation method

The 'Gleaning Network UK' feasibility study is recognised to have a strong potential for replication across EU. The evaluation of the feasibility study was carried out by two food

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waste experts, based on the report submitted by email<sup>2</sup>. The evaluation was carried out against pre-determined criteria and project objectives, on the basis of the submitted final report, four project plans and the gleaning handbook<sup>3</sup>. Sarah Bromley also visited a Gleaning activity in the UK see figure 1 below:

Figure 1- Evaluation visit to UK Gleaning

**Feedback** organized a UK based gleaning in Gloucestershire late in October 2015, where volunteers gleaned Gala Apples from a fruit farm that supplied some of the largest supermarkets in the UK. The trees were on their third crop but the apples did not meet the supermarket specifications of size and density, therefore were surplus. The farmer did not receive a high enough return if he was to juice the apples, therefore juicing was not seen as a viable option.

Almost 30 volunteers attended the gleaning between 10am and 3pm. There was a lively community spirit, with a bring-and-share lunch, which included homemade cake! 3.5 tonnes of apples were gleaned overall. This broke the record for the quantity gleaned in the time done. This surplus was distributed to St Paul's Hostel, the YMCA and Fareshare who distributed them to London, Chesterfield and Southampton to people in need.

Key points learnt from the visit:

1. The gleaning coordinator was a part time volunteer and worked part time in a cafe. Sometimes she turned down extra shifts (money) to fulfil the Gleaning role.
2. Some of the volunteers at this site were reached through word of mouth and online (either through emails or social media)
3. Some reasons people gave for attending
  - a. Nice to give something back
  - b. Provides sense of community
  - c. They care about the Food Waste issue.
  - d. Close by, however some also drove over an hour to attend.
4. The farmer suggested that a possible upcoming challenge for the gleaning network would be crops becoming more efficient. For example he claimed he has just purchased some new orchids which are designed to produce much less surplus. However there will always be surplus for example he identified that one year there was a hail storm during August which meant his fruit was blemished and he could not sell any of the crop. This could be gleaned or sent to juicing.
5. The farmer claimed that if the Gleaning network got larger and more commercialised they may have to adhere to the same standards as supermarkets. Theoretically when placing and storing apples in the large wooden crates a nail could get stuck in a bottom of an apple; therefore each one should get checked. He identified this would be a burden on the farmer and unlikely that he would engage in this task, whilst it would be a huge administrative task to be able to be absorbed into the small capacity of the charities.
6. An English Farmer claimed that he himself was contacted during the busiest and most stressful time of year which can result in less engagement. He argued that farmers should be contacted earlier in the year when it is less stressful, which may result in higher engagement. He did however recognise that he was an organised farmer that knew what crop he was going to have sometimes three years in advance.
7. The farmer claimed that when the apples fall on the floor and are considered as 'waste', wildlife eat it. Therefore if this was to get more large scale the knock on effectives to wildlife should also be considered.

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<sup>2</sup> <http://www.eu-fusions.org/index.php/gleaning-network-eu> <http://www.eu-fusions.org/index.php/gleaning-network-eu>

<sup>3</sup> <http://www.eu-fusions.org/index.php/download?download=194:gleaning-handbook>

# 3 Evaluation of project results

This section evaluates key findings from the 'Gleaning Network UK' feasibility study. As a result of the project, 82 gleaning days were facilitated, delivering ~30 tons of fresh produce to charities. Four regional gleaning networks are now up and running, ready to organise further gleaning days in the future.

Benefits (some quantifiable, some unquantifiable) of the project include:

- 1 Recovering and redistributing ~30 tons of fresh fruit and vegetables that would otherwise have been wasted. The types of produce gleaned included cabbages, broccoli and cauliflower (together ~50%), salads (~15%), root vegetables (14%) and citrus fruits (12%).
- 2 Helping people in need by donating gleaned food to 33 charitable organisations
- 3 Giving opportunities for people of all ages to reconnect with farmers and the way their food is produced, spend time outside in a sociable environment and become empowered to directly help tackle environmental issues;
- 4 Raise awareness of the issue of farm-level food waste;
- 5 Gather information and data to contribute to research on farm-level food waste (provided in the next section)

Feedback/ Gleaning UK have provided quantitative data to demonstrate the delivery on the first two points above (See Table 1). The share of the produce that actually reaches the intended people in need is unknown, although understood to be high (it is in both in gleaners and charities interest and care to ensure only products that can be used are gleaned).

**Table 1: Key Results from each Region**

Region	No. Gleaning Days	Total QTY Gleaned (kg)	Most Common Crop Category	Avg No. Volunteers per Glean	Amount gleaned per day per volunteer
Belgium	12	6,627	Brassica	6	92
France	36	5,354	Root Veg	5	30
Greece	6	6,500	Citrus Fruit	5	217
Spain	28	11,090	Brassica	4	99
<b>Total</b>	<b>82</b>	<b>29,571</b>			

The differences in terms on the amount gleaned per day and per volunteer are due to different styles of operation and different crops that were gleaned.

For example, in Greece citrus fruits were the main crop. It is quicker to pick oranges from a tree that to pull or dig root vegetables (which was for example the main crop in France). Furthermore Re-Bon in France operated under the motto of "no glean is too small", often working with smaller organic farmers within 50km, whereas Boroume in Greece operated nationwide, focusing on fewer, larger-scale gleaners.

**Table 2: Gleaned produce by produce category**

Category	Sub Category	Total	Assumed whole-sale price*	Calculated value in EUR	Notes
<b>Fruit</b>	Citrus Fruit	3,500	0.40	1,400	
	Other Fruit	1,115	1.00	1,115	Assumed strawberry
	Top Fruit	3014	0.37	1,115	Assumed apple
<b>Vegetable</b>	Allium	814	0.25	204	Assumed leek
	Brassica	7,695	0.30	2,309	
	Other (Vegetable)	3,208	0.20	642	
	Root Vegetable	4,174	0.19	793	Assumed carrot
	Salad	4,416	0.44	1,943	
	Squash	1,635	0.26	425	
<b>Total</b>		<b>29,571</b>		<b>9,945</b>	

\* from UK government National Statistics: Latest wholesale fruit and vegetable prices. The lowest value is used to represent high season, time when produce has likely been gleaned. <https://www.gov.uk/government/statistics/wholesale-fruit-and-vegetable-prices>

Additional benefits of raised awareness and reconnection with food production are based on anecdotal evidence alone.

### 3.1 Key findings

Key findings of the study are that gleaning activities can be organised quickly and with few resources, depending mostly on motivated individuals (volunteers) who step-up to organise gleaning activities.

As part of the gleaning activities organised by this project, organisers collected data from participating farmers on the causes of farm-level food waste. The results of the survey are as follows:

- The main driver for 50% of all surplus produce is that produce does not meet the **cosmetic standards** set by the buyers. This was found to be the main driver of farm-level waste in Belgium, Greece and Spain.
- The second most common reason (behind 34% of gleaned produce) was planning **surplus** as a buffer to ensure meeting the contract requirements. In France this was the leading driver (above cosmetic standards).
- Other causes include trial plantations (9%), limitations of farm machinery to harvest all product (3%), not meeting quality criteria such as over and under-ripeness (2%) and order cancelations (1%).

### 3.2 Recommendations from feasibility study

The main recommendations from the feasibility study are outlined in the guideline document for organising gleaning activities (available from <http://feedbackglobal.org/gleaning-network-eu-2/>). Here we summarise the

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recommendations (steps) for organising a gleaning day, and some other headline recommendations.

Steps in setting up a gleaning network are:

- Research local farming and food production practices
- Contact farmers and explain the purpose (give out a summary sheet of what they can expect)
- Contact local charities that would receive the gleaned produce. These can include charities, food banks, community groups and even commercial organisations. The quantity of food available for gleaning will often exceed the capacity of any single organisation, so establishing relationships with several is important.
- Create an internet presence on web or social media to attract volunteers
- Gather equipment (crates, sacks, harvesting tools). It is important to have the appropriate equipment (e.g. crates that stack correctly, that are appropriate for the produce) otherwise that can significantly limit the amount gleaned.
- Organise transport of volunteers (if required) and produce. Car-sharing can be a good option for farms not easily accessible by public transport. Some groups in the local area might be able to help by lending a minivan or minibus.
- Agree on a gleaning date with the farmer, and speak again with them in advance to ensure all their concerns are addressed. Gleaning day should be as close to produce being ready as possible to prevent spoilage from bad weather.
- Reach out to previously established volunteer base. Advise them on what to bring and wear.
- Agree on the hand-over with receiving charities

Main other recommendations include being very proactive in communication on traditional and social media, keeping a log on the event, measure impacts, record numbers and obtain quotes from gleaners and farmers, all which can be used to demonstrate the benefits.

### **Health and safety**

Some farms have specific health and safety requirements on their farm. Farmers need to be consulted, and every volunteer needs to be aware of safety requirements. For every gleaning day, there should be at least one person present who is trained in first aid (can be one of the volunteers), and first aid kit needs to be brought along. Special care needs to be taken when using equipment, such as harvesting knives or ladders. Everybody knows how to use and handle these safely, and these might necessitate the use of cut-resistant gloves to ensure against any accidents.

### 3.3 Evaluation

The outcomes of the project are, where possible, measured quantitatively, and Table 3 shows an overview of the project results against the evaluation criteria. Since this was a feasibility study, it was difficult to estimate in advance what the expected outcomes would be. It is also important to note that some of the gleaning activities reported here might have happened even without the involvement of FUSIONS, so this feasibility study cannot take complete credit. All partners apart for the Belgium regional partners were already established gleaning organisations, but they have all benefited from the help they received from Gleaning Network EU, that allowed them to reach more farmers and organise more events that they otherwise would have been able to.

**Table 3: Evaluation of project results against pre-agreed evaluation criteria**

Evaluation criteria	Target	Achieved	Notes
1. Number of networks / gleaning activities	3-5	4	
2. Number of gleaning days	10	82	Target greatly exceeded, although some of these would have happened without FUSIONS involvement.
3. Total number of volunteers (no participants/event)	Not specified	Total 290 (average 5/glean)	Some volunteers came to more than one event.
4. Volume of produce saved	Not specified	~ 30 tonnes	Some of these would have happened without FUSIONS involvement.
5. Data to show that the gleaned produce reach target vulnerable individuals	Not specified	Not possible to collect	Unfortunately only anecdotal evidence is available, suggesting most gleaned food reaches intended destination.
6. Number of organisations participating in gleaning network	Not specified	40 farms 33 beneficiaries	These numbers are across all 4 regional partners.
7. Number of person-hours used to organise an average gleaning day	Not specified	10 - 12 person hours	Depends on the number of volunteers, media presence, logistical solution to hand-over to the beneficiary, novelty to the farmer
8. Number of person-hours used to organise gleaning network in a county	Not specified	80 - 100 hours	Rough estimate

The written guidelines are very user-friendly, well written and presented, and the content seems well chosen and comprehensive.

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# 4 Evaluation of the project implementation

The project delivered against all planned project deliverables, as can be seen in Table 4. The delivery of some objectives was moved by a few months, in consultation with WRAP, due to reasons related to the nature of gleaning as a seasonal activity. The number of gleaning days that were facilitated by the project exceeded expectations, and the quality of output materials, such as the gleaning guide, is exemplary.

**Table 4. Delivery against project objectives**

Project objectives	Delivery	Notes
1) Develop overview of project plan + objectives	Complete	On time
2) Determine the project's Evaluation Metrics	Complete	On time
3) Identify and enlist stakeholders; Create working group	Complete	Small, justified delay
4) Hold meetings in each region to understand local context, stage of development of gleaning project	Complete	Small, justified delay
5) Agree project budgets with key stakeholders	Complete	Small, justified delay
6) Run pilot gleaning days	Complete	Exceeded expectations in number of gleaning days
7) Follow up with regional organisations after gleaning days: incorporate feedback into gleaning guide	Complete	Small, justified delay
8) Write gleaning guide	Complete	Great quality
9) Create online dissemination tool & related content	Still in progress	

The main cause for the delays is the seasonality of gleaning activities, for example unseasonably bad weather.

Other barriers include for example, other political and social events making it hard for gleaning networks to reach volunteers (this happened, for example, in Greece). If the numbers of volunteers were too low because the farm was inaccessible to public transport, this was overcome by encouraging and facilitating car-sharing.

The only solution to bad weather is to ensure that the produce is gleaned, redistributed and used as quickly as possible. If the weather is looking bad on the day, gleaning organisers can consider shortening the length of the gleaning day and advising volunteers of this in advance, as well as advise them on the appropriate clothing.

Sometimes the quantity of food gleaned exceeded the capacity of the local beneficiary(s). To counter this organisers have developed relationships with several beneficiaries, rather than relying on one, including: charities, food banks, community groups, social enterprises, even commercial organisations who could potentially pay for the gleaned produce (such as 'natural shops').

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Rarely farmers have changed their mind about hosting a gleaning day. The best way to reduce this risk is to ensure that the farmer has sufficient information in advance. Farmers participating gave good feedback, (one for example expressed his admiration for the gleaners), and often saying they hate seeing their produce go to waste. However many say they are too busy to get involved in these activities more often than once or twice a year, highlighting time constraints of the farmers as a significant barrier.

The project was completed well within the total budget of €23,900. The majority was spend on project management time and personnel time spent on advising regional partners. About €4,000 was spent on travel, and equally on purchasing of tools and packaging materials that regional organisations will be able to use continually. Volunteering (not costed here) was crucial in running the gleaning networks.

**Table 5 Project spent**

		Allocated budget
Personnel time	Project management and advice; Writing of the Handbook	€15,400
Travel	4 visits of regional partners	€4,000
Consumables	Tools and crates used on gleaning days	€4,500
TOTAL		€23,900

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# 5 Evaluation of project sustainability

Gleaning projects are mostly volunteer based (not only to provide the labour on the gleaning day, but often also to organise the network). These self-organised volunteers are highly motivated, passionate and take great ownership of the activities they are running. As such gleaning activities are likely to continue in these and different settings even if no or minimal funding is available for its support.

Some gleaning networks are organised instead as a social enterprise, generating modest income to support themselves, as well as the farmers (e.g. the Spanish project partner Espigoladors). Bon et Bein originated from a gleaning project<sup>4</sup>; however their partners agreed that gleaning alone had limited social and environmental impact due to the short period in which gleaning would take place. Therefore a consortium of McCain, E.Leclerc, Randstad, Le Gappi and the Federation of Food Banks began Bon et Bein, which has developed an alternative supply chain for surplus potatoes and vegetables through processing them into soups which are then sold in a leading supermarket. They have created a secondary market for this food. Additionally the company is seeking to combat unemployment through providing jobs to personnel with no working experience, qualifications or proven skills, and gives them the opportunity to follow a one year training programme. The impact so far shows that the first steps to reduce food waste that is generated on the farms have been set and that the concept has the potential to develop further. Their sales turnover this year was €98,000 selling each soup at €4.97. This identifies a social enterprise model that is not only successful in reducing food waste but also addressing some social goals (unemployment), along with making an income to cover their costs. Therefore moving Gleaning to a more economically viable model may be able to make them into a social enterprise which allows for the project to be economically viable to a degree.

Gleaning networks that highly depend on the enthusiasm and self-organisation of a single individual are of course also susceptible to change of the individual's circumstances. However there are numerous organisations that work successfully on a team based on volunteers. For example the Trussell Trust FoodBank<sup>5</sup> has over 400 foodbanks in the UK which are largely organised and run by volunteers. The gleaning network in the UK has over 9000 volunteers signed up to help glean. There are often two types of volunteers, the coordinators and the regular volunteers. It is the coordinators however that ideally would be in a paid position. Many gleaning operations currently rely on two types of unpaid individuals. There are the gleaning volunteers, i.e. the people who come along to the gleaning days and help harvest the food. Then there are the gleaning coordinators, who usually give their time voluntarily (perhaps 1-2 days per week in peak season) to organise the gleaning days. To be sustainable in the long term, an organisation would ideally employ the gleaning coordinators on a part-time basis. That said, Gleaning Network UK ran fairly successfully for the best part of 4 years from voluntary coordinators.

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<sup>4</sup> For a full description of Bon et Bein please see Appendix I

<sup>5</sup> <https://www.trusselltrust.org/>

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Recruiting farmers to the gleaning project took considerable time and effort, however, with the exception of Greece<sup>6</sup>, partners did not have major difficulties in enlisting farmers ready to participate. In addition to farmers, the common 'bottlenecks' to gleaning (i.e. factors that limit the maximum amount to be gleaned) are availability of volunteers, availability of packing equipment such as crates, and the capacity of the charities receiving food.

Levels of food waste on farm are huge around the EU. Some farmers are reporting that, for example, with the use of new varieties of fruit trees that yield more uniform fruit, there will be less surplus food to glean in the future. However given the magnitude of surplus food on farms due to different reasons, there is likely to be enough surplus products for gleaning activities for the foreseeable future.

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<sup>6</sup> The project partners explained that NGOs are not generally trusted in Greece, which contributed to difficulty of finding supportive farmers

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# 6 Evaluation of potential for replication of the project

The feasibility study showed that gleaning can be organised quickly and with minimal funding, if fuelled by the enthusiasm of the organisers, and if they have access to the right shared information.

Organising a gleaning network requires stakeholder management (farmers, beneficiaries), outreach activities and organising volunteers, transport and tools.

There are different possible arrangements to organise and replicate gleaning, the following all proved to work well within the EU network:

- A motivated **individual or a small number of people**, reaching out to farmers and beneficiaries over the phone, and recruiting volunteers over social media (which can also be used to advertise gleaning events);
- Gleaning activities being organised by the **re-distribution charity** (e.g. polish Food Bank), following similar practices;
- **Managing relationships** with farmers and beneficiaries and act as a link between the two, but without getting involved in the actual gleaning activities, which are instead in the domain of the beneficiary (e.g. greek Borome)
- Gleaning activities ran as a **social enterprise** with added complexity around the activities and involving financial transactions, such as paying farmers for products, adding value (and extending life) to products by processing them into soups, jams and similar, which are sold to support the activity.

Although examining the need for gleaning in different EU member states was not a part of the feasibility study, we could conclude that all member states probably have some potential for gleaning activities:

- All member states have surplus produce on farms. The latest assessment of waste on farm (primary production) in EU estimated by FUSION is 26 million tonnes ± 19 million tonnes. Therefore, even if the priority goal of reducing these wastes is achieved, there is plenty more scope for gleaning activities!
- All member states will have some need for food donations. The question is how developed the charity food distribution network is, and how ready they are to accept such donations.

From other FUSIONS projects we know that sourcing fresh produce is particularly difficult, as they are rarely donated to charities by supermarkets and food manufacturers. Yet these are some of the most healthy and nutritionally important foods. There is a great synergy with gleaning there, the only problem being that gleaning only provides these products in seasons (can be helped with processing, like chutneys, soups, pasteurised smoothies).

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# 7 Conclusions

The 'Gleaning Network EU' feasibility study was successful in organising (or helping to organise) a large number of gleaning events across Europe, that jointly collected 30 tonnes of fruit and vegetables, that would otherwise be wasted, and delivered them to charities for redistribution.

In addition to reducing food waste and improving food security of vulnerable people, benefits included offering volunteering gleaners a positive experience, enabling their re-connection to the sources of food, and increase awareness of farm food waste issues. The high-quality guideline material produced and the developed website will promote replication in other cities and countries, and facilitate sharing of experiences between these organisations. Already there is interest from other countries not included in the pilots (for example from Czech Republic), to join the network and also organise similar events.

All member states of EU probably have potential use for gleaning activities. In all member states some food grown will not be collected by farmer, and all will have some need for food donations. Differences might exist in how developed the charity food distribution that can accept donated gleaned food.

Gleaning network themselves however advocate, that while gleaning is a great interim solution to the problem of on-farm food waste and food poverty that we have, the ultimate goal should be to **reduce** the on-farm food waste and reduce food poverty in the first place. The research carried out by gleaners shows that two strategies to reduce on-farm food waste are to value products regardless of their cosmetic state, and help farmers plan the planting stage better to reduce surpluses.

In conclusion, gleaning is a highly replicable social innovation, and the materials produced through FUSIONS should help its wide uptake across the EU member states.

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# 8 Recommendations

It is recommended that gleaning networks be considered a suitable way on ensuring at least some of the useful unharvested produce is saved from waste, and used to alleviate food poverty.

Any party interested in organising gleaning activities is strongly encouraged to read the Gleaning Handbook published through this project [<http://feedbackglobal.org/gleaning-network-eu-2/>] and join the Gleaning Network EU online community. The handbook is very engaging, comprehensive and user-friendly, and was informed by gleaning activities in UK and four regional partners, making its relevance European-wide.

During this feasibility study, some countries experienced a sudden loss of a large market for their produce, as Russia implemented a temporary ban on the import of EU food products. The authorities did not have a plan for the resulting large amount of surplus foods on farmer's fields, causing much confusion and uncertainty. This meant that in certain EU countries – notably in Belgium and Poland – farmers were hesitant about letting gleaners onto their fields to access crop they could not now sell, unsure about what that could mean for their compensation. In some cases the food was simply left to rot. A thorough review of the 2014 situation should be carried out, with shortcomings of the interim policies identified, to prepare a better framework for when a situation such as this arises again.

# Appendix I



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## Developing Bon et Bein

### WP4 – Testing Social Innovation

### Evaluation Report

**Date: 11.02.2016**

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# Colophon

Title	Developing Bon et Bein: Evaluation Report
Authors	Bart van Gogh Wageningen UR Sarah Bromley, WRAP
Keywords	food waste prevention, food donation, food preservation, IT Systems, food aid, best practice, social innovation, Supermarkets
Clients	European Commission (FP7), Coordination and Support Action – CSA Contract number: 311972
Project leader	FUSIONS coordinator: Toine Timmermans, Wageningen UR - Food Biobased Research, The Netherlands Project leader for this Deliverable: David Rogers, WRAP.
Acknowledgments	The authors would like to thank Sophie Easteal, Michael Wenborn, Elaine Charlesworth & David Rogers from WRAP for coordinating the work package/feasibility studies and Gaspard Lathoud, CSR manager McCain Foods Continental Europe and Thomas Pocher, Manager E. Leclerc Wattlelos who kindly participated in the evaluation.

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# Bon et Bein

Bon et Bien' (translated in English as "Good & Well") was established in 2015 as a social business that seeks sustainable solutions for reducing food waste and for creating job opportunities for people that encounter difficulties in entering the job market. The enterprise is described by its partners as '*Un projet intrapreneurial, une innovation collective*': an entrepreneurial project, a collective innovation.

Bon et Bien is situated in Templeuve, a village community in the north of France, close to the cities of Lille and Valenciennes. The business proposition of Bon et Bien is to collect from farms in the region vegetables and potatoes that do not meet the specifications required for the consumer market. In the prevailing rules of market these products are unsellable in the fresh market, and as a consequence are either discarded on the farms, obtained by third parties for processing into animal feed or composting, or ploughed into the soil. In either way, the product is not made available anymore for the consumer market, has lost economic value, and in worst case is lost entirely in terms of loss of nutritional value and loss of resources (land, water, energy). Bon et Bien prevents this waste of food by collecting these vegetables and process these into consumer products (fresh soups) for the retail market.

Bon et Bien incorporates a social element in its business by offering the opportunity to unemployed people to learn the skills and trade in food processing. People that experience difficulties in finding a job position are giving the opportunity to enter into a work contract for a one-year traineeship in the company. During this year trainees receive specific trainings and can obtain a certificate, which enables them to obtain a stronger basic position in the job market after finishing their traineeship in Bon et Bien.

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# Aims and Objectives

Bon et Bien has two main objectives:

1. fight against food waste; and
2. enable the professional re-integration of people who have been unemployed for a long period of time.

A third and more conditional objective of Bon et Bien is to safeguard profitability, economic sustainability and financial autonomy by means of an innovative model of co-creation. The model includes the involvement of all stakeholders in the entire value chain of the product, from farmer to consumer. By building a social business that will involve parties from the entire product value chain, Bon et Bien wants to generate impact in the community on different levels: economic, environmental and social.

Bon et Bien distinguishes target groups for:

- the sourcing of feedstock for processing: farmers and traders with a surplus of potatoes and vegetables that cannot be sold through regular sales channels due to non-conformity of the product with retail market standards
- the sales of final product: retail and food service market / consumer
- employment and training: people who encounter difficulties in finding a position in the job market

These three categories basically form the primary target groups for Bon et Bien to liaise and communicate with within a social business, sustainable enterprise context. In this process each of the Bon et Bien partners acts as intermediary for one of the mentioned target groups, from their own core activity as organisational or business entity, and their roles in Bon et Bien:

- McCain / Gappi: liaising with primary sector / supporting sourcing of farm product
- E. Leclerc: communication with the end-consumer; retail-interface between consumers and the Bon et Bien company
- Randstad: recruiting and training of trainees to be employed in Bon et Bien

Although food banks are not one of the target groups of Bon et Bien, the French Association of Food Banks (FFBA) is involved in Bon et Bien, specifically as ethical advisor. In this role FFBA's task is to safeguard the company's sustainability in terms of the balance between the company's economic, environmental and social objectives.

In co-operation with the food catering company Sodexo Bon et Bien will attempt in 2016 to expand its product supply to the food service market in France and Belgium. The co-operation with Sodexo will be valuable for Bon et Bien to establish a foothold in this market, although it is expected that this market will be more difficult for reasons that the sales revenues will be lower.

Farmers and trade companies in the region are selected on the availability of surplus vegetables on their farms, and their willingness to commit these volumes for delivery to Bon et Bien on a

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regular basis. Bon et Bien settles the arrangements with the supplying farms by means of annual contracts, which also includes the agreed price for produce will be supplied.

Products of Bon et Bien are well displayed and positioned in E.Leclerc shops in Lille, Templeuve and Watrelos. The active participation by E.Leclerc, one of the largest supermarket networks in France, made it possible to implement a market strategy that creates good exposure, amongst others by explaining to the consumer 'the story of the product' itself.

The recruiting, selection and training of personnel (trainees) is entirely organised and supervised by Randstad. Through their network of their local branches in the community in the Lille region, they are able to identify and recruit suitable candidates that are eligible for the Bon et Bien traineeship.



Bon et Bien considers the supplying farmers as partners in the development of the social business. The intention is to build long-term partnerships with these growers for delivery of the product volumes. From the start-up of Bon et Bien in May 2015 a group of 10 growers has been involved as supplier of vegetables and potatoes to Bon et Bien. Considering the plans for scaling up the operations and deliveries this number will increase to 100 in 2016. Contacts with the farmers are established by Bon et Bien and through the stakeholders that have ties with the farming community in the area Nord-Pas-de-Calais.

As social enterprise it is the purpose of Bon et Bien to involve all stakeholders that will cover the entire value chain. In the co-creation process of establishing the company the value chain from farmer, processor and retailer was involved. The next step in the full growing of the social business by Bon et Bien will be to increase the involvement of consumers as stakeholders in the process. Through social media (Facebook) Bon et Bien intends to integrate this role / function of the consumer in the value chain of the product.

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# Background

Bon et Bien started as a co-creation initiative in 2012 by three private partners (McCain, E.Leclerc en Randstad France) and two non-governmental associations (La Fédération Française des Banques Alimentaires<sup>7</sup> (FFBA), and le GAPPI<sup>8</sup> (Groupement d'Agriculteurs Producteurs de Pommes de terre pour l' Industrie)). Since then Bon et Bien has developed into a social business with grassroots in the farming sector and retail industry in the region Nord-Pas-de-Calais (in the north of France). While each organisation addressed the issue of food waste from their own professional and societal background, they all wanted to grasp the underlying causes of the loss of non-consumed fresh food products on the farms (mainly potatoes and vegetables). The social aspect of the business is directly related to the region's relative high rate of unemployment (13,1%<sup>9</sup>). The partners acknowledged the necessity to link food wastage with existing societal deficiencies, more specifically the burden or negative effects of food waste on the environment, the food insecurity of social-economically vulnerable groups, and the unemployment of people that are at great distance from the labour market due to the lack of education and the training of professional skills.

Through a stakeholder workshop 2012 the five partners set a collective agenda for action to curb food waste on farm level. The outcome of this workshop was the gleaning pilot project in 2013. The pilot served as a way to liaise with farms on the food waste topic, and to gain insight in the scale of the problem (volumes of potatoes and vegetables discarded or not used for consumption purposes). The pilot project also formed a stepping stone in the co-creation of a social business by the partners, that would ultimately substantiate the venture from a business perspective but also from a societal point of view. The latter aspect concerns diminishing the negative environmental effects from food waste, and the creating of jobs for a group of unemployed people who have difficulties in finding a connection with the job market.

Within the co-creation model the partners started with a gleaning pilot project. From this pilot the partners concluded that gleaning as a social business solution would only have limited social and environmental impact because of the short period in which gleaning would actually take place. As a solution for reducing food waste it was therefore not considered as sustainable. The alternative to set up a sales outlet of deformed (strange) vegetables wasn't deemed sustainable either because the consumer will always select the most perfect product that is available. The partners then developed the concept further into what today is Bon et Bien: a social business that collects from farms vegetables and potatoes that would not be sold in the consumer market due to non-conformity with market standards or product defects. These products are then processed into soups, to be sold in the E.Leclerc supermarkets in and around the city of Lille.

Since the official start of Bon et Bien in May 2015 the social business has been successful in organising the entire chain from collection, processing, marketing, and sales. In addition the company has developed an organisational structure that supports people, that previously were unemployed and have limited professional skills, to learn skills and obtain working experience in a business environment. The structure consists of a job-rotation scheme in which the selected employees work in the company for one year, and during this year receive training in professional skills for food processing. The programme is developed in co-operation with Randstad and enables

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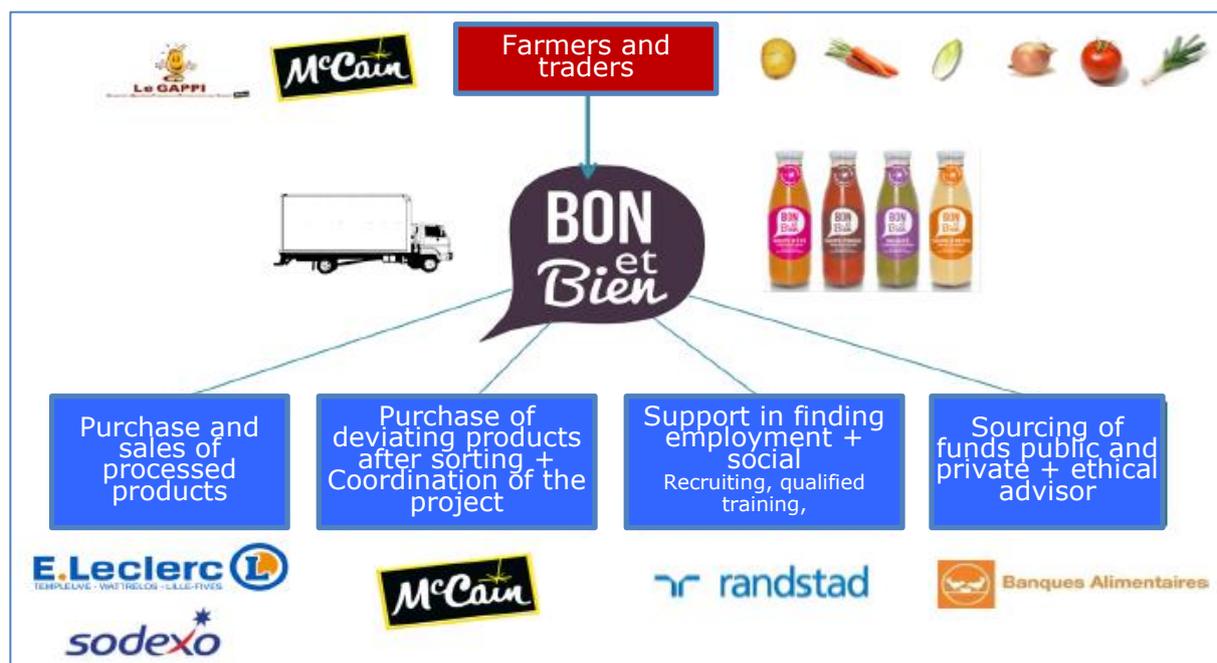
<sup>7</sup> French Association of Food Banks (FFBA)

<sup>8</sup> Association of growers of potato for industrial processing

<sup>9</sup> Source: [www.insee.fr](http://www.insee.fr). For France the unemployment is calculated at 10,8%

the trainees to obtain both a practical experience on the job and a theoretical background in food processing.

The first year of production is yet to be completed, but already Bon et Bien has expressed its ambition and plans to scale up its operations in the year 2016. In this year shareholders and management intend to invest in increasing its processing capacities to realise a larger turnover in sales of its product in the retail and food service market, to create extra job positions in the company for professionals and trainees, and to expand its sales outlets to other retail stores and to the food service sector.



Graph 1 Organisational structure of Bon et Bien

Source: Bon et Bien/McCain, 2016

The organisational structure, including the connections with the partners in Bon et Bien is explained by the schematic overview in Graph 1:

- Vegetables and potatoes are collected by Bon et Bien from farms and trade companies in the region Nord-Pas-de-Calais. McCain and Le Gappi have a supporting role in identifying and liaising with these suppliers.
- Produce is collected on a weekly basis from these suppliers by Bon et Bien and then transported by truck to the processing facility in Templeuve. After reception the product is stored and then processed into fresh soups.
- Product of Bon et Bien is purchased by E.Leclerc (retail market) and Sodexo (Food service market) who sell it to their customers.
- McCain purchases potatoes that are collected from the farms by Bon et Bien for the flake processing line in their factory<sup>10</sup>.
- Randstad supports in the recruiting of personnel (trainees) and in coordinating the training programme for the trainees, enabling trainees to obtain a qualification certificate. After finalisation of the traineeship Randstad guides Bon et Bien trainees in finding a new job position.

<sup>10</sup> McCain purchase these potatoes from Bon et Bien only in the first year of operation as an extra source of income for Bon & Bien.

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- The French Association of Food Banks has a role in obtaining public and private funds that support the Bon et Bien financial portfolio. In addition the FBBA acts as ethical advisor and partner in the co-creation process.

In addition their respective roles, both McCain and E.Leclerc form the driving forces in the co-creation process. In this McCain performs an overall co-ordinating role, from their experience in developing social business in Colombia, as well as from their corporate responsibility strategy to invest in local economies and communities to apply social business modelling for alleviating poverty.

Acting shareholders of Bon et Bien are McCain, E.Leclerc and Randstad. Each of these partners has provided an equal share in the start-up capital of €300.000 as an investment loan. The condition is that this start-up loan will be paid back within a period of 5 years, with no interest and no dividend. The objective is for Bonn et Bien to be financially autonomous.

# Implementation

Materials for informing consumers have been developed to tell the story about the origins of the product, about the background of food waste and about the social and environmental impact of the Bon et Bien enterprise. Communication materials that have been developed so far intend to illustrate the story to the public, to increase awareness on the issue food waste, and to motivate customers to buy the product. For example, as part of a European campaign on the reduction of waste Bon et Bien introduced an internet quiz in which participants were asked to give answers to how much food waste is reduced by the Bon et Bien products. Besides the fact that this form of advertisement created positive exposure of the Bon et Bien products, the format made it possible for consumers to link the product directly with a specific volume of product that is processed (e.g. leek, carrots, onion, potato) and that otherwise would have been wasted for human consumption.



Graph 2 Material for marketing / communication

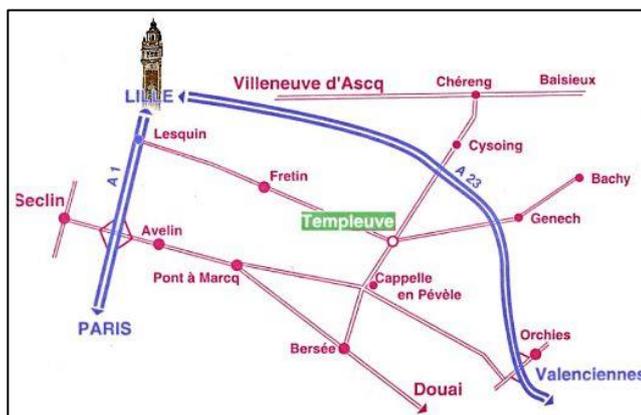


Graph 3 Bon et Bien Facebook advertisement

In order to understand in what location a similar initiative could take place we take a look at the location of Bon et Bien.

Nord-Pas-de-Calais is the region with the second-highest unemployment rate in France (13,1% compared to the national unemployment rate of 10,8%). Agriculture, in association with the food

industry, is a main economic activity in the region and covers two thirds of the region. Nord Pas de Calais contains 16 000 farms, representing 30 000 agricultural workers, and is the biggest French regional producer of amongst others potatoes and a variety of horticultural product. The combination within the region of high unemployment and the importance of agriculture and food industry as main economic activity formed the breeding ground to address food waste within this social and economic context.



Source: [www.ville-templeuve.fr](http://www.ville-templeuve.fr)

The production facility of Bon et Bien is located close to the commercial centre in Templeuve, near to the E.Leclerc supermarkets in Templeuve, Lille and Wattrelos in the region Nord-Pas-de-Calais. Being close to the main market outlets has created an advantage for the distribution of final products to the shops.

Partners of Bon et Bien chose the method of co-creation as a way to establish the social business concept by:

- involving multiple partners from the product value chain with varying backgrounds; and
- gaining support from the partners' respective organisations.

The co-creation method has resulted in the partnership between the organisations, and as such made an important contribution to the success of Bon et Bien so far. The involvement of partners from both the profit and the non-profit sector made it possible to set out a path that brings together the respective business and social agenda's and combine these in a new not-for-profit business organisation.

Starting point for any (group of) organisation(s) that intends to set up a similar intervention is that there is a positive business case that will enable the process of collecting and processing fresh produce from farms and other supplying companies, and that the organisations will set a collective agenda. The condition for the success and, generating revenues from sales in the consumer market.

Staff personnel is required to have good knowledge of food processing technology, as well as on the regulations and procedures for safeguarding food quality and food safety (ISO, HACCP).

The basic principles of the process are relatively easy to learn to trainees who therefore do not require a background in industrial food processing.

A first and absolute requirement is that the intervention has to be sustainable on the economic aspect. In addition there are a number of organisational and contextual preconditions that have to be met for the good implementation of the intervention:

- Top-level support: before implementation of the collective agenda and entering into the process of co-creation it is important to clear governance and gain support from the top management of the respective partners.
- Mobilise stakeholders: engage, inform and involve the respective stakeholder organisations in order to receive support and commitment in the day-to-day operations of the social business.
- Definition of a collective agenda: the collective agenda is more important than the agenda's of the individual partners and should be appreciated as such.
- Pivot in the process: whereas collective action is important, you will need one party that acts as intermediary and driving force in the process of co-creation.

Knowledge and vocabulary sharing: the process of co-creation requires the sharing of knowledge and vocabulary between the partners in the process. Parties from the non-profit sector will have to adapt to the rules of business, while profit organisations need to integrate non-commercial interests and goals in their business mind-set.

**Implementation of the concept of Bon et Bien was developed in 3 phases detailed below:**

<b>Phase 1: Gleaning</b>		
<b>Activity:</b>	<b>Purpose/result:</b>	<b>Timeline:</b>
a) identifying stakeholders	<ul style="list-style-type: none"> <li>• Involve stakeholders from the entire chain in the process of co-creation (farmer, processor, retail)</li> </ul>	
b) stakeholder workshop	<ul style="list-style-type: none"> <li>• inception of the idea for the gleaning project</li> </ul>	Dec- 2012
c) gleaning pilot	<ul style="list-style-type: none"> <li>• Pilot for the co-creation model</li> <li>• Inventory of the food waste problem at farm level</li> <li>• Developing an activity as means to employ people who are at great distance from the labour market</li> </ul>	Jun-Nov 2013

<b>Phase 2: Social business Bon et Bien</b>		
<b>Activity:</b>	<b>Purpose/result:</b>	<b>Timeline:</b>
a) stakeholder workshop food waste and social business	<ul style="list-style-type: none"> <li>• follow up on the gleaning project</li> <li>• identify link food waste and social business</li> <li>• conception of the idea for Bon et Bien</li> </ul>	Dec- 2013
b) Development concept Bon et Bien	<ul style="list-style-type: none"> <li>• supporting local employment in Nord-Pas-de-Calais</li> <li>• reduction of food waste</li> </ul>	Jan-2014 - Apr- 2015
c) Co-creation	<ul style="list-style-type: none"> <li>• Create internal awareness and support, commitment from top (CEO) level</li> <li>• Create awareness in the own organisations</li> </ul>	Jan-2014 - Apr-2015
d) Start-up operation Bon et Bien	<ul style="list-style-type: none"> <li>• Collection vegetables (weekly)</li> <li>• Processing / production fresh soups</li> </ul>	May 2015
e) Start-up operation Bon et Bien: collection potatoes	<ul style="list-style-type: none"> <li>• In the first year McCain takes unmarketable potatoes from Bon et Bien for their flake production. This is done in support of the start-up of Bon et Bien for the company to generate some extra cash, and will be stopped after the first year</li> </ul>	May 2015 - Apr 2016

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<b>Phase 3: Upscaling</b>		
<b>Activity:</b>	<b>Purpose/result:</b>	<b>Timeline:</b>
a) Increase social and environmental impact	<ul style="list-style-type: none"> <li>• Stronger involvement of consumers in the co-creation of Bon et Bien (a.o. through social media)</li> </ul>	2016-...
b) Increase production capacity	<ul style="list-style-type: none"> <li>• Investment in processing capacity</li> <li>• Increase suppliers volume</li> <li>• Expand number of market outlets retail</li> <li>• Develop market outlet food service sector</li> </ul>	2016-...

# Impact

Table 1 gives an overview of the impact that has been realised in the brief period of time after the start of Bon et Bien in May 2015. Consistent with the 3 pillars of the social enterprise Bon et Bien assesses impact from an economic, environmental and social perspective. The table also shows the prognosis for 2016, linked with the investment plan to increase the production capacity and the sales volume. The target for 2020 is to have realised a reduction in food waste with 700 tons of vegetables and potatoes and to provide work for 30 people, of which 24 persons on a one-year contract.

**Table 1 Impact Bon et Bien**

<b>Key figures</b>		<b>2015</b> May-Dec	<b>2016</b> prognosis	<b>2020</b> target
<b>Production</b>				
capacity	ltr.	80.000	200.000	700.000
prod. Volume	ltr.	30-40.000	150.000	600.000
<b>Impact:</b>				
<u>economic</u>				
sales volume	ltr.	21.000	80.000	330.000
sales price	ltr.	4,67	4,67	4,67
sales turnover		€ 98.000	€ 373.333	€ 1.540.000
sales outlets		5	>10	
<u>environmental</u>				
food waste reduced	kg	17.000	200.000	700.000
<u>social</u>				
staff personel	fte	2	2	6
trainees (1-yr. contracts)		3	6	24

In the case of positive net revenue, profits are retained and invested into the business to increase social and environmental impact. Bon et Bien does not pay-out dividend to shareholders.

For the year 2016 plans are:

- Scale up of sourcing: to scale up in the number of supplying farms from 10 in 2015 to 100 growers in the coming year 2016.
- Scale up sales outlets: Also the number of sales outlets will be increased, in particular by extending to other E.Leclerc stores in France.
- Enter a new market: in 2016 the first deliveries are foreseen of product to the food service sector. The first steps for this market diversification are being investigated in close co-operation with the company Sodexo.

Increase in sales turnover: as a result of these efforts the target for the total sales in 2016 is set at 80.000 litres.

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# Lessons Learnt

For which problem was the intervention developed? Please describe nature, gravity, geographical spreading and consequences.

20 percent of the potatoes and vegetables that are grown in the fields for the fresh market and food processing industry does not reach the consumer. This percentage is estimated by McCain, based on their experience in the farming sector in the region Nord-Pas-de-Calais in northern France, and a pilot gleaning project they co-ordinated in 2012 in this region. Part of this product is sold to the animal feed industry and processed into cattle feed, part is left in the fields. The considerable volumes not only have an impact on the economic sustainability of the farming business, but also creates an environmental impact as a result of the loss of resources that are used in the process of production and the GHG emission of product that is left to rot in the field. From a social and ethical perspective the wastage of food and hence the loss of nutritional value is finding a growing opposition as well.

For the partners in the consortium of McCain, E.Leclerc, Randstad, Le Gappi and the Federation of Food Banks this gave reason to set-up an initiative in the region where they operate: Nord-Pas-de-Calais. The gleaning pilot project gave insight in the potential product volumes of potatoes and vegetables that are left on the farms. The pilot also showed the power and potential of involving people that have difficulty with finding access to the job market, in recovering food. This created an important to set up a business concept that would tackle two obstinate issues in the region in a sustainable way: food waste and unemployment.

The ambition of the consortium is to develop a new business concept that will tackle some of the underlying causes of food waste and unemployment:

- The consumer desires a vegetable, fruit or potato that is perfectly shaped. Product defects or deformities are not accepted by the consumer and hence such products are rejected in the value chain. These products are either left in the fields and ploughed into the soil, or processed into cattle feed, composted, or thrown away. In all these cases nutritious food is no longer valued and processed for human consumption.
- Part of the large group of unemployed people in the region lacks professional education or qualifications for working in the food processing industry. A lack of skills and working experience keeps these people at long distance from the labour market.

Bon et Bien was established as a business that addresses both issues as a commercial business with a social profit.

Bon et Bien has developed an alternative supply chain for potatoes and vegetables that are deemed unsuitable for the fresh market or are unfit for largescale industrial processing. The nutritional value of these products is preserved by processing them into ready meal products (soups). Selling points of the new product is the quality (taste), and the social aspect of buying and consuming a local product.

The company provides jobs to personnel that has no working experience, qualifications or proven skills, and gives them the opportunity to follow a one year training programme. The programme consists of theoretical and practical (on-the-job) training. After one year the trainees receive a certificate which enables them to find their net job in the food processing industry.

The impact so far shows that the first steps to reduce food waste that is generated on the farms have been set and that the concept has the potential to develop further. The opportunity to

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employ people with little or no professional background on a one-year training contract has proven successful as well.

The following is a summary of elements that have been considered by the partners in Bon et Bien as effective elements in this intervention that contribute to reaching the set goals. These are presented as key learnings:

Key learnings:

- **Create facts first:** in the case of Bon et Bien the gleaning project provided valuable information and insights on the size and scope of food waste on the farms, and with that the economic and environmental impact.
- **Internal before external:** this is about creating awareness by engaging with and mobilise each stakeholders organisation first, before implementing external communications on the initiative.
- **Set clear and measurable goals:** set clear goals internally and externally what you intend to deliver with the initiative
- **Small success stories can lead to big impact**
- **Create win-win for each partner:** you have to create a win-situation for each of the partners involved
- **Share vocabulary / knowledge:** partners have to share the knowledge and vocabulary in the co-creation process. Social partners have to assimilate the language and the importance of the economic value of a social business. Private (business) partners will need to adopt the aspects of generating social and environmental impact that may lie beyond their primary scope of business.
- **Clear governance structure:** obtain support from the top-management (in case of a multinational partner both on national and international corporate level).
- **Economic sustainability:** ensure sustainability on the economic aspect of the social business
- **Customer partnerships:** reach out to the consumers: use press and social media to inform and involve consumers in the co-creation process

There are also a number of key challenges to attend to when setting up a similar approach and intervention:

- **Set a collective agenda:** the collective agenda of the partners involved is more important than the individual agenda
- **Create budget:** make available or obtain financial means to employ a project manager and office space to enable mobilising the locomotive that you need to start-up and manage the co-creation process

**Appoint an intermediary party:** a party is needed that acts in the co-creation process as an intermediary between the partners, and that is able to create alliances between the partners

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## Social Innovation Projects on Food Waste Reduction Case Study 'Bon et Bien'

### Colophon

<i>Name organisation:</i>	Bon et Bien
<i>Country:</i>	France
<i>Telephone:</i>	-
<i>Website</i>	<a href="http://bonetbien.fr/">http://bonetbien.fr/</a>
<i>Contact person(s)</i>	Gaspard Lathoud, CSR manager McCain Foods Continental Europe Thomas Pocher, Manager E. Leclerc Wattlelos
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# 12 Appendix V- Social Supermarkets Individual Evaluation Report



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# Advancing social supermarkets across Europe

**WP4 – Testing Social Innovation**

**Evaluation Report**

**Status: draft**

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**Reducing food waste through social innovation**

FUSIONS EU project is supported by the European Community's Seventh Framework Programme under Grant Agreement no. 311972.



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# Colophon

Title	Advancing social supermarkets across Europe: Evaluation Report
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Keywords	food waste prevention, food donation, social supermarkets, food aid, best practice, social innovation, food poverty
Clients	European Commission (FP7), Coordination and Support Action – CSA  Contract number: 311972
Project leader	FUSIONS coordinator: Toine Timmermans, Wageningen UR - Food Biobased Research, The Netherlands  Project leader for this Deliverable: David Rogers, WRAP.
Acknowledgments	The authors would like to thank Sophie Easteal, Michael Wenborn, Elaine Charlesworth & David Rogers from WRAP for coordinating the work package/feasibility studies and Felicitas Schneider & Silvia Scherhauser (BOKU University), Clementine O'Connor, Agathe Derain, Manuela Gheoldus & Hortense Montoux (BIO by Deloitte) who undertook the feasibility study.

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# 1 Introduction

## 1.1 Background to FUSIONS

Under the EU FUSIONS programme<sup>1</sup>, seven feasibility studies were implemented to test socially innovative projects across Europe. This evaluation report assesses the outputs from one of the seven feasibility studies, which reviewed Social Supermarkets across Europe. Social supermarkets are one of the forms that facilitate re-distribution of surplus food donated by food retailers, manufacturers and hospitality sector, and sells it at heavily discounted prices to low income, vulnerable and food insecure individuals. FUSIONS are administering an evaluation of the feasibility studies.

## 1.2 Aims of the Evaluation Report

The aim of the evaluation is to identify the projects that are most applicable for replication and scaling up, and to support the planning of replication approaches. This document provides the findings from an evaluation of the feasibility study entitled 'Advancing Social Supermarkets across Europe', and impartially considers the success of the study which was undertaken in 2014/5.

This report is part of a deliverable within FUSIONS Work package 4, which sets out to test & evaluate the impact of social innovation on reducing food waste detailing the results and impacts of the implemented feasibility studies.

The 'Advancing Social Supermarkets across Europe' feasibility study was an exception amongst the 7 feasibility studies, in that it did not include any practical implementation (for example a pilot), but consisted instead of a **desk-based review** of existing supermarkets, their setting-up, on-going operations and the difficulties they face.

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<sup>1</sup> <http://www.eu-fusions.org/>

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## 1.3 Background to the Advancing Social Supermarkets feasibility study

The aim of the feasibility study was to facilitate the expansion of the social supermarket concept into new areas or countries by analysing the experience in several Member States, identifying different models and good practices. The feasibility study was carried out by BOKU - University of Natural Resources and Life Sciences, Institute of Waste Management from Vienna, Austria and BIO by Deloitte, France.

Social supermarkets are one of several possible models of re-distributing surplus food, donated by retailers and food manufacturers, and making it available to individuals in low income groups. Other possible models of redistribution are food pantries (charitable institutions who give surplus food to beneficiaries for free; in some countries otherwise known as food banks), and soup kitchens (also known as people's kitchens, which give away prepared meals). Any of these distribution models can be supported warehouse style redistribution centres (known as food banks in USA and many European countries) that accept and organise donated food, then pass it on to charitable outlets).

The main distinction is that social supermarkets sell food items (as opposed to giving them away for free), but at a heavily-discounted price. The discount is typically between 70% to 90% compared to the regular selling price. Social supermarkets often offer a wider choice of products.

The products that social supermarkets provide often have labelling errors or a short remaining shelf-life. They include everyday goods such as fruits, vegetables, bread and dairy products as well as personal hygiene products and detergents.

As well as contributing to food waste prevention, social supermarkets have several additional social benefits. Social supermarkets provide food at a low cost to those who are at risk of being food insecure. During financial hardship, it is the food bill that is easily squeezed as it is an area that offers flexibility (Goode,2012:16)<sup>2</sup>. By reducing the food budget, social supermarkets provide an important opportunity for low-income households to meet other expenses, such as utility bills. Additionally social supermarkets provide practical support to those who have particular challenges (e.g. long-term unemployment). Many social supermarkets have a café at the side of the main shop, which encourages social interactions, and several provide support and advice (for example confidence building and CV writing). Social Supermarkets are thought to reduce some of the stigma attached to relying on food donations. This is due to social supermarkets allowing for individuals to perform and engage in normal consumer

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<sup>2</sup> Goode, J. (2012) 'Feeding the family when the Wolf's at the door: The impact of over-indebtedness on contemporary foodways in low-income families in the UK' *Food and Foodways: Explorations in the History and Culture of Human Nourishment*, Vol. 20, No.1, pp.8-30

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behaviour; in that the supermarket items are purchased: rather than given as a charitable act. The act of purchasing allows for dignity to be retained and for individuals to participate in consumer behaviour that they may have otherwise been excluded from due to being on a low income. Social supermarkets therefore bridge the gap between traditional food redistribution and retailing.

The first Social supermarkets in Europe were established in France in the 1980s. The feasibility study found supermarkets were operational in 8 member states (France, Germany, Austria, UK, Belgium, Spain, Luxemburg and Romania), but it is possible that some are operational in other member states also. Social supermarkets are also common in Switzerland. The feasibility study analysed in detail the operation of Social supermarkets in 4 of these member states (France, Germany, Austria & UK) plus Switzerland. Switzerland, France, Germany and Austria are thought to have the highest prevalence of Social supermarkets (one social supermarket for every ~60-100 thousand people), with 700 Social supermarkets operating in France.

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# 2 Methods

## 2.1 Feasibility study methods

The feasibility study undertook the process of literature review, interviews and site visits.

On the basis of literature review, a typology of social supermarket was developed, highlighting different models of social supermarket in operation across the EU. A few social supermarkets were selected as case studies of good practice. A SWOT (strengths, weaknesses, opportunities, threats) analysis was carried out for each case study.

The study interviewed 4 individuals: 2 working in management of one or several supermarkets, as well as 2 academic experts.

## 2.2 Evaluation method

The “Advancing Social Supermarkets across Europe” study evaluated, as social supermarkets are recognised to have a strong potential for replication across EU where they are not yet as prevalent. The evaluation of the feasibility study was carried out by three specialists with food waste, sustainability and social science backgrounds, based on the report submitted to the FUSIONS Share Point in July 2015, additional research, a site visit to a social supermarket in UK and conversations with feasibility study handlers.

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# 3 Evaluation of project results

This section evaluates key findings from the 'Advancing social supermarkets in Europe' feasibility study. As no pilot was implemented specifically for this project (it was rather a desk-based feasibility study), the key findings are summarised and their significance for evaluating social supermarkets is assessed. The most important findings from the study are the recommendations for existing social supermarkets and for facilitating their replication (summarised here from various parts of feasibility study, and presented in Chapter 5 of this report).

## 3.1 Key findings

The study estimated over 1500 social supermarkets are in operation in the five selected study countries (Austria, Germany, Switzerland, France & United Kingdom) with others known to operate in Belgium, Spain, Luxembourg and Romania.

There are different models of social supermarket operating in different countries, but access to social supermarkets is typically restricted to registered individuals in low income groups. Typical recipients include retired people, single parents, students and long-term unemployed.

Data is not available to show the set-up and operating costs of a social supermarket, which is especially important when considering replication. We were able to obtain operational costs of two social supermarkets in UK, who report running costs to be in the order of 12,000 to 14,000 EUR per week (including some payment for the food, and running an advanced personal development programme, which may not be necessary in other cases).

In addition, most of the existing social supermarkets & umbrella organisations do not communicate performance data on a regular basis.

Social supermarkets in Austria were studied in most detail, but even there, very rudimentary data exists for Austria on the amount of food waste prevented by social supermarkets. One study for example suggests that over 500 tonnes of food are redistributed by one group of social supermarkets each year. There are many small outlets (less than 10,000 Euro per annum) and a few with a sales total of over 100,000 Euros per year. According to Leinbacher and Holweg<sup>3</sup>, the average revenue of a social

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<sup>3</sup> Leinbacher & Holweg (2010) Studie der Sozialmärkte in Österreich. Vienna: ECR-Workgroup on Social Sustainability and GS1.

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supermarket was 46,000 Euros per annum. By way of comparison, the value of retail sales (excluding sales tax) in Austria in 2011 for the largest three food retailers was €3.58 million per outlet.

In the case of Austria, approximately 92% of the donated food was distributed to clients, which we assess is a great achievement and a real contribution to reducing waste which would otherwise go for disposal or animal feed. However, further losses will undoubtedly occur at the household stage due to the nature of some of the foodstuffs e.g. overripe & blemished fruit, and undoubtedly not all surplus food arising at the retail and food production stages will be appropriate for redistribution via social supermarkets.

The sale of additional surplus non-food items (e.g. personal hygiene products & detergents) is mentioned for Austrian, UK, German & Swiss social supermarkets. This enables the organisation to have a wider role in waste prevention rather than just food waste and also increases the attractiveness of the range of goods offered to the clients. These products are also likely to have a longer shelf-life than non-staple food items.

One point which the study found to be particularly beneficial, and increasing the importance of the social supermarket model in comparison to other food redistribution models, was that many social supermarkets provided **wider social benefits** by co-locating additional services. These have included: advice from on-site social workers, interview & CV preparation, money management advice and cooking / healthy eating lessons as well as social interaction via in-store cafés.

## 3.2 Recommendations from feasibility study

The main output from feasibility study are six recommendations (for existing social supermarkets), and a set of key points for replication for each country.

### **Recommendations for existing social supermarkets**

The following six main recommendations are mostly aimed at existing social supermarkets (but are to a degree also applicable to emerging social supermarkets):

- Social supermarkets benefit from forming **umbrella networks**, ideally one per country. Social supermarkets that are under an umbrella network were found to be in a stronger position than those operating alone. Benefits of being a part of an umbrella network include:
  - development of partnerships with the food industry and therefore encouragement of food donations;
  - provision of support and training to staff;
  - facilitation of sharing of good practices;
  - collection of evaluation data;

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- stronger lobbying for funds.
  - Many social supermarkets heavily rely on their **local connections**, such as receiving funding and premises from local authorities, offering services in collaboration with local social services (who also help identify beneficiaries), and receiving donations directly from local shops and producers, so it is important for existing and new social supermarkets to strengthen these relationships (more guidance and examples of how to do this would be beneficial).
  - Provide **additional social benefits** to the beneficiaries in addition to food at a low cost. Social supermarkets have a great potential to become and remain a focal point in the social life of vulnerable and excluded beneficiaries and are therefore ideal vehicles for social integration and training.
  - Working closely with **volunteers and workers** – they are key for the consumer experience and need to receive ongoing training, support and encouragement, and be involved in the decision making to ensure their engagement.
  - **Improve measurement of impacts** – there is surprisingly little information on the impacts. However having some data could improve the position of social supermarkets in recruiting support from local and national governments, business and donors.

### 3.3 Evaluation

The project report provides the following list of examples of indicators that could be useful when considering the set-up, operation and evaluation of social supermarkets.

- Number of other social supermarkets in the area;
- Set up costs (and how these were covered);
- Time needed to plan and set up the social supermarket;
- Operational costs per month (and how these are covered);
- Revenues per month (including from the shop, cafe, etc);
- Average discount (%) on price of items (compared to regular supermarket price);
- Floor area and floor breakdown;
- Number of customers / day;
- Number of members / month;
- Number of coupons used ;
- Number of paid staff (employees) and staff time (e.g. average number of employee hours / week);
- Number of management staff and time;
- Number of volunteers (and particularly number of volunteer hours per week, because many work part-time);

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- Number of supplying organisations (and where they are in food chain (e.g. farms, manufacturers, retailers, restaurants, households));
  - Quantity of food waste diverted/sold;
  - Value of food waste diverted;
  - Percentage of food redistributed based on food received;
  - Number of training sessions per year;
  - Number of training participants per year;

Qualitative analysis: feedback from customers/employees/volunteers.

However, little actual data is available on many of these indicators in the study – the project being more qualitative in nature.

WRAP was able to obtain some of this information for the Community Shop social supermarket in UK:

- Set up costs: ~£260,000 or more for a retrofit of an existing building. Community shop aim to cover this by donations from the local authority and/or charitable trusts
- Operational costs per month: ~28,000 for wages, electricity bills, transport, training and travel, etc. (not included cost of food, which is donated for free, rent and depreciation). This is covered by sales of products at the discounted rates.
- Number of management staff and time: 9 full-time staff equivalents, all staff are paid (no volunteers)
- Number of members: 500 at any given time. They are able to procure about 70% of their food requirements through Community shop.
- Percentage of food redistributed based on food received: nearly all food is either sold or used in the café for hot meals.

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# 4 Evaluation of the project implementation

This section is different from other FUSIONS projects, as there was no pilot carried out under FUSIONS, but instead the existing implementations of a social supermarket in the UK, France and Austria were analysed.

The feasibility study itself was, perhaps unsurprisingly, implemented very quickly due to the experience of the individuals working on the study and the fact that it was largely desk-based in nature.

After the selection of the project at the beginning of 2014, the research work was commenced in early 2014. A draft report was submitted in December 2014 and this was reviewed by IFR & WRAP. Further improvements were suggested to style and content and the final report was received in July 2015.

## **Example of an implementation of a social supermarket in UK**

There are two social supermarkets (called "Community Shops") in the UK, set up by an organisation called Company Shop.

Company Shop already worked in a similar fashion to a social supermarket, selling discounted surplus food, but only to employees of certain food manufacturing sites and low-income workers. Company Shop therefore launched two pilot social supermarkets, one in Goldthorpe, Yorkshire, and one in London to explore extending their business model into the charity remit addressing unemployed people in need.

The objective for operating costs is to be commercially self-sustainable, similar to the previous Company Shop.

Products are usually sold at around 30% of the regular retail price.

Each Community Shop employs a combination of skilled positions; two mentors; a chef; and a retail manager. Additionally some members of Community Shop can undergo training that enables them to be peer mentors; however this is not a paid position. These individuals offer guidance and support to other members of Community Shop and are supported by the two paid mentor employees.

About two-thirds of the surface area of the stores is dedicated to retail; the last third is a café. This allows a chef to cook cheap fresh meals every day and to provide cooking classes (in particular for products that are available on the shelves that members may not be familiar with, therefore aiming to provide some nutritional benefits). The café also encourages social interactions between members.

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Members must engage in a personal development plan ("The Success Plan"), supported by mentors employed by Community shop. Social services/trainers visit the café so that members can meet with them in a familiar and secure environment. The main aim of the success plan is to equip participants with an skill, whether that is building confidence or writing and improving their CV. Within the first six months of operating the first Community Shop, 423 people benefited from a personalised development plan. About 1 in 5 has subsequently moved into employment. Membership is limited to 6 months only, and can be renewed in exceptional cases.

As of 2015, the Goldthorpe shop is achieving self-sufficiency in terms of operational costs, but the London supermarket is not yet self-sufficient.

Company Shop plans to open 18 more Social Supermarkets, but this largely depends on strong support by the local authority to cover start-up costs.

Social supermarkets in UK are complimenting much more numerous food banks that distribute food for free. The main differences between the two models are that Community shops embedded the re-employability programme in their operations from the start (beneficiaries are not able to access discounted food unless they also become evolved in the personal development programme).

Social supermarkets still operate a commercial transaction, which in UK enables them to run the personal development programmes and be financially self-sufficient in the long-run, which is facilitated also by their link to the parent Company Shop. In this sense, social supermarkets operate in the space between the completely free food donations, and ordinary consumer transactions.

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# 5 Evaluation of project sustainability

This chapter again is slightly different to its counterpart chapters in other evaluation reports, as the project itself (the desk-based review of social supermarkets) is not intended to have a prolonged activity. Instead we cover longevity of the reviewed social supermarkets, and particularly any risks that might jeopardise their on-going operations.

Risks to longevity of social supermarkets are varied but may result from technical and logistical facilities, volunteer availability or product sourcing and supply.

A proportion of social supermarkets (13%, Austria) did not have their own vehicle and therefore depend on delivery from the donors, or volunteers using their private vehicles. This limits the supply of products and the independence of the social supermarket.

Only 50% of social supermarkets surveyed in Austria had their own storage for cooling and freezing although support from companies and individuals was noted to sometimes include the use of cooling/freezing area. The use of cooling and freezing both enables a wider range of donated items to be accepted and should help to reduce deterioration of fresh products such as fruit and vegetables.

The operation of social supermarkets is hugely dependent on volunteer support (e.g. 60% of staff in Austria, 60,000 volunteers in Germany). This presents a risk but also an opportunity for minimising staff costs through a well-managed operation. The two main operating expenses of social supermarkets in Austria are staff costs and occupancy costs although these are not quantified. Occupancy costs can often be defrayed by provision of local authority support or premises although this is vulnerable to any future tightening of public expenditure.

The difficulty of sourcing good quality fruits, vegetables and dairy products was identified by social supermarkets in France. There is a need to ensure that the product offer is suitable on a nutritional basis all the year round and is attractive to the clients to ensure high levels of participation.

To summarise, existing social supermarkets are expected to continue operating, but face risks in forms of:

- loss of donations due to changes in donors business operations or spoilage of donations due to lack of proper transportation and storage facilities;
- loss of funding and/or facilities;

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- loss of volunteers.

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# 6 Evaluation of potential for replication of the project

The feasibility study only focused on Austria, Germany, Switzerland, France & the UK as these were the main countries where social supermarkets were present.

Over 1500 social supermarkets were in operation in the five countries studied in 2013 indicating that there was a large potential for replication across the EU-28. This is perhaps only limited by the national context since, in 2013, there were 700 social supermarkets in France and 640 in Germany but only 2 operating in the UK. However, the rapid emergence of food banks in the UK indicates that change is possible in a relatively short period of time. Since 2004, the number of food banks in the UK has risen from 1 to 445 helping over 1 million people in 2014-5 (Trussell Trust, 2015<sup>4</sup>).

Clearly the timescales for planning and start-up are clearly longer than for some other social innovation projects although not insurmountable.

The scale of the need in the five countries studied is not defined so it is not clear whether countries, for instance, with alternative delivery mechanisms such as an extensive foodbank network are more or less likely to require a network of social supermarkets. However, it should be noted that the social supermarket model provides long term support through permanently discounted pricing unlike foodbanks which provide emergency food aid e.g. through vouchers for 3 days-worth of food items.

In order to replicate social supermarkets successfully, the following aspects need to be in place to ensure their establishment and operations. These are briefly outlined below.

## 1. **Financing**

There are little data available to show the set-up and operating costs of a social supermarket. Community Shop social supermarket which opened in London, UK reportedly received an investment of £1 million with a building and discounted rent rate provided by the local council<sup>5</sup> (however the real estate prices of London are not representative to situation elsewhere).

It is therefore recommended that set-up and operational costs are reported by the existing umbrella organisations to help inform their counterparts where there is no/limited social supermarket provision.

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<sup>4</sup> Trussell Trust, 2015, [www.trusselltrust.org/stats](http://www.trusselltrust.org/stats)

<sup>5</sup> Ft.com, 15 December 2014, Social supermarket to sell surplus food at discount to poor, available online at <http://www.ft.com/cms/s/0/90b1bb36-8231-11e4-ace7-00144feabdc0.html#axzz3i2XjXSUI>

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Most common sources of funding for existing social supermarkets are local or national governments, followed by charitable institutions (often embedded in communities formed around religion). These funds can be obtained in combination with business donations, government grants and revenues from sales.

Operational costs can be kept low by having shorter opening times, and using volunteers.

## **2. Securing donations from food retailers and manufacturers**

Establishing a relationship with possible sources of donations early in the process is crucial.

In some countries donors would have a financial incentive to donate the surplus food to avoid waste management and biological treatment costs. However tax regulations vary between member states. In most EU countries where social supermarkets are currently operating, the value of donated food is set to zero and no tax is paid on it by either party. In some EU countries (Spain, Denmark and Sweden) VAT would have to be paid on donated food, which can be a large barrier to surplus food donations. (VAT regulation regarding food donations has recently changed in Germany, which resulted in a boost in donations).

In addition to zero VAT on donated food, France and Spain also offer tax breaks related to food donation, which is understood to be a huge incentive for donating to social supermarkets and food banks. The financial attractiveness of donating therefore depends on the costs and revenues associated with alternative uses of food waste material, and tax regulations.

In addition to financial incentives, business might feel motivated to donate surplus food due to consumer pressure and wish to improve their social responsibility related reputation.

Social supermarkets have a legal responsibility to ensure food is safe, properly stored, and not sold after sell-by day, and should be therefore able to reassure donating parties on the subject of liability. However it might be more difficult to address worries about losing reputation, especially for branded products). The solution to this might be raising awareness of the purposes and benefits of food donations.

Supply of fresh fruits and vegetables and dairy products has been proven to be more difficult than that of staples. It is therefore recommended emerging social supermarkets focus on securing their supply.

## **3. Volunteers**

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The feasibility study identified volunteers to be crucial for the operation of social supermarkets. The availability of willing and suitable volunteers in a community is likely to be essential to operate a new social supermarket in a financially sustainable manner.

In addition to regular volunteers, social supermarkets present an excellent possibility to employ people as a part of reintegration programmes and training for work in the retail sector, delivering a wider benefits and synergies with social security. There is also a growing interest among companies to send paid staff members to work in social supermarkets as part of their Corporate Social Responsibility activities. In Austria volunteers can choose to work in social supermarkets as an alternative to military service, while Germany runs a national volunteering scheme that pays small allowances to volunteers. All of these cases illustrate various possibilities to attract volunteers.

#### **4. Infrastructure & transport**

A typical social supermarket would require, at minimum:

- Store space- sizes vary from very small if using a serving counter, to more typical supermarket sizes (average size in Austria is 90m<sup>2</sup>). Sales areas are often provided by local authorities to the charity free of charge.
- Storage space

In addition, while not essential, the following are very useful for the operation of a social supermarket:

- Cooling and freezing facilities to store received food for longer and reduce own waste. Sometimes social supermarkets without own freezing facilities gain agreements to use those of donating companies as in-kind donation.
- Vehicles for collections are important for the independent operation of social supermarkets. Social supermarkets sometimes rely on the use of vehicles owned by employees or volunteers, however suitably equipped vehicle are needed in order to transport cooled and frozen products.
- Cafe space with a kitchen for serving prepared food or hot drinks. These provide additional social benefits, and also reduce food waste by enabling use of food products approaching sell-by date in hot meals.
- Online presence (can be organised as a part of volunteering/in-kind donation).

#### **5. Regulatory compliance**

The main regulatory compliance for social supermarkets is around planning and land-use, and food safety.

For issues around planning it is best to approach local government early in the process, as they are likely to be both the acting local planning authority and a party interested in improving social security within their territory.

Food safety regulations in EU stipulate that social supermarkets will not be able to sell products past their use-by date, however they can sell products past best-by dates. Some social supermarkets additionally protect themselves by requiring beneficiaries to sign and acknowledge their own responsibility for checking the products and consuming them within a short timescale. So far no social supermarket has experienced any legal challenge in regards to food safety to our knowledge.

For help with regulatory compliance, existing **guideline documents** can be useful for social supermarkets setting up in any countries, as the regulation is likely to be similar across the EU. These are available online:

Guidelines to help social supermarkets achieve regulatory compliance		
Country	Title of guidelines	Web address
Germany	Leitfaden für die Weitergabe von Lebensmitteln an soziale Einrichtungen - Rechtliche Aspekte	<a href="http://www.bmelv.de/SharedDocs/Downloads/Broschueren/LeitfadenWeitergabeLMSozEinrichtungen.pdf?__blob=publicationFile">www.bmelv.de/SharedDocs/Downloads/Broschueren/LeitfadenWeitergabeLMSozEinrichtungen.pdf?__blob=publicationFile</a>
Austria	Leitfaden für die Weitergabe von Lebensmitteln an soziale Einrichtungen - Rechtliche Aspekte	<a href="http://www.bmlfuw.gv.at/lebensmittel/kostbare_lebensmittel/initiative/lebensmittel.html">www.bmlfuw.gv.at/lebensmittel/kostbare_lebensmittel/initiative/lebensmittel.html</a>
France	Guide des bonnes pratiques d'hygiène de la distribution de produits alimentaires par les organismes caritatifs.	<a href="http://www.ba38.banquealimentaire.org/sites/ba38/files/gph_20115943_0001_p000_1_texte.pdf">http://www.ba38.banquealimentaire.org/sites/ba38/files/gph_20115943_0001_p000_1_texte.pdf</a>

The following document also provides a useful overview of regulations related to food donations in all EU member states:

European Economic and Social Committee (2014) Comparative Study on EU Member States' legislation and practices on food donation.

<http://www.eesc.europa.eu/?i=portal.en.publications.34210>

## 6. Strong collaboration with Social Services

The feasibility study highlights the importance of additional social benefits that are made possible by strong collaboration between social supermarkets and local social services.

Social services usually identify beneficiaries – i.e. individuals that should receive help in the form of access to social supermarkets. If that is not possible, social

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supermarkets can register members on their own accord, using some objective criteria, e.g. income below poverty line in the country (but these can be adapted depending on local social context). Social supermarkets usually issue membership cards, and some limit sales to one person to prevent secondary resales.

The social supermarkets often have a wider role in delivering social benefits. This can take many forms such as advice from on-site social workers, interview & CV preparation, money management advice, cooking / healthy eating lessons or simply the provision of a café to improve social interactions. This type of benefit is often not quantifiable but can be immensely important to the clients.

The necessary alignment of all the above aspects makes replication of social supermarkets challenging, as is the case for any social innovation involving numerous stakeholders. However, the potential benefits are also great, and encompass environmental benefits, improved food security and wider social benefits. The challenges are by no means unsurmountable; however they should not be taken lightly. Any organisations aiming to open a social supermarket should be sufficiently prepared and equipped to face them, including having skilled and passionate staff.

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# 7 Conclusions

The 'Advancing social supermarkets across Europe' feasibility study has provided useful insights into the state of social supermarkets in Europe, the different variants in existence and their strengths and weaknesses.

Social supermarkets are a form of food re-distribution, that are very commonly found in some member states (particularly France, Germany and Austria), while completely missing in other member states (e.g. Denmark). The UK is an interesting case where social supermarkets are just starting to emerge. Although not explicitly studied in the feasibility study, the main reasons for such differences seem to be historical prevalence of food donations, general level of social security and VAT legislation, which in some countries inadvertently heavily discourages food donations.

The authors of the feasibility study, who thoroughly investigated social supermarkets, found them to be beneficial and complimentary to other forms of food redistribution (e.g. social pantries and free charitable redistribution) for two main reasons:

- Because there is still a transaction involved, beneficiaries are economically active and more integrated in the society. They also often have a higher choice in products and feel more empowered.
- The social supermarket model lends itself to achieve additional social benefits through co-location of advice and social care.

The feasibility study is lacking an investigation on where social supermarkets should be most encouraged (in which member states, and in which social settings). Unfortunately very little quantitative information on social supermarket set-up and running costs were found.

WRAP separate research<sup>6</sup> which found that whilst tonnages of surplus food available at store level are small in comparison to the whole supply chain, the volumes are sufficient and the process is straightforward enough to make this a strategic target area for expansion.

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<sup>6</sup> WRAP (2014) Opportunities to divert surplus food from back of retail store to charities for human consumption, available at <http://www.wrap.org.uk/sites/files/wrap/Food%20Connection%20case%20studies.pdf>

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# 8 Recommendations

It is recommended that social supermarkets are considered as a suitable delivery mechanism across the EU for the twin objectives of alleviating food poverty and preventing food waste from the production, processing and wholesale/retail stages of the food supply chain.

In relation to policy, it is recommended that VAT regulation is reviewed in member states where it represents a barrier to higher prevalence of food donations.

It is also recommended to commission further detailed research on the set-up and operational costs of social supermarkets to inform potential umbrella organisations and local authorities in countries where there is no/limited social supermarket provision.

Evaluation report –

Advancing social supermarkets across Europe

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# 13 Appendix VI- Surplus Food Individual Evaluation Report



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# Surplus Food Redistribution System

**WP4 – Testing Social Innovation**

**Evaluation Report**

**22.02.2016**

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**Reducing food waste through social innovation**

FUSIONS EU project is supported by the European Community's Seventh Framework Programme under Grant Agreement no. 311972.



# Colophon



Title	Surplus Food Redistribution System: Evaluation Report
Authors	Bojana Bajzelj, WRAP; Sarah Bromley, WRAP
Keywords	food donation, food waste prevention, data-enabled, IT-systems, food aid, best practice, social innovation, food poverty
Clients	European Commission (FP7), Coordination and Support Action – CSA Contract number: 311972
Project leader	FUSIONS coordinator: Toine Timmermans, Wageningen UR - Food Biobased Research, The Netherlands Project leader for this Deliverable: David Rogers, WRAP.
Acknowledgments	The authors would like to thank Sophie Easteal, Michael Wenborn, Elaine Charlesworth & David Rogers from WRAP for coordinating the work package/feasibility studies

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# 1 Introduction

## 1.1 Background to FUSIONS

Under the EU FUSIONS programme<sup>1</sup>, seven feasibility studies were implemented to test socially innovative projects across Europe. This evaluation report assesses the outputs from one of the seven feasibility studies, which tested the creation of an IT information-sharing system to facilitate food donations by the supermarkets to the local charities in Denmark. FUSIONS are administering an evaluation of the feasibility studies.

## 1.2 Aims of the Evaluation Report

The aim of the evaluation is to identify the projects that are most applicable for replication and scaling up, and to support the planning of replication approaches. This document provides the findings from an evaluation of the feasibility study entitled 'Surplus Food', and impartially consider the success of the project which was undertaken in 2014/5.

This report is part of a deliverable within FUSIONS Work package 4, which sets out to test and evaluate the impact of social innovation on reducing food waste detailing the results and impacts of the implemented feasibility studies.

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<sup>1</sup> <http://www.eu-fusions.org/>

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## 1.3 Background to the Surplus Food Redistribution System Feasibility Study

The aim of the 'Surplus Food Redistribution System' feasibility study was to test the possibility of setting-up an IT system in Denmark that would connect organisations like supermarkets who have surplus food on a daily basis, with local organisations like homeless shelters. The end goal is to give food that would otherwise have been wasted to people in need. The system's name in Danish is '*Overskudsmad*', meaning surplus food.

The feasibility study was carried out by *Creative* (Danish PR agency) and *Stop Spild Af Mad* (Stop Wasting Food Movement in English), a Danish grass-root NGO specialising in raising awareness of food waste issues. They hired an IT company called *Net Ressourcer* to develop the system, and later set-up an organisation consisting of 22 volunteers to finalise the development of the IT systems, and support its uptake.

Before the beginning of the project, food donations and redistribution were already taking place in Denmark, but at a very limited scale. A few local Danish supermarkets have established one-on-one relationships with local charities. There is also a larger food bank ("*Fødevarebanken*" in Danish) operating in Copenhagen, but the communication between potential donors and recipients is not systemised.

The IT system was envisaged to be simple: supermarkets register their daily surplus food and the local organisations then receive an e-mail and SMS about the available food, which they can then collect at an agreed time.

The other aspect of the project was to identify stakeholders, and ensure their involvement. 100 potential beneficiaries were identified, from which 51 were prioritised as they are not yet receiving help from the food bank in Copenhagen. Three supermarket chains were approached and got involved in the project, however later two of them pulled out after initial positive feedback. Their reservations included concerns over VAT payments and food safety.

The existing VAT regulations in Denmark are obstructive to donating food. Companies that wish to donate food are liable to pay the VAT on the food's value, making it more expensive for the supermarkets to give away food than dispose of it via waste management routes.

Another issue involves food safety regulation. Should there be a need to recall the donated food, the recipient of the food and the supermarket should be able to track the origin of the food to prevent diseases to spread. This means that all donated food needs to be registered by the supermarket, which generates an administrative obstacle for the supermarkets and charities. Unfortunately these two major barriers were not identified at the beginning of the project.

Due to the barriers listed above it proved difficult to test the system on a bigger scale within the timeframe of this project. At present the hope is to be able to conduct a test with a small number of REMA 1000 supermarkets during autumn 2015, and based on the feedback from this test, roll out the system on a larger scale – hopefully in 2016.

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# 2 Methods

## 2.1 Feasibility study methods

The feasibility study main activities revolved around project management, particularly around the development of the IT system, and stakeholder management, especially relationships with supermarkets as the target donors.

The main steps that were taken as a part of this project were:

1. Project plan was created.
2. Software developers were hired and tasked with delivering a website for registering surplus food and emailing charities.
3. 51 priority charities were identified and contacted.
4. The four main supermarket chains were approached, and consulted with.
5. A prototype of the IT system was tested with the representatives from three supermarket chains.
6. Based on the received feedback, IT system was improved.
7. Clarification letter was obtained from Danish Veterinary and Food Administration, to address a concern some supermarkets had (discovered during step 4).
8. A working group consisting of 22 volunteers was set-up to help scale-up the uptake of the system.
9. A number of handbooks were created to outline 'rules of conduct' for donors and charities. These are however only available in Danish.
10. System trials were to be started, but due to the issue and confusion around VAT, two supermarket chains pulled out of the participation. REMA 1000 supermarkets continued being involved, but for a number of reasons, the testing of the system was delayed until autumn 2015. At the time of writing this report this has not yet taken place.

## 2.2 Evaluation method

The 'Surplus Food Redistribution System' feasibility study is evaluated in detail, as such information technology solutions are recognised to have a strong potential for replication

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across EU. The evaluation of the feasibility study was carried out based on the report submitted to WRAP by email in September 2015<sup>2</sup>.

Evaluation was carried out against pre-determined criteria, such as progress against the expected deliverables, set at the beginning of the project. Where these objectives were not met, the reasons are explored together with the possible mitigation strategies to address them. These form the main learning points from the study.

The evaluation was based on the final report submitted in September 2015, the four project plans submitted to WRAP during the project, and conversations with project managers. Some desk-based research was also carried out to inform the evaluation.

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<sup>2</sup> <http://www.eu-fusions.org/index.php/surplus-food>

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# 3 Evaluation of project results

This section evaluates key findings from the 'Surplus Food Redistribution System' feasibility study, and outlines the recommendations that the feasibility study authors have identified. For more details, please see the Feasibility Study final report.

## 3.1 Key findings

At the time of the writing, the feasibility study has not yet managed to pilot the system, so no results in terms of food waste saved and re-distributed are yet available.

The key findings are formed instead of:

- The identified barriers and possible strategies to overcome them (see Section 4)
- Recommendations to other similar projects (see the next section)
- Feedbacks from the three supermarket representatives, who evaluated the test system and found it user-friendly, but suggested changes that would enable traceability of food to be traceable, and some other changes.
- An overview of similar IT systems across Europe (see the Feasibility Study final report)

## 3.2 Recommendations from feasibility study

Having learned from the process, the authors of the feasibility study recommend taking the following steps when setting up the system:

1. Setting up a project plan and deligation of tasks
2. Detailed research/consultation on VAT-regulation and food safety regulation.
3. Engage in dialgue with key stakeholders and collect data to form the basis of the system
4. First draft of web-solution
5. First system tests with supermarket representatives
6. Corrections and adaptations based on feedback.

- 
7. Practical test including both supermarkets and shelters.
  8. Promotion of the system in press and social media.
  9. Final launch. Continuously monitor progress.

In addition, authors of the feasibility study offer the following recommendations, based on the issues they have encountered:

Keeping the scope of the project realistic is important in general. Smaller geographical area will reduce the number of the charities that need to be engaged, and allow a more in depth understanding of the situation.

If the IT system is to be developed by a third party, the expected delivery of functionality needs to be clearly contracted, and given the timeframe and the budget, this must be done with realistic expectations. Potential users of the system should be involved in the development of the systems from the beginning. If the system is to be freely available, this must be explicit in the contract as well.

The goal should be simplicity of use for the donor, but in Denmark registering food on redistribution nonetheless presented an administrative burden. The unsold food also needs registering on the "store system", and there is a potential to combine the two systems.

It is important to find alliance partners within the key stakeholders that are willing to champion. It is important to find about their practicalities and concerns, rather than make any assumptions.

The right funding is important from the beginning. If the budgets are not in line with the aim of the project, then the goals of the project should be adjusted. A specific fundraising strategy should be in place from the beginning of the project.

A knowledgeable project manager should be appointed from the beginning of the project, preferably a person who has knowledge with in the field of surplus food and a strong network among all relevant stakeholders. If the organisation is based on volunteers, it is important to take relatively slower progress into account.

Finally all roles and responsibilities should be clearly defined from the beginning, by that avoiding unnecessary waste of time and confusion.

### 3.3 Evaluation

Evaluation of the project results was meant to be based on pre-set evaluation criteria, which we determined during an iterative process between project team and project evaluators. As this project has not yet achieved its final stage, many of those evaluation criteria have not yet been measured. Nonetheless, a table of the full set of criteria is presented below, for future reference and as a list of important information that should be collected by any similar project.

Table 1: Evaluation of project results against pre-agreed evaluation criteria

<b>Evaluation criteria</b>	<b>Target</b>	<b>Achieved</b>	<b>Notes / actions</b>
1. Amount of food distributed.			Not possible to collect as trial not yet underway.
2. Previous disposal routes of distributed food			
3. Final use and benefits of distributed food			
4. Number of food donors	Significant share of Denmark retail's market	A few supermarkets in the test area	A few supermarkets signed-up for a trial, can expand later
5. Number of recipient organisations	51	A few recipient organisations in the test area	Recipient organisations in trial area
6. Qualitative feedback from participants & donors.	Based on few interviews		Not possible to collect as trial not yet underway.
7. Number of volunteer hours		6,224	These exceeded the expectation. They were used to established the system once the funding has run out
8. Match funding	Exceed the ~180,000 DKK funding from Fusions	110,000 DKK- from 2 sources	Although the project was successful at gaining additional funding, the ambitious scope meant this was not enough to cover all of the necessary activities.

# 4 Evaluation of the project implementation

The ambitious scope of this project was never quite correctly matched with the available funding, which resulted in some key deliverables not yet being achieved. Unfortunately this was not clear from the project's applications to FUSIONS.

Furthermore some aspects of the project were significantly delayed due to unforeseen circumstances. The overview of the progress against the project deliverables is outlined in Table 2. One of the main intended outcomes – to have a working IT system that could be shared with interested organisations and used in other countries, was abandoned, due to Intellectual Property issues and unclear expectations. The project also suffered from numerous staff changes, lack of project management during some phases of the project and unclearly defined responsibilities.

Table 2. Delivery against project objectives

<b>Project objectives</b>	<b>Delivery</b>	<b>Notes</b>
1) Develop overview of project plan + objectives	Complete	Four large chains approached, one continues as a partner.
2) Map Danish shelters and other recipient organisations	Complete	Over 100 were approached, 51 selected as priority.
3) Map Danish supermarkets and other potential donors	Complete	
4) Promote concept to shelters & donors	Complete	
5) Make first draft of web-solution structure and user interface.	Complete	
6) Launch test website for test audience	Complete	
7) Adapt and improve website/IT solutions	Ongoing	Run out of funding to finish as intended (to develop the SMS system, allow traceability of donated food)
8) Provide guidance documents for the use of the system for different audiences	Complete?	Only available in Danish
9) Trial IT system in a test area	Ongoing	Delayed, still scheduled
10) Launch the IT system nation-wide	Ongoing	Unclear if this will ensue
11) Prepare the IT system to be used by others / apply the platform in their countries		Not possible due to IP issues / unclear contracting and stakeholder relationships

The project team had to undertake several significant, unforeseen tasks; however the successful implementation of mitigations strategies means that the project is still on

course to widely support food redistribution in Denmark, as well as have international relevance. These additional tasks included:

- obtaining a letter of clarification on food safety from the Danish Veterinary and Food Administration.
- gaining clarity in relation to VAT taxation on food donations, and raising that as an issue, lobbying for its change.
- exchange of experience with surplus food distribution IT systems across the EU, creating a small working group.
- Keeping track of any learning points to inform other interested parties through the feasibility study final report.

Table 3 outlines some of the many barriers that the project team encountered, as well as their mitigation strategies.

Table 3. The main barriers encountered and the strategies to overcome them:

<b>Barriers</b>	<b>Possible prevention strategies (in hindsight)</b>	<b>Strategies deployed in this project</b>
Funding to fully develop the IT system ran out (SMS, App functionality, traceability)	Ensure the scope of IT system and funding are realistically matched.  Carefully select the right IT company with experience, contract carefully.	New sources of funding were sought out (mostly unsuccessfully).  22 volunteers were recruited in an effort to finish the development of the system.
Donor concerns over food safety regulation.		Obtained an official statement by Danish Veterinary and Food Administration in support of the project.  Addressed with staff training.
VAT regulations	Carefully check regulations upfront (see a recent EESC publication <sup>3</sup> ).  Consulting a VAT expert in the early stages.	Consulting a VAT expert in the middle stages.  The solution could be reducing the product price to a fair level to lower the liable VAT.
Slow, top-down, decision making process in supermarkets	Ensure the collaboration of the top management first; or target smaller stores that have the autonomy to approve the use of the system.	In the end piloting with smaller stores that have the autonomy to approve the use of the system without going to the 'top'.
Staff training necessary in supermarkets.	The system should be simple to use and therefore training should not be too cumbersome.	Designing the system that is simple to use. Training new employees every time using a volunteer group.

<sup>3</sup> <http://www.eesc.europa.eu/resources/docs/qe-02-13-506-en-c.pdf>

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# 5 Evaluation of project sustainability

Whether the project will truly achieve the wider uptake in Denmark remains unclear.

The feasibility project team have raised a high profile for this project, which increases the chances of the main stakeholders (e.g. the REMA100 supermarket chain) having a stake in the successful implementation of the project. The “*Stop food waste*” organisation has been very successful in raising the general awareness of food waste issues, and ensured the project received wide support despite the changes it undertook.

The project’s implementation was already affected by changes in staff and their circumstances, and this could continue to be problematic in the future.

The IT system also requires either further funding or significant volunteering for successful implementation. The feasibility study project team remain however optimistic that this will be possible, considering the match-funding they have already received and the enthusiasm of the volunteers to get involved in the project.

Setting up a cross-European network of surplus food communication systems will help the longevity of the project, and also its replication.

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# 6 Evaluation of potential for replication of the project

Although this project was significantly delayed in its progress towards delivering food waste reductions, there is a clear need for these types of information-exchange solutions for the food redistribution systems across the EU member states. The number of similar projects that emerged across EU at about the same time (e.g. FoodCloud, Phenix, Foodwe) prove that these solutions can work well, although they all experienced some teething problems.

Firstly, any organisations aiming to replicate such an initiative should be aware that there are two aspects to this project, both of which need to come together in order for the project to be successful: (i) developing a working IT systems, and (ii) stakeholder relationship management. One does not work without the other.

The feasibility study under-estimated the amount of resources and time both of these aspects would take. Ultimately, they were able to deliver the project on the stakeholder management front (as this is something the main delivery partner – Communique – specialises in). However the outsourced IT system was never delivered to the original expectation, due to a lack of funds and opaque contracting.

In contrast, a more successful food redistribution system FoodCloud,<sup>4</sup> developed the IT system in-house. As a start-up tech company, the people delivering the IT-solution had a stake in its success.

Another difference between FoodCloud and “Overskudsmad” was that FoodCloud established a close collaboration with one supermarket chain, using their network of supermarkets to expand the scheme quickly. Overskudsmad tried to engage all of the main supermarket chains, but this proved too ambitious and stalled progress. In the end, “Overskudsmad” also partnered with one chain alone.

The feasibility study in Denmark showed what the importance of the VAT taxation as a possible hurdle to food donations. A recent publication by the European Economic and Social Committee (EESC)<sup>5</sup> revealed that Denmark is one of only three countries in Europe that still observes VAT on food donations (the other two being Sweden and Spain) The reports summarises the situation on VAT as a difficult area: “Terminology in legal texts vary such that the value of food may be considered low or zero at time of donation, VAT may be “abandoned”, or “exempted”. This issue is both controversial and lacks clarity.” The EESC report is a well written overview of the regulation concerning food donations across the EU, and should be high on any interested party’s reading list.

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<sup>4</sup> For a full description and comparison of food cloud see Appendix I

<sup>5</sup> <http://www.eesc.europa.eu/resources/docs/qe-02-13-506-en-c.pdf>

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# 7 Conclusions

This social innovation proved to be more complex than the project partner predicted. They were offering a technology/internet based communication solution to the perceived problem, but did not anticipate complications related to food safety concerns and regulation, taxation, and realities of retail business and their decision timescales, the required training and administrative burden.

The main learning point for the future of such projects is to be **aware of the scope and complexities of the problem and have the capacity to address the variety of related issues**, and handle both the IT system and stakeholder management side of the project.

Delivering a communication platform – which is what the social initiative partner proposed to do – is in reality only one part of an integrated solution. Without the delivery of other parts, this initiative failed to deliver its set goals.

Furthermore the following realities need to be taken into consideration from beginning of a project:

- Slow decision process of the retail partner
- VAT legislation as a possible barrier (depending on the country)
- Staff Training constraints for retailers (esp. for temp. staff and part-timers)
- Food safety risk management
- Funding requirement for the development of the IT system

The project team has done well to try to address these barriers, and log their learnings for others. They have also analysed similar IT system projects across Europe. Some of them, e.g. Food Cloud in Ireland were highly successful in delivering a similar IT system nationwide in Ireland, by partnering with Tesco supermarket chains. Any parties interested in setting the system in their own countries could use the learnings presented in this evaluation report, by others like FoodCloud<sup>6</sup>.

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<sup>6</sup> <http://foodcloud.net/faq/>

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# 8 Recommendations

It is recommended that IT systems to support food donations are supported across the EU. Eight examples of similar systems across EU show there is large interest in them both from the civil society, and supermarkets as potential donors.

To speed up the uptake and the development of these systems, more clarity should be provided by the governments on the aspects of food safety regulations and taxation. One example is a clarification given by the European Commission that foodstuffs that are close to their 'best before', or which cannot be sold due to their external appearance, can have their value set fairly low or close to zero<sup>7</sup>. In light of this clarification the three countries that still perceive VAT on donated food (Denmark, Spain and Sweden) should re-examine their interpretations of the relevant VAT regulation.

Parties interested in the development of such tools should bear in mind the complexities of the process, be conservative in planning for time and budgets, and ensure they have enthusiastic support in their donating partners. Existing successful platforms, such as FoodCloud have the advantage of understanding the potential barriers and solution, so appropriating their systems would probably offer faster solutions than developing systems from the start.

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<sup>7</sup> European Parliament (2013), Written questions :E-003730/13, E-002939/13  
<http://www.europarl.europa.eu/sides/getAllAnswers.do?reference=E-2013-002939&language=EN>

# 9 Appendixes I- Developing FoodCloud



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## Developing FoodCloud

**WP4 – Testing Social Innovation**

**Evaluation Report**

**Date: 11.02.2016**

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**Reducing food waste through social innovation**

FUSIONS EU project is supported by the European Community's Seventh Framework Programme under Grant Agreement no. 311972.



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# Colophon

Title	Developing FoodCloud: Evaluation Report
Authors	Sarah Bromley, WRAP
Keywords	food waste prevention, food donation, food preservation, IT Systems, food aid, best practice, social innovation, Supermarkets
Clients	European Commission (FP7), Coordination and Support Action – CSA  Contract number: 311972
Project leader	FUSIONS coordinator: Toine Timmermans, Wageningen UR - Food Biobased Research, The Netherlands  Project leader for this Deliverable: David Rogers, WRAP.
Acknowledgments	The authors would like to thank Sophie Easteal, Michael Wenborn, Elaine Charlesworth & David Rogers from WRAP for coordinating the work package/feasibility studies and Iseult Ward who kindly participated in the evaluation.

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# FoodCloud

FoodCloud is a not-for-profit social enterprise that connects businesses that have too much food with charities in their surrounding communities. This is completed through an app (or via their website). The donors (such as supermarkets) upload details of the surplus food and the time period it can be collected in. The software then automatically sends a text to the most appropriate charities. The first charity to accept the offer collects directly from the business; however, in some cases there is a rota system where charities have a specific day/ time they collect the food.

FoodCloud was first established in 2012 when Iseult Ward and Aoibheann O'Brien met at university. They identified the need for collaboration between charities and food organisations, and realised that they needed technology to make the process scalable and sustainable. During the summer of 2013 they successfully pitched FoodCloud at SEI's first Minnovation Fund. This became their first funding and validation for the concept. FoodCloud was then accepted into the accelerator programme, TCD launchbox. Part of this grant provided them a salary in order for them to develop the idea further. Through a tweet they recruited an American developer who offered to design the FoodCloud App at a 0% commission. The app was not successful in the Irish context and further work was needed. This was outsourced. Iseult and Aoibheann worked with the charities to establish why it did not work initially and the feedback was because of charity resource constraints and due to the mixture of food. The charities were used to working with fresh-raw food thus were not sure how to utilise some the food. In August 2013, Aoibheann and Iseult registered FoodCloud as a not-for-profit company and were accepted on Ireland's leading tech accelerator programme, Launchpad.

From October 2013 to June 2014, FoodCloud secured trials with Tesco (18 stores), Starbucks and some smaller cafes and bakeries. It was however in July 2014 where FoodCloud announced a partnership with Tesco who expanded the app nationally to 146 stores in Ireland. FoodCloud recruited a team and now employees 10 full time staff and 2 part time staff. 8 months later they joined Tesco in the UK and also developed a pilot with FareShare<sup>8</sup>.

There has been a consistent iterative approach to develop the FoodCloud system in order to make it user friendly and simplistic enough to be easily useable. This was especially

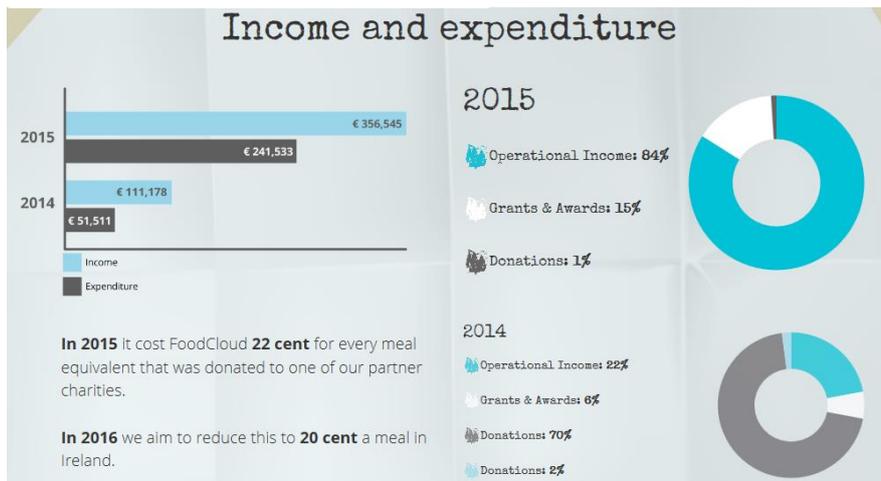
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<sup>8</sup> <http://www.fareshare.org.uk/>

the case in the early development of the App. The FoodCloud team run shifts in order to provide 9am-9pm support to both the charities and organisations that donate food. These tasks involve dealing with cases where retailers forget to post and charities are waiting or charities forget to collect and retailers are waiting. FoodCloud have now been able to hire two members of staff who are IT specialists to allow for continuous development, and have now integrated their system with Tesco's. This has removed some of the administration tasks.

Currently FoodCloud has 180 donors and 350 charity donors across Ireland and the UK. They have re-distributed over 869 tonnes of food, 1.9m meals which equates to 2,782 tonnes of Co2 savings. For more information on their current impact visit their Annual report for 2015<sup>9</sup>. FoodCloud is a financially sustainable organisation; figure 4 identifies that they are economically viable and generate income from the organisations they work with. It costs Tesco a similar amount to pay to send their surplus to FoodCloud as it did to their waste management company. This project is in line with the Tesco CSR aims.

Table 1 Income and expenditure of FoodCloud



<sup>9</sup> <http://food.cloud/annualreport2015/>

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Whilst the Surplus Food Redistribution feasibility study was situated in Denmark which has an inherently different social context than FoodCloud, there were a number of things which made it successful which could be translated into the feasibility study and further projects.

#### FoodCloud

1. FoodCloud began the project on a small scale and expanded it from there. They established a close collaboration with one supermarket chain, in a small country Ireland. But using their network of supermarkets they were able to expand quickly. Whereas Surplus Food Redistribution tried to engage all the main supermarket chains, this proved too ambitious and stalled progress.
2. FoodCloud first and foremost explored the option of having the app produced at little or no cost before outsourcing the development of the IT tool.
3. FoodCloud are economically sustainable as 85% of their income is operational, that is the donor's pay them for their services.
4. They developed a service which made the FoodCloud available from 9am-9pm each day in order to make sure the system was working for both the donors and recipients. This ensured that the App was working and in cases where it was not they were able to rectify the problem. This ensured consistent engagement from all the parties involved.
5. FoodCloud experienced a similar barrier to the Surplus Food Redistribution feasibility study in that there is an administrative task that the supermarkets have to fulfil in posting the food. They are currently working with Tesco to integrate this into their system, removing this administrative task.

Therefore whilst the Surplus Food Redistribution feasibility study was not successful in fully implementing the IT tool with supermarkets and charities. FoodCloud has identified that this can be done, that they experienced similar and also different barriers to the feasibility study, but most importantly they are economically sustainable.

<http://food.cloud/>

Meeting with Iseult Ward

Evaluation report –  
Surplus Food Evaluation

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# 14 Appendix VII Order Cook Pay Individual Evaluation Report



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# Developing Order Cook Pay Feasibility study

**WP4 – Testing Social Innovation  
Evaluation Report**

**Date: 19.02.2016**

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**Reducing food waste through social innovation**

FUSIONS EU project is supported by the European Community's Seventh Framework Programme under Grant Agreement no. 311972.



# Colophon

Title	Developing Order Cook Pay: Evaluation Report
Authors	Sarah Bromley, WRAP
Keywords	food waste prevention, food-redistribution, School kitchens, social innovation
Clients	European Commission (FP7), Coordination and Support Action – CSA Contract number: 311972
Project leader	FUSIONS coordinator: Toine Timmermans, Wageningen UR - Food Biobased Research, The Netherlands Project leader for this Deliverable: David Rogers, WRAP.
Acknowledgments	The authors would like to thank Sophie Easteal, Michael Wenborn, Elaine Charlesworth, Giorgio Bagordo & David Rogers from WRAP for coordinating the work package/feasibility studies; along with Ulla-Karin Barr, Jenny Gustavsson, Karin Östergren, SP Food and Bioscience, Sweden

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# 1 Introduction

## 1.1 Background to FUSIONS

Under the EU FUSIONS programme<sup>1</sup>, seven feasibility studies were implemented to test socially innovative projects across Europe. One of the seven feasibility studies, titled 'Order Cook Pay' in Sweden, focused on reducing food waste in the school environment through developing and then introducing a web-based technology system that would help schools plan the number of meals to cook based on actual demand; thus reducing surplus.

## 1.2 Aims of the Evaluation Report

The aim of the evaluation is to identify the projects that are most applicable for replication, and to support the planning of replication approaches. This document provides the findings from an evaluation of the feasibility study entitled 'Order Cook Pay', and impartially considers the success of the project which was undertaken in 2014.

This report is part of a deliverable within FUSIONS Work package 4, which sets out to test & evaluate the impact of social innovation on reducing food waste detailing the results and impacts of the implemented feasibility studies.

## 1.3 Background to Order Cook Pay feasibility study

The feasibility study was organised by SIK/SP Food and Bioscience, based in Sweden, and a partner in the FUSIONS programme. The Order Cook Pay (OCP) feasibility study focused on reducing the amount of food surplus produced at the school canteen level due to over production. This is because there is a lack of information on the number of pupils who will eat at school day to day. SIK/SP Food and Bioscience claimed that each year 10,000-30,000 tonnes or more of food is waste in the Swedish school canteens<sup>2</sup>. This not only produces a financial loss, SIK/SP Food Bioscience argue that a cost of a school lunch varies between municipalities but typically the range is between €0.7 and €2.00, but also has environmental consequences. SIK/SP Food Bioscience argue that if less food is wasted the money saved could be used to buy higher quality and more nutritional food. According to the OCP team this would not only improve the children's health but could also help make the school restaurants more appealing and attractive to school children.

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<sup>1</sup> <http://www.eu-fusions.org/>

<sup>2</sup> <http://www.eu-fusions.org/index.php/order-cook-pay> <http://www.eu-fusions.org/phocadownload/feasibility-studies/Order-Cook-Pay/FUSION%20OCP.pdf>

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SIK/SP Food and Bioscience identified that there was scope for this project as Sweden was one of a few countries<sup>3</sup> which offer their primary school children the right by law, to have a free school lunch per day<sup>4</sup>. SIK/SP Food and Bioscience have identified that each child in Sweden is served roughly 2000 school lunches during his/her years in school. Therefore there was a large scope of how much was and could be wasted.

Since 2011 there was the requirement that in Swedish schools, lunches should be nutritious. Therefore the project aimed not only to reduce surplus within the school restaurants, but to increase the nutrition of the meals by using the money saved to buy better quality food. In addition to this SIK/SP Food and Bioscience identified that in Sweden each student when leaving school "should have knowledge and understanding of the impacts of his/her lifestyle on health, environment and society". Order Cook Pay's end goal was to also use the school lunches as leverage that could become a key aspect in educating children about healthy and sustainable lifestyles.

The key aims and objectives of this study were:

1. To reduce the the amount of food waste within the school resturants.
2. To develop better relationships between school kitchen staff, pupils, pupils parents and teachers through introducing a technology that will determine how many meals to prepare each day.
3. To develop childrens knowlege and understanding of health, enviroment and society through using the results from the technology (i.e. how much food has been saved and the enviromental effect this has; teaching children the benefits of the technology; and the wider issue of food sustainability as a whole) as part of lesson plans.
4. To demonstrate the use of new technology to support school canteens.
5. Provide sound evidence that this technology could be used and possibly expanded into new arenas i.e. in work palce canteens
6. To produuce gudiance that enables effective implementation of the technology to more school canteens. This would improve resource efficiency.

The OCP project focuses on developing a web-based technology system that would help schools plan the number of meals to cook based on actual demand. This in turn was expected to lead to 10-50% waste reduction of kitchen waste (not plate waste). SIK/SP Food and Bioscience identify that some schools already have web-based platforms which are aimed to help administration, where children and parents can download and submit documents as well as check and report absence. Therefore by integrating a component aimed at better planning of school meals in such a system could be very effective. This does not have to be technically complicated since the platform already is in place. The collaboration with such school web platform providers was a fundamental part of the Order-cook Pay project.

The project ran for 10 months until it was concluded that the feasibility study could not be implemented with the resource and timeframe dictated by the FUSIONS project. The project team still considers the project idea to have high value.

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<sup>3</sup> Other countries being the UK, Finland and Estonia.

<sup>4</sup> The Swedish school law, Skollagen, 1997 and page 5 <http://www.eu-fusions.org/phocadownload/feasibility-studies/Order-Cook-Pay/FUSION%20OCP.pdf>

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# 2 Methods

This section details the project evaluation methods; firstly outlining the how OCP *planned* to evaluate the project. The second part of this section will detail the evaluation method adopted by the EU FUSIONS team to determine the successfulness and replicability of this project as a whole.

## 2.1 OCP Feasibility study methods

The Figure 1 provides the *planned* overview of the steps in the project method by OCP. The bold part indicates how far the project was run before ending.

Table 1- Feasibility planned project method

Task	Description of task
<b>1</b>	<b>Proposal for external funding from The SwedishInnovation Agency, Vinnova to be able to support the partner not beign FUSIONS partners</b>
<b>2</b>	<b>Internal start meeting for the core partners</b>
<b>3</b>	<b>Engaging municipalites</b>
4	External start meeting with Municipalities
4:1	Waste reduction
4:2	Change management
4:3	Result and classroom discussion
5	New software developed for the OCP tool
6	Measurements of reference level of waste without support from OCP tool and Food Tracker (Food Tracker)
6:1	First test of reference measuring
6:2	Mid results from reference measuring
6:3	Final results without support from OCP tool and Food Tracker
7	Measurements of waste level with support from OCP tool and Food Tracker (FT)
7:1	First test of measuring with support from OCP tool and Food Tracker
7:2	Mid results from test with support from OCP tool and Food Tracker
7.3	Final results with support from OCP tool and Food Tracker
8	Project meeting disussing the results of the measurements
9	Best practice of introducing new tools to reach sustainable results
9:1	Test of best practice to introduce OCP tool, FT and change management
9:2	Mid results from best practice to introduce OCP tool, FT and change management
9:3	Best practice of introducing OCP tool, FT and change management
10	Dissemination

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## 2.2 Evaluation method- How FUSIONS is evaluating the work

Each of the seven feasibility studies was evaluated. OCP was not implemented within the resource and timeframe dictated by the FUSIONS project; therefore the main part of the evaluation is conducted from the final report written by OCP<sup>5</sup>.

## 2.3 Evaluation method- How OCP is evaluating the work.

The Order Cook Pay feasibility study was due to gather data on key performance indicators, such as number of meals recorded on the system and number of participants; along with conducting empirical research in the form of interviews with participants (staff, teachers and pupils). The following bullet points identify the key areas of research which were planned in order to evaluate OCP.

- Number of participants (pupils, teachers, kitchen staff) in the pilots (by site).
- Reasons a school chooses not to participate in the pilot. (a mix of self-service & non-self-service schools)
- Number of meals recorded by the system, clarity about the 'diversion' i.e. where the school usually sends its food waste.
- Waste levels before / throughout the study (kitchen & serving waste, edible and inedible estimated).
- Financial saving made by the school.
- Feedback of participants (staff, teachers and pupils) – qualitative interviews to get an understanding of the benefits they accrue from the project and potentially their awareness / attitudes to waste before and after the project.
- Number of volunteer hours (e.g. teaching / catering staff).
- Match funding (time / financial) from project partners.

The objective was to gather an understanding of the benefits they accrue from the project. However as the study only ran for ten months, no evidence was gathered although key lessons learnt have been documented.

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<sup>5</sup> <http://www.eu-fusions.org/phocadownload/feasibility-studies/Order-Cook-Pay/FUSION%20OCP.pdf>

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# 3 Project results

This section provides an overview of the results of the OCP feasibility study, including that generated from the final report. The feasibility only ran for 10 months before it was announced that the study would no longer be going forward. There are no results to report as the feasibility report was not fully implemented: rather a document of the key barriers encountered and lessons learnt have been documented instead.

The key barriers that were encountered were:

1. Recruiting stakeholders to be involved in the study (such as municipalities),
2. the complexity of the IT tool to be compatible in each school,
3. funding the project;
4. and the time frame dictated by FUSIONS.

More money and time was needed in order to fully implement the project. As the municipalities in Sweden carry the responsibility for the school lunches the OCP feasibility study decided to try and recruit five municipalities that would then contribute €15,000.00 each. Five municipalities showed interest and engagement in participating in the project but no municipalities fully engaged. In all cases the main contact was the Public Health Planner. SIK/SP Food and Bioscience claimed that municipalities did not participate for the following reasons:

1. **Illness:** One reason reported was due to the contact at the municipality being ill.
2. **Timescales:** For some municipalities they did not feel they could take on the project due to not having enough time because of other projects they were engaged in.
3. **Lack of capacity:** Some municipalities felt that they were not capable, or had the capacity, to start and work on the project
4. **Financing:** The municipalities budget was negotiated before OCP presented their proposal. This resulted in much of the money being committed; thus there was little room for municipalities to fund the work.

OCP did have one municipality that was heavily engaged as this municipality had previously collaborated with the behavioural scientist that worked on OCP; however late 2014 this municipality also withdrew. This resulted in the conclusion that the project could not go forward due to having no funding or municipalities' engagement.

Nonetheless some key learning was identified from this process. The most important point was that any project similar to this should be **organised on a smaller scale** at first in order to build up the trust and engagement of the schools and municipalities. Other key lessons learnt were identified and are detailed below:

1. Recruiting municipalities, securing funding and developing the IT tool require a large proportion of resource.
2. More time should be left to build trusting relationships with schools, municipalities and school kitchens.
3. In the schools there should be an infrastructure which will allow for the IT tool to be fully implemented.
4. There must be enough time for the kitchen staff to learn how to implement new ways of working before the tool is launched

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5. Alternative sources of funding should be identified at an early stage. If funding is needed from the municipalities, this should be requested before the yearly budget has been finalized. This funding should also be asked for with an analysis of the impact of the tool, therefore an evidence base should be gathered to justify the need for the funding. Additionally the requirement of extra funding from a municipality can also be a barrier to their overall buy in and engagement to the project as a whole, therefore these relationships and financial requests should be carefully managed.
  6. Ensure there is enough time to fully implement the project, leave contingency.
  7. Ensure that the scope of the project is not too encompassing and wide that it is unmanageable.
  8. Take into account the amount of time that is required from various stakeholders such as municipalities, schools, parents and pupils.
  9. That the topic of 'food' and 'eating' is sensitive for some and can become a barrier to implementation. For example OCP experienced difficulty due to having to be sensitive with some teenagers that had complex relationships with food, for example having eating disorders such as anorexia and bulimia.
  10. The project is successful when you have engaged individuals.

Some materials were produced within the project which is detailed below:

- Invitation to municipalities, a Power Point and a folder.
- Presentation for the FUSIONS Regional Platform Meeting in Stockholm.
- Presentation for the WP4 Feasibility Study Videos.

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# 4 Project implementation

This section provides the findings on the project implementation process for the Food Service Surplus Solution feasibility study. The section will address timescales, the project management and volunteer resource needed to develop and implement the project, the financial cost and the main constraints/unforeseen issues of the study.

## 3.1 Timescales

The project ran for 10 months in the year of 2014.

## 3.2 Project Management Resource

This next section identifies the project management that is needed and in what areas during the implementation. Table 2 highlights the key partners involved in the study and Table 3 identifies the amount of time expected to be used and the amount of time actually used.

Table 2- The Key Partners

Name	Organisation	Role in project	Relationship to FUSIONS
Camilla Byrinder	Qualifare (QF)	Inventor, technical support OCP introduction	
Christina Skjöldebrand	CFB	Project leader Vinnova part of the project, Senior scientist	
Anki Sundin	NGruppen (NG)	Behaviour study and nutrition	
Martin Larsson	Forerunner (FR)	Behaviour study	
Patrik Djurberg	Grace Organic (GO)	Food Tracker support and introduction	FUSIONS Member
Klas Lilja	InfoMentor (IM)	OCP program support	
Ulla-Karin Barr	SIK/SP Food and Bioscience	Project leader FUSIONS part of the project	FUSIONS Partner
Christel Esbjörnsson	SIK/SP Food and Bioscience	Waste studies, improvement support	FUSIONS Partner
Jenny Gustavsson	SIK/SP Food and Bioscience	Assisting Ulla-Karin in the lead of the project	FUSIONS Partner
Karin Östergren	SIK/SP Food and Bioscience	Supporting in the reporting phase	FUSIONS Partner

Table 3- Project management resource

Parter	Role	Planned time (PM)	Used time (PM)
SP Food Bioscience (SIK)	Project leader	2,7	1,0
Millas&QualiFare	Technician / Order cook pay inventor	1,1	0,7
InfoMentor	Programsupport	1,3	0,2
IDA/Västerås	Behavior study	1,4	0,1
NGruppen	Behavior study / nutrition	0,6	0,1
CFB	Scenior scientist/	0,8	0,3
Municipal	School and kitchen personal	2,6	0,0
Total		10,5	2,5

### 3.3 Financial costs

In total the OCP spent €24,000.00. This was the total amount provided by the FUSIONS project. However OCP required extra funding outside of FUSIONS, estimated at €75,000.00, to deliver the software needed for the feasibility study. They envisioned that of the 40 municipalities each would contribute €15,000.00; however, no municipalities provided the money.

A number of funding streams were selected in order to try and cover the extra costs of the OCP project. A proposal for additional support was handed in to VINNOVA (Sweden's innovation agency) accruing to the plan to be able to cover the costs of the non-FUSIONS participants. QualiFare and CFB were mainly involved in the application, supported by SP, NGruppen and Forerunner. Unfortunately the proposal was not approved.

Negotiations were also held with different county boards and county councils aiming to cover (50%) of the costs for the participating municipalities. This was conducted between early summer 2014 and October 2014. A number of county councils were close to approving this outline. The possibility to apply for funding from various trusts was also considered, but since the county boards were considering the proposal and it originally looked promising, OCP decided not to follow this route.

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# 4 Project sustainability

Although the project was not successful at being fully implemented and was ceased after 10 months, the OCP team explored the opportunity of applying part of the OCP idea. This was done through providing a number of pupils present at the school; however ifoMentor and Qualifare found the same difficulties with introducing the concept at this level.

Whether the project will truly achieve the wider uptake in Sweden remains unclear. Some of the project team remain hopeful a similar project will continue in Sweden but for now there are no immediate plans to expand this project after the FUSIONS deadline.

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# 5 Potential for replication of the project

The OCP feasibility ran for 10 months before it was announced that the study would no longer be going forward. Therefore this project is not sustainable as it was never fully implemented. This however does not mean that the concept of reducing waste at school canteens is void. The Order Cook Pay team identified that during spring 2015 two schools in Sweden trialled 'MealMan' which was developed as an result of pupils concern that the canteen offer three different dishes every meal. This pilot project<sup>6</sup> was set up between the kitchen organisation, school and a parent working at an IT company.

In the UK a private company called ParentPay<sup>7</sup> sells an IT tool and system which allows for cashless payments in schools. Each school is allocated a dedicated set-up manager and the school and parents are presented with an online system (which is assisted with SMS texts) where they top up their children's allowance on a swipe card. This has been implemented in 5,000 schools. It is claimed to save schools £15,000 per annum, with the majority of this being saved on administration. Parents have claimed it is convenient, ensures the money is being spent correctly and is efficient. Whilst this is not the same model as Order Cook Pay, the system will allow for data to be collected in terms of tracking the amount of meals purchased over a period of time. This data can be used for forecasting, which ultimately would help to reduce waste. Whilst this study does not focus on reducing food waste it does demonstrate that a similar IT system can be implemented into a wide range of (UK) schools, and more importantly there is appetite for this, even if it is not from a food waste perspective.

Similarly within the UK Kingswood Catering<sup>8</sup> is a family run business that specialises in catering for the education sector. They felt that the meals offered to children in British schools should be higher nutritional standard. Therefore they have created a system which allows parents and children a selection of school meals, using locally sourced ingredients, which incorporate a variety of free range and organic ingredients. They employ over 80 members of staff throughout Northamptonshire and Lincolnshire and train their staff to a high level. Table 4 identify the system which allows parents and children to select their meals. Similar to ParentPay whilst this does not focus on reducing food waste it does demonstrate that a similar IT system can be implemented into a wide range of (UK) schools, and importantly there is a focus on improved nutrition. Both these examples are commercial companies.

Whilst OCP was not fully implemented in Sweden, there are other organisations present which are achieving similar goals to OCP. These other organisations do not have exactly the same aims and objectives; however do indicate the possibility of integrating a similar IT system into schooling.

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<sup>6</sup> <http://www.metro.se/nyheter/eleverna-far-valja-skolmat-med-hjalp-av-en-app/EVHody!WDS2AqkINQikk/>

<sup>7</sup> <https://www.parentpay.com/>

<sup>8</sup> <https://www.kingswoodcatering.co.uk/about-us>

Table 4 Kingswood Catering system

	 NONE	 MAIN MEAL	 VEGGIE MEAL	 PACKED LUNCH	 HOTPOT	 JACKET	 PUDDING
<b>MONDAY 22/02/2016</b>	None	Pork Meatballs in Tomato Sauce & Pasta <a href="#">more info »</a>	Quorn Swedish Style Balls & Pasta <a href="#">more info »</a>	Tuna Mayonnaise Sandwich <a href="#">more info »</a>	Tomato and Chicken Pasta Pot <a href="#">more info »</a>	Jacket Potato with Cheese <a href="#">more info »</a>	Ice Cream Tub <a href="#">more info »</a>
<b>TUESDAY 23/02/2016</b>	None	Gammon Steak Fresh Potatoes Baked Beans <a href="#">more info »</a>	Cheese & Tomato Omelette & Potatoes <a href="#">more info »</a>	Sliced Ham Soft Roll <a href="#">more info »</a>	Quorn Steak Strips Arrabiatta Sauce Pasta Pot <a href="#">more info »</a>	Jacket Potato with Tuna and Light Mayonnaise <a href="#">more info »</a>	Fresh Fruit Platter <a href="#">more info »</a>
<b>WEDNESDAY 24/02/2016</b>	None	Chicken	Sweet Potato	Cheddar	Chicken &	Jacket Potato with Baked	Iced Fruit

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# 7 Conclusions

Order Cook Pay was one of the seven feasibility studies which tested social innovation as a solution to reducing food waste as part of FUSIONS WP4. This feasibility study focused on reducing food waste in the school environment through developing and then introducing a web-based technology system that would help schools plan the number of meals to cook based on actual demand; thus reducing surplus. Additional to reducing food waste they aimed to create a forum which would increase the relationships between school kitchen staff, pupils, pupil's parents and teachers; they aimed to develop children's knowledge and understanding of health, environment and sustainable living; and in the long term they aimed to increase the children's nutritional health through improving the nutrition of the meals provided.

The project ran for 10 months until it was concluded that the feasibility study could not be implemented with the resource and timeframe dictated by the FUSIONS project. The project team still considers the project idea to have high value, and this report has identified some organisations that have successfully implemented an IT system that helps schools, parents and pupils to organise when and what meals are required. OCP have generated some outputs but most importantly they have documented the key barriers encountered and the lessons learnt. These were, difficulty in recruiting stakeholders to be involved in the study (such as municipalities), the complexity of the IT tool to be compatible in each school, funding the project and the time frame of FUSIONS. More money and time was needed in order to fully implement the project. This type of knowledge is invaluable for those seeking to organise a similar study.

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# 6 Recommendations

Any party interested in organising similar pilots to the Order Cook Pay are strongly encouraged to do the following:

1. Identify other similar projects, the social inventory can assist with this<sup>9</sup>. Contact these organisations and also if possible visit the organisations in order to see first hand the project.
2. Recruit stakeholders early, especially if the project is requesting funding from certain stakeholders. The request for funding should coincide with the stakeholders own budgeting.
3. Allow for a substantial time for building relationships with schools, municipalities and school kitchens.
4. Work with schools that have the infrastructure which will allow for the IT tool to be fully implemented.
5. Ensure that the scope of the project is not too encompassing and wide that it is unmanageable.
6. Know the audience you are trying to target and understand that people's relationship with food can be complex, especially in the case of eating disorders.
7. Read the Order Cook Pay final report published through this project<sup>10</sup>.

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<sup>9</sup> <http://www.eu-fusions.org/index.php/social-innovations/social-innovation-inventory/213-sii-european-map>

<sup>10</sup> <http://www.eu-fusions.org/index.php/order-cook-pay>

# 15 Appendix VIII- FoodCloud



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## Developing FoodCloud

WP4 – Testing Social Innovation

Evaluation Report

Date: 11.02.2016

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Reducing food waste through social innovation

FUSIONS EU project is supported by the European Community's Seventh Framework Programme under Grant Agreement no. 311972.



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# Colophon

Title	Developing FoodCloud: Evaluation Report
Authors	Sarah Bromley, WRAP
Keywords	food waste prevention, food donation, food preservation, IT Systems, food aid, best practice, social innovation, Supermarkets
Clients	European Commission (FP7), Coordination and Support Action – CSA
Project leader	Contract number: 311972 FUSIONS coordinator: Toine Timmermans, Wageningen UR - Food Biobased Research, The Netherlands Project leader for this Deliverable: David Rogers, WRAP.
Acknowledgments	The authors would like to thank Sophie Easteal, Michael Wenborn, Elaine Charlesworth & David Rogers from WRAP for coordinating the work package/feasibility studies and Iseult Ward who kindly participated in the evaluation.

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# FoodCloud

FoodCloud is a not-for-profit social enterprise that connects businesses that have too much food with charities in their surrounding communities. This is completed through an app (or via their website). The donors (such as supermarkets) upload details of the surplus food and the time period it can be collected in. The software then automatically sends a text to the most appropriate charities. The first charity to accept the offer collects directly from the business; however, in some cases there is a rota system where charities have a specific day/ time they collect the food.

FoodCloud was first established in 2012 when Iseult Ward and Aoibheann O'Brien met at university. They identified the need for collaboration between charities and food organisations, and realised that they needed technology to make the process scalable and sustainable. During the summer of 2013 they successfully pitched FoodCloud at SEI's first Minnovation Fund. This became their first funding and validation for the concept. FoodCloud was then accepted into the accelerator programme, TCD launchbox. Part of this grant provided them a salary in order for them to develop the idea further. Through a tweet they recruited an American developer who offered to design the FoodCloud App at a 0% commission. The app was not successful in the Irish context and further work was needed. This was outsourced. Iseult and Aoibheann worked with the charities to establish why it did not work initially and the feedback was because of charity resource constraints and due to the mixture of food. The charities were used to working with fresh-raw food thus were not sure how to utilise some the food. In August 2013, Aoibheann and Iseult registered FoodCloud as a not-for-profit company and were accepted on Ireland's leading tech accelerator programme, Launchpad.

From October 2013 to June 2014, FoodCloud secured trials with Tesco (18 stores), Starbucks and some smaller cafes and bakeries. It was however in July 2014 where FoodCloud announced a partnership with Tesco who expanded the app nationally to 146 stores in Ireland. FoodCloud recruited a team and now employees 10 full time staff and 2 part time staff. 8 months later they joined Tesco in the UK and also developed a pilot with FareShare<sup>1</sup>.

There has been a consistent iterative approach to develop the FoodCloud system in order to make it user friendly and simplistic enough to be easily useable. This was especially the case in the early development of the App. The FoodCloud team run shifts in order to provide 9am-9pm support to both the charities and organisations that donate food. These tasks involve dealing with cases where retailers forget to post and charities are waiting or charities forget to collect and retailers are waiting. FoodCloud have now been able to hire two members of staff who are IT specialists to allow for continuous development, and have now integrated their system with Tesco's. This has removed some of the administration tasks.

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<sup>1</sup> <http://www.fareshare.org.uk/>

Currently FoodCloud has 180 donors and 350 charity donors across Ireland and the UK. They have re-distributed over 869 tonnes of food, 1.9m meals which equates to 2,782 tonnes of Co2 savings. For more information on their current impact visit their Annual report for 2015<sup>2</sup>. FoodCloud is a financially sustainable organisation; figure 4 identifies that they are economically viable and generate income from the organisations they work with. It costs Tesco a similar amount to pay to send their surplus to FoodCloud as it did to their waste management company. This project is in line with the Tesco CSR aims.

Table 1 Income and expenditure of FoodCloud



Whilst the Surplus Food Redistribution feasibility study was situated in Denmark which has an inherently different social context than FoodCloud, there were a number of things which made it successful which could be translated into the feasibility study and further projects.

1. FoodCloud began the project on a small scale and expanded it from there. They established a close collaboration with one supermarket chain, in a small country Ireland. But using their network of supermarkets they were able to expand quickly. Whereas Surplus Food Redistribution tried to engage all the main supermarket chains, this proved too ambitious and stalled progress.
2. FoodCloud first and foremost explored the option of having the app produced at little or no cost before outsourcing the development of the IT tool.
3. FoodCloud are economically sustainable as 85% of their income is operational, that is the donor's pay them for their services.
4. They developed a service which made the FoodCloud available from 9am-9pm each day in order to make sure the system was working for both the donors and recipients. This ensured that the App was working and in cases where it was not they were able to rectify the problem. This ensured consistent engagement from all the parties involved.
5. FoodCloud experienced a similar barrier to the Surplus Food Redistribution feasibility study in that there is an administrative task that the supermarkets have to fulfil in posting the food. They are currently working with Tesco to integrate this into their system, removing this administrative task.

<sup>2</sup> <http://food.cloud/annualreport2015/>

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Therefore whilst the Surplus Food Redistribution feasibility study was not successful in fully implementing the IT tool with supermarkets and charities. FoodCloud has identified that this can be done, that they experienced similar and also different barriers to the feasibility study, but most importantly they are economically sustainable.

<http://food.cloud/>

Meeting with Iseult Ward

FoodCloud

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# 16 Appendix IX BON et Bien



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## Developing BON et Bien

**WP4 – Testing Social Innovation**

**Evaluation Report**

**March 2016**

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**Reducing food waste through social innovation**

FUSIONS EU project is supported by the European Community's Seventh Framework Programme under Grant Agreement no. 311972.



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# Colophon

Title	Developing BON et Bien: Evaluation Report
Authors	Bart van Gogh Wageningen UR
Keywords	food waste prevention, food donation, Gleaning, best practice, social innovation, Supermarkets, social enterprise, unemployment, soups.
Clients	European Commission (FP7), Coordination and Support Action – CSA Contract number: 311972
Project leader	FUSIONS coordinator: Toine Timmermans, Wageningen UR - Food Biobased Research, The Netherlands Project leader for this Deliverable: David Rogers, WRAP.
Acknowledgments	The author would like to thank Sarah Bromley, Sophie Easteal, Michael Wenborn, Elaine Charlesworth & David Rogers from WRAP for coordinating the work package/feasibility studies and Gaspard Lathoud, CSR manager McCain Foods Continental Europe and Thomas Pocher, Manager E. Leclerc Wattlelos who kindly participated in the evaluation.

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# BON et Bien

'BON et Bien' (translated in English as "Good & Well") was established in 2015 as a social business that seeks sustainable solutions for reducing food waste and for creating job opportunities for people that encounter difficulties in entering the job market. The enterprise is described by its partners as '*Un projet intrapreneurial, une innovation collective*': an entrepreneurial project, a collective innovation.

BON et Bien has its home base in Templeuve, a village community in the north of France, close to the cities of Lille and Valenciennes. The business proposition of BON et Bien is to collect from farms in the region vegetables and potatoes that do not meet the specifications required for the consumer market. In the prevailing rules of market these products are unsellable in the fresh market, and as a consequence are either discarded on the farms, obtained by third parties for processing into animal feed or composting, or ploughed into the soil. In either way, the product is not made available anymore for the consumer market, has lost economic value, and in worst case is lost entirely in terms of loss of nutritional value and loss of resources (land, water, energy). BON et Bien prevents this waste of food by collecting these vegetables and process these into consumer products (fresh soups) for the retail market.

BON et Bien incorporates a social element in its business by offering the opportunity to unemployed people to learn the skills and trade in food processing. People that experience difficulties in finding a job position are giving the opportunity to enter into a work contract for a one-year traineeship in the company. During this year trainees receive specific trainings and can obtain a certificate, which enables them to obtain a stronger basic position in the job market after finishing their traineeship in BON et Bien.

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# Aims and Objectives

BON et Bien has two main objectives:

1. fight against food waste; and
2. enable the professional re-integration of people who have been unemployed for a long period of time.

A third and more conditional objective of BON et Bien is to safeguard profitability, economic sustainability and financial autonomy by means of an innovative model of co-creation. The model includes the involvement of all stakeholders in the entire value chain of the product, from farmer to consumer. By building a social business that will involve parties from the entire product value chain, BON et Bien wants to generate impact in the community on different levels: economic, environmental and social.

BON et Bien distinguishes target groups for:

- the sourcing of feedstock for processing: farmers and traders with a surplus of potatoes and vegetables that cannot be sold through regular sales channels due to non-conformity of the product with retail market standards
- the sales of final product: retail and food service market / consumer
- employment and training: people who encounter difficulties in finding in position in the job market

These three categories basically form the primary target groups for BON et Bien to liaise and communicate with within a social business, sustainable enterprise context. In this process each of the BON et Bien partners acts as intermediary for one of the mentioned target groups, from their own core activity as organisational or business entity, and their roles in BON et Bien:

- McCain / Le Gappi (potato growers association): liaising with primary sector / supporting sourcing of farm product
- E. Leclerc: communication with the end-consumer; retail-interface between consumers and the BON et Bien company
- Randstad: recruiting and training of trainees to be employed in BON et Bien

Although food banks are not one of the target groups of BON et Bien, the French Association of Food Banks (FFBA) is involved in BON et Bien, specifically as ethical advisor. In this role FFBA's task is to safeguard the company's sustainability in terms of the balance between the company's economic, environmental and social objectives.

In co-operation with the food catering company Sodexo BON et Bien will attempt in 2016 to expand its product supply to the food service market in France and Belgium. The co-operation with Sodexo will be valuable for BON et Bien to establish a foothold in this

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market, although it is expected that this market will be more difficult for reasons that the sales margins will be lower.

Farmers and trade companies in the region are selected on the availability of surplus vegetables on their farms, and their willingness to commit these volumes for delivery to BON et Bien on a regular basis. BON et Bien settles the arrangements with the supplying farms by means of annual contracts, which also includes the agreed price for produce will be supplied.

Products of BON et Bien are well displayed and positioned in E.Leclerc shops in Lille, Templeuve and Watrelos. The active participation by E.Leclerc, one of the largest supermarket networks in France, made it possible to implement a market strategy that creates good exposure, amongst others by explaining to the consumer 'the story of the product' itself.

The recruiting, selection and training of personnel (trainees) is entirely organised and supervised by Randstad. Through their network of their local branches in the community in the Lille region, they are able to identify and recruit suitable candidates that are eligible for the BON et Bien traineeship.



BON et Bien considers the supplying farmers as partners in the development of the social business. The intention is to build long-term partnerships with these growers for delivery of the product volumes. From the start-up of BON et Bien in May 2015 a group of 10 growers has been involved as supplier of vegetables and potatoes to BON et Bien. Considering the plans for scaling up the operations and deliveries this number will increase to 100 in 2016. Contacts with the farmers are established by BON et Bien and through the stakeholders that have ties with the farming community in the area Nord-Pas-de-Calais.

As social enterprise it is the purpose of BON et Bien to involve all stakeholders that will cover the entire value chain. In the co-creation process of establishing the company the value chain from farmer, processor and retailer was involved. The next step in the full growing of the social business by BON et Bien will be to increase the involvement of consumers as stakeholders in the process. Through social media (Facebook) BON et Bien intends to integrate this role / function of the consumer in the value chain of the product.

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# Background

BON et Bien started as a co-creation initiative in 2012 by three private partners (McCain, E.Leclerc en Randstad France) and two non-governmental associations (La Fédération Française des Banques Alimentaires<sup>1</sup> (FFBA), and le GAPPI<sup>2</sup> (Groupement d'Agriculteurs Producteurs de Pommes de terre pour l' Industrie)). Since then BON et Bien has developed into a social business with grassroots in the farming sector and retail industry in the region Nord-Pas-de-Calais (in the north of France). While each organisation addressed the issue of food waste from their own professional and societal background, they all wanted to grasp the underlying causes of the loss of non-consumed fresh food products on the farms (mainly potatoes and vegetables). The social aspect of the business is directly related to the region's relative high rate of unemployment (13,1%<sup>3</sup>). The partners acknowledged the necessity to link food wastage with existing societal deficiencies, more specifically the burden or negative effects of food waste on the environment, the food insecurity of social-economically vulnerable groups, and the unemployment of people that are at great distance from the labour market due to the lack of education and the training of professional skills.

Through a stakeholder workshop 2012 the five partners set a collective agenda for action to curb food waste on farm level. The outcome of this workshop was the gleaning pilot project in 2013. The pilot served as a way to liaise with farms on the food waste topic, and to gain insight in the scale of the problem (volumes of potatoes and vegetables discarded or not used for consumption purposes). The pilot project also formed a stepping stone in the co-creation of a social business by the partners, that would ultimately substantiate the venture from a business perspective but also from a societal point of view. The latter aspect concerns diminishing the negative environmental effects from food waste, and the creating of jobs for a group of unemployed people who have difficulties in finding a connection with the job market.

Within the co-creation model the partners started with a gleaning pilot project. From this pilot the partners concluded that gleaning as a social business solution would only have limited social and environmental impact because of the short period in which gleaning would actually take place. As a solution for reducing food waste it was therefore not considered as sustainable. At the same time, providing employment for disadvantaged members only during harvest period was neither sustainable. The alternative to set up a sales outlet of deformed (strange) vegetables wasn't deemed sustainable either because the consumer will always select the most perfect product that is available. The partners then developed the concept further into what today is BON et Bien: a social business that collects from farms vegetables and potatoes that would not be sold in the consumer market due to non-conformity with market standards or product defects. These products

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<sup>1</sup> French Association of Food Banks (FFBA)

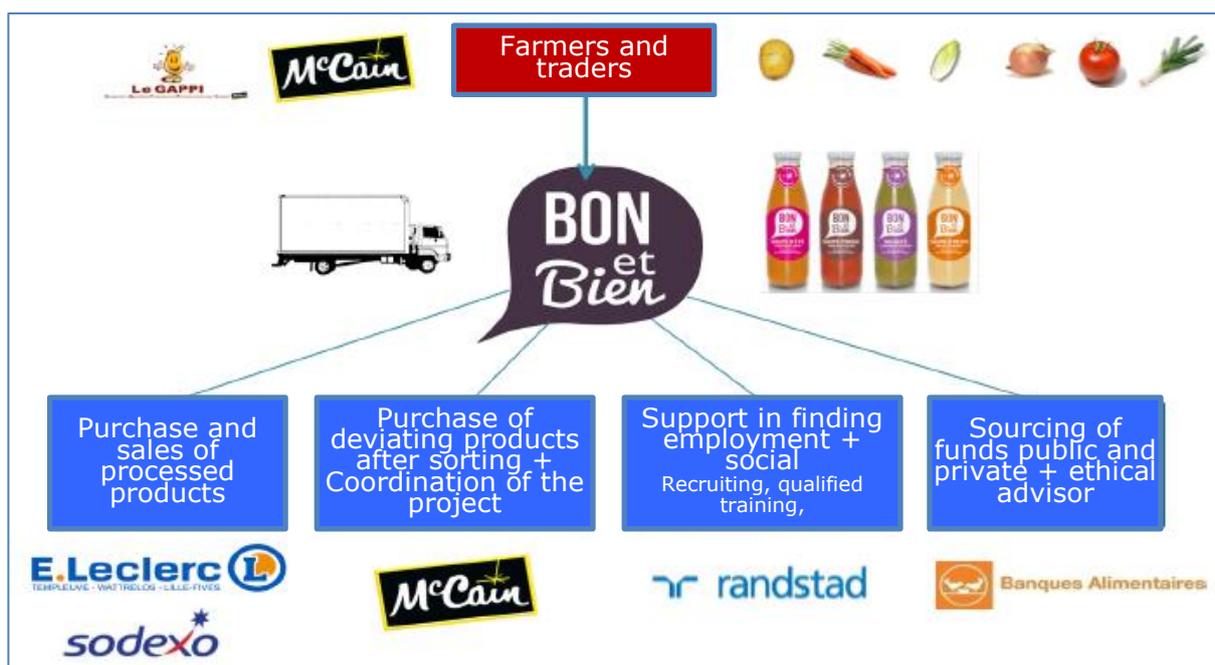
<sup>2</sup> Association of growers of potato for industrial processing

<sup>3</sup> Source: [www.insee.fr](http://www.insee.fr). For France the unemployment is calculated at 10,8%

are then processed into soups, to be sold in the E.Leclerc supermarkets in and around the city of Lille.

Since the official start of BON et Bien in May 2015 the social business has been successful in organising the entire chain from collection, processing, marketing, and sales. In addition the company has developed an organisational structure that supports people, that previously were unemployed and have limited professional skills, to learn skills and obtain working experience in a business environment. The structure consists of a job-rotation scheme in which the selected employees work in the company for one year, and during this year receive training in professional skills for food processing & a social coaching. The programme is developed in co-operation with Randstad and the local employment actors and enables the trainees to obtain both a practical experience on the job and a theoretical background in food processing.

The first year of production is yet to be completed, but already BON et Bien has expressed its ambition and plans to launch a scale up of its operations in the year 2016. In this year shareholders and management intend to invest in increasing its processing capacities to realise a larger turnover in sales of its product in the retail and food service market, to create extra job positions in the company for professionals and trainees, and to expand its sales outlets to other retail stores and to the food service sector.



Graph 1 Organisational structure of BON et Bien

Source: Bon et Bien/McCain, 2016

The organisational structure, including the connections with the partners in BON et Bien is explained by the schematic overview in Graph 1:

- Vegetables and potatoes are collected by BON et Bien from farms and trade companies in the region Nord-Pas-de-Calais. McCain and Le Gappi have a supporting role in identifying and liaising with these suppliers.

- 
- Produce is collected on a weekly basis from these suppliers by BON et Bien and then transported by truck to the processing facility in Templeuve, at the back of the E.Leclerc supermarket. After reception the product is stored and then processed into fresh soups.
  - Product of BON et Bien is mainly purchased by E.Leclerc (retail market) and we are conducting some tests with Sodexo (Food service market) who sell it to their customers.
  - McCain purchases potatoes that are collected from the farms by BON et Bien for the flake processing line in their factory<sup>4</sup>.
  - Randstad supports in the recruiting of personnel (trainees) and in coordinating the training programme for the trainees, enabling trainees to obtain a qualification certificate. After finalisation of the traineeship Randstad guides BON et Bien trainees in finding a new job position.
  - The French Association of Food Banks had a role in obtaining public and private funds that support the BON et Bien financial portfolio to facilitate the launch of the project. In addition the FBBA acts as ethical advisor and partner in the co-creation process.

In addition their respective roles, both McCain and E.Leclerc form the driving forces in the co-creation process. In this McCain performs an overall co-ordinating role, from their experience in developing social business in Colombia, as well as from their corporate responsibility strategy to invest in local economies and communities to apply social business modelling for alleviating poverty.

Acting shareholders of BON et Bien are McCain, E.Leclerc Templeuve . Each of these partners has provided an equal share in the start-up capital of €200.000 as an investment loan. Randstad additionally provided a loan of 100.000. The condition is that this start-up loan will be paid back within a period of 5 years, with no interest and no dividend. The objective is for BON et Bien to be financially autonomous (“no dividend, no loss”).

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<sup>4</sup> McCain purchases these potatoes from BON et Bien only in the first year of operation as an extra source of income for BON et Bien.

# Implementation

Materials for informing consumers have been developed to tell the story about the origins of the product, about the background of food waste and about the social and environmental impact of the BON et Bien enterprise. Communication materials that have been developed so far intend to illustrate the story to the public, to increase awareness on the issue of food waste, and to motivate customers to buy the product. For example, as part of a European campaign on the reduction of waste BON et Bien introduced an internet quiz in which participants were asked to give answers to how much food waste is reduced by the BON et Bien products. Besides the fact that this form of advertisement created positive exposure of the BON et Bien products, the format made it possible for consumers to link the product directly with a specific volume of product that is processed (e.g. leek, carrots, onion, potato) and that otherwise would have been wasted for human consumption.



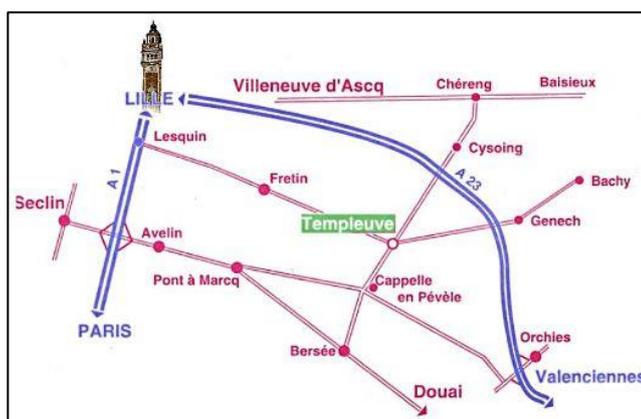
Graph 2 Material for marketing / communication



Graph 3 BON et Bien Facebook advertisement

In order to understand in what location a similar initiative could take place we take a look at the location of BON et Bien.

Nord-Pas-de-Calais is the region with the second-highest unemployment rate in France (13,1% compared to the national unemployment rate of 10,8%). Agriculture, in association with the food industry, is a main economic activity in the region and covers two thirds of the region. Nord Pas de Calais contains 16 000 farms, representing 30 000 agricultural workers, and is the biggest French regional producer of amongst others potatoes and a variety of horticultural product. The combination within the region of high unemployment and the importance of agriculture and food industry as main economic activity formed the breeding ground to address food waste within this social and economic context.



Source: [www.ville-templeuve.fr](http://www.ville-templeuve.fr)

The production facility of BON et Bien is located close to the commercial centre in Templeuve, near to the E.Leclerc supermarkets in Templeuve, Lille and Wattrelos in the region Nord-Pas-de-Calais. Being close to the main market outlets has created an advantage for the distribution of final products to the shops. A marketing feature is that the BON et Bien is positioned as an “intra enterprise” outlet within the E.Leclerc hypermarket.<sup>5</sup> This has provided the BON et Bien social business with a number of advantages in terms of support and infrastructure in security, energy, offices, etc.

Partners of BON et Bien chose the method of co-creation as a way to establish the social business concept by:

- involving multiple partners from the product value chain with varying backgrounds; and
- gaining support from the partners’ respective organisations.

The co-creation method has resulted in the partnership between the organisations, and as such made an important contribution to the success of BON et Bien so far. The involvement of partners from both the profit and the non-profit sector made it possible to set out a path that brings together the respective business and social agenda’s and combine these in a new social business organisation “no dividend, no loss”.

<sup>5</sup> Mr. Thomas Pocher, E.Leclerc Wattrelos:

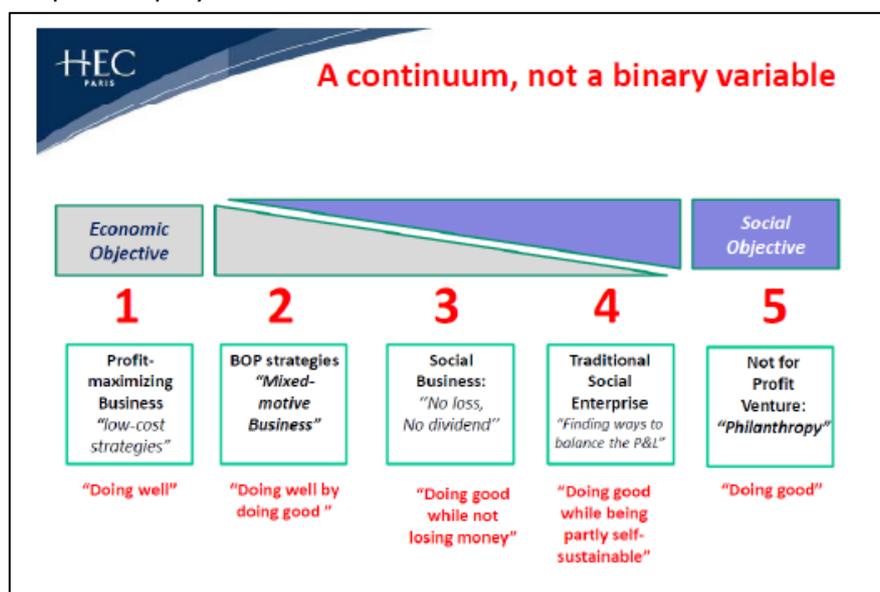
Especially the co-creation set-up enabled BON et Bien to leverage skills and competences from a multitude of disciplines within the partner organisations (advice from legal, marketing, agronomy, finance, PR, HR, etc.). According to the partners this has made a huge difference, in quality as well as in cost.

Legal entity : "SAS à mission sociale"

A *social business* is a cause-driven business. In a social business, the investors/owners can gradually recoup the money invested, but cannot take any dividend beyond that point. Purpose of the investment is purely to achieve one or more social objectives through the operation of the company, no personal gain is desired by the investors. The company must cover all costs and make profit, at the same time achieve the social objective, such as, healthcare for the poor, housing for the poor, financial services for the poor, nutrition for malnourished children, providing safe drinking water, introducing renewable energy, etc. in a business way.<sup>6)</sup>

The social business entity is best described by the following graph. In this graph are displayed on the far left the profit-maximizing business entity, representing the maximisation of the economic objective, and on the right the not-for-profit type of venture, with its foundations in its social objective. The social business combines both the economic and social objectives of the venture, hence the characterisation "no loss, no dividend".

Graph 4 Graphic display of the social business



Starting point for any (group of) organisation(s) that intends to set up a similar intervention is that there is a positive business case that will enable the process of collecting and processing fresh produce from farms and other supplying companies, and that the organisations will set a collective agenda. The condition for the success is to find a market, and a consumer demand that will generate revenues from sales in the market.

<sup>6</sup> <http://www.muhammadyunus.org/index.php/social-business/social-business>

Staff personnel is required to have good knowledge of food processing technology, as well as on the regulations and procedures for safeguarding food quality and food safety (ISO, HACCP).

The basic principles of the process are relatively easy to learn to trainees who therefore do not require a background in industrial food processing.

A first and absolute requirement is that the intervention has to be sustainable on the economic aspect. In addition there are a number of organisational and contextual preconditions that have to be met for the good implementation of the intervention:

- Top-level support: before implementation of the collective agenda and entering into the process of co-creation it is important to clear governance and gain support from the top management of the respective partners.
- Mobilise stakeholders: engage, inform and involve the respective stakeholder organisations in order to receive support and commitment in the day-to-day operations of the social business.
- Definition of a collective agenda: the collective agenda is more important than the agenda's of the individual partners and should be appreciated as such.
- Pivot in the process: whereas collective action is important, you will need one party that acts as intermediary and driving force in the process of co-creation.

Knowledge and vocabulary sharing: the process of co-creation requires the sharing of knowledge and vocabulary between the partners in the process. Parties from the non-profit sector will have to adapt to the rules of business, while profit organisations need to integrate non-commercial interests and goals in their business mind-set.

**Implementation of the concept of BON et Bien was developed in 3 phases detailed below:**

<b>Phase 1: Gleaning</b>		
<b>Activity:</b>	<b>Purpose/result:</b>	<b>Timeline:</b>
a) identifying stakeholders	<ul style="list-style-type: none"> <li>• Involve stakeholders from the entire chain in the process of co-creation (farmer, processor, retail</li> </ul>	
b) stakeholder workshop	<ul style="list-style-type: none"> <li>• inception of the idea for the gleaning project</li> </ul>	Dec- 2012
c)gleaning pilot	<ul style="list-style-type: none"> <li>• Pilot for the co-creation model</li> <li>• Inventory of the food waste problem at farm level</li> <li>• Developing an activity as means to</li> </ul>	Jun-Nov 2013
<b>Phase 2: Social business BON et Bien</b>		
<b>Activity:</b>	<b>Purpose/result:</b>	<b>Timeline:</b>
a) stakeholder workshop food waste and social business	<ul style="list-style-type: none"> <li>• follow up on the gleaning project</li> <li>• identify link food waste and social business</li> <li>• conception of the idea for BON et</li> </ul>	Dec- 2013

	Bien	
b) Development concept BON et Bien	<ul style="list-style-type: none"> <li>• supporting local employment in Nord-Pas-de-Calais</li> <li>• reduction of food waste</li> </ul>	Jan-2014 - Apr- 2015
c) Co-creation	<ul style="list-style-type: none"> <li>• Create internal awareness and support, commitment from top (CEO) level</li> <li>• Create awareness in the own organisations</li> </ul>	Jan-2014 - Apr-2015
d) Start-up operation BON et Bien	<ul style="list-style-type: none"> <li>• Collection vegetables (weekly)</li> <li>• Processing / production fresh soups</li> </ul>	May 2015
e) Start-up operation BON et Bien: collection potatoes	<ul style="list-style-type: none"> <li>• In the first year McCain takes unmarketable potatoes from BON et Bien for their flake production. This is done in support of the start-up of BON et Bien for the company to generate some extra cash, and will be stopped after the first year</li> </ul>	May 2015 - Apr 2016

### **Phase 3: Upscaling**

<b>Activity:</b>	<b>Purpose/result:</b>	<b>Timeline:</b>
a) Increase social and environmental impact	<ul style="list-style-type: none"> <li>• Stronger involvement of consumers in the co-creation of BON et Bien (a.o. through social media)</li> </ul>	2016-...
b) Increase production capacity	<ul style="list-style-type: none"> <li>• Investment in processing capacity</li> <li>• Increase suppliers volume</li> <li>• Expand number of market outlets retail</li> <li>• Develop market outlet food service sector</li> </ul>	2016-...

# Impact

Table 1 gives an overview of the impact that has been realised in the brief period of time after the start of BON et Bien in May 2015. Consistent with the 3 pillars of the social enterprise BON et Bien assesses impact from an economic, environmental and social perspective. The table also shows the prognosis for 2016, linked with the investment plan to increase the production capacity and the sales volume. The target for 2020 is to have realised a reduction in food waste with 700 tons of vegetables and potatoes and to provide work for 30 people, of which 24 persons on a one-year contract.

Table 1 Impact BON et Bien

Key figures	2015 May-Dec	2016 prognosis	2020 target
<b>Production</b>			
capacity ltr.	80.000	200.000	700.000
prod. Volume ltr.	30-40.000	150.000	600.000
<b>Impact:</b>			
<u>economic</u>			
sales volume ltr.	21.000	80.000	330.000
sales price ltr.	4,67	4,67	4,67
sales turnover	€ 98.000	€ 373.333	€ 1.540.000
sales outlets	5	>10	
<u>environmental</u>			
food waste reduced kg	17.000	200.000	700.000
<u>social</u>			
staff personel fte	2	2	6
trainees (1-yr. contracts)	3	6	24

In the case of positive net revenue, profits are retained and invested into the business to increase social and environmental impact. BON et Bien does not pay-out dividend to shareholders.

For the year 2016 plans are:

- Scale up of sourcing: to scale up in the number of supplying farms from 10 in 2015 to 100 growers in the coming year 2016.
- Scale up sales outlets: Also the number of sales outlets will be increased, in particular by extending to other E.Leclerc stores in France.
- Enter a new market: in 2016 the first deliveries are foreseen of product to the food service sector. The first steps for this market diversification are being investigated in close co-operation with the company Sodexo.

Increase in sales turnover: as a result of these efforts the target for the total sales in 2016 is set at 80.000 litres.

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# Lessons Learnt

For which problem was the intervention developed? Please describe nature, gravity, geographical spreading and consequences.

20 percent of the potatoes and vegetables that are grown in the fields for the fresh market and food processing industry does not reach the consumer. This percentage is estimated by McCain, based on their experience in the farming sector in the region Nord-Pas-de-Calais in northern France, and a pilot gleaning project they co-ordinated in 2012 in this region. Part of this product is sold to the animal feed industry and processed into cattle feed, part is left in the fields. The considerable volumes not only have an impact on the economic sustainability of the farming business, but also creates an environmental impact as a result of the loss of resources that are used in the process of production and the GHG emission of product that is left to rot in the field. From a social and ethical perspective the wastage of food and hence the loss of nutritional value is finding a growing opposition as well.

For the partners in the consortium of McCain, E.Leclerc Templeuve, Randstad, Le Gappi and the Federation of Food Banks this gave reason to set-up an initiative in the region where they operate: Nord-Pas-de-Calais. The gleaning pilot project gave insight in the potential product volumes of potatoes and vegetables that are left on the farms. The pilot also showed the power and potential of involving people that have difficulty with finding access to the job market, in recovering food. This created an important to set up a business concept that would tackle two obstinate issues in the region in a sustainable way: food waste and unemployment.

The ambition of the consortium is to develop a new business concept that will tackle some of the underlying causes of food waste and unemployment:

- The consumer desires a vegetable, fruit or potato that is perfectly shaped. Product defects or deformities are not accepted by the consumer and hence such products are rejected in the value chain. These products are either left in the fields and ploughed into the soil, or processed into cattle feed, composted, or thrown away. In all these cases nutritious food is no longer valued and processed for human consumption.
- Part of the large group of unemployed people in the region lacks professional education or qualifications for working in the food processing industry. A lack of skills and working experience keeps these people at long distance from the labour market.

BON et Bien was established as a business that addresses both issues as a commercial business with a social profit.

BON et Bien has developed an alternative supply chain for potatoes and vegetables that are deemed unsuitable for the fresh market or are unfit for largescale industrial processing. The nutritional value of these products is preserved by processing them into

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ready meal products (soups). Selling points of the new product is the quality (taste), and the social aspect of buying and consuming a local product.

The company provides jobs to personnel that has no working experience, qualifications or proven skills, and gives them the opportunity to follow a one year training programme. The programme consists of theoretical and practical (on-the-job) training and a social coaching (to resolve the social issues: lodging, overindebtedness). After one year the trainees receive a certificate which enables them to find their net job in the food processing industry.

The impact so far shows that the first steps to reduce food waste that is generated on the farms have been set and that the concept has the potential to develop further. The opportunity to employ people with little or no professional background on a one-year training contract has proven successful as well.

The following is a summary of elements that have been considered by the partners in BON et Bien as effective elements in this intervention that contribute to reaching the set goals. These are presented as key learnings:

Key learnings:

- **Create facts first:** in the case of BON et Bien the gleaning project provided valuable information and insights on the size and scope of food waste on the farms, and with that the economic and environmental impact.
- **Internal before external:** this is about creating awareness by engaging with and mobilise each stakeholders organisation first, before implementing external communications on the initiative.
- **Set clear and measurable goals:** set clear goals internally and externally what you intend to deliver with the initiative
- **Small success stories can lead to big impact**
- **Create win-win for each partner:** you have to create a win-situation for each of the partners involved
- **Share vocabulary / knowledge:** partners have to share the knowledge and vocabulary in the co-creation process. Social partners have to assimilate the language and the importance of the economic value of a social business. Private (business) partners will need to adopt the aspects of generating social and environmental impact that may lie beyond their primary scope of business.
- **Clear governance structure:** obtain support from the top-management (in case of a multinational partner both on national and international corporate level).
- **Economic sustainability:** ensure sustainability on the economic aspect of the social business
- **Customer partnerships:** reach out to the consumers: use press and social media to inform and involve consumers in the co-creation process

There are also a number of key challenges to attend to when setting up a similar approach and intervention:

- **Set a collective agenda:** the collective agenda of the partners involved is more important than the individual agenda

- 
- **Create budget:** make available or obtain financial means to employ a project manager and office space to enable mobilising the locomotive that you need to start-up and manage the co-creation process

**Appoint an intermediary party:** a party is needed that acts in the co-creation process as an intermediary between the partners, and that is able to create alliances between the partners

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## Social Innovation Projects on Food Waste Reduction Case Study 'BON et Bien'

### Colophon

<i>Name organisation:</i>	BON et Bien
<i>Country:</i>	France
<i>Telephone:</i>	-
<i>Website</i>	<a href="http://bonetbien.fr/">http://bonetbien.fr/</a>
<i>Contact person(s)</i>	Gaspard Lathoud, CSR manager McCain Foods Continental Europe Thomas Pocher, Manager E. Leclerc Watrelos
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BON et Bien

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# 17 Appendix X Zero Waste Jam



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## **Developing Zero Waste Jam**

**WP4 – Testing Social Innovation**

**Evaluation Report**

**Date: 11.02.2016**

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**Reducing food waste through social innovation**

FUSIONS EU project is supported by the European Community's Seventh Framework Programme under Grant Agreement no. 311972.



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# Colophon

Title	Developing Zero Waste Jam: Evaluation Report
Authors	Sarah Bromley, WRAP
Keywords	food waste prevention, food donation, food preservation, jams, preserves, chutneys, food aid, best practice, social innovation, Austria
Clients	European Commission (FP7), Coordination and Support Action – CSA
	Contract number: 311972
Project leader	FUSIONS coordinator: Toine Timmermans, Wageningen UR - Food Biobased Research, The Netherlands
	Project leader for this Deliverable: David Rogers, WRAP.
Acknowledgments	The authors would like to thank Sophie Easteal, Michael Wenborn, Elaine Charlesworth & David Rogers from WRAP for coordinating the work package/feasibility studies and Cornelia Diesenreiter who kindly participated in the evaluation.

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# Zero Waste Jam

Zero Waste Jam is a 6 month old Austrian social enterprise that redistributes surplus food fruit from private gardens and creates Jams which they sell to the general public. Zero Waste Jam was originally founded in 2012 by Evalina Lundqvist, the founder of the sustainability agency The Good Tribe. She appointed Cornelia Diesenreiter to become the new CEO and owner of Zero Waste Jam in order to expand the project as Evalina did not have the capacity. Cornelia is a chef by profession but also studied Economics and Law at undergraduate and Eco-resource management at Master level. Therefore Cornelia is fully equipped for this role.

Zero Waste Jam, like many, strongly believes in using our world's natural resources efficiently. They identified that despite growing concerns of food security an enormous amount of fruits and vegetables go to landfill due to failing the strict cosmetic standards set by the market or due to seasonal overproduction. Zero Waste Jam wants to challenge the prevailing idea of this waste, to make it social acceptable that resources have value despite being oddly shaped; resources have value and to promote treating all resources with respect, using them to their full potential. In order to portray this message Zero Waste Jam collects surplus fruit from private and public gardens; from community gardens; as well as the forest (the other ingredients used are organic and/or fair trade.) to create jams, syrups and chutneys.

Their marketing moto is 'use what you have' and they plan to have a social franchising model; however at the moment this has been unsuccessful due to certain legal requirements. Cornelia runs the project on her own but close friends help with the harvesting; she also has free mentoring from sales experts that believe in the project. Cornelia hopes that as Zero Waste Jam expands they will be able to employ a team. Currently to promote the concept they are using social media and local newspapers. Currently the cost to run Zero Waste Jam is low, with much of the money needed to cover simple things such as transport and webpage costs. Cornelia expects this will change next year as they are expecting to take a permanent kitchen and look to develop and widen the team/workforce to help with the cooking and harvesting. The project is economically viable in that they sell the product and this is invested back into the company. As this is a relatively new project they did not have any annual turnover figures.

This season Zero Waste Jam has intercepted more than 600kg of food which is expected to increase next season. Currently this is mostly sourced from private gardens, which they claim should not be underestimated as they produce a lot of surplus. Currently Zero Waste Jam has the opportunity to collect more surplus, however at the moment they do not have the capacity<sup>1</sup>. Zero Waste Jam have found that they have had a high level of engagement from fruit donors who are relieved and happy their fruits and vegetables have not gone to waste. Additionally they have found they have been well received by

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<sup>1</sup> For example the summer of 2015 a farmer offered them 800kg of pears and another a ton of tomatoes but they were not able to take the quantity.

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the people who consume their products. A key finding has been that their consumers like the story behind the jam they are consuming. This has now become a central part of their marketing strategy.

The largest challenge that Zero Waste Jam has faced to date is their capacity, there is more surplus than they can deal with. The work is largely seasonal; there is hardly any cooking from November to May, with the peak time being July and August. This means they need to be very flexible when it comes to cooking space, workforce, and storage. Additionally she found that originally she struggled with the legal requirements of the project as she did not know where to gather the specific information and the support needed. She is now planning to write a manual for the social franchise model she is developing which will help people in this area.

Cornelia identifies that the best part of the project is being outside picking the fruits in order to make a difference, in order re-connect with nature. Interesting Cornelia identified that some people have challenged the work she does due to not understanding the surplus element. For example people do not like the fact that they are eating 'waste'; others have claimed that the surplus element is just a marketing strategy as they do not believe there is surplus. Cornelia has found that being a qualified chef has considerably helped her when she is challenged. For example when people have been hesitant about surplus food because of the perception that surplus food/waste had a high risk of food poisoning. She found that people were more acceptable to the idea once they found out she was a chef. This was because of the perception that she knew what she was doing and was trained to an adequate standard. This identifies the importance in some cases of having qualified and experienced project managers.

Whilst this project does not have a social element (in that it seeks to achieve a social goal such reduce food insecurity etc), it does seek to reduce food waste. Similar to Disco Boco it creates Jams and chutneys and sources the food from farmers. Zero Waste Jam has lessons which could be adopted by Disco Boco.

1. For example Zero Waste Jam works with private gardens; these have identified another source which appears to largely be untapped.
2. The importance of health and safety, Cornelia found that people valued her chef status as it gave them the confidence that she was fully equipped to use surplus food. This identifies the importance of gathering qualified, experienced project managers and the concept of health and safety training.
3. That a large proportion of the costs are spent on expanding the project, having a permanent kitchen and paying for a team.
4. The importance of education, some people are still not aware that surplus is not necessarily 'waste' in the traditional form.
5. A key lesson learnt is that Zero Waste Jam's consumers like the personal touch, the personal story behind the jams being made. This is a good marketing strategy when selling the product. If Disco Boco did something similar they would also have the social element which could help sell the product.<sup>2</sup>
6. The seasonality of the product, Zero Waste Jam found that they had extremely busy period where the harvests were in, therefore this needs to be considered

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<sup>2</sup> This was a similar finding in the Bon Bein case.

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when organising a Disco Boco as certain period may result in less surplus. Additionally if the model became a social enterprise, that is the food was sold, the seasonality would need to be considered.

7. The manual when developed on the legality of the project may help individuals hoping to sell the product.
8. Although Disco Boco already has a branding. It is useful to note that Zero Waste Jam has attracted some negative responses due to the connotations attached to the word waste. Therefore if Disco Boco was to expand or change the logos, this is an important aspect to consider.

<http://zerowastejam.com/en/>

Meeting with Cornelia Diesenreiter

Zero Waste Jam

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# 18 Appendix XI Foodbattle



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## **Developing FoodBattle**

**WP4 – Testing Social Innovation**

**Evaluation Report**

**March 2016**

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**Reducing food waste through social innovation**

FUSIONS EU project is supported by the European Community's Seventh Framework Programme under Grant Agreement no. 311972.



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# Colophon

Title	Developing FoodBattle: Evaluation Report
Authors	Bart van Gogh Wageningen UR
Keywords	food waste prevention, Food waste diary, consumers, social innovation.
Clients	European Commission (FP7), Coordination and Support Action – CSA Contract number: 311972
Project leader	FUSIONS coordinator: Toine Timmermans, Wageningen UR - Food Biobased Research, The Netherlands Project leader for this Deliverable: David Rogers, WRAP.
Acknowledgments	The author would like to thank Sarah Bromley, Sophie Easteal, Michael Wenborn, Elaine Charlesworth & David Rogers from WRAP for coordinating the work package/feasibility studies and Gaspard Lathoud, CSR manager McCain Foods Continental Europe and Thomas Pocher, Manager E. Leclerc Wattlelos who kindly participated in the evaluation.

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# FoodBattle

FoodBattle aims at reducing the food waste volume by stimulating consumer awareness of their routines in the planning, purchasing, storing, preparing and discarding of food, and by presenting concrete measures for improvement in these processes.

FoodBattle is an action period of three-weeks in which consumers keep a daily record of the amount of food they discard. The concept intends to achieve a high susceptibility to relevant information for a short period of time (during the three weeks battle period) in which participants receive information and tips to adjust their daily routines in the shopping, cooking and eating process. FoodBattle was developed in 2012 as an intervention addressing the consumers and their relatively large contribution to the waste of food in the supply chain. Whereas the FoodBattle targets the individual consumer, the recruiting of participants in a FoodBattle is done through groups of which they are a member. Groups can be either social groups, political groups, communities, schools, companies, etc. Basically, it can be any formal and informal group of people that share an interest, belief, conviction, profession, habitat, education, hobby, etc. Any of these groups can start and be in charge of its own FoodBattle.

A FoodBattle campaign starts with a group or community that wants to challenge its members to minimise their food waste. The FoodBattle coordinating organisation then feeds this group with tools and information for a FoodBattle to become operational. Important elements in the FoodBattle campaign are the weighing and registration of the food waste (food waste diary) and the communication of practical and concrete tips for consumers to reduce this waste.

The purpose of the FoodBattle is to make people aware of how much food they actually waste and to present them solutions that will help them to reduce their food waste. The idea is that the food waste diary as a self-monitoring tool will increase the participants' awareness of their own food waste behaviour. By creating a competitive atmosphere within their peer-groups participants will be motivated to enter into the debate on food waste within their group and ultimately to change their food waste routines.

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# Background

FoodBattle was developed as intervention to contribute to the reduction of the environmental impact that results from the substantial share of edible food that is purchased but not consumed and is thrown away by the consumer. The conception is that by reducing food waste at household level the overall environmental impact of food waste will be reduced.

FoodBattle was developed in a collaboration process between Wageningen UR Food & Biobased Research, Circulus Berkel, Milieu Centraal and the Netherlands Nutrition Centre. The process was supported financially by the Dutch Ministry of Infrastructure & Environment, who is politically responsible for environmental policy, including policy measures related to household waste.

The FoodBattle's primary target group consists of individual consumers and their families / households. Participants in the FoodBattle are recruited through their peer groups. These peer groups serve as intermediary in the start-up and organisation of the FoodBattle. Intermediary target groups can be political and social groups, governmental and non-governmental organisations, private companies, etc.

FoodBattle is open to any group that wants to engage its members' attention for the issue of food waste and their role in the reduction of food waste. Target groups are approached through the FoodBattle website, press releases, and through a network of (government) stakeholders.

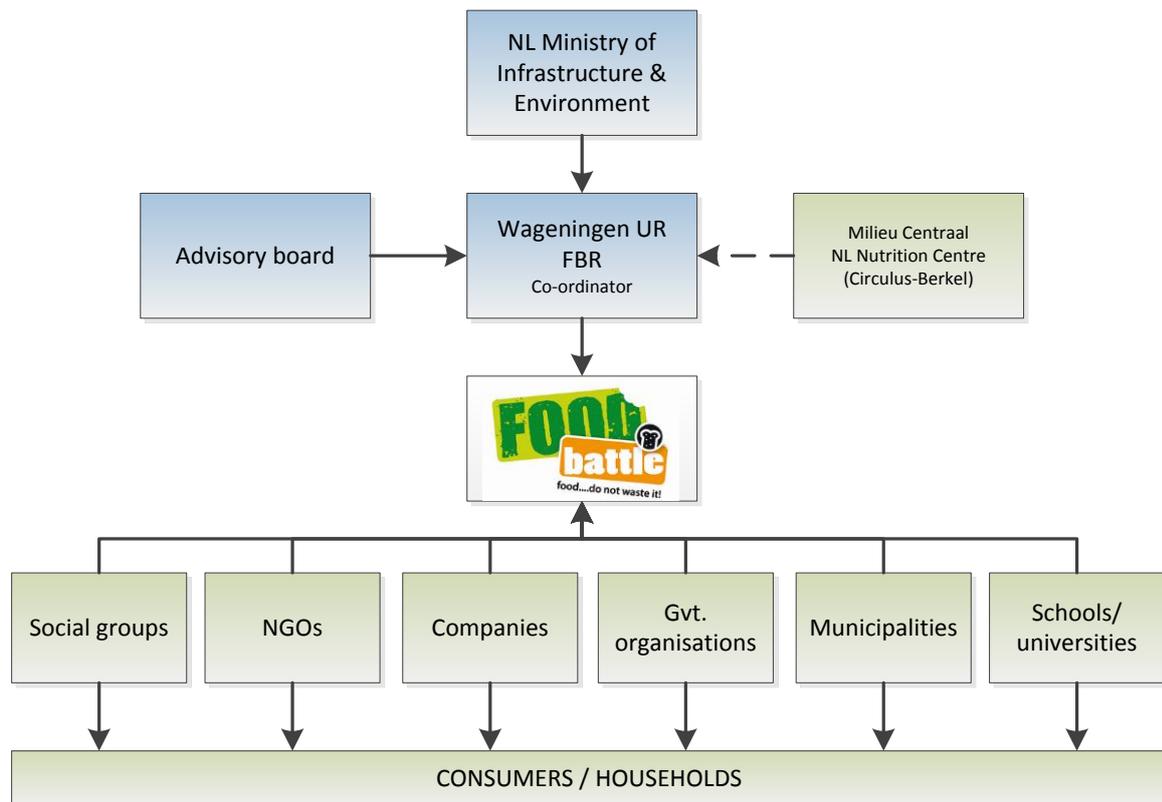
The intermediary target groups are in charge of the recruiting of participants for the FoodBattle. FoodBattle supports the recruiting by providing several communication tools that have been developed for this purpose (posters, flyers), and through its website ([www.foodbattle.nl](http://www.foodbattle.nl)). In collaboration with the target group a 'battle-plan' is drafted as a detailed action plan for the group to guide them through the organisational steps from start to finish of the FoodBattle.

The FoodBattle was developed in the Netherlands from the stage of design and developing of tools in 2011-2012, to a small-scale pilot to test the concept in 2012-2013, and then to full-scale implementation in 2014 and onwards. In 2012-2013 the FoodBattle was successfully tried in a pilot with 3 supermarkets in 3 local communities in the Netherlands. Later in 2014 a total of 6 full-scale FoodBattles were organised for a variety of organisations, comprising a total of nearly 850 participating households, or 2000 persons. In 2015 a total of 9 FoodBattles were implemented in co-operation with municipalities, ministries, NGOs, and alike. The 2015 campaigns mobilised more than 600 households, or 1600 persons.

The ambition is to make FoodBattle available for organisations that wish to involve their members in the debate on food waste. To realise this ambition the FoodBattle is planned to be made available as a web-application through which organisations can be more self-sustaining in organising their own FoodBattles.

Graph 1 shows a schematic overview of how FoodBattle is organised in the Netherlands. As mentioned before the concept was developed by Wageningen UR FBR in co-operation with the NGOs Milieu Centraal, the Netherlands Nutrition Centre, and with Circulus-Berkeel. The development of the intervention was commissioned and financed by the Dutch Ministry of Infrastructure & Environment. A FoodBattle campaign is initiated by one or more intermediate groups. These groups recruit among their members (employees, supporters, etc.) the participants to fill their own FoodBattle (see also the paragraph 'implementation').

Graph 1 Organisational structure of FoodBattle



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# Implementation

Logo - The FoodBattle logo is developed by one of the supporting partners and made available for all communication materials that are developed in the FoodBattle. It contains the key-message that is used in the FoodBattle: "food...do not waste it!"

www.foodbattle.nl - Apart from a small English section the FoodBattle website is currently in Dutch language. The content of the website is managed by the FoodBattle supervisor.

Posters & flyers - Intermediary groups can either use posters and flyers, made available by the FoodBattle supervisor for the recruiting of participants, or develop their own communication materials.

Each FoodBattle intervention is structured in co-operation with the initiating group and contains the following elements:

- 1) recruiting of participants through a communication campaign
- 2) information transfer of measures for households to reduce their food waste (e.g. flyers, website, tips and messages during the FoodBattle, etc.)
- 3) questionnaire to record the behaviour of consumers
- 4) diary to record the individual daily food waste
- 5) communication of results

Graph 2 is a simplified overview of the implementation of the FoodBattle. A FoodBattle is initiated by a group that wants to involve its group members in the issue of food waste and to exemplify their particular role or contribution in reducing the amount of food wasted. The overall co-ordination of the FoodBattle is done by the supervisor, i.e. the organisation that is responsible for the co-ordination in the preparation, implementation phase of the FoodBattle.

The group as intermediary is responsible for the recruiting of participants for its own FoodBattle. Communication to the group members is supported by the FoodBattle supervisor by providing content and lay-out for communication materials. Registration by the participants can be done either by weblink on the FoodBattle website, or by the group's organisation itself. In both cases names and email addresses are registered and entered into the FoodBattle's system participants database.

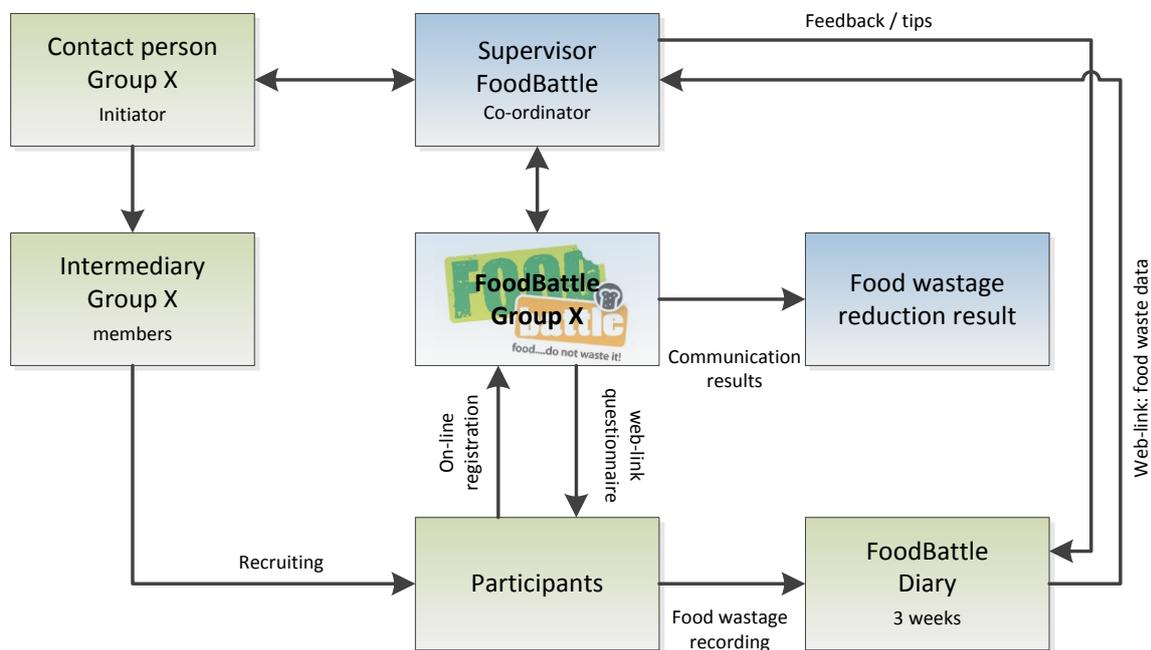
After registration in the FoodBattle the individual participants receive a web-link to fill out a questionnaire before the start of the FoodBattle. Purpose of this questionnaire is to retrieve information from the participants on their specific behaviour and of their household members with regard to their consumption and discarding of food, but also to increase the awareness of their own behaviour.

The FoodBattle starts on the same day for all members in the group. Participants are required to keep a daily record of their food waste. After the first week all participants receive an email form the supervisor with a web-link and are requested to fill out their daily recordings in an electronic form. This electronic form is then processed by the

supervisor after which a feedback email is sent to each participant, containing generic information (tips) on how they can reduce their food waste. This procedure is repeated in the second and third week of the FoodBattle. After completion of three weeks recording of food waste each participant receives a web-link to a second electronic questionnaire to evaluate the participants experiences.

After completion of the FoodBattle the participant receives an email containing information on his own performance in terms of food waste reduction, in comparison with his group and/or the average national food waste. This gives feedback to the participant on its own performance relative to the overall performance of the group.

Graph 2 Schematic overview of the FoodBattle organisation



FoodBattle is not fixed to a particular location or venue, but can be organised by any organisation in any setting.

Currently the FoodBattle concept is co-ordinated in the Netherlands by Wageningen UR. Discussions to transfer this co-ordinating role to a different type of organisation are geared to involve another supporting organisation with links to food, environment and sustainability.

- *Target group relevance* - The contextual condition of the FoodBattle as intervention to reduce food waste is that the consumer is a substantial contributor to the total food waste. This is the case in the Netherlands where each person wastes each year approximately 47 kg of solid food. The total value of edible food that is wasted by consumers is estimated at €2,6 billion per year. Hence also the financial relevance in the Netherlands to intervene at consumer level, with an expected high return on investment from the intervention in terms of reduced environmental impact from food waste.

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- *Budget* - The FoodBattle intervention is designed to delegate a substantial share of the work and responsibility in organising a FoodBattle to the initiating organisation. Nonetheless the co-ordinating role requires to have a dedicated team of experts that is available to provide support during a FoodBattle, in case of troubleshooting and for feedback to questions from the FoodBattle participants. For this purpose a certain budget will have to be allocated to the co-ordinating organisation. A similar budgetary need applies to the coverage of expenses for webhosting, maintenance of the FoodBattle information and system tools.
  - *Government support* - The development of the blueprint of the FoodBattle concept and of the system tools was sponsored by the Dutch government. The support from the government also kick-started the organisation of the full-scale FoodBattles in 2014 and 2015. The extra funding has contributed to the naming and publicity of FoodBattle.

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# Impact

Each FoodBattle is concluded with the calculation of the individual and overall group performance after three weeks and the communication of these results to the group. The results show a comparison of the kilogrammes of food waste recorded in the third week with the food waste in the first week of the FoodBattle. Although the food waste recordings for the first week are not an actual 'zero-measurement', the comparison does give an impression of the impact of the three week awareness campaign on the participants behaviour and routines, and of the food waste reduction and benefits that are feasible for the individual participant. The results of the FoodBattles that have been executed so far vary, but an average short-term reduction of food waste at household level by 20 percent is considered feasible.

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# Substantiating arguments

FoodBattle was developed as intervention that would contribute to the reduction of the environmental impact substantial volumes of edible food that is thrown away by the consumer. The conception is that by reducing food waste at household level the overall environmental impact of food waste will be reduced. Especially food waste that occurs at the end of the supply chain has a high environmental impact because the food product has gone through the entire chain (use of energy and water, greenhouse gas emissions, transport, etc.). By reducing food waste less food will be required to be produced, and will also lead to less food waste disposal and recycling.

Food waste is caused at different moments in the consumer process:

- 1) waste by purchasing too much food,
- 2) waste by poor (refrigerated) storage (improper storage or exceeding of the product expiration date),
- 3) waste at the preparation stage (preparing too much food), and
- 4) waste at the actual consumption of food (discarding of food instead of cold storing / deep-freezing of left-over food).

In order to intervene successfully in these moments of food waste generation, the following factors were identified that need to be tackled:

- *Awareness*: • Awareness of the consumer is low • People often do not know how much food they actually discard
- *Purchasing behaviour*: • Buying too much food • Food is very cheap and the consumer tends to buy too much • Consumers find it rather difficult to estimate how much food they actually need, and are afraid to have too little • Pricing and promotion campaigns of retailers also induce a tendency to overbuying by consumers • Absence of a shopping list.
- *Convenience*: • Consumers increasingly use processes and pre-cut fresh products, that are more susceptible to spoilage • Consumers do their grocery shopping less frequent (once a week; fresh products spoil at the end of the week).
- *Competences: bad handling (storage) of food*: • Food is either stored too long or under bad conditions, leading to spoilage • Young consumers lack knowledge of proper food preparation • Inadequate storage of food after purchasing leads to quality loss.
- *Poor planning and eating behaviour*: • Family setting with both parents involved in the shopping routines leads to purchase of surplus food • Children tend to have a variable appetite and to change their food preferences • Impulse buying and altered planning during the week also generates a surplus of food ultimately to be wasted.

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- *Luxury behaviour:* • People are not willing to consume 'old' products • When too much food is prepared leftovers are no longer stored for another occasion but are rather thrown away • People tend to 'forget' the food they have in the refrigerator, often in combination with poor storage • Sometimes people throw away food before it is spoiled and sometimes wait until it does get spoiled • Food is thrown away when it doesn't taste nice • Sometimes people change their menu when they rather eat something different, other than what they have purchased before.
  - *Lack of information:* • People do not have sufficient information, in particular when they are concerned about health and food safety, leading to the discarding of food products that are basically still good • People are not aware of the impact of food waste on the environment.

From the 3 FoodBattle pilots in 2012-2013, and the following 15 full-scale FoodBattles in 2014-2015, the FoodBattle has proven to be a successful intervention in the process of raising peoples interest to reduce food waste in their own household and to adapt new behaviour in relation to the reduction of food waste. Results from the three week FoodBattle period show a potential reduction of food waste by 20 percent.

### **Summary of effective elements**

#### *Effective elements:*

- FoodBattle is a valuable contributing element in awareness campaigns of organisations that want to address the societal problem of food waste to their members. The combination of a challenge and the transferring of information and ideas for measures to be taken to reduce food waste, has been effective to get people involved for a short period of time on the subject of food waste.
- An increasing number of (public) organisations and communities is interested in their own roles to reduce impact from food waste and are looking for opportunities to convey their message to their members. FoodBattle provides a good opportunity to organise a small and medium scale information and awareness campaign on the topic and to get individual citizens involved.
- The combination of organising a FoodBattle event with a clear start and finish presents good occasions for coverage on the subject of food waste in the local and national media. Social media has not yet been fully utilised and can basically have a large potential in FoodBattle campaigns.

#### *Challenges:*

- It is a challenge for FoodBattle to link with people that are less susceptible to the message of the necessity to reduce the environmental impact from food waste. Recent FoodBattles in the Netherlands have been successful in liaising with people who have an intrinsic attitude or willingness to take action to reduce food waste.

Whereas FoodBattle is a relatively low-cost communication campaign, expenses for co-ordinating the FoodBattle are to be covered from the budget that the initiating group has available and is willing to spend. The automation of data-handling and communication of information is expected to lower the financial threshold for organisations to enter into a FoodBattle.

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## Social Innovation Projects on Food Waste Reduction Case Study 'FoodBattle'

### Colophon

*Name organisation:* **Wageningen UR Food & Biobased Research:** institute for applied research for sustainable innovations in healthy food, fresh food chains and biobased products

*Country:* The Netherlands

*Name off supporting organisations:* **Milieu Centraal:** public information service about energy and the environment in everyday life

**Voedingscentrum (Netherlands Nutrition Centre):** public information service that provides information on, and encourages consumers to make, healthier and more sustainable food choices.

**Circulus-Berkel:** service provider for the collection and processing of waste streams in a number of municipalities in the centre of the Netherlands.

**Ministry of Infrastructure & Environment:** the Ministry of I&E supported the development and implementation of the FoodBattle from the perspective that reducing food waste at household level will contribute to improvement of the waste chain and the positive impact on the environment.

*Website* <https://www.foodbattle.nl/english/foodbattle-english/>

*Contact person(s)* Mr. Bart van Gogh, projectleader on behalf of Wageningen UR Food & Biobased Research

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