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Executive Summary

FORWARD – Food Recovery and Waste Reduction - is a two-years transnational project co-funded by the European Commission under the Lifelong Learning Programme. Its main aim is the reduction of food waste and the promotion of unsold food recollection in favour of charities, thanks to training and use of ICT resources.

It is estimated that up to 50% of edible and healthy food gets wasted every year, which amounts to approximately 90 million tons of food in Europe alone. At the same time 16 million citizens depend on food aid in the EU.

FoRWaRd aims to intervene in one specific link of the chain causing food waste, that of food supply, by favouring the acquisition of specific competencies to assure a better management of food resources, in terms of waste reduction, separation and recovery.

The project target group is twofold:

1. On one side the **representatives of the food supply chain** are trained as food waste managers: by following few simple steps, they become able to identify where and how waste is produced and the best solutions to reduce and collect it, saving money, pollution and time.
2. On the other side, **charities and NGOs** are targeted, trained to work as food banks: they can organise recollection programmes and redistribute unsold food to people in need.

Both groups benefit from the main outcome of the project, an **innovative platform** in 9 languages, hosting:

- A **free online training course** for food supplier and charities focused on the reduction of food waste and methods to recovery and redistribute it.
- An **educational game** simulating the process of recovery of food waste and the relationship between food suppliers and charities
- A **user-friendly brokering platform to allow the natural matching of demand and supply of food waste**. Any user, all over the world, can search or publish a donation announcement and find a counterpart, so to favour the creation of contacts and network between food producers/sellers and organisation able to organise the recovery, such as Food Banks and other Charities.

Check out the platform at www.foodwastereduction.com

In addition, the consortium of promoters also focused on raising awareness on the food waste issue, thanks to internet communication, presence on social networks, diffusion of an informative video and creation of synergies with other initiatives on food waste reduction at European level.

The consortium of promoters is composed of 8 organisation from 8 European Countries, able to provide a qualified mix of transnational, trans-sectoral and multidisciplinary background, cultures and fields of expertise. The promoters range from consulting companies, training organisations, Food Banks, a software house, an economic network connected with the horticulture supply chain and an academic network. The partners are based in Italy, Czech Republic, Greece, Germany, Hungary, Lithuania, Netherlands, Poland.

The promoters put in place an action plan for exploitation of results, focusing on visibility in internet and social network, presentation of the project in various events, networking with relevant initiatives, promotion of the food waste reduction concept in the food sector and among citizens. The platform will remain online at least for three years after completion of the project and the results will be kept free and accessible online to any interested user.

Moreover, the consortium plans to use the results in training activities addressed to other groups, such as citizens. The outcomes will be further exploited in future local or transnational projects, as well as activities with schools and public authorities.

Visit the project website at www.foodrecoveryproject.eu and join the brokerage platform at www.foodwastereduction.com . Anyone can make the difference and reduce food waste!

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1. Project Objectives

It is possible to list project objectives in two main groups

General objectives:

- To promote transnational cooperation among VET providers and stakeholders in order to detect common training pathways for the reduction of food waste
- To strengthen existing links and develop new ties between education, training and work sectors
- To develop a sense of social and civic responsibility through a righteous use of natural resources
- To reduce the negative impact on the environment of our system of production and consumption

Specific objectives:

- To identify common strategies to bridge the gap of the labour market skill needs in the field of waste reduction and re-use of unsold foodstuff
- To train food suppliers and charities in two directions: 1) how to reduce food waste, 2) how to recovery unsold and uneaten food. In brief, to train food waste managers
- To create, thanks to ICT, a virtual space, where training contents will be available, enriched with visual elements and simulations
- To provide a brokering platform to enable the natural matching of demand and supply of left-over foodstuff
- To promote Corporate Social Responsibility in the European food supply sector

The project aims also at promoting the integration of learning with working, in line with the provision “New skills for new jobs”. In particular, there is a need for a massive recovery of food waste, given that food suppliers are not prepared to reduce food waste and they have to turn to consultants and external experts. The project wants to promote a work-placed training specifically outlined on their needs, as a basis for development of vocational skills relevant to the labour market.

Taking into consideration the European provisions concerning respect for the environment, GHG emissions reduction and waste management regulation, skills related to food waste recovery/reduction are destined to be crucial in the upcoming years, especially considering that the amount of general food waste in EU is projected to increase, according to a study by the European Commission. That results in anticipation of skills needs of the labour market.

It is expected that the project main result in the long run will be an improvement of the order-supply-recovery chain, which would lead to a change of some unsustainable commercial behaviour of the target group and, in turn, of the customers/consumers, a reduction of natural resources waste and disposal costs and indirectly a cut to GHG emissions and water consumption.

Besides economic actors, the project wants to affect also charitable associations offering food services to people in need, who can act as recipient and collectors of unsold foodstuff. They participate in the project with a double aim:

- To create links between supply and demand of unsold food in order to organise an efficient recovery;

- To train members of charitable associations to become managers of food waste, so that they can spend acquired skills to improve their services and work with the supply sector as recovery manager.

2. Project Approach

The overall methodology is based on the idea of creating a training plan and a food recovery solution by following strictly the target group needs.

The project combines different methodologies to collect information, materials and data:

1. Desktop research in all project countries
2. Surveys involving representatives of the target groups
3. In-depth interviews
4. Pilot test sessions
5. External support from a distance

Once the system has been developed, it has been evaluated and validated by representatives of the target public, developing a validation methodology: the results obtained indicated the improvements that must be made to the self-learning system, both in its technological components and in its contents, so that the created system (training path and brokering platform for food recovery) has been fully adapted to the target group needs.

In particular, the two target groups (food suppliers and charities) have been involved in two important stages of the project:

1. The initial need analysis: altogether 151 companies and 100 charities responded to the questionnaire specifically developed to investigate the state of the art and the training needs;
2. The pilot test of the FoRWaRd system: a total of 231 organisations participated in the training and testing activities (120 food suppliers and 121 charities)

The partners used a combination of methods to involve the target in each country, ranging from organisation of workshop/training events, to questionnaire sent by email, to telephone or paper interviews. They also exploited the intermediation of local associations or local authorities.

The appraisal was carried out from the beginning, while simultaneously designing awareness and diffusion tools to present to recipients and potential users the opportunities and advantages, both professional and personal development, that can be offered by the products and results of FoRWaRD.

The **dissemination strategy** is devised in order to:

- Raise awareness of the project and the issues relevant to FORWARD activities in the appropriate circles of interests.
- Foster acquaintance among European food supply sector and charities of the products developed in FORWARD so to favour access of the target public to project results and prepare the way for further exploitation
- Cluster with other similar projects in order to learn from them and to make FORWARD known to them in turn.

The activities scheduled and described in the Dissemination Plan include:

- Internet presence: project website, partners' and other relevant websites

- Elaboration of paper-based and web-based information and promotion materials: press articles, leaflets, newsletters, technical manuals
- Organisation of public events in each country involved and a closing conference in Germany
- Presence in public events, contribution to seminars and conferences relevant to the use of web project
- Networking and cooperation with organisations, associations and training networks of the civil society, in particular with organisations active in the promotion of sustainable development and fight to poverty

Two dissemination levels are envisaged:

1. The overall strategy of the consortium, which includes actions and tools described in the Dissemination Plan. At this level the consortium acts as a whole.
2. The national/regional/local level affected by the individual strategies developed by each partner, according to its specific type of organisation, businesses, activities, resources, etc.

The strategy for **exploitation of results** is in place in order to transfer what has been learnt into new practices. This task implies above all an identification of target groups which are likely to find the products/outcomes of the project interesting and relevant to their needs, starting from the stakeholders who have been involved during the development of the project.

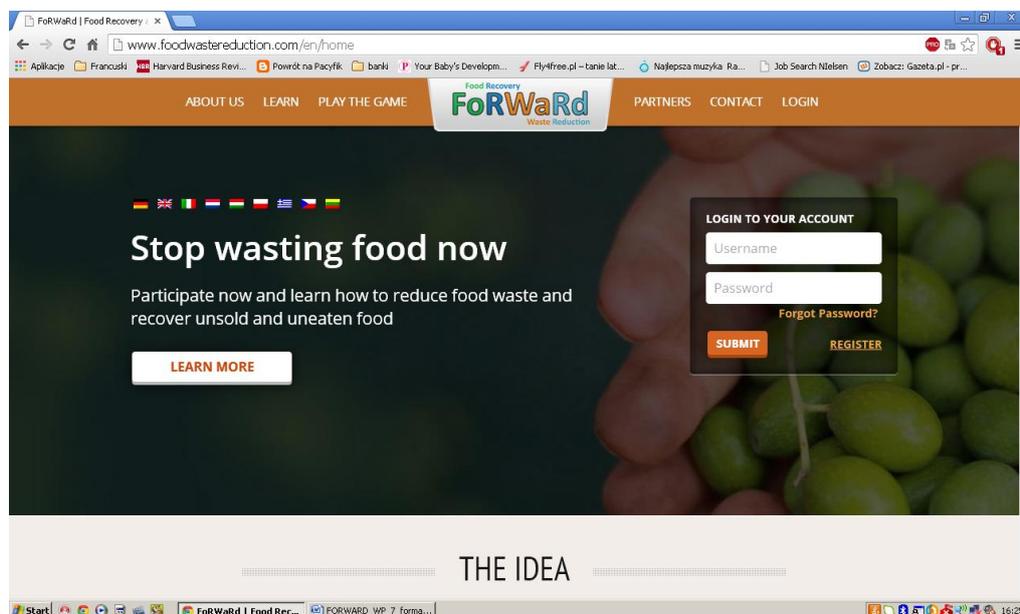
In addition, the partners will use the developed product to update their activities so as to deliver the brand new training system through their formative activities and/or consultancy. The agreed ways to exploit the results has the aim to make living the projects and outputs beyond the contractualized life of the activities.

3. Project Outcomes & Results

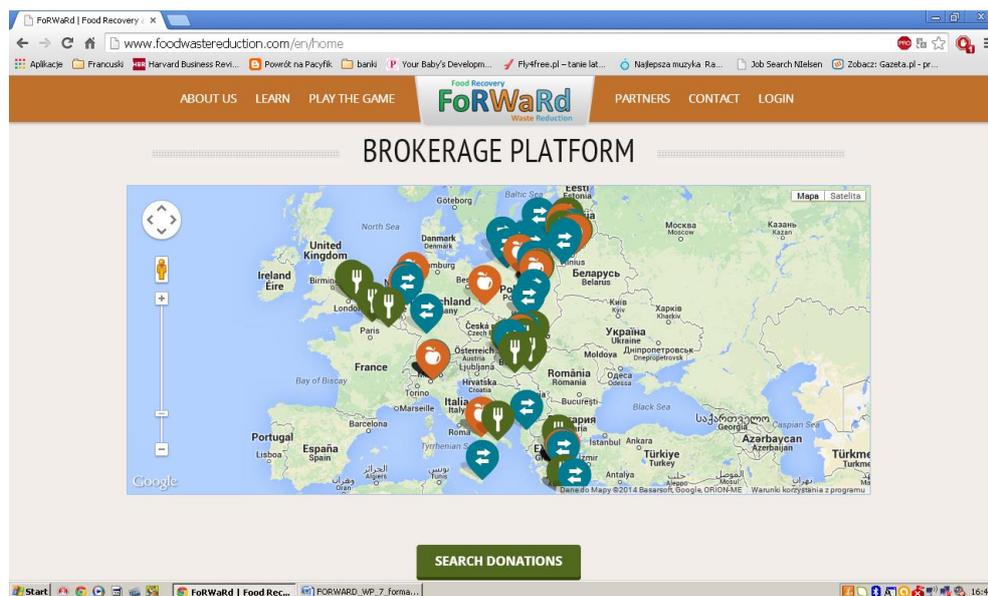
The main outcome is an **innovative platform** in 9 languages, hosting the three main results of the project:

- A **free online training course** for food supplier and charities focused on the reduction of food waste and methods to recovery and redistribute it.
- An **educational game** simulating the process of recovery of food waste and the relationship between food suppliers and charities
- A **user-friendly brokering platform to allow the natural matching of demand and supply of food waste**. Any user, all over the world, can search or publish a donation announcement and find a counterpart, so to favour the creation of contacts and network between food producers/sellers and organisation able to organise the recovery, such as Food Banks and other Charities.

The results are available online for free at www.foodwastereduction.com. An intuitive interface gives access to all features and tools.



By a simple registration procedure the user can enter the brokering platform and publish food donation announcement or look for donators in its region/city: the system works thanks to a simple google maps localisation.

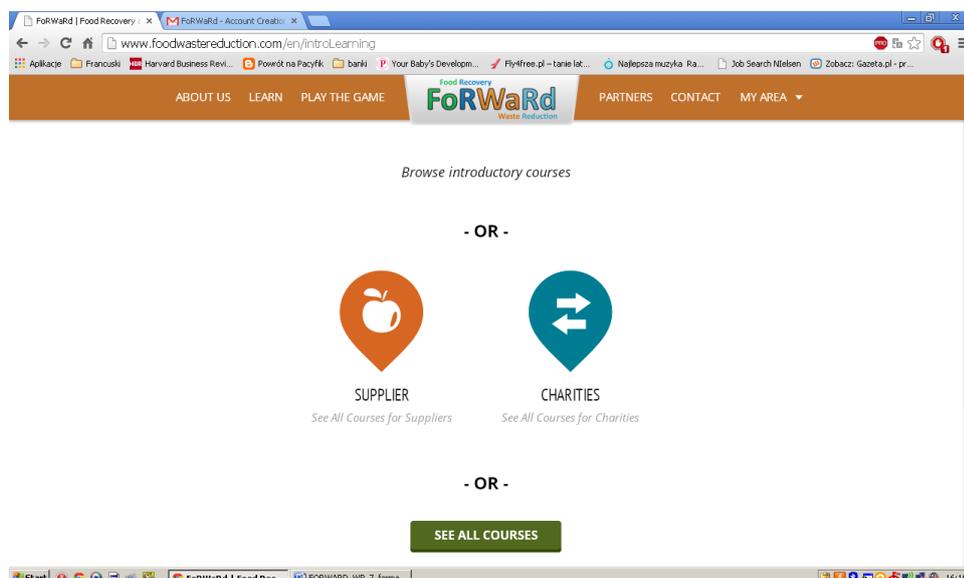


The target group is twofold: a) the representatives of the food supply chain, b) NGOs and charitable associations.

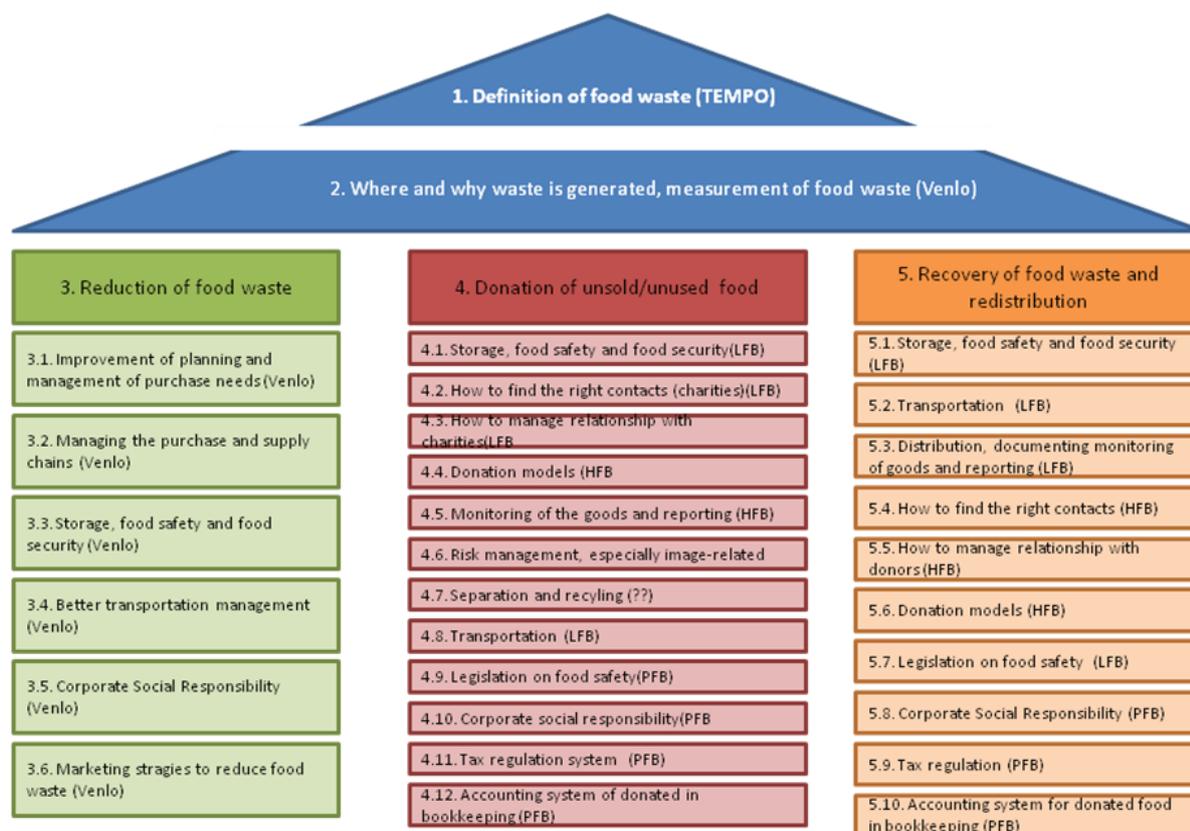
The two groups benefit from the project being trained as food waste managers: the training aims to provide them with the skills necessary to identify where and how waste is produced and the best solutions to reduce it and collect the left-over, saving money, pollution and time.

While target group a) will directly exploit the acquired skills in their facilities/business, target group b) could also exploit such knowledge in order to work as “consultants” for food suppliers and/or to organise recovery systems in their territory. A good practice of this field is that of Food Banks, represented by 3 members of the consortium.

The target groups have been involved in several stages of the project, in order to assure correspondence of the outcomes to their specific needs and feedbacks. Therefore, the training plan includes two educational pathways, one for food suppliers, one for charities, as shown in the following picture:



The contents include the following units, organised around three main areas: Contents for the reduction of food waste (dedicated to food suppliers), contents for the donation of food waste /for suppliers), contents for the recollection of unsold and unused food (addressed to charities).



Also an informative video has been developed to raise awareness of the food waste issue and provide information about FORWARD solutions: it is available on Youtube and in the homepage of the project <http://foodrecoveryproject.eu/> in 9 languages.

The target of the project has been actively involved and reached.

First, during the initial investigation of the state of the art food suppliers and vendors have been reached in the 8 countries of the partners. To be able to base the results on the real needs of companies and charity organisations, the project consortium undertook a research in Spring 2013. The objectives of the research were: to scan the public sphere for food waste data and already existing educational programmes and materials; to understand companies' situation, attitudes and practices regarding food surplus, waste and donation; to understand the situation, attitudes and practices of charities that receive and distribute food surplus.

For surveying the companies and charities the partners jointly developed two separate questionnaires (one for food companies, one for food distributing charity organisations). Consortium partners then translated and used these questionnaires in different ways to gather responses: altogether 151 companies and 100 charities replied.

Apart from the survey, each partner conducted a desktop research to list in a regional report the most relevant data at national level about food waste statistics in each country and also the most important already existing educational materials.

According to the findings of the state of the art analysis, the consortium agreed on the specific contents, educational aims, learning outcomes, approach and methods (described in details in a report on the definition of training plan).

Secondly, the target groups took part in training and testing activities. The E-learning platform needed to undergo testing and evaluation in order to ascertain the opinion of the E-learning platform's target group and/or whether the provided information is experienced as useful and functional.

The challenge was to provide an E-learning and brokering platform with the purpose of raising the level of attention for the subject of food waste, provide useful training contents and tools to take action. Before publishing the platform, FoRWaRd wanted to know how the target group experiences the E-learning platform.

The purpose of the test was to gain a general impression of how the target group experiences the E-learning and brokering platform in terms of design, content and functionality.

The two target groups have then been involved in the piloting phase, acting as end-users of the vocational pathway and evaluators of the approach, the methodology and the product itself. In particular, they assessed how the developed solution responds to their specific needs, highlighting defects and imperfections and suggesting improvements and adaptations. The number of participants has been 231: 120 Food Suppliers and 121 Charities.

The results were positive: the first impression on the brokering platform was very good for 85% of respondents and 93% thinks that this programme delivers new and innovative materials.

As a general opinion about FORWARD platform both Charities (Ch) and food suppliers (FS) have very good opinion of using e-platform to reduce food waste (FS-79%, Ch- 81%).

81% of respondents (FS) and 72% (Ch) have opinion, that content is relevant to their work duties. Both food suppliers (91%) and charities (96%) would recommend course to other people.

More than half 60% of FS and 53% Ch responders have opinion, than game meet their expectations.

E-learning courses were appreciated and most respondents would recommend them to others as they are informative, interesting and can be taken free of charge. Charities representative (87%) are more likely to use platform for needs of their daily work

Besides the concrete people involved in the development and testing of the training plan, a wider target group made of stakeholders, representatives of the food supply chain, charitable associations and the public in general has been reached and involved during the overall duration of the project, thanks to the dissemination and exploitation activities. The project, in fact, had a great visibility and was presented in several relevant events in Europe. At least 5000 people and organisation have been reached.

The visibility of the project in the web has been very successful, several websites created a link to FORWARD website, among others the DG SANCO of the European Commission mentioned FORWARD among the existing best practices for the reduction of food waste (http://ec.europa.eu/food/safety/food_waste/good_practices/awareness_information_education/index_en.htm)

4. Partnerships

The consortium of promoters is composed of 8 organisations from 8 European countries, representing different expertise and backgrounds, altogether able to mobilise the skills necessary to reach project objectives:

- **Eurocrea Merchant (IT)** is a consulting company experienced in business and vocational training projects at European level. It is the coordinator of the project and assures high level quality and implementation standards.
- **Hungarian Food Bank (HU)**, **Lithuanian Food Bank (LT)** and the **Federation of Polish Food Banks (PL)**, three members of the worldwide network of Food Banks, whose main aim is to support the reduction of malnutrition and poverty by collecting and distributing food donations. They represent in the project the no-profit sector and in particular the actors working in the recollection of food waste.
- **AVACA Technologies (GR)**, an independent software development house and IT integrator based in Athens, Greece and provides consulting, informatics and engineering services.
- **Greenport Venlo (NL)** is an economic network of businesses, organisations and institutions associated with the horticulture supply chain. It represents in the project the technical skills necessary to develop a food waste reduction programme.
- **TEMPO Training and Consulting (CZ)** is the biggest private training organization in the Czech Republic. It represents in the project the contribution of the experts in vocational training and innovation in education.
- The **European Retail Academy (GE)** has as its scope to act as a virtual platform and as an initiator of workshops/seminars/conferences to bring more transparency about retail-research and retail-education at universities or universities of applied sciences. ERA represents the retail sector and leads dissemination activities.

Besides the specific fields of expertise, all partners are able to involve target group and have a wide network of partners/clients/stakeholders/members, which will assure high visibility to project results and facilitate the exploitation of the produced products. Their staff have different profiles, including experts on issues related to environment, business, training and social issues. The project relies on the combination of those different expertise and synergies, and the quality of the results is directly proportional to the level of interaction among the different competences.

All the partners work or already worked in various multi-actors projects and programmes at regional/national/European level.

The added value of working in a multi-actor and transnational consortium is the possibility to exchange visions and experiences in all the phases of the project, according to the different background and specific skills. Also, the nature of the consortium guaranteed the European added value of the results, developed in 9 languages (partners' languages plus English) according to the needs and researches conducted in different countries.

The geographical composition has also been taken into appropriate account: the project in fact gathers together different partners from 8 different European countries (Italy, Hungary, Greece, Netherlands, Germany, Czech Republic, Poland, Lithuania), not only to analyse diverse scenarios, but especially to promote, from the beginning the widest diffusion.

5. Plans for the Future

The consortium agreed on a strategy for dissemination and exploitation aimed to assure the sustainability of the project results after the end of the European Commission co-financing period.

The purpose is to raise awareness of the project outcomes and the EU support, but also to sensitize the general public and the sectors involved to act in their facilities or houses in order to avoid the waste of food. In this respect, one of the strengths of the project is the wide visibility and the success of visibility activities.

The exploitation strategy is based on the idea laying at the basis of the project: it is not enough to train food waste managers, it is also necessary to give the target groups an effective tool to allow food waste recovery and an autonomous management of food resources, also beyond the project lifetime. To reach this goal, therefore, it is necessary to raise awareness first on the problem of food waste, secondly on the possible solutions to reduce and recovery it, thirdly on the tools developed in the projects and available to the public on the web.

Moreover, the training shows how food waste reduction and recovery its convenient for everyone, especially for producers and suppliers, in terms of disposal costs reduction, improvements in inventory management, tax deductions for donated products (in some countries), creation of new markets for products, strengthening their brand and customer loyalty by demonstrating environmental and social responsibility, improving employee morale by displaying good corporate citizenship.

This strategy includes both actions undertaken before the end of the project and plans for actions to be implemented in the future.

During the contractual period, the consortium laid the basis for a successful exploitation of results in the long run. This implied:

- The definition of the target groups of dissemination and exploitation:
 1. First of all the two direct targets of the project: food supply chain representatives and charitable sector;
 2. Private and Public VET providers of the countries involved and possibly of other European countries, with the aim to favour the incorporation of project results into the VET systems;
 3. Policy makers and public bodies responsible for vocational training provisions, environmental and development issues: the aim is to raise awareness of the problem and favour the use of the developed tools at a wider level, with the exploitation by public bodies.
- The development of an exploitation plan which includes common activities and individual plans for exploitation developed by the partners
- The decision of keeping project results free and available online, in order to guarantee free exploitation by interested stakeholders
- The signature of an intellectual property rights agreement covering all project outcomes: as being developed in a joint partnership, the copyright over the training system is borne by the partner's organisations as legal bodies. Each of the partners has the rights of using the training system

- The decision of keeping the FORWARD platform online and functioning for at least three years after the end of the project
- The collection of letters of interest signed by national or international organisations informed on the project and willing to use the results.
- The creation of networking opportunities and synergies with other projects or initiatives aimed at reducing food waste, such as the FUSIONS project (<http://www.eu-fusions.org/>), consumer associations, Foodshare initiative in Germany, FunFoodCare, DG SANCO initiatives and many others.
- The presentation of the project in various relevant events, such as seminars, conferences and workshop organised by FUSIONS promoters, FAO, international networks of retailers, international fairs on food.

In the future, the consortium plans to keep on carrying out the above mentioned actions, especially through internet dissemination, presentations in relevant events and promotion of the use of the platform.

The promoters are also searching for sponsors and companies interested in supporting the platform maintenance and development (such as TESCO in Poland, which is interested in exploiting the platform in its chain of supermarkets, as demonstrated by a letter of interest)

Furthermore, one of the best way to assure project sustainability will be the diffusion of Food Banks best practices in the European countries and the creation of training materials able to train the manager of food waste: that would potentially lead to the creation of new Food Banks branches or other association/organisation working for food waste recovery.

Another way of using the results is the integration of the e-learning system into the Food Banks ongoing training activities addressed to charities.

The dissemination and promotion potential offered by Food Banks through their network it's very significant, thanks to the networking potential of the European Federation of Food Banks (FEBA), that brings together 240 food banks in Europe, which fight daily against hunger and food waste.

The coordinator also plans to further develop the theme reduction of food waste in new European projects, in order to fully exploit the platform (e.g. a project on adult education). Another idea is to promote the use of FORWARD results in the framework of the Expo2015 in Milan, which is focused on food.

Finally, a book of FORWARD training materials is currently under development, thanks to the German partner initiative of making a publication out of the materials developed in FORWARD. The book is promoted by Save Food world FAO initiative.

6. Contribution to EU policies

The European Commission is taking the issue of tackling food waste very seriously. Reducing food waste has enormous potential for reducing the resources we use to produce the food we eat. Being more efficient will save money and lower the environmental impact of food production and consumption.

In 2011, the Commission's "Roadmap to a Resource-efficient Europe" (COM(2011) 571 final), identified **food as a key sector** where **resource efficiency should be improved** and called for ambitious action to tackle food waste.

In 2014, the Commission's Communication "Towards a circular economy: a zero waste programme for Europe" (COM/2014/0398 final), and the related legislative proposal to review recycling and other waste targets (COM/2014/0397 final) puts forward **objectives for food waste reduction** in the EU. It includes a proposal for Member States to develop national food waste prevention strategies with the aim of **reducing food waste by at least 30 percent by 2025**. Sectors concerned include: manufacturing retail/distribution, food service/hospitality and households.

The first step the EC has taken to this purpose has been to fund a Preparatory study of food waste across the EU, which estimates that about 89 million tonnes of food is wasted per year or 179 kg per capita per year, and that food is wasted at all the levels of the food chain.

Wastage occurs in all stages of the process that goes from the production to the consumption of food. But FoRWaRD project aims to intervene in one specific link of the chain causing food waste, that of food supply and retail. To this purpose, the project delivered training contents and tools aimed at developing specific competences for a better management of food resources (in terms of waste reduction, separation and recovery). Also charities and organisations responsible for recollection of unsold food addressed with training contents and tools specifically targeted to their needs. This approach is in line with the policy recommendation of the Preparatory study, which include: awareness raising campaign, food waste prevention and collection programmes.

The project also intends to develop skills and competences which will be more and more important in the labour market in the upcoming years, since the *Preparatory study for the review of the Thematic Strategy on the Prevention and Recycling of Waste* of the European Commission demonstrated that overall food waste generation in the EU is increasing together with demographics.

The project also addresses various European priorities and legislative acts, listed below:

- FoRWaRD, aiming at reducing wastage, promoting recycling, protection of the environment, solidarity and social cohesion fits perfectly with: the principles on which the Union is founded (as listed in Article 2 of Treaty establishing the EC); protection of the environment(Art. 6); the launched EU 2020 Strategy and the EU 2020 Resource efficiency Flagship initiative;
- By reducing food waste, also the amount of waste going in the landfills is affected, so favouring the implementation of Directive 1999/31/EC, aimed at preventing the adverse effects of the landfill of waste on the environment;
- Promoting recycling and separation of food waste to produce bio-fuels favours the application of Directive 2009/28/CE and the *Thematic Strategy on the Prevention and Recycling of Waste* (COM 2005/666) reviewed in 2010;

- The European Parliament has recently made a resolution (Resolution of 06/07/2010) which follows a European Commission Green Paper on the management of bio-waste in the EU, arguing that a specific directive for bio-waste should be approved.
- The project falls within the principles *New skills for new jobs*, because it fosters a qualification system more responsive to labour market needs: the aim is to train a new professional figure working as waste manager and able to optimize the process of purchase and supply of foodstuff, reducing wastage
- Moreover, the project falls within the priority of sustainable growth and competitiveness set out in the Lisbon Strategy, aiming to improve;
- Finally, FORWARD is in line with the provisions of the Europe 2020 strategy, especially for what concerns the target on climate change and energy sustainability.

