

# INTER-ORGANIZATIONAL RELATIONSHIPS: A CASE OF INTEGRATED STRATEGY FOR FOOD WASTE REDUCTION AND ORGANIC WASTE MANAGEMENT

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Track 3

## **Abstract**

Inter-organizational relationships are often a protective factor to compensate the weakness of the single organization or to permit them to approach and solve problems better than alone. Especially in the field of creating sustainable cities, is necessary to work in logic of circular subsidiarity (Zamagni, 2010 e 2012). Food waste and organic waste management are two big problems for the Public Administration, due to its costs but especially for the high environmental impact (i.e. health consequences, welfare reduction, pollution and so on). The food waste is produced from all the phases of the supply chain; its impact concerns several organizations: local government, enterprises and non-profit organizations. Based on a data collection and analysis of a project experimented in Verona, compared with other similar practices, this paper aims to highlight that it is necessary an integrated strategy of organic waste reduction, that needs a cultural and normative change, to guarantee the sustainability of the food waste reduction. The paper tries to evaluate if and how the effectiveness, the efficiency and the durability of this strategy, in terms of costs reduction, mutual benefits, decrease of environmental impacts, social and ethics positive repercussions, can be generated. The case study seems to show that it are necessary inter-organizational relationships coordinated by one of the organizations embroiled and a cultural change of each organization involved. This change must permeate the entire organization and it has to be supported by the legitimacy of regulations specific to promote the adoption of the best practises on a large scale.

**Keywords:** *inter-organizational relationships, food waste, public administration, non-profit organizations, organic waste reduction.*

## **Introduction**

The inter-organizational relationships, especially if they are cooperative types, can be useful to remove external barriers from both the vertical and horizontal value creation chain. (Lang and Lockart 1990). The collaborative network approach enables the firms to interconnect each other in order to increase their competitiveness and to share resources (Rossignoli and Ricciardi 2014). The organizations can find a possibility to produce something more than that they can create alone, and be complementary one to another to develop resources or knowledge. (Mansell and Wehn 1998). The environment influences the organization's behaviors (Golinelli, Gatti 2014) and it is very important to know the framework in understanding organizations (Pfeffer and Salancik 2003), especially in their answer to external restrictions. When organizations attend to social problems (enterprises interested in corporate social responsibility, public enterprises – owned by local authorities, social cooperatives and, generally, the organizations belonging to the so called “third sector”) their reasons to be collaborative are numerous. The environment is characterized by knowledge-based economy that stimulate sharing economy (Dominici 2003), especially if organizations face a problem regarding to the improvement of quality of life of all the civil society. The organizations involved in social problems or in topics concerning the community in general, naturally are rich of ethical values that make a collaborative network effective, for instance trust, solidarity, reciprocity and loyalty (Rossignoli and Ricciardi 2014), but not always they are able to create durable profitable relationships with other kind of organizations. Spontaneous and/or pre-existent trust may provide substantial but unpredictable benefits for partnering (Lazar, 2000), but it is possible to solve a problem with a partnership among the organizations if there is a benefit for all the organizations (Waddock, 1988), called win-win mechanism. The research question of this work is if and how the inter-organizational relationships can improve efficacy and efficiency of an integrated strategy for food waste reduction and organic waste management.

### **The problem of lost of food and the different organization's point of view**

The loss and waste of food in last few years are attracting the interests of many organizations, belonging to the principal groups (the profit-, the public- and the so-called third-sector). Every year, it is wasted a lot of food: in worldwide context are wasted 1,300,000 tons, the third part of total production; in Europe are lost 90,000,000 tons of food, i.e. 180 kilograms per capita. (FAO, 2011). The food waste is missed 5% into large retailers, wholesale and retail; 4% through food services (transport, shift, etc.); 39% during the food production; finally 42% in consumption phase. In the Italian context, are wasted 6,000,000 tons of foods, i.e. the 17,4% of consumption and it can be

quantified in 15 billion euros, more than 1% of GDP. Only the 35% of food surplus is destined to human nutrition, thanks to donations, even so the 32,2% becomes waste and it's allocated to the dump for corporate decisions. Veneto Region is the first Italian region for what concern separate collection of rubbish; the organic portion of solid urban refuses amount to 372,000 tons, but every year have been wasted 34,045 tons of agricultural products and 31,000 tons in the supply chain. (*data source: research of University of Bologna, 2010*).

Companies participate to integrated strategy of food waste reduction and organic waste management in order to cut productive, distributive, of disposal and fiscal costs. They can do a price reduction or increase their profit, but they can also improve their image and reputation and use savings to prevent production of refuses, as recommended by European strategies and adopted by national and regional regulations. For the Public Administrations (P.A.), this practice is a priority that involves different areas. The first is the social area, that must combine welfare payments with an insufficient amount of economic resources at disposal. The second is the ecology sector, which aims at a management of refuse that it is in line with European and National hierarchy. Territories often excel in the separate collection of rubbish, however there is not a similar diffusion of actions of waste reduction at the source, especially for what concern organic refuse. The actions for refuse prevention are not promoted; management of refuse is a public administration commitment instead actions of waste contrast are promoted by the third sector and voluntary initiatives. Finally it is involved the education sector because recovers of surplus of food from school canteens, supports the training in schools, to promote good and conscious preventive behaviours. An important role is covered by the local socio-sanitary services (AUSSL), for the research of activities, the settlement of hygienic and sanitary procedures and a qualified support for the training of materials to distribute to citizens.

Finally, the non-profit organizations can have a twofold stake in this topic. The recovery of the food waste can be an opportunity for work in which insert people that are in a rehabilitation program, furthermore they can use the save of money, that they didn't spend to buy food, to give better services to their assisted people or to admit more people to their programmes.

### **The case study**

In the territories, activities of recovery and reuse of food waste arise continuously and spontaneously. The paper describes the case of the R.e.b.u.s project - Recovery of excess of food usable in a supportive way - a network among firms, P.A. and non-profit organizations, that recovers the surplus of food to avoid its waste and permits to reuse it thanks to the maintenance of the nutritional characteristics untouched.

According to Yin (2003), the case study is analysed as a single explicative case and data are collected through a direct and participated observation.

The R.e.b.u.s. network, coordinated by an association of second level, hasn't structural costs because the organizations of third sector recovery the surplus of food from private or public companies and immediately consume it. Meals recovered for assisted people, increase from 80% to 100% of requirements, saving money and time. They also guarantee a better nutrition to disadvantaged people, thanks to balanced foods and vegetables, increasing common goods thanks to better public health. The donor companies reduce their fiscal costs and make an action of Corporate Social Responsibility (CSR). In some Veneto's cities, in particular in Verona's area where the experimentation is finished, in 2013 have been recovered 1,088 tons of meals and 20,637 canned goods, to the tune of about euro 1.600.000. It allowed preventing the 5% of organic refuses of what collected in 2012 (*source: Arpav*) by recovering from one large retailer, 21 school and two company canteens, one fruit and vegetable market and five producers' organizations (*source: R.e.b.u.s. 2013*). By involving in the future, all the large retailers, the school canteens and the stands in the fruits and vegetables market or add other channels such as bread market, restaurants, autogrill, distributors, catering and so on, it should be possible to recover much more food.

The comparison from this result and the ones of other best practices in the Italian area, suggests that the project improves when the several organizations are involved in an integrated strategy, in this case particular focused on the food waste reduction and organic refuses production.

In fact, in Ferrara city's experience, for example, in which there are not been involved the local public institutions and the coordination is managed by an external consultant, has been recovered 555 tons in ten years (*source: <http://www.cronacacomune.it>*). Also, in other projects managed by structured organizations, but in which institutions are not involved, there are lower results: 295 tons in 2012 with 28 cities involved (*source: <http://www.cronacacomune.it>*). Instead the NOW project, activated in Brescia area, where there is a relationship between the various organizational units, results are alike of Verona. (*source: [www.cauto.it](http://www.cauto.it)*)

Probably, just the involvement of all the three groups of organizations, linked by stable and reciprocals relationships, permits to reach the goals with efficiency and efficacy, guaranteeing sustainability and lifetime to the social project analysed.

### **Discussion: criticality and protective factors**

The efficacy and continuity of a social project like that, depend necessarily from the adoption of a regulated procedure that guarantees the respect of hygienically and sanitary rules, administrative and

fiscal transparency and traceability and permits to each subject the possibility to obtain a mutual support. If the best practices are just observed and abandoned to a voluntary management without institutional support or sporadically put in expensive external management hands, they often die, for the lack respectively of financial and organizational resources or of structured inter-organizational relationships. The benefits of project management, in circular subsidiarity, allow some protective factors. Public companies that manage the refuses collection, can reduce the refuses tax for the companies involved as donors; these latters can also designate part of the costs reduction to support economically the project, making a CSR action in which invest less resources than in a direct help. Non-profit organizations can do the selection between reusable food (maybe by using disadvantage people); they can be coordinators, giving volunteers, doing the statement for the financial reduction and reduce their acquisition costs of buying food.

P.A. defines procedures and controls their respect; it can support, diffuse and repeat the project, improving social capital of territories and public health.

The study highlights also some criticalities that could affect the whole project with negative consequence on all the subjects involved.

The organizational change for permitting the recovery, requires an initial investment for human resources (for example who divides the surplus, prepares the documents, follows the procedures during the delivery to the associations etc) that often is more than if companies throw away their food surplus; moreover, to obtain the fiscal reduction it is necessary to do the reports and verify the documentation and this increases costs. There is also a risk of a bad food conservation and consumption by associations and their assisted, that could make worse company's reputation instead of improve it.

Some criticalities, only for the third sector, are usually linked to an organizational inefficiency or being a voluntary structure that make difficult the organization for the regular recovery, to obtain its technical instruments (vans, refrigerators etc), to fill correctly the documentation, to conserve the documents that guarantee the traceability, to measure the economy value of goods. Associations are obviously focused on people assistance. In a circular subsidiarity logic, efficiency and coordination of companies, institutional incentives and the support of second level organizations that coordinate, train and control, are an essential help for the improvement of the organization and knowledge transfer to the non-profit managers. Finally, the socially responsible companies can support with part of the savings enjoyed by third sector organizations thanks to their recover of food that avoid its waste.

Another problem, only for companies, can be a difficult interaction with the territory; the only way to ride it generates excessive costs or needs the use of new procedures that are not yet tested. Thanks to the third sector organizations, is possible to find more efficient solutions. For example, what is not allocated to human nutrition can be reused for animal one, compost production, biogas that permits to generate job for social inclusion.

For P.A., the impact of waste along the supply chain depends on the category of food, the market and the environment; it is important to reduce waste at the source. Education can have a greater impact and can generate a cultural change, but it could be expensive to make a campaign for information and to make citizens aware.

Encouraging collaborative relationships, it is possible to create virtuous circuit that permit to compensate those lack, to improve lifestyle and to reduce environment impacts. Inter-organizational relationships make social economy and territorial innovation easier and can achieve the sustainable development.

### **Conclusions**

The structured relationships (agreements, protocols, the constitutions of working groups aimed at co-design etc.) among the organizations of the three groups (profit, non-profit and third sectors), help to more effectively and efficiently achieve the goals of reducing food waste.

The public authorities are able to be a major engine of the development of best practices, ensure growth that guarantees safety, protect and improve the health of the entire community, fight illegality, reduce public expenditure. The circular subsidiarity is vital for the welfare; according to Zamagni, it is accomplished by the stable presence of for-profit companies and the third sector with the public administration therefore it generates synergistic actions between these macro-sectors.

The P.A. should promote the spread and development through the adoption of clear rules (for example: reduction of environmental hygiene tax for those who reduce the disposal of food waste or prevents the production of food surplus by a free supply, tax cuts for the donors or for those who buy local products or short supply chain products in the name of corporate social responsibility, bureaucratic facilitations, incentives for coordination, actions aimed to simplify the management of organic waste and so on). It should raise community awareness, make public communications of the results, and so on.

Companies, instead, should do other actions, as the free transfer of physiological surpluses and the recognition of the economic benefits coming from the savings for waste disposal costs reduction. In this way, they could sustain the association that coordinates the recovery of food surplus project.

The third sector, especially *onlus* organizations, should cooperate with the public administration in the process control, prepare the agreements with donors for the administrative and fiscal transparency, train the third sector organizations to respect the regulations, verify the accuracy of the procedure, elaborate the results that are to be communicated to all the stakeholders, find new donors and beneficiaries. The non-profit organizations have also to guarantee the use of what has been received in the ways and times indicated and produce the proper documentation for tracking, promote the diffusion of the good practice to staff and volunteers and improve their own management.

A cultural change is necessary in our country and, partly, a normative functionality for a sustainable development planning. The creation and development of best practices is continuous, but to get meaningful results and to ensure their proper functioning, among the organizations involved there must be collaborative relationships of circular subsidiarity and reciprocity. The case analysed shows that the effectiveness and durability of the project are largely determined by the inter-organizational relationships that give affordability, reduction of the environmental impacts, positive effects of the social ethics, institutional legitimacy (especially legislation), which support the replicability of this best practices on a large scale.

The reduction of food waste and the management of organic waste, in the Verona's case study, is significantly improved thanks to the regional legislation on food surpluses, the involvement of the province, municipality and the local health authorities, the creation of co-design strategies between all those who deal with food surpluses and the presence of a network coordination in which are created agreements for the realization of mutual benefits among all the stakeholders involved (institutions, enterprises and third sector).

Much remains to be done: to extend the project to other area, to expand it to other channels, to create new rules that facilitate the development for example but the actions that have been realized, make feel confident.

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