

# Recovery and redistribution of safe and nutritious food for human consumption

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Every year, approximately 1.3 billion tons of food produced for human consumption are lost or wasted, an amount equal to a third of the food produced worldwide (FAO, 2011). Globally there is emerging recognition of the food loss and waste issue in the context of climate change. Accounting for about 8 % of global anthropogenic GHG emissions, food loss and waste levels are a significant driver of climate change. As more countries reach middle income status changes in consumer behavior are expected to lead to an increase in the per capita amount of food wasted at consumer level.

Wasted food is discarded at each segment of the food supply chain for a variety of reasons, including strict marketing standards, inadequate communication among food business operators, or poor logistics systems. Once this food is removed from the food supply chain, it can take different paths. According to the “food-use-not-loss-or-waste” hierarchy (Figure 1) food recovery and redistribution of safe and nutritious food for direct human consumption (R&R) is, after the prevention at source, the preferred option to tackle the issue of food loss and waste.

Previously inaccessible safe and nutritious food can be accessible for the low income community members through different R&R models, such as gleaning networks, food banks, food pantries, soup kitchens, social supermarkets, and other innovative businesses. R&R models involve a wide range of actors through the nutrition sensitive agricultural and food system, including, for instance, the public and private sector, civil society, academia, individual producers, processors, and consumers.

R&R is an important component of sustainable food systems because it prevents safe and nutritious food from becoming waste or be discarded for direct human consumption. R&R contributes also to the increase of food availability and accessibility for segments of the population that are in transitory or persistent food insecurity. R&R can reinforce inclusive business models by providing economic value addition to food that would otherwise go to waste, enabling at the same time capacity-building for the food supply chain actors that participate, incentivizing job generation and social inclusion.

## **Box 1. Recovery and redistribution**

*Recovery and redistribution of safe and nutritious food for direct human consumption (R&R) gives food a second opportunity to be used for its main purpose: feeding humans and contributing to their food security and nutrition.*

According to FAO (2015), **recovery** of safe and nutritious food for direct human consumption is to receive, with or without payment, food (processed, semi-processed or raw) which would otherwise be discarded or wasted from the agricultural, livestock, forestry and fisheries supply chains of the food system.

**Redistribution** of safe and nutritious food for direct human consumption is to store or process and then distribute the received food pursuant to appropriate safety, quality and regulatory frameworks directly or through intermediaries, and with or without payment, to those having access to it for direct food intake (FAO, 2015).

## **Box 2. Food-use-not-loss-or-waste hierarchy**

The latest contribution to a proposed hierarchy for the facilitation of food use and the prevention and reduction of food loss and waste has been redefined as “food-use-not-loss-or-waste” hierarchy. In this approach, the first of the priorities is to ensure safe and nutritious food for human consumption is available and accessible, followed by food loss and waste prevention and reduction at source, followed by R&R. Lower levels include feed, compost, or energy recovery, which are all context-dependent.

# Framework analysis

Given the R&R potential to impact the sustainability of the food system, consideration for an integrated framework in which these actions take place is needed.

Six major limiting factors are identified as the core barriers to the facilitation of R&R, the elements of which are affected by four major spheres of action. These spheres include: policy and regulation, resource mobilization, partnerships, and inclusive business models.

Often, these factors share points of connection that make them interdependent. This means that changes in a given factor directly affect one or several of the rest. A food system approach in the design of an R&R framework is thus essential. Moreover, it is important to note that the influence of each of these factors and actors may differ according to the context and the specific segment of the food supply chain in which they take place.

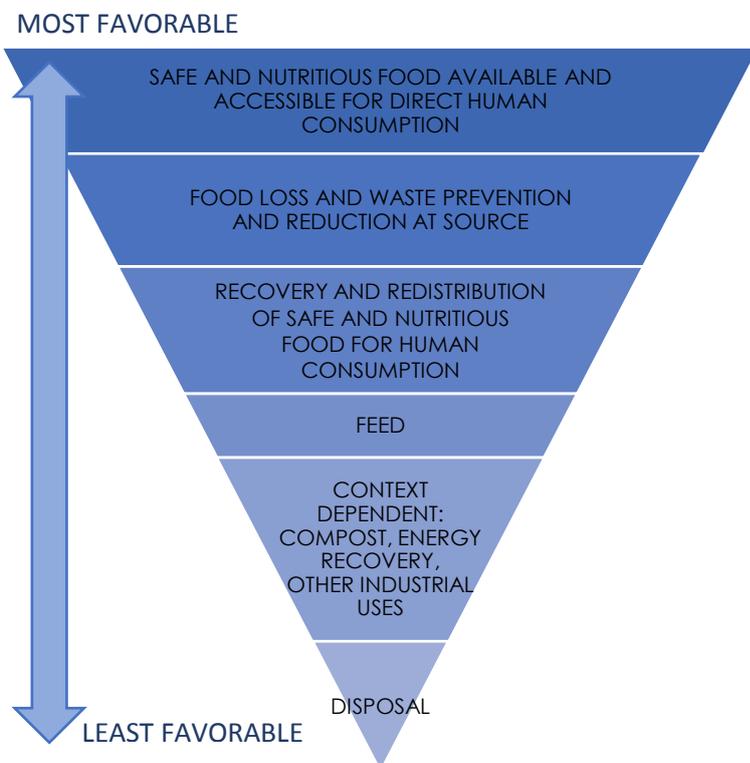


Figure 1. Food-use-not-loss-or-waste hierarchy, adapted from CFS 41

## Limiting factors

### 1. Limited access to channels and resources enabling R&R

Limited access to resources and channels enabling R&R is the main obstacle in the establishment of initiatives implementing the use of safe and nutritious food for direct human consumption. Resources can be of financial nature, related to infrastructure (roads, water and electricity supply and storage facilities); goods and services (transportation, information and food industry equipment); knowledge and trained personnel. Existence of channels incorporating logistics and distribution systems are key for successful operational models.

### 2. Insufficient knowledge-sharing, collaboration and cooperation among actors in the food supply chains

Lack of transparency and trust in information channels reduce chances that concerted actions and coordination of activities are effective, and that knowledge is disseminated across stakeholders. Building partnerships based on these values encourages sustainable partnerships in the short, medium and long-term.

<i>Common limiting factors</i>	<i>Policy and regulation</i>	<i>Resources and mobilization</i>	<i>Partnerships</i>	<i>Inclusive business models</i>
<b>1</b> Limited access to channels and resources enabling R&R	X	X	X	X
<b>2</b> Insufficient knowledge-sharing, collaboration and co-operation among actors in the FSC		X	X	X
<b>3</b> Unbalanced power distribution and unproportioned-to-risk practices among FSC actors	X			X
<b>4</b> Prioritization of lower levels of the food-use-not-loss-or-waste hierarchy	X	X		X
<b>5</b> Gaps in knowledge, skills and equipment for food safety and quality assurance	X	X		X
<b>6</b> Inadequate environment for the development of inclusive business models	X	X	X	X

Table 1. Common limiting factors for R&R throughout the food supply chain (FSC).

### **3. *Unbalanced power distribution and unproportioned-to-risk practices among food supply chain actors***

The influence exerted by powerful actors over other actors in the food supply chain may lead to contractual agreements that promote practices less favorable to R&R.

### **4. *Prioritization of lower levels of the food-use-not-loss-or-waste hierarchy***

Food supply chain actors, when deciding their management operations, often prioritize solutions that correspond to lower levels of the food-use-not-loss-or-waste hierarchy. The decision to redirect food for human consumption may depend on the degree of recoverability, the criteria or interpretation of taxation policy and other economic incentives, as well as product liability and food safety concerns.

### **5. *Gaps in policy, knowledge, skills and equipment for food safety and quality assurance***

Failure in assuring food safety and quality causes food that could be used for direct human consumption to become unsafe and of poor quality. Food businesses without the adequate capacity, including trained personnel and access to appropriate equipment to preserve food during storage and transport, may be discouraged to engage in R&R activities. At the same time, engaged actors in R&R must be in the position to ensure food safety and quality.

### **6. *Inadequate environment for the development of inclusive business models***

R&R as an inclusive business model that involves also commercial transactions cannot be implemented without an enabling environment. Such supportive environment is the result of efforts by governments and food system actors alike, and it involves the provision of policies and regulations, establishment of partnerships and mobilization of resources in industrialized countries as well as countries in transition and developing countries.

#### ***Box 1. Improving collaboration and cooperation among FSC actors***

The Gleaning Network campaign, through Feedback (UK), coordinates volunteers, producers and food redistribution charities to feed people in need. It does so by establishing relationships between farmers and beneficiaries as well as partnerships with national and local charities and social enterprises. More info:

<http://feedbackglobal.org/campaigns/gleaning-network>

#### ***Box 2. Policy incentives for food donation***

The food-sharing project Manzer Partazer (Mauritius) provides food donors with a liability disclaimer that protects them from any risk of legal implication due to food safety issues - that are under the responsibility of the redistributor after the donation up to the consumer level. This measure encourages hotels, restaurants and caterers, supermarkets and bakeries to donate food and cut down waste disposal costs.

More info: <http://www.manzerpartazer.org>

#### ***Box 3. Guidelines for food safety and quality assurance***

Caritas Italiana and Fondazione Banco Alimentare (Italy) have jointly elaborated detailed guidelines for those food operators wishing to engage in R&R activities. These guidelines have been validated by the Italian Ministry of Health and include technical information concerning food safety and hygiene as well as samples of required documentation. The guidelines are a good example on how R&R initiatives can be promoted and facilitated.

*Manual of Good Practices for charitable organisations by Caritas Italiana and Fondazione Banco Alimentare Onlus In accordance with Article 8 of Regulation (EC) 852/2004:*  
[http://cdn.bancoalimentare.it/sites/bancoalimentare.it/files/manualecaritasbanco\\_eng\\_007.pdf](http://cdn.bancoalimentare.it/sites/bancoalimentare.it/files/manualecaritasbanco_eng_007.pdf)

#### ***Box 4. Innovative businesses fighting food waste***

An increasing number of initiatives are using as business model the commercialization of food that is still wholesome and nutritious but which is considered of "sub-standard" quality for wholesalers and retailers. In this context, farmers and producers receive an economic value for discarded food while businesses generate income once the products are marketed, generating a win-win situation. Some initiatives include *Espigoladors*, *Imperfect*, *Hungry Harvest*, and *Rubies in the Rubble*.

# Conclusions and recommendations

Recovery and redistribution of safe and nutritious food for direct human consumption gives food a second opportunity to be used for its main purpose: feeding humans and contributing to their nutrition and food security.

R&R activities are considered preventive measures to save safe and nutritious food from turning into waste, while presenting potential contribution to the sustainability of food systems.

The success of R&R measures depend also on the existence of an enabling environment that facilitates a functioning and operating system. Limiting factors were identified as well as connected facilitation elements from four major spheres of action: policy and regulation, resource mobilization, partnerships, and inclusive business models. This can be seen from the R&R concept map in Figure 2.

Food system actors addressing limiting factors for the development of R&R may wish to:

- ❖ *Take into account the food-use-not-loss-or-waste hierarchy when elaborating policies, regulations and guidelines*
- ❖ *Identify and communicate the resources needed to set or scale up R&R. Resources (e.g. technical, financial, human) should be integrated in the nutrition sensitive food system and efficiently connected to the food supply chains already available structure*
- ❖ *Establish partnerships among food supply chain and food system actors based on values of transparency and trust while working towards strengthening the capacity to deliver in an integrated manner*



Figure 2. R&R Concept map. Authors' elaboration.