



PhD in INGEGNERIA GESTIONALE / MANAGEMENT ENGINEERING - 38th cycle

PARTENARIATO PNRR Research Field: METHODS AND INSTRUMENTS FOR ASSESSING SURPLUS FOOD AND FOOD WASTE IN DISTRIBUTION

Monthly net income of PhDscholarship (max 36 months)

€ 1450.0

In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity

Motivation and objectives of the research in this field

The PhD research project is mainly aimed to produce new qualitative and quantitative evidence on food waste and surplus food in the distribution stage of agri-food value chains.

The results obtained by the PhD candidate should contribute to fill extant knowledge gaps on the strategies that can be activated to measure and analyse regularly and at fine-grained levels surplus food and food waste in distribution firms. Data that will be produced can be leveraged by the food distributors, policymakers, non-profit organizations and other food system actors that strive for valorising surplus food in an economic or social perspective, and for preventing, reusing and recycling food waste. T

he PhD candidate?s investigation is ultimately expected to strengthen the sustainability and inclusiveness of food distribution, by enhancing food security and nutrition quality for the whole population, especially more vulnerable persons, and by making the distribution operations more eco-efficient.

The empirical setting of the research project is the sector of Italian distributors. In detail, the PhD candidate should explore the technological instruments and organizational processes adopted by distributors for the purpose of measuring surplus food and food waste. Secondly, he / she should design, adapt and experiment measurement methods that return information about the quantity of surplus food and food waste generated in food



	<p>distribution, and the strategies adopted to prevent or valorise them (for example according to the food waste hierarchy). In so doing, the candidate may propose and experiment innovative indicators and data collection systems.</p> <p>Lastly, in order to support robust and informative analyses, the measurement approaches proposed and/or experimented should fulfil the following criteria (at least part of them): ability to produce large-scale datasets, possibility to repeat the measurement rounds regularly, necessity to collect information at micro levels (for example, distribution centres vs stores, different product types, different enterprise sizes and locations).</p> <p>The project has several motivations. Food waste reduction in retail and consumption stages is the subject of 12.3 SDG target (FAO, 2021; UNEP 2021). However, firms and their stakeholders can undertake sustainable development processes only if they are well informed about the impact of their current and planned actions, but radical changes are necessary in the conventional corporate accounting of sustainability (Schaltegger et al. 2017). In detail, today information on food waste is highly incomplete at country levels (FAO, 2021; UNEP, 2021), let alone at firm, region, and product levels.</p> <p>The scholarship is funded by a PNRR grant (Partnership Esteso 10 – ONFOODS).</p>
<p>Methods and techniques that will be developed and used to carry out the research</p>	<p>After reviewing scientific and grey literature, the PhD candidate will conduct the research by the means of multiple methods. He/she may design and administer a survey over a sample of Italian distributors. Collected data may be used not only to obtain estimates of the incidence of prevention and valorization options, but also to test the relationship between surplus food and food waste and industry, firm, product-level explanatory drivers. Further possible methods include content analysis. Innovative indicators could be developed and tested to capture the adoption potential of the newest measurement approaches. Lastly, quantitative and qualitative analysis of agrifood startups strategies, characteristics and</p>



	performances could also be leveraged.
Educational objectives	The involved PhD student will learn (i) to understand and assess food waste and surplus food in food distribution and other stages of the agri-food value chains; (ii) to design and apply innovative methods for measuring the adoption of sustainable strategies at firm and industry levels; (iii) to interact with public and private stakeholders for research and policy purposes.
Job opportunities	Upon PhD completion, the candidate may be tasked with empirical research activities in interdisciplinary groups engaged with sustainability-oriented transformation, also developing competences for team leadership roles. Public sector agencies and international organizations engaged with policy design and assessment are also a prospect employer, along with consulting organizations that advise agri-food companies and authorities on sustainable innovation, as well strategy and development functions in agri-food and technology providers companies.
Composition of the research group	4 Full Professors 2 Associated Professors 2 Assistant Professors 5 PhD Students
Name of the research directors	Proff. Paola Garrone, Marco Melacini

Contacts
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Additional support - Financial aid per PhD student per year (gross amount)	
Housing - Foreign Students	--
Housing - Out-of-town residents (more than 80Km out of Milano)	--

Scholarship Increase for a period abroad	
Amount monthly	725.0 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
The PhD candidate will have the opportunity to attend courses on Management Engineering



methods, sustainability-oriented innovation and agri-food sustainability at Politecnico di Milano and other Universities and research centres. He/she will be supervised by the research director through frequent meetings, and will receive feedbacks on his/her intermediate results during regular meetings with the Doctorate board and scientific conferences. The candidate will be involved in some teaching and communication activities, which are seen as a major opportunity to practice with dissemination of own and other relevant research results. He/she will be offered a desk and PC at the DIG building.

The Food Sustainability Lab research projects that are related to the PhD research topics include PNRR's ONFOODS partnership and Food Sustainability Observatory initiatives (https://www.osservatori.net/it_it/osservatori/food-sustainability).

The research group cooperates with several academic groups and research centres, and various public, private and non-profit stakeholders, such as the Dunning Centre for International Business network, CIRAD Montpellier, Laurier Centre for Sustainable Food Systems at the Wilfrid Laurier University in Waterloo, Canada; the National Research Institute on Agronomy (INRA); Cardiff University; Wageningen University, Roskilde University, Fondazione Banco Alimentare, the Milan Urban Food Policy Pact network.

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Decreto Direttoriale Avviso:

D.D. 341 del 15/03/2022 Avviso pubblico per la presentazione di Proposte di intervento per la creazione di "Partenariati estesi alle università, ai centri di ricerca, alle aziende per il finanziamento di progetti di ricerca di base" - nell'ambito del Piano Nazionale di Ripresa e Resilienza, Missione 4 "Istruzione e ricerca" - Componente 2 "Dalla ricerca all'impresa" - Investimento 1.3, finanziato dall'Unione europea - NextGenerationEU

Decreto di concessione: D.D. 1550 del 11/10/2022