



Article

ESG Investing Issues in Food Industry Enterprises: Focusing on On-the-Job Training in Waste Management

Gunta Grinberga-Zalite * and Andra Zvirbule

Faculty of Economics and Social Development, Latvia University of Life Sciences and Technologies,
LV-3001 Jelgava, Latvia

* Correspondence: gunta.grinberga@llu.lv

Abstract: Recently, there is a growing interest in investing in ways that might eliminate global warming; therefore, a number of studies promote the idea of ESG investing. The current study presents the latest discourses on the interpretation of investment and the role of social aspects in terms of investing in ESG. The topicality of the particular study is justified by the fact that food sector investors and other market participants use ESG information through ESG ratings, which, among social factors, include on-the-job training as an important indicator of a company's sustainability. This study was based on a mixed-methods methodology that combines qualitative and quantitative research methods in consistent methodological steps. Based on the research of a wide range of scientific literature and the results of focus group interviews with industry practitioners, the authors have explored ESG implementation issues in European food sector enterprises to identify how food sector companies can strengthen their ESG performance by developing practical on-the-job training in waste management. This study has posed a research question: What skills should be integrated in on-the-job training programs in contemporary waste management in food industry enterprises? The research results present a systematized structure that integrates explicit and tacit knowledge, skills and competence that were acknowledged as topical in developing on-the-job training programs for food industry enterprises.

Keywords: social impact investing; waste minimization; vocational training; promoting sustainability



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1. Introduction

ESG investing issues have recently been both actively supported and criticized by industry players, politicians and academia representatives. The war in Ukraine, which began in February 2022, and the subsequent threat of economic recession have made these discussions even more vivid.

In fact, the term ESG (environmental, social and governance) investing is not a new discovery and dates back to 2004. The ESG investing approach claims that investors should evaluate enterprises based not only on their commercial performance, but also on their environmental, social and governance performance, and therefore it is advisable to use numerical scores for evaluation of ESG performance (ESG Investing 2022). During the last decade, several objective forces such as the Sustainable Development Goals (2015) and Agenda for Sustainable Development (2015), The Paris Agreement/UNFCCC (2018), the European Green Deal (Fetting 2020), the Directive 2014/95/EU of the European Parliament and of the Council as regards disclosure of non-financial and diversity information by certain large undertakings and groups (Directive 2014/95/EU of the European Parliament 2014) as well as The EU Taxonomy for Sustainable Activities (2020) have pushed ESG investing into the mainstream. Accordingly, there is a growing interest among the public in problems related to investing in ways that would eliminate global warming and social injustice (Pástor et al. 2021), which substantiates a number of studies that enthusiastically promote the idea of ESG investing. One of the latest reports conducted by KPMG

and Eversheds Sutherland (2020), which surveyed business leaders from more than 500 global companies about the risks and opportunities that climate change poses to their organizations, claims that business awareness of the risks associated with climate change is growing. Despite the reality of domestic and geopolitical pressures caused by the economic downturn, most respondents have indicated that they are forced to act more decisively towards the implementation of sustainability measures, recognizing that such a strategy is not only good for the environment but also good for their business. However, ESG investing approaches have also received a lot of criticism in recent years (Hughes et al. 2021; Schmidt 2021; Burke 2022). The growing numbers of scientific publications devoted to investigation of various ESG investing issues give evidence not only of increasing support and awareness but also cultivating exaggerated positivism, greenwashing and data fraud.

It is possible to use different types of literature review methodologies, depending on the research purpose: systematic, semi-systematic, and integrative approaches. For the current literature study, the authors used a semi-systematic or narrative review approach to discuss the topics that have been conceptualized and studied by other researchers within social science disciplines and thus could be relevant to ESG investing issues. According to Ward et al. (2009), Wong et al. (2013) and Snyder (2019), this type of analysis can be useful for identification of theoretical perspectives and common issues within a specific research discipline.

The authors used academic search engine Google Search, which by its 389 million records is currently the most comprehensive academic search engine and thus can be considered as an adequate tool for the analysis of scientific literature sources (Haddaway et al. 2015; Zientek et al. 2018; Gusenbauer and Haddaway 2020). Google Scholar is a web-search engine that is free and indexes full-text scholarly literature worldwide across different science disciplines and international databases. Google Scholar provides journal and conference papers, theses and dissertations, academic books, pre-prints, abstracts, technical reports and other scholarly literature.

The authors conducted a Google Scholar search using the keywords “ESG investing” for the period 2012–2022 which showed that the number of publications worldwide dealing with various ESG issues is still steadily increasing (Figure 1).

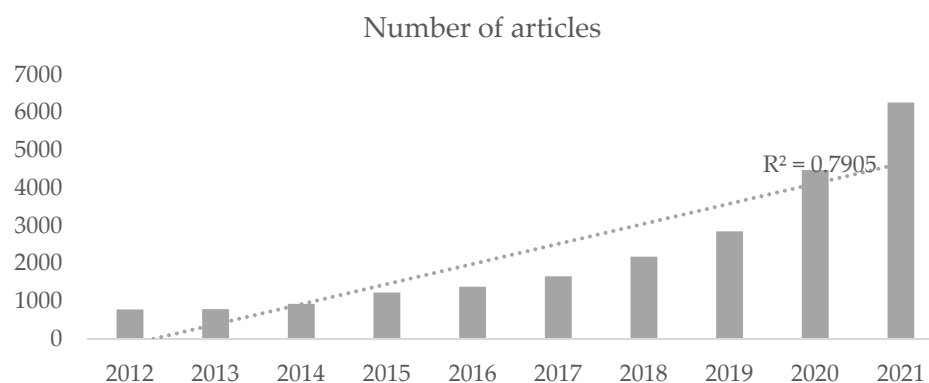


Figure 1. Google Scholar database articles containing keywords “ESG investing”, 2012–2021.

In this respect, Hvidkjær (2017) argues that although scientific research on ESG investments has been growing over the last decade and the research is methodologically sound, most authors emphasize the positive nature of ESG investments rather than using a more dispassionate scientific approach. From an ESG finance perspective, one of the major problems is that many studies are based on very short time periods over which returns are measured. Several studies use time periods of less than 10 years. Moreover, in a short-term period, the results become sensitive to specific macroeconomic conditions. For example, energy prices may have had a certain tendency to increase or decrease or the economy may have been in a period of growth or decline. Therefore, statistical methods are not always able to fully interpret such situations. Unfortunately, ESG has received significant

criticism based on three arguments. First, although ESG brings together an ambitious list of tricks, it does not provide an understandable guide for investors and companies to make the trade-offs that are inevitable in any society. Second, entrepreneurs often lack objective motivation in reality, because even though good business practices are honorable, it is often very profitable for the company to shift costs, such as pollution, to society rather than cover them directly. Third, there is a measurement problem in ESG investments: different rating systems are complex, inconsistent with each other, and can be interpreted differently (Hvidkjær 2017; ESG Investing 2022; Merker and Peck 2019; Serafeim 2021).

However, in the authors' opinion, the currently uncovered research gap is a narrow range of practical issues addressed in the food industry that reveal the experiences and challenges of food sector companies in making meaningful decisions about the strategic directions of investment that would improve sustainable competitiveness. The previous study by the authors in terms of ESG investment and commitments to the European Green Deal was aimed at analyzing food waste management practices in selected European countries Grinberga-Zalite and Zvirbule (2022), which revealed the general attitude of the food sector representatives towards the challenges associated with sustainability reporting in their companies. This study will continue the discussion of previous research findings and focus on waste management issues as a component of the ESG investment strategy at the food industry level. Since the food industry is a complex and global network of different businesses that supply a wide variety of food products, the research objective of the in-depth investigation is limited to eight food production sectors in six selected European countries: the United Kingdom, Turkey, Spain, Italy, Latvia and Lithuania. The aim of the current article is to analyze the needs of food sector employees for contemporary waste management skills at work. This study has posed a research question: What skills should be integrated into contemporary on-the-job training in the waste management of food industry enterprises? The topicality of the particular study is justified by the fact that food sector investors and other market participants use ESG information through ESG ratings (e.g., Thomson Reuters, MCCI, and Bloomberg), which, among social factors, include workforce training and community engagement as important indicators of a company's sustainability (Riccardo and Patalano 2020). Investments in the social pillar, employee training, are relatively easier to assess and track, and the relationship between work-based learning and quality of employment is auspicious (CEDEFOP n.d.). In addition, as the authors' previous studies proved (Grinberga-Zalite and Zvirbule 2022), employees perceive training in the company as a significant advantage, an opportunity to improve personal qualifications as well as a strong motivator to work in the particular company.

The specific research tasks are: (1) to present the discourses and the role of social aspects in ESG investing; (2) to analyze and systematize the food sector's requirements for on-the-job training in contemporary waste management in selected European countries. The current article provides a consistent study on ESG implementation issues in European companies and how food sector companies can strengthen their ESG performance by promoting the development of employees' skills in the currently important area of waste management, which can help companies to become more sustainable and use their resources more efficiently.

2. Materials and Methods

The current study was based on a mixed-methods methodology that combines qualitative and quantitative research methods in consistent methodological steps (Figure 2).

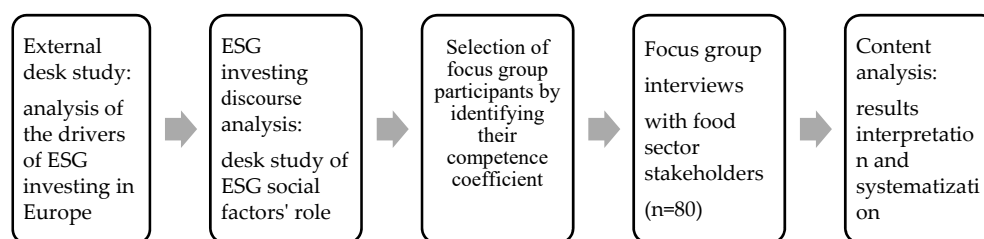


Figure 2. Research methodological steps.

The use of focus groups interviews in this research methodology has many advantages—they are flexible, provide extended and in-depth insights into the research of the problem, have low costs and are relatively easy to perform (Shoaf and Shoaf 2006). Since the authors' practical research took place during the COVID-19 pandemic crisis, when there were various limitations in communication with the respondents, the focus group discussions were organized online, which ensured 100% attendance and the opportunity to accurately record all interviews.

The focus group interviews involved stakeholders of eight food sub-sectors who were either employers/employees or worked in food industry related education institutions as trainers, teachers, academicians, and researchers (80 persons in total) in Spain, the United Kingdom, Italy, Latvia, Lithuania and Turkey (Figures 3 and 4). The selection of the countries to be further analyzed in this study was according to two aspects. *Firstly*, the authors conducted a preliminary survey of countries that were full members or collaborating partners of the [Association for European Life Science Universities \(ICA\)](#) (n.d.) relating to the circular bioeconomy, the sustainable use of natural resources and the protection of the environment. The availability of appropriate data, motivation to cooperate with research team and wish to collaborate within a zero-waste food production chain were important aspects for achievement of the current study goals. Therefore, the mission of ICA—to enhance its partner institution's success in education, research and innovation for a sustainable bioeconomy and society, by engaging with European institutions and networks, to share experience—was considered as consistent with the authors' study settings. Accordingly, important criteria in selecting the countries were their experience and knowledge to promote effective and inclusive decisions for ESG implementation issues in food sector enterprises and identify how food sector companies can enhance their practical on-the-job training in waste management, which could empower them to enhance sustainability commitments. *Secondly*, eight specific sub-sectors were chosen after consultations with ICA member organizations so that the chosen sectors do not overlap with each other and provide a distinctive expertise. Accordingly, the authors sent out invitations to the life sciences universities and major food sector associations of the countries to participate in this study and, after receiving a positive response, jointly with potential partners evaluated which food sub-sectors are the most traditional in these countries with growing ESG investing attractiveness and future development potential, of which finally eight sub-sectors were identified (Figure 4).

Selection of participants (experts) is an important stage in the successful implementation of focus group interview methodology. Therefore, the selection of focus group participants was carried out by using a quantitative research method—numerical assessment of the level of competence of focus group participants in the researched problem. In order to ensure the highest possible competence of focus group participants in on-the-job training in waste management, the coefficient of participants' competence in the given area was identified. The coefficient of competence was obtained by using the formula:

$$k = \frac{\sum_{j=1}^m v_j}{m} \quad (1)$$

where k is the coefficient of competence; v_j —evaluation of a focus group participant (expert); m —number of focus group participants.



Figure 3. Geographical representation of the focus group interviews ([MapChart Europe n.d.](#)).

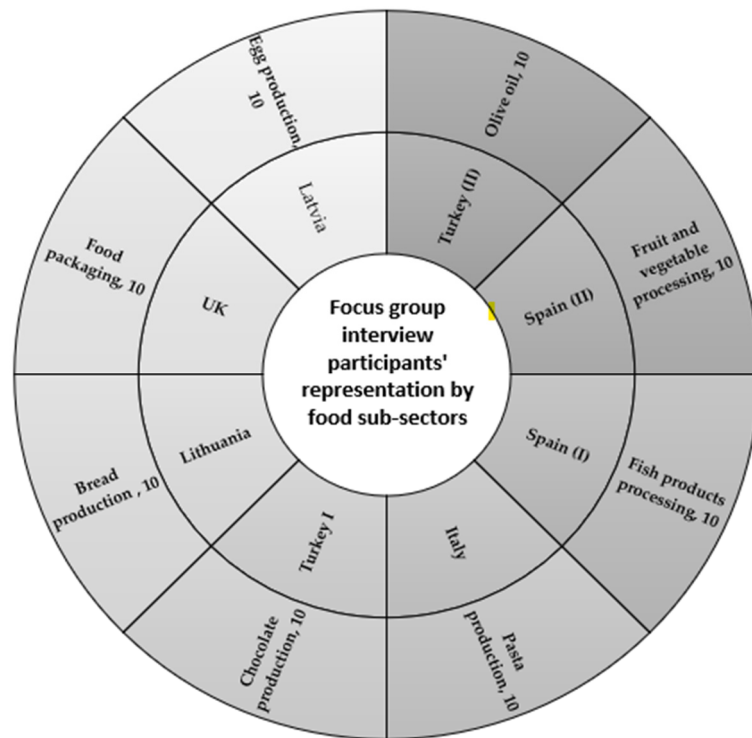


Figure 4. Number of focus group participants ($n = 80$) and their represented food sub-sectors ($n = 8$).

To assess the competence of each focus group participant in the research question, a scale of 0–1 was used, where 0 means that the focus group participant has no competence and opinion in the researched problem, but 1 means the focus group participant is

competent in the researched problem, can make decisions in solving the problem and is interested in expressing his/her opinion. If the value of the competence coefficient is below 0.40, then it is considered that the competence of the focus group participant in the research problem is low; if the coefficient is in the range 0.40–0.50, it is regarded as satisfactory; but if the value of the competence coefficient exceeds the range 0.70–0.80, the competence of the focus group participant is considered as high (Vogt and Johnson 2015). In the study, individual competence assessments were conducted for each participant of the focus group, which formed and influenced the overall coefficient of competence of the participants of the given food sub-sector.

The information arranged in Table 1 reveals that the highest competence coefficients were identified in the egg production, chocolate production, bread production, pasta production and fruit and vegetable processing sub-sectors. The representatives of the food packaging sector have a slightly lower competence coefficient, which could be explained by their lower awareness of the researched problem in this narrow specialization sector. The lowest competence coefficient values were identified in the fish product processing and olive oil production sectors, which can be explained by the fact that these sub-sectors are still dependent on traditional agricultural/fishery specific processes and thus improving contemporary waste management skills in these sectors started comparatively later and therefore lags behind other analyzed sub-sectors, which have become more technology-packed and innovation driven in European countries. Overall, the level of competence of the focus group participants was recognized as adequate for the implementation of further methodological steps.

Table 1. Competence coefficient of focus group participants in each of the food sub-sectors.

Variable	Egg Production	Food Packaging	Bread Production	Chocolate Production	Pasta Production	Fish Product Processing	Fruit and Vegetable Processing	Olive Oil Production
k	0.87	0.75	0.80	0.84	0.80	0.51	0.84	0.52

The focus group interviews were structured into four blocks of questions covering various practical aspects of waste management in food production and processing enterprises (Appendix A).

3. Results

3.1. Discourses in Interpretation of Investment and the Role of Social Aspects in ESG Investing

ESG investments can be evaluated both by their financial and social returns. Increasing shareholder value and financial measurements can justify the economic benefits, but social return can be seen both as a common good for the entire society as a whole, which is provided by, for example, charity events, as well as targeted social investments in the employees of a company, thus preparing them to be more qualified professionals in their workplace and making them more valuable to the specific employer and the market as a whole. Based on the OECD study conducted by Riccardo and Patalano (2020), the authors conclude that several interpretations of the return of investment can be distinguished today (Table 2).

Table 2. Discourses in interpretation of the return of investment.

Social Investing	ESG Investing	Financial Investing
Investment with measurable environmental and/or social return	Investment aimed at enhancing long-term value by using ESG factors to mitigate risks and identify growth opportunities	Limited or no regard for environmental, social or governance practices
<i>Social and financial return</i> <i>Use of ESG metrics and methodologies</i>		<i>Financial return</i> <i>Use financial return metrics and methodologies</i>

However, recently, conventional investing is often regarded as less connected with sustainable and responsible investing and thus industry terminology requires long-term value alignment with social values.

Although ESG investing major index providers Thomson Reuters, MSCI and Bloomberg use different methodologies in their assessments, social pillar factors incorporate a big variety of criteria in all these indices. Moreover, the factor “workforce” integrates both aspects of the development of human capital and development of supply chain sustainability. Accordingly, it is necessary to promote supply chain sustainability by training the employees to work more efficiently by using the latest technologies and specific knowledge. The study conducted by KPMG and Eversheds Sutherland in 2020 found that 74% of business leaders believed that their employees need to improve skills to tackle climate changes in their industry. Therefore, on-the-job training aimed at mastering new topical skills on sustainability issues is necessary in companies (Bianchi et al. 2022).

3.2. Food Sector Requirements for Contemporary Waste Management Training in Selected European Countries

For the food industry, in terms of waste reduction, one of the priorities is to reduce waste in general, replacing it with opportunities for waste reuse both in the production processes of the product itself, minimizing packaging, and looking for ways to turn waste into a renewable resource in cooperation with other partners of the supply chain or companies not related to the industry (Otles et al. 2015). However, today, food industry employees often lack awareness of the relevance of such an approach, understanding of types of waste, their management and environmental impact, as a result of which companies do not use their capacity wisely.

A number of studies have concluded that target-oriented on-the-job training is one of the most important ways to assist employees in gaining contemporary skills required in the labor market. Moreover, regular training provides employees with confidence in organizational support (Meyer and Allen 1997; Noe and Wilk 1993; Pouliakas 2021). On-the-job training and skill development are today considered an important aspect of best human resource management practices (Dardar et al. 2012). It is important to note that on-the-job training differs significantly from learning in an academic environment (Baartman and Bruijn 2011). Accordingly, professional training addresses specific professional tasks that takes place at the workplace. Since the purpose of professional training is to stimulate employees to gradually develop their profession, the development of competences and the formation of identity are more specific and oriented towards social practice at work.

In terms of the authors’ practical study, focus group interviews were organized in the period March–April 2022 in six countries: Spain, the United Kingdom, Italy, Latvia, Lithuania and Turkey, involving 80 competent stakeholders who represented six food sub-sectors. The experts had to brainstorm what waste management skills, knowledge and competences are needed nowadays and meet the needs of the target groups, i.e., food production and processing companies. Researchers and experts jointly came to the conclusion that it would be meaningful if these skills were learned in special waste management training programs by three target groups: (1) the future workforce who

study in departments related to food production in vocational secondary schools; (2) food industry employees whose waste management skills need to be improved; (3) institutions offering professional training courses that focus on the business sector and develop training content for B2B markets. Additionally, experts had to assess whether this training program is relevant and contains innovation elements that contribute to the common understanding of the waste reduction culture in Europe.

After compiling the results of all focus group interviews, the authors worked on the content analysis to identify the presence of certain keywords, themes, documents within the qualitative on waste management issues in different food sectors. The objective of the authors was to identify explicit knowledge required by all the food sectors analyzed and tacit knowledge that would be more tailored for particular sectors, leaving space for professionals in the food sectors to work on later and improve according to their specific needs. Skills were identified by distinguishing soft skills from hard skills in food companies. For employees, hard skills are abilities that are easier to define and their results are easier to measure, e.g., the ability to use certain computer programs. In contrast, soft skills are those that make an employee responsive and able to communicate and cooperate with other people in the workplace on a daily basis, creating a pleasant, organized and productive work environment. On-the-job training attitude means the employees' feelings, values, motivation or priorities in this profession, which should be purposefully stimulated.

In the eight focus group interviews, the stakeholders of food sub-sectors suggested more than 200 different formulations of general and specific skills that were claimed as necessary for the employees and in their opinion needed to be integrated in on-the-job training. By making a careful comparison of skill formulations, those skills that overlapped were merged, so it was necessary to optimize their formulations. The next objective of the authors was to aggregate those skills that were similar to all food sectors and thus could be structured as explicit knowledge, tacit knowledge, soft skills and hard skills. The researchers also summarized the attitude that should be trained for employees of all food sectors. The intention of the current study was to prepare a conceptual framework for on-the-job training content that could afterwards be supplemented according to the specific needs of each sub-sector and thus would provide a safe on-the-job training basis that is relevant in the opinion of industry professionals. Figure 5 provides the final version of the summarized content and structure of on-the-job training in waste management that was submitted for validation to 80 experts representing the food production industry. Despite the different experiences and approaches of professionals and academia in waste management in six countries, during the validation of the suggested on-the-job training content, all focus groups unitedly agreed that the summarized content and structure of the on-the-job training program are relevant and necessary to help companies improve their performance in the social pillar of ESG investing and thus could contribute to the overall company's competitiveness.

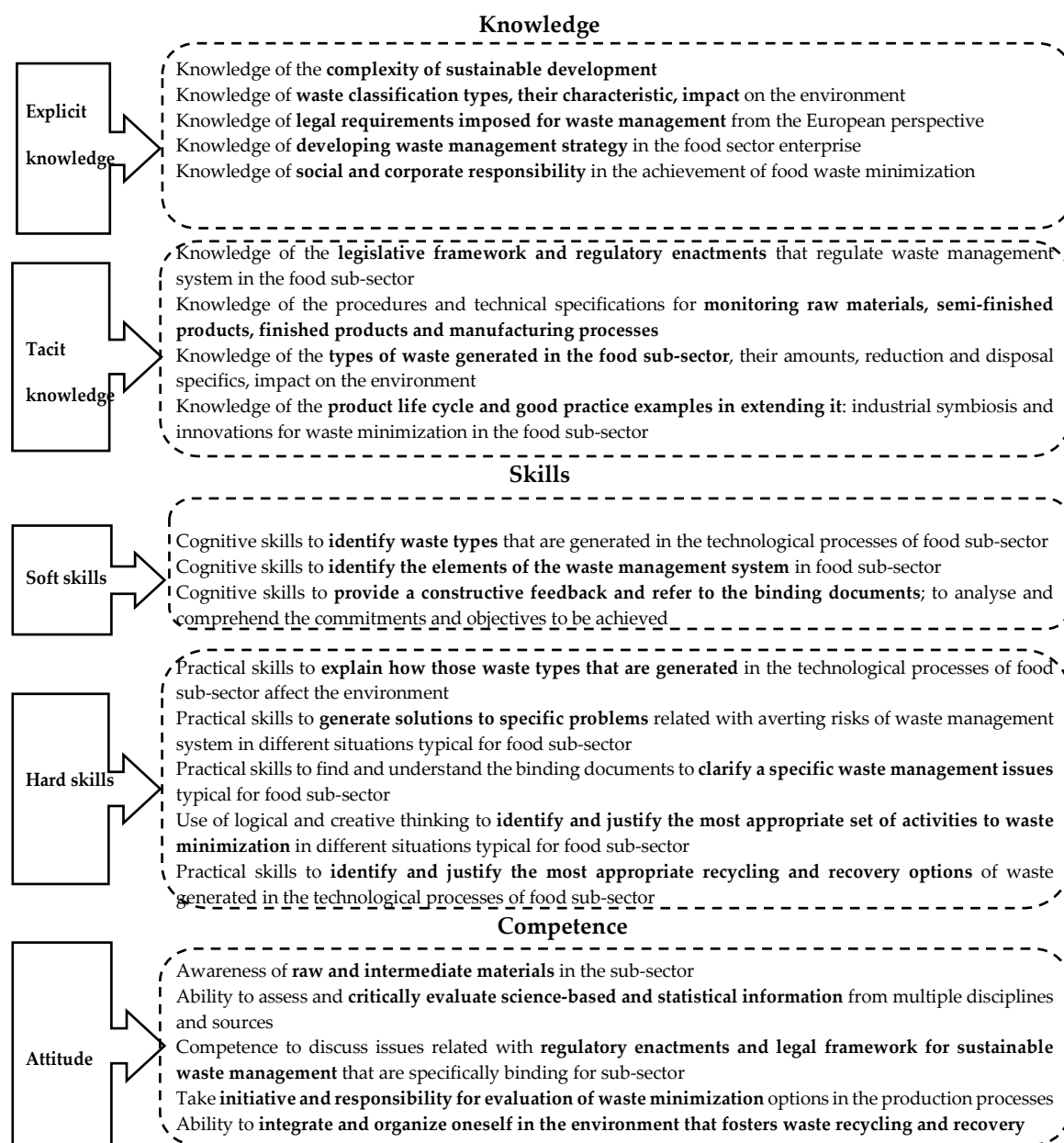


Figure 5. The content and structure of on-the-job training in waste management in the food sector enterprises developed based on the focus group interviews (n = 80).

4. Discussion

Challenges facing the development of contemporary waste management skills have been explored from different industries' perspectives. However, scholarly literature accumulated by the Google Scholar database reveals that previous studies related to waste management skills training issues have been focused on other economic sectors, such as tourism (Omidiani and Hezaveh 2016), the higher education sector (Davis 2008), the health sector (Muduli and Barve 2012) and the building construction sector (Sealey et al. 2001). Therefore, the current authors' study can supplement the existing scientific base by, firstly, focusing on food production sectors, which have been little explored before, and secondly, by the fact that waste management skills development is viewed in close connection with the current issue of ESG investing. The results of this study helped to identify and systematize the current needs for skills to be developed and trained in on-the-job training in food industry enterprises, which would serve as an important ESG investment objective in the future. Since this research was limited to only eight food industry sub-sectors and six Euro-

pean countries, it does not cover all food production sectors and all European countries. Nevertheless, it is important to emphasize that all these sub-sectors were carefully selected based on their importance and the existence of traditions in the national economy of the selected countries. Therefore, these eight food sub-sectors are essential at a European scale and preserve the values of European nations, which makes them attractive for national and international ESG investors. Since the authors have received a positive evaluation of the developed training content from the food industry stakeholders, the next research directions will focus on the practical validation of the conceptual training content in the enterprises by involving more industry experts from vocational education institutions to jointly develop training methodologies that comply with contemporary learning expectations at the workplaces. In the opinion of the authors, further research should be diversified by food sectors, because, for example, egg production and fish product production could require very different training approaches and methods of practicing waste management. However, the unifying element of these studies is to promote a culture of waste reduction and to increase the awareness of employees about their role in promoting the sustainability of the food sector.

5. Conclusions

Although this study is limited to eight food production sub-sectors that vary in terms of projects and initiatives and cooperate with the network of Association for European Life Science Universities, it has shed a light on on-the-job training issues in waste management in the context of ESG investment strategies in food industry enterprises. Among the interviewed experts, the highest level of competence in on-the-job training issues in waste management was identified in the egg production, chocolate production and fruit production sub-sectors, which had the greatest experience and awareness of the relevance of attracting ESG investments for the development of waste management skills, while traditional agricultural/fishery sub-sectors indicated a lower level of competence.

The current research has identified food sector employees' needs for contemporary waste management skills at the workplace. The focus group experts consider that nowadays employees of the food production sector need, regardless of their employment position, to be trained not only to identify different waste types, but also be aware of their impact on the environment. Moreover, today, not only white-collar workers but all the staff that work in different production units of the enterprise need to be aware of legal requirements for food waste and the importance of waste management in terms of overall business corporate responsibility. Additionally, there are many types of hard skills that food sector experts listed as important, and they all are related to empowering employees to generate solutions and take initiative in waste minimization in the enterprise.

The authors have presented the summarized research results as a systematized structure of skills, which is a practically applicable conceptual framework for on-the-job training content validated by European food industry professionals and thus applicable in the direction of ESG investment. This conceptual training framework is a valuable training material worth further developing as in the analyzed countries' food sector enterprises, despite the growing interest of entrepreneurs, such on-the-job training courses in waste management have not been developed yet. Therefore, the authors consider that the network of Association for European Life Science Universities should further promote these tools, helping food sector enterprises, educational institutions and ESG investors to work on the validation and implementation of such on-the-job training programs in practice.

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Appendix A. Focus Group Interview Questions

I Questions for discussion of the waste hierarchy skills of employees who work in food sub-sector	<ol style="list-style-type: none"> 1. What knowledge on waste hierarchy do employees (who work in food production/processing units) need to enhance the waste minimization in sub-sector enterprises? 2. What skills in dealing with waste hierarchy issues do employees (who work in food production/processing units) need to enhance the waste minimization in sub-sector enterprises? 3. What types of responsibility/autonomy related with waste hierarchy issues are necessary for employees (who work in food production/processing units) to enhance the overall waste minimization in sub-sector enterprises? 4. What are the main shortcomings that sub-sector enterprises need to address regarding the waste hierarchy issues?
II Questions for discussion of the waste reduction and disposal skills of employees who work in food sub-sector	<ol style="list-style-type: none"> 1. What knowledge on the waste reduction and disposal do employees (who work in food production/processing units) need to enhance waste minimization in sub-sector enterprises? 2. What skills in dealing with the waste reduction and disposal do employees (who work in food production/processing units) need to enhance waste minimization in sub-sector enterprises? 3. What types of responsibility/autonomy related with the waste reduction and disposal issues are necessary for employees (who work in food production/processing units) to enhance the overall waste minimization in sub-sector enterprises? 4. What are the main shortcomings that sub-sector enterprises need to address regarding the waste reduction and disposal issues?

III Questions for discussion of the
waste minimization skills of employees who
work in food sub-sector

1. What knowledge on the waste minimization do employees (who work in food production/processing units) need to enhance the overall waste minimization in sub-sector enterprises?
 2. What skills in dealing with the waste minimization do employees (who work in food production/processing units) need to enhance the overall minimization in sub-sector enterprises?
 3. What types of responsibility/autonomy related with the waste minimization issues are necessary for employees (who work in food production/processing units) to enhance the overall waste minimization in sub-sector enterprises?
 4. What are the main shortcomings that sub-sector enterprises need to address regarding the waste minimization issues?
-

IV Questions for discussion of the
waste recycling and recovery skills of
employees who work in food sub-sector

1. What knowledge on the waste recycling and recovery do employees (who work in food production/processing units) need to enhance the overall waste minimization in sub-sector enterprises?
 2. What skills in dealing with the waste recycling and recovery do employees (who work in food production/processing units) need to enhance the overall waste minimization in sub-sector enterprises?
 3. What types of responsibility/autonomy related with the waste recycling and recovery issues are necessary for employees (who work in food production/processing units) to enhance the overall waste minimization in sub-sector enterprises?
 4. What are the main shortcomings that sub-sector enterprises need to address regarding the waste recycling and recovery issues?
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