

## Article

# Supporting Agri-Food SMEs in Italy in the Post-COVID-19 Context: From Horizon 2020 to Horizon Europe

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**Abstract:** In recent decades, European policy has targeted specific measures towards SMEs. The recently concluded Horizon 2020 Programme, under the Europe 2020 Strategy, has provided economic support to stimulate competitiveness and boost the economy of member states by focusing on innovation. The SME Instrument, through a structure of multiple calls, constituted the vehicle for SMEs to access the funds made available by the European Union with disruptive innovation proposals. The initial structure of the SME Instrument, developed in phases and along the lines of the US Small Business Innovative Research (SBIR) Programme, was afterwards simplified in the design of its successor, the EIC Accelerator Pilot. The success of the above mentioned economic instruments led the European institutions to develop a new instrument, the EIC Accelerator, supported by the current Horizon Europe programme. After outlining the main features of this transition and the novelties introduced, this paper aims to ascertain the extent to which SMEs in the agri-food sector in Italy have had the ability and opportunity to intercept funds by measuring participation in the SME Instrument. Furthermore, it intends to verify which type of firms in the agri-food sector, divided into agricultural and industrial enterprises, intercepted more of the examined funds, and which organisational phase, productive or commercial, the enterprises have been oriented towards, also giving relevancy to the specific objects of the winning projects.

**Keywords:** SMEs; agri-food; Horizon Europe; SME instrument; EIC accelerator; innovation



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## 1. Introduction

The European Union (EU), over the years, outlined measures and drew programs to organise economic aid to support small- and medium-sized enterprises (SMEs) in the assumption of keeping the economic machine running [1–3]. This support has taken on different characteristics over the various years as it is affected by the economic policy guidelines that follow one another over time, giving rise to different regulatory interventions. In particular, in the last decade, the European Union has provided financial support to SMEs to enhance their innovative potential.

The evolutionary pathway of innovation starts with Regulation (EU) No. 1291/2013, which established the Framework Programme for Research and Innovation Horizon 2020 (H2020) for the seven-year plan between 2017–2020. This Framework Programme was part of the Europe 2020 Strategy [4] to overcome the financial economic crisis and to achieve economic growth that can be characterised as follows:

- Smart, to foster an economy based on knowledge and innovation;
- Sustainable, to steer the economy toward more resource-efficient, greener and more competitive models;
- Inclusive, to raise employment rates and to improve social and territorial cohesion.

In this context, H2020 supported innovation actions with a decisive impact on sustainable, smart and inclusive development.

In particular, “*three priorities emerged: 1. generating excellent science; 2. fostering industrial leadership to support business [ . . . ]; 3. tackling societal challenges, in order to respond directly to the challenges identified in the Europe 2020 strategy by supporting activities covering the entire spectrum from research to market*” [5].

H2020 represented a framework of European financing providing an opportunity to support innovative firms with strong ambitions to develop, to grow and to internationalise, including micro-, small- and medium-sized enterprises (SMEs).

Specifically, a financial instrument for SMEs in the European Union under H2020 was the SME Instrument with a budget for the period 2014–2020 of EUR 3 billion [6,7]. It targeted innovative firms proposing project initiatives for new products, services and business models aimed at fostering economic and social development along the whole research and innovation chain.

In fact, in the context of H2020, innovation is considered a key element for the achievement of sustainable growth objectives; it also acquires a broad meaning, including, next to product innovation, process innovation. In fact, the aim is to reward proposals for new models and working methods. In particular, the SME Instrument, by targeting the development of innovations, represented a stimulus for enhancing the competitiveness [8] of SMEs in the agri-food sector [9].

The SME Instrument’s structure included technological and application thematic areas [10] subdivided along the two sub-periods of 2014–2015 and 2016–2017. The success achieved with the application of the SME Instrument, according with the mid-term evaluation of 2018, convinced the European Commission to provide a new program, the EIC Accelerator Pilot (European Commission, 2020b), for the years 2018–2020. The EIC Accelerator Pilot [11] not only bridged the transition from H2020 to the next programming Horizon Europe (HE) (the Framework Programme for Research and Innovation—2021–2027) [12,13], strengthening the initial support, but took into account the needs arising from the Coronavirus pandemic—including those arising from the negative economic and societal consequences [14] that impacted businesses and industries and especially firms of small and medium sizes [15]—and the European Green Deal guidelines (EIC Accelerator “Green Deal”). The EIC Accelerator for the relaunch of enterprises also received financial support by the Next Generation EU [16] and the National Recovery and Resilience Plan (NRRP) [17]. The actual purpose of the Framework Programme for Research and Innovation 2021–2027 is to stimulate innovation with particular focus on green transition sectors through direct and indirect venture capital investments. In this proactive context of sustainable development, the agro-food system may take advantage of initiatives within circular models that would favour, among other things, the protection of non-renewable resources, the development and strengthening of agro-energy, from an ecological and digital perspective. This contribution first outlines the SME Instrument’s main characteristics and functioning, and then it highlights the transition to the subsequent program, HE, activated in 2021, Regulation (EU) 2021/695. Successively, the present research aims to ascertain the extent of the phenomenon of interception of SME Instrument funds with specific reference to the agro-food sector in Italy—particularly in the regions where the innovative SMEs [18] that benefited from relevant European funding registered. This is in consideration of the fact that the project initiatives developed by these firms have represented a significant source of innovations that may have contributed to the growth and employment of the Italian agro-food production system [19,20]. Furthermore, this paper intended to verify which types of firms in the agro-food sector, divided into agricultural and industrial enterprises, had the ability to intercept more of the European funds examined. Therefore, having identified this distinction, the present study aimed to ascertain which organisational phase, productive or commercial, the enterprises have been oriented towards, also giving prominence to the specific objects of the winning projects. In addition, the paper organised the data retrieved from the Aster database to verify whether the financial resources provided were used by

companies belonging to the agricultural or industrial phase. Further, the present research examined whether the firms have developed projects pertaining to the production phase or to the market phase.

A similar contribution was not present, to the best of our knowledge, in the current scientific literature in this field; therefore, this paper hopefully brings new elements.

Indeed, this study constitutes an innovative aspect in the scientific literature related to the study of the distribution of European funds and particularly of the SME Instrument. This allowed investigating the entrepreneurial tendencies of enterprises in the sector segments concerning Agriculture & Fisheries and Food & Beverage.

## 2. State of Art

SMEs are “a significant source of innovation, growth and employment in Europe” [21]. European programmes have developed measures and outlined several actions over the years to support these entities and keep the economic machine running. Such support has been characterised differently in the various years reflecting the political turns that have followed each other in time.

The last European Programme supporting SMEs recently ended in 2014–2020 and it was part of the Europe 2020 [22] strategy focusing on developing smart, sustainable and inclusive economic growth in order to overcome the financial economic crisis. In this context, therefore, the H2020 Framework Programme for Research and Innovation, established by Regulation (EU) No 1291/2013, aimed at integrating a number of instruments dedicated to support research and innovation into a common strategic framework. The latter two represented the key drivers of social and economic prosperity and of environmental sustainability to attract private investment and facilitate financial mechanisms.

H2020 was structured in three pillars, “Excellent Science, Industrial Leadership and Societal Challenges”, and with two specific objectives, “Spreading excellence & widening participation” and “Science with and for society” [22]. Within the Industrial Leadership pillar [23] and the Societal Challenges pillar [24], which aimed, among others, at attracting more private investment into Research and Innovation (R&I) and supporting the increase in innovative SMEs in Europe [22], the SME Instrument was tailored specifically for high-risk and high-potential innovative projects to foster all forms of innovation in all types of SMEs, as defined by Article 2 of the Recommendation 2003/361/EC. The Executive Agency for Small and Medium-sized Enterprises (EASME) is in charge of the SME Instrument management [7,25]. Eligible participants were legal entities in an EU Member State or in a country associated with H2020 [21]. The specific orientation towards SMEs was set out in Article 22 of Regulation (EU) No. 1291/2013 and Article 53 of Regulation EU No. 1290/2013, which also stated that SMEs may cooperate with other enterprises, research organisations or universities. Single SMEs or consortia could have applied, although only for-profit [26,27] SMEs. The SME Instrument provided funding and support for innovation projects to develop and expand globally. SMEs could apply for grants under specific thematic topics [28–30].

The SME Instrument ran as an open call with cut-off dates. Its structure included three phases covering the whole innovation cycle path: from the business idea’s conceptualisation stage to the commercialisation stage. The first two phases provided financial support, while the third offered supporting services. It was not compulsory to access all the three phases. SMEs could apply directly for phase 2 if they met the requirements, while Phase 3 was optional.

Phase 1 (proof of concept) helped SMEs to get a grip on innovation. The funding was provided for verifying and assessing the technical feasibility and commercial potential of breakthrough innovative projects and the duration was around six months. The evaluation process might involve “market research, analysis of regulatory constraints or standards regimes, intellectual property management, etc.” [31]. The amount of the funding was a lump sum of EUR 50.000, representing 70% of the notional eligible costs of EUR 71.429 [32], to address to the project, whether the participant was a single SME or a consortium [26]. In particular,

the eligible project costs were both direct and indirect [33]. Not all projects were able to reach Phase 2 and not all the firms applied first to Phase 1.

Phase 2 (innovation project) was about the development and the demonstration of the innovative project. Participants, in fact, had to attach to the call a full business plan for scaling-up with a global growth-oriented strategy and also a feasibility assessment to prove the potential to access the market in an expected period of around six months [31]. The funding forms for this phase were grants between EUR 500,000 and EUR 2.5 million. The eligible costs were “*direct costs of personnel, subcontracting, providing financial support to third parties, and other direct costs (e.g., travel, equipment, consumables); indirect costs based on a flat rate of 25% of eligible direct costs*” [33].

At the end of phase 2, each innovative idea was supposed to become a proposal for a product, a process or a service to enter to the market and a commercialisation strategy to be presented to potential private investors. In fact, one of H2020’s purposes regarding the SME Instrument was precisely to draw in funds from private investors.

Phase 3 (commercialisation) did not provide direct funding and consisted in business support services and network activities to help SMEs accessing new markets or customers and create a link with investors.

The SME Instrument also offered coaching services, delivered by business coaches to help the firms to scale-up and grow, and mentoring services to develop leadership skills through meetings with experienced entrepreneurs.

Extra support was offered to SMEs in addition to financial contributions: up to three days of coaching during Phase 1 and up to 12 days of coaching during Phase 2 through the Enterprise Europe Network (EEN), while none was offered during Phase 3.

At the end of the SME Instrument calls, the interim evaluation of H2020 reported numerous successful results in fostering breakthrough, market-creating innovations. Thus, EU Institutions decided to strengthen the support setting for the EIC Accelerator Pilot, also identified as the SME Instrument successor (European Commission, 2021d), ensuring the continuation of the path marked out by the former.

The two funding schemes ultimately represented two temporally successive articulations of H2020, in the early years with the SME Instrument and in the final years with the EIC Accelerator Pilot, thus covering the policy-planning period from 2013–2020.

Despite many similarities, there were technical [26,34] and policy differences between these two instruments.

First of all, at a technical level, the EIC Accelerator pilot focused specifically on scaling-up [34] for SMEs with a “*radically new highly risky, and thus, non-bankable idea*”, [35] which were encountering obstacles in obtaining financing on the market because of the high-risk character of their projects. It also offered a new blended finance—grant and equity—component. This equity form novelty was “*up to EUR 15 million per company (EUR 100 million total budget for equity in 2019–2020 pilot phase*” [34]. Compared to the former [36] SME Instrument, the EIC Accelerator pilot also presented a fully bottom-up [36] approach that allowed SMEs to present projects without any limits about specific topics. Moreover, Phase 2’s evaluation proposal required two steps, one of which was a face-to-face interview.

Other differences reflected the disparate economic policy contexts. The EIC accelerator pilot imbedded the criteria and the key principles guiding the actions of the new European strategy outlined in the Green Deal [37] and the Recovery Plan for Europe (NextGenerationEU). Funding was facilitated if the projects aligned with Green Deal principles, i.e., if they met the scope of specific indicated themes and if these were affected by the objectives of the new European strategy to prioritise climate, clean and circular economy, etc. In addition, the EIC Pilot lined up to support SMEs projects for innovative health solutions aimed at tackling the COVID-19 pandemic (Coronavirus relevant innovations).

The EIC Accelerator Pilot served as a pilot phase for the introduction of the next seven-year programming period’s instrument, i.e., after H2020. The EIC Accelerator Pilot took place during the debate on the new seven-year programme line and its gradual establishment. The consultation of European institutions resulted in the structure of the

new HE Framework Programme for Innovation for the period 2021–2027 [38], designed to succeed the H2020 Framework Programme.

Due to the success of the SME Instrument and the EIC Accelerator Pilot, the EIC Accelerator was launched on 18 March 2021 [39,40] as the European Innovation Council's (EIC) flagship programme for SMEs *“with a budget of EUR 10 billion”* [41]. It is part of the HE Work Programme European Innovation Council 2021 [41] promoted by the European Council. It is pursuing *“identification and support of breakthrough technologies and game-changing innovations with the potential to become market leaders”* [41]. Following the setting of the budget to be allocated to the actions of the new Framework Programme (EUR 95.5 billion at current prices, of which EUR 5.4 billion from the Next Generation of the EU Recovery Fund) [42,43], in fact, last March the HE Strategic Plan was adopted for investments in the first four years (2021–2024). This plan considers the growth process of SMEs with a strong innovative vocation in the European and global markets (scaling up), as long as the projects include the premise of accelerating the two transition processes towards digitisation and the Green economy, and also contribute to making Europe the first circular economy, climate neutral and sustainable. The EIC Accelerator in particular is part of the third pillar of HE, Innovative Europe [42], and aims to operate in continuity with its predecessors, to solicit public support and private investment.

This flagship programme for SMEs is arranged in two calls: *“EIC Accelerator open”* and *“EIC Accelerator challenge”*. The first is an open funding, meaning that no predefined thematic priorities are required; it points to *“any technologies and innovations that cut across different scientific, technological, sectoral and application fields or represent novel combinations (EIC Work Programme)”* [41]. The EIC Accelerator challenge *“provides funding to address specific technological and innovation breakthroughs [ . . . ] for transitioning to a green, digital and healthy society (EIC Work Programme)”* [41] and to those identified by the European Commission as strategic health, digital technologies and the EU Green Deal (*“in particular, limiting emissions by 2030 and achieving climate neutrality by 2050”*) [44]. The EIC Accelerator's action is ongoing and for that reason, the results are not available yet.

Given this scenario, in Italy, agro-industrial SMEs of innovative capital goods for agro-food enterprises with specific objectives resorted to the financial support provided by the European Union, under the already concluded H2020 Programme (the SME Instrument and the EIC Accelerator) to develop revolutionary innovative ideas aimed at shaping new markets or reforming already existing ones.

Therefore, the present analysis aimed at measuring this phenomenon and verifying the level of recourse to these sources of financing in relation to Italian agro-industrial SMEs whose projects fell within the Agriculture & Fisheries and Food and Beverage thematic areas, with reference to the approved 2020 projects.

The scientific community dedicated specific research on the SME Instrument. Some authors underlined that the SME Instrument's roots are not to be found in Europe, but its origin lies in an US model: *“the Small Business Innovative Research (SBIR) program”* [10,27]. The SME Instrument replayed the three-phase structure of the US instrument [27].

Therefore, the SME Instrument results in a novel scheme within the European innovation policy [27].

Moreover, by examining the existing literature on this topic, several considerations emerged regarding SMEs' potential and the challenges they typically face as traced hereinafter.

Based on literature studies, SMEs are key actors in the innovation ecosystem that may *“contribute to employment rates”* [23,45], especially considering that innovation is a crucial element in industrial competitiveness and drives economic growth [10,46–48] to gain competitive advantage [1,49]. SMEs can also favour structural changes and industrial renewal [27,50].

On the other side, there are several opportunities that SMEs might embrace. These entities encounter several obstacles in their growth, many of which derive from constrained resources, limited access to capital [45,51,52] and accessibility to credit issues [53,54]. This happens especially during the process of exploitation and scaling up, but also during the

pre-commercial phases, which are considered high risk, with some authors referring to them as the “Valley of Death” [23]. According to several researchers, the SME Instrument represents a response to the “financial gap experienced by small and young innovative firms” [27] and also to the “Valley of Death” being a tailored, SMEs-funding instrument [10]. Indeed, the scientific literature studies confirm that the SME Instrument addressed disruptive innovations and many leading companies used the SME Instrument as an accelerator to bridge the “Valley of Death” [23], as it can be ascertained from the analysis of the type of firms which have benefited from the funds made available by that instrument. The information about the funds is available in the database of the Executive Agency for SMEs (EASME), which managed the implementation of the SME Instrument as confirmed in the literature [10] and was “responsible for the selection of the awardees” [27].

This would show that the SME Instrument derived actually from a targeted policy directed to meet SMEs’ need for a “greater degree of selectivity in order to address the funding gaps of firms with growth opportunities” [27,55]. Innovation policies can support in overcoming the barriers to the growth of SMEs [27] and some authors explore whether the SME Instrument reached the purpose of selecting the real “EU Innovation Champions” that better contribute to the innovation ecosystem with an open innovation approach [45].

### 3. Methodology

The proposed analysis relied on the Aster database, which lists the agro-industrial innovative SMEs of EU member states that benefited from H2020 funding subdivided by thematic area and for the period from 2014–2019. Therefore, data drawn from the Aster source allowed the individualisation of the Italian SMEs that submitted projects falling under the thematic areas Agriculture & Fisheries (AF) and Food & Beverage (FB), in order to acquire their numbers by region and the amounts received. It was possible to outline the progress, when present, of the projects from Phase 1 concerning “Feasibility Study” (technical assessment and market potential) to Phase 2 for “Innovation” (demonstration activities). Specifically, Phase 1 involves an initial lump sum contribution of EUR 50,000, while Phase 2 is a subsequent potential co-financing of between EUR 0.5 and EUR 2.5 million (foreseen for a maximum of two years) for projects recognised as having “Innovative” potential (demonstration activities).

With reference to the Agriculture & Fisheries (AF) and Food & Beverage (FB) thematic fields, the paper intended to verify whether these areas were connected to each other in a sort of linear link [56]. In this regard, the linear Bravais–Pearson correlation coefficient made it possible to observe the degree of interdependence of the thematic domains, i.e., to highlight the measure of the linear relationship existing between the characters X (AF) and Y (FB) detected on the N statistical units (number of regions). Therefore, the degree of concordance between the relative amounts received by innovative SMEs was assessed in the regions that reveal their presence in order to ascertain any imbalance between the intensity of one with respect to the other. This either excludes or includes the presence of any external elements, which would differ from each other in the two different thematic areas, and may affect to some extent the relationship between the two variables considered.

It was possible to develop the Bravais–Pearson correlation, since the thematic areas drew on the same funding funds provided for the agro-food sector.

The coefficient  $r$ , which is limited to regions in which projects with both themes co-exist, was derived from the following formula:

$$r_{xy} = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2 \sum_{i=1}^n (y_i - \bar{y})^2}} \quad (1)$$

This linear correlation coefficient can assume values between  $-1$  and  $1$ ; positive values indicate a degree of positive agreement, i.e., as one variable increases, the other tends to increase on average; in contrast, negative values indicate discordance, i.e., as one variable increases, the other tends to decrease on average. A zero value indicates

no concordance—that is, the only case in which there is no linear relationship between the two variables, but independence. The linearity trend indicates the strength of the concordance relationship.

The type of innovation indicated in the object of the winning projects allowed the identification of the category of enterprise they belong to, divided into “farm” and “industrial agri-food”. Then, the projects were divided to provide evidence on whether they concerned the stage of production or that of marketing.

#### 4. Results

The SME-Instrument was a sub-programme of H2020 designed to support SMEs also in the agri-food sector by including funding for the two macro sectors AF and FB.

ASTER data on SME projects related to the AF and FB thematic areas, presented in Table 1, showed that Italy comprised 13.2% (equal to 59 units) of EU SMEs and 10.2% (EUR 17.5 million) of the above-mentioned total amount allocated to Member States.

At the European level, the SME Instrument financed firms in northern areas more than those in the Mediterranean Basin [57]. A particular focus on Italy showed those regions that intercepted these opportunities.

Observing the regions in both phases, Emilia Romagna and Lombardy represented the largest percentage of territorial realities where national innovative SMEs are registered. As Table 1 reports, in Emilia Romagna there were 16 firms (27.1% of the national number) and EUR 4.5 million was the contribution they benefited from (25.5% of the national total); in Lombardy, there were 15 firms and the amount of contributions was EUR 5.6 million (respectively, 25.4% and 31.8% of the corresponding national figure). Coming in next was Veneto with six beneficiaries (10.2%) who benefited from EUR 3.6 million (20.4%), then Apulia with four SMEs (6.8%) and €1.4 million (8.1%) and afterwards, Liguria with two firms (3.4%) and €1.2 million (6.7%). The remaining regions were Trentino-Alto Adige, Lazio and Piedmont at equal positions, then Tuscany, Umbria, and Campania, which benefited from fewer H2020 resources (between EUR 0.05 million and EUR 0.6 million).

It is important and interesting to note that the SME Instrument amount of the funding (a lump sum of EUR 50,000 in Phase 1, grants between EUR 500,000 and EUR 2.5 million in Phase 2) referred to whether the participant was a single SME or a consortium [26]. So, although the number of firms that received funds was more than one, for a single project, in the case of a consortium, only the “representing” beneficiary showed in the results. Specifically, the “representing” beneficiary was generally the coordinator or the partner if the coordinator’s country was not Italy. The number of participants consequently was higher.

The linear Bravais–Pearson correlation coefficient was not determined for Trentino-Alto Adige and Campania, being the only regions that did not show simultaneous participation of the two variables AF and FB.

The result of the  $r$  coefficient showed the linearity of the aforementioned thematic areas and a relationship close to a positive concordance (0.80) (Table A1); this leads to the consideration of the two variables AF and FB oriented to be mutually dependent; in fact, in displaying the relative trend, they show small deviations (Figure 1). Therefore, with regard to the consideration of whether or not there are external elements, different from each other, in the two thematic areas, influential or not in the interception of reference funding, they would seem to be non-existent.

Regarding the comparison between two phases (Table 1), in Phase 1, the number of beneficiary firms prevailed over Phase 2, and vice versa in regards to the resources involved. On the other hand, this situation could have been foreseen, given that Phase 1 is preliminary, constituting a test of innovative projects. Phase 2 envisages the definitive project realisation for farms and/or agri-food industrial enterprises, to address one of the stages of the production process of the recipients or the phase that purely concerns marketing. Consequently, not all firms were able to move on from Phase 1 to Phase 2.

As for the innovations proposed by Innovative SMEs in the agro-food sector, Tables 2 and 3 show, summarily, the specific types developed.

**Table 1.** Distribution by regions of innovative SMEs in the agri-food sector benefiting from Horizon 2020 grants in 2014–2019 (\*).

Regions	AF		FB		Total Innovative SMEs			
	Beneficiaries	Total Grant	Beneficiaries	Total Grant	Beneficiaries		Total Grant	
	n.	000 Euro	n.	000 Euro	n.	%	000 Euro	%
<b>Phase 1</b>								
Emilia-Romagna	6	300	7	350	13	27.7	650	27.7
Lombardy	6	300	5	250	11	23.4	550	23.4
Veneto	2	100	2	100	4	8.5	200	8.5
Trentino-Alto Adige	1	50	-	-	1	2.1	50	2.1
Piedmont	1	50	3	150	4	8.5	200	8.5
Liguria	-	-	1	50	1	2.1	50	2.1
Tuscany	1	50	2	100	3	6.4	150	6.4
Apulia	-	-	3	150	3	6.4	150	6.4
Lazio	2	100	2	100	4	8.5	200	8.5
Campania	1	50	-	-	1	2.1	50	2.1
Umbria	-	-	2	100	2	4.3	100	4.3
Total	20	1000	27	1350	47	100.0	2350	100.0
%	42.6	42.6	57.4	57.4	100.0		100.0	
<b>Phase 2</b>								
Emilia-Romagna	3	3820	-	-	3	25.0	3820	25.2
Lombardy	2	1754	2	3265	4	33.3	5019	33.1
Veneto	1	878	1	2488	2	16.7	3366	22.2
Trentino-Alto Adige	1	561	-	-	1	8.3	561	3.7
Piedmont	-	-	-	-	-	-	-	-
Liguria	1	1115	-	-	1	8.3	1115	7.4
Tuscany	-	-	-	-	-	-	-	-
Apulia	1	1265	-	-	1	8.3	1265	8.4
Lazio	-	-	-	-	-	-	-	-
Campania	-	-	-	-	-	-	-	-
Umbria	-	-	-	-	-	-	-	-
Total	9	9393	3	5754	12	100.0	15,147	100.0
%	75.0	62.0	25.0	38.0	100.0		100.0	
<b>Italy</b>								
Emilia-Romagna	9	4120	7	350	16	27.1	4470	25.5
Lombardy	8	2054	7	3515	15	25.4	5569	31.8
Veneto	3	978	3	2588	6	10.2	3566	20.4
Trentino-Alto Adige	2	611	-	-	2	3.4	611	3.5
Piedmont	1	50	3	150	4	6.8	200	1.1
Liguria	1	1115	1	50	2	3.4	1165	6.7
Tuscany	1	50	2	100	3	5.1	150	0.9
Apulia	1	1265	3	150	4	6.8	1415	8.1
Lazio	2	100	2	100	4	6.8	200	1.1
Campania	1	50	-	-	1	1.7	50	0.3
Umbria	-	-	2	100	2	3.4	100	0.6
Total	29	10,393	30	7104	59	100.0	17,497	100.0
%	49.2	59.4	50.8	40.6	100.0		100.0	
<b>European Union</b>								
Total	240	97,668	206	73,347	446	100.0	171,015	100.0
%	53.8	57.1	46.2	42.9	100.0		100.0	
Italy/UE (%)	12.1	10.6	14.6	9.7	13.2		10.2	

(\*). Our elaboration data ASTER.

**Table 2.** Destination and period of implementation of innovative SME projects in Italy (\*).

Regions	INNOVATIONS	Topic	Farm		Industrial Agri-Food		Projects Timing	
			PF **	C ***	PF **	C ***	Starting	Ending
Emilia-Romagna	Automated system for packaging fresh meat with reduced waste/giveaway, processing time, human involvement and contamination	AF				X	1 May 2017	31 August 2017
	Bee Ethic Frames 2.0, a disruptive technology in apiculture	AF	X				1 December 2018	31 May 2019
	LICE CULTIVATOR: Fast mechanical cultivator reducing fuel and herbicide use	AF	X				1 May 2019	31 August 2019
	MASTERCOW, an antibiotic-free bioinorganic therapy for bovine mastitis	AF	X				1 August 2018	31 January 2019
	Automatic hydraulic jack with improved capacity, safety and efficiency for agricultural implements	AF	X				1 December 2017	31 March 2018
	Innovative tag system, providing affordable time–temperature quality control of individual temperature-sensitive products	AF				X	1 October 2016	28 February 2017
	COOK-SAFE: A safer, non-stick, antibacterial and heat-stable nanocoating for cookware and household appliances	FB				X	1 June 2018	30 September 2018
	DEcision support system for smart agriculture	FB	X				1 March 2019	30 June 2019
	Universal multi-purpose automated glass jar filler for the fruit and vegetable processing industry	FB				X	1 May 2018	31 August 2018
	Vegetable ozone therapy for the defence of greenhouse crops	FB	X				1 August 2015	30 November 2015
	Parmesan cheese quality inspection via CAT scanner and robotic arm	FB				X	1 August 2019	30 November 2019
	Developing the world’s first food wrapping machine with organic film	FB				X	1 May 2018	31 August 2018
	Fermentation processes for functional foods from rapeseed, sunflower and other EU matrices devoted to young animals. Zero-miles model boosting safety and competitiveness of livestock sector	FB				X	1 February 2015	31 July 2015
	Lombardy	3Bee Hive-Tech: innovative IoT system designed for monitoring beehives	AF	X				1 February 2018
Antibiotic resistance-free meat and dairy products		AF				X	1 February 2017	31 May 2017
Early warning system for enteropathies in intensive broiler farming		AF	X				1 December 2018	31 May 2019
A novel double-wheel rake machine to provide high-quality fodder and high operational speed		AF	X				1 November 2016	28 February 2017
On-field innovative system to detect very low concentrations of aflatoxins in milk		AF				X	1 February 2017	31 July 2017
Application of high-power ultrasounds (HPUs) to improve the sustainability in meat in tenderising and brining processes		AF				X	1 November 2016	28 February 2017
Valorisation of corn processing by-products into plastic bio-composites		FB				X	1 March 2016	31 July 2016
Optimum, sustainable solution for seed drying and conservation		FB				X	1 December 2015	31 March 2016
A sustainable organic solution for bee decline		FB	X				1 March 2016	31 August 2016
PREFEapp, an innovative mobile app that aims at cutting food waste at its roots, thanks to the cooperation of final consumers, municipal undertakings and LSRT players		FB				X	1 September 2018	28 February 2019
Increasing grain quality through advanced oxidation treatment during storage	FB				X	1 September 2014	31 January 2015	

Table 2. Cont.

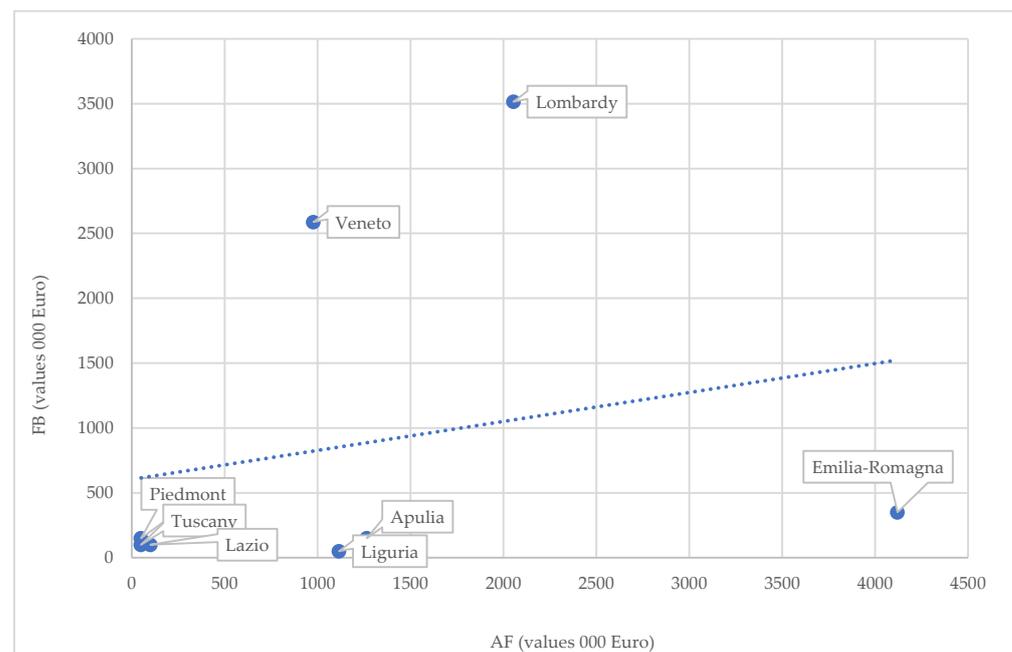
Regions	INNOVATIONS	Topic	Farm		Industrial Agri-Food		Projects Timing	
			PF **	C ***	PF **	C ***	Starting	Ending
Veneto	Unique radar-drone used for subsurface water detection for precision agricultural irrigation	AF	X				1 May 2017	31 August 2017
	From plants for plants: enhancing crops potential and resilience by reliable new generation biostimulants	FB	X				1 February 2016	31 August 2016
	RLTProFood—Remote Lighting Technology for the processing and production of food	FB			X		1 October 2015	31 March 2016
	First industrial use of bio- and eco-compatible geopolymers produced from metakaolin to manufacture tanks for wine, beer, vinegar and olive oil production and storage via 3D-printing technology	AF				X	1 Jun 2016	30 November 2016
Trentino Alto Adige	Modelling and imaging development for precision agriculture	AF	X				1 June 2017	30 November 2017
Campania	Smart cuvette and portable time-resolved FRET for fast analysis of milk	AF			X		1 December 2017	31 March 2018
Piedmont	Detergent-free steam cleaning system for modular conveyor belts in the food industry	AF			X		1 May 2017	31 October 2017
	BEANS TO CHOCOLATE	FB			X		1 August 2018	30 November 2015
	Food treatment process based on high-voltage, nanopulsed electric discharges in liquid phase	FB				X	1 September 2015	29 February 2016
	Mobile wireless device microcantilever-based biosensor to identify and measure the aflatoxin B1 in animal food and M1 in the milk chain	FB				X	1 December 2015	31 May 2016
Tuscany	The acrylamide-free superabsorbent polymer for agriculture water footprint reduction	AF	X				1 December 2018	31 May 2019
	Jellyfish barge—a floating greenhouse	FB	X				1 June 2015	30 November 2015
	Novel oven with autonomous accurate temperature control, for higher energy efficiency and savings	FB	X				1 June 2015	30 November 2015
Apulia	Biologic lycopene from tomatoes	FB			X		1 February 2019	31 July 2019
	A feasibility study, to investigate and verify the commercial and industrial viability of a wastewater processing solution to generate bioplastics from agri-food and municipal wastewater sources	FB			X		1 February 2016	31 May 20/16
	Novel ozone and thermal shock conservation process for vegetables	FB			X		1 May 2015	31 August 2015
Umbria	Agricolus decision support system	FB	X				1 March 2016	31 August 2016
	Industrial scale-up of the first all-natural solid fat based on olive oil to produce healthier bakery foods	FB			X		1 July 2018	31 December 2018
Lazio	A resource-efficient granulation process for advanced formulation of any compound in food and pharma production	FB			X		1 December 2015	31 March 2016
	Nite Carbon Nanoclusters, a natural antioxidant for the food industry made from agricultural waste	AF				X	1 March 2018	31 July 2018
	An automated, machine learning, IoT agronomic platform for optimal irrigation, pesticide and fertiliser utilisation at farms	AF	X				1 December 2018	31 May 2019
Liguria	COMPostable capSULE for instant coffee delivery based on an innovative chemical functionalisation of bio-based plastics	FB				X	1 November 2015	29 February 2016
	Drone-based integrated monitoring system for early detection of crop pathology and pest control in high-tech greenhouse agriculture	FB	X				1 September 2015	31 January 2016

(\*) Our elaboration data ASTER. (\*\*) PF = Production Factor. (\*\*\*) C = Commercialization.

**Table 3.** Destination and period of implementation of innovative SME projects in Italy (\*).

Regions	INNOVATIONS	Topic	Farm		Industrial Agri-Food		Projects Timing	
			PF **	C ***	PF **	C ***	Starting	Ending
Emilia-Romagna	Automatic hydraulic jack with improved capacity, safety and efficiency for agricultural implements	AF	X				1 November 2018	31 May 2021
	Vegetable ozone therapy crops sanitised naturally from seed to feed	AF	X				1 November 2019	31 October 2021
	Improving resource efficiency through a protective film for hose reel irrigation	AF	X				1 August 2018	31 December 2020
Lombardy	EssiccaOptimum, a sustainable solution for seed drying and conservation	AF	X				1 March 2018	31 August 2019
	A novel double-wheel rake machine to provide high-quality fodder and high operational speed	AF	X				1 July 2017	30 April 2019
	Artificial intelligence revolution in beekeeping sector: the “Internet of Bees”	FB	X				1 August 2019	31 July 2021
	XSpectra: the most advanced real-time food contaminants detector	FB				X	1 April 2019	30 September 2021
Apulia	A revolutionary, safe and cost-effective industrial process for gluten detoxification in cereals	AF			X		1 November 2016	31 October 2018
Liguria	Solaris energy tobacco for the creation of a European sustainable biojet fuel value chain	AF				X	1 August 2017	31 May 2019
Veneto	Innovative oxygen-free wine bottling process	AF				X	1 July 2016	31 March 2018
	Design of an agricultural greenhouse for intensive growing of microalgae in fresh/sea water with a syngas production plant and organic farming of chickens and pigs outdoors	FB	X				1 August 2015	31 January 2017
Trentino Alto Adige	Instruments for creating casings from wine industry waste	AF				X	1 March 2018	31 August 2019

(\*). Our elaboration data ASTER. (\*\*). PF = Production Factor. (\*\*\*) C = Commercialisation.



**Figure 1.** Correlation trend line.

The analysis of each project allowed the verification of whether they were more oriented towards the production phase of the agro-food chain or towards marketing.

First, it is of note that there is a propensity towards innovations pertaining to a variegated range of typologies.

The inexistence of a univocal pattern of choice, given the existing diversification, makes it possible to identify only the common strategic orientations of firms through the destination of their innovations.

Thus, beneficiary firms have been distinguished into farms and agro-food industries for a two-fold purpose. On the one hand, it establishes which of these two groups of enterprises in the agro-food sector was most able to intercept the European funds made available; on the other hand, it investigates the destination, whether production phase or market, that the innovations developed were directed towards.

Regarding the distribution between the two groups, it emerged that industrial firms are more numerous (26 units), i.e., captured more funds, than agricultural ones (21 units).

With reference to the types of innovations, the farms developed projects related almost exclusively to the production phase (19 units), except for two firms that addressed the commercial phase. Instead, in the group of agro-food industries, although innovations at the service of the production phase prevailed (17 units), the relative subdivision appeared more differentiated, resulting in a significant consistency of food industry/industrial agro-food heading towards the market (9 units). These agro-food industry SMEs developed innovations for the valorisation of products directed to the “large organised distribution” and/or the “organised distribution”, rather than the traditional commercial forms (retail). To the best of our knowledge, to date, no scientific work has been published that, by comparison, may confirm or contradict the findings presented in this paper. Assuming that, it would be important for the scientific literature to direct studies on these topics in the near future to fill the relative gaps.

## 5. Discussion

The territorial variability that emerged derives from the location choices of the firms and it can be explained by the combination and balance of a good number of considerations, among which, principally, the strategic and competitive positioning [58] of the firms in the production system and the distance between the enterprise and the market. The

combinations of these factors are more easily found in Northern Italy, so much so that most of the firms studied were found in Emilia Romagna, Lombardy and Veneto. This strategic positioning in the north of Italy is also favoured by the widespread presence of district entities [59], whose names, sometimes synonymous at first sight (Industrial Districts, Local Production Districts, Rural Districts, Quality Agro-Food Districts, Production Districts, Supply Chain Districts and Enterprise Networks), correspond to very different legal concepts. Such a set of different competences, however, may be a harbinger of collaboration and formal agreements among the many specialties that innovative SMEs express. If this is true for SMEs in the north, it is less so when observing the regions in the south, where only a small number of innovative SMEs in Puglia and Campania participated in the SME Instrument.

The results suggested a minor interest from southern firms; a higher stimulus may be addressed not so much in terms of the size of the districts, which are currently “local excellences”, but in terms of the potential for innovative agro-food activities.

Moreover, industrial districts, defined as the modes of organising the production process in the early stages of capitalism [60], or local manufacturing systems, are also strategic for innovation processes [58].

The new instrument, the EIC Accelerator, may represent an opportunity for SMEs for strategic innovations for the European Green Deal and digital and health technologies in the agro-food sector.

Moreover, the program has currently been updated to support mainly SME projects for innovative health solutions aimed at tackling the COVID-19 (Coronavirus relevant innovations) pandemic. This is a demonstration of policy adaptation

In the future, the EIC Accelerator program would be supported by the post-pandemic (NRP) Next Generation EU Facility for a portion (EUR 5.4 billion) of the current EUR 95.5 billion HE programme budget [61].

Ultimately, the allocation of funds between the two categories of enterprises, farm and industrial agro-food, does not greatly differ, so neither sector appeared to be less active than the other. On the other hand, globally the innovations proposed were more oriented towards the production phase, with a greater gap compared to the commercialisation phase in the case of the farm category.

The project initiatives developed by these firms represented a significant source of innovations. As expressed in the scientific literature, innovations may represent a strategic element of competitiveness that contributes to the growth and employment of the Italian agri-food production system [19,20].

## 6. Conclusions

The results outlined highlighted the fact that the SME Instrument has certainly been a great opportunity for agro-food SMEs willing to take up the challenges of improvement through innovation [62]. Some innovative national agro-food firms were involved in the evolutionary process of innovation, each of which made a very different contribution. The ability of agro-food enterprises to adapt to new technical and technological innovations, which can be integrated at different points in the production cycle of a product [63], and through which they can aim to conquer national and international markets, or consolidate existing ones, emerged.

These encouraging results led to further policy measures to support SMEs. HE provides the key tools to drive this perspective and it is hopeful that the results of the funding programs that it supports will show in the future a high level of SME participation.

It would be desirable for SMEs in the agro-food sector to take advantage of the opportunities offered by the EIC Accelerator calls for proposals to develop and implement processes and systems to enable the transition from a linear to a circular economy.

In order for the EIC Accelerator to achieve its purposes, certain obstacles would have to be overcome [64]. First and foremost, there is an insufficient level of information about the instruments put in place. This condition does not trigger in potential partici-

pants a targeted interest in the opportunities made available within the framework of the envisaged objectives.

For HE to widen the prospects for interception at a national level, firms must be informed and made aware of the positive environmental, economic and social effects. To this end, the present paper may contribute to an attempt to disseminate more information in this regard.

A second obstacle affecting participation in calls for proposals is also presented to SMEs, which, although aware of the opportunities offered, consider the procedures cumbersome due to the numerous and complex requirements, to such an extent as to require outside support from specialised consultants, with an additional burden of related costs [65]. The possibility of streamlining the application criteria through ad hoc strategies could facilitate SMEs' access to applications.

In addition, the application being in English constitutes a further barrier for Italian SMEs, which may prefer to apply for Italian or regional bids for the same amount of funding.

Another issue is related to the internal organisation of SMEs, which is sometimes insufficient to represent in practice the right environment for developing innovations. Therefore, while these calls for proposals act as an incentive for innovation, an effort by the proposers is needed to provide an appropriate strategic planning framework for the implementation of "change".

The main problems could concern management control and management control tools, which within the firm allow a comparison between the actual situation and the planned one regarding the commercial aspects, the sales objectives, investments, the economic and financial aspects of which, for example, farms are often in deficit [66,67]. Indeed, referring to the concrete cases highlighted in the present paper, in the context of the agro-food sector, the SME Instrument data results showed a modest participation by SMEs. Moreover, when divided between the industrial agro-food and farm SMEs categories, the number of beneficiary farms was fewer. In conclusion, the preparation and the support needed are often not economically viable or attractive for firms, especially in the face of modest funding: EUR 50,000 in the first stage of the SME Instrument.

On the contrary, the attractiveness of European funds may be greater for firms interested in setting up international consortia, when allowed. Due to their geographical location, enterprises in northern Italy are more favoured in creating such networks and this circumstance might indirectly explain the minor or total absence of participation of SMEs in the south.

The current challenge for firms is to create an internal managerial and technical organisation in such a way as to be able to develop not only innovative ideas, as with H2020, but also ideas that are in line with the new acceleration purposes of the ecological transition required by the European Green Deal [68]. Finally but importantly, there is also a need to focus on support for overcoming the COVID-19 pandemic crisis as a crosscutting issue in many areas [69].

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### Nomenclature

AF	Agriculture & Fisheries
EC	European Commission
EU	European Union
EASME	Executive Agency for SMEs
FB	Food & Beverage
H2020	Horizon 2020
HE	Horizon Europe
NRRP	National Recovery and Resilience Plan
R&I	Research and Innovation
SMEs	Small and medium-sized enterprises
SBIR	Small Business Innovative Research

### Appendix A

**Table A1.** Correlation of Pearson.

		Agriculture & Fisheries (AF)	Food & Beverage (FB)	Total Innovative SMEs
Agriculture & Fisheries (AF)	Pearson correlation	1	0.289	0.805 **
	Sign. (2-tailed)		0.418	0.005
Food & Beverage (FB)	Pearson correlation	0.289	1	0.801 **
	Sign. (2-tailed)	0.418		0.005
Total Innovative SMEs	Pearson correlation	0.805 **	0.801 **	1
	Sign. (2-tailed)	0.005	0.005	

\*\* A correlation is significant at the 0.01 level (2-tailed).

### References

- Lohith, C.P.; Srinivasan, R.; Kadadevaramath, R.S.; Shrisha, S. Innovation and strategic marketing—The key factors: A literature review on Indian micro small medium enterprises. *Int. J. Bus. Syst. Res.* **2018**, *12*, 53–68. [CrossRef]
- Digdowiseiso, K.; Sugiyanto, E. How effective is institutional quality for the creation of small & medium enterprises (SMEs) in Indonesia? *Econ. Sociol.* **2021**, *14*, 263–274. [CrossRef]
- Rozmi, A.N.A.; Nohuddin, P.P.N.E.; Hadi, A.R.A.; Bakar, M.I.A. Identifying small and medium enterprise smart entrepreneurship training framework components using thematic analysis and expert review. *Int. J. Adv. Comput. Sci. Appl.* **2021**, *12*, 298–309. [CrossRef]
- European Commission. *COMMUNICATION FROM THE COMMISSION EUROPE 2020: A Strategy for Smart, Sustainable and Inclusive Growth*; European Commission: Brussels, Belgium, 2020.
- The European Parliament and The Council of the European Union. Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 Establishing Horizon 2020—the Framework Programme for Research and Innovation (2014–2020) and Repealing Decision No 1982/2006/EC Text with EEA Relevance. *Off. J. Eur. Union L* **2013**, *347*, 104–173.
- Camera dei Deputati Ufficio Rapporti con l'Unione Europea. Programma Horizon 2020 Per Ricerca e Innovazione nell'UE. 2019. Available online: [https://www.camera.it/temiap/documentazione/temi/pdf/1104729.pdf?\\_1550331337991](https://www.camera.it/temiap/documentazione/temi/pdf/1104729.pdf?_1550331337991) (accessed on 15 December 2021).
- ART-ER. SME Instrument. 2021. Available online: [https://first.art-er.it/\\_aster\\_/viewFocus/28/sme-instrument](https://first.art-er.it/_aster_/viewFocus/28/sme-instrument) (accessed on 15 December 2021).
- Gouveia, M.C.; Henriques, C.O.; Costa, P. Evaluating the efficiency of structural funds: An application in the competitiveness of SMEs across different EU beneficiary regions. *Omega* **2021**, *101*, 102265. [CrossRef]
- Zarbà, C.; Chinnici, G.; D'Amico, M. Novel Food: The impact of innovation on the paths of the traditional food chain. *Sustainability* **2020**, *12*, 555. [CrossRef]

10. Sanne, J.-L. Horizon 2020 SME-Instrument topic: Clinical research for the validation of biomarkers and/or diagnostic medical devices. *Pers. Med.* **2018**, *15*, 303–309. [[CrossRef](#)]
11. European Commission. Horizon 2020 EIC ACCELERATOR PILOT (SME Instrument). Submission & Evaluation of Proposals—Cut-off Dates of 9 October 2019 and after. Guidelines for Applicants; VERSION 1.5. 2020. Available online: [https://ec.europa.eu/research/participants/data/ref/h2020/other/guides\\_for\\_applicants/h2020-guide-eic-smeinst-18-20\\_en.pdf](https://ec.europa.eu/research/participants/data/ref/h2020/other/guides_for_applicants/h2020-guide-eic-smeinst-18-20_en.pdf) (accessed on 15 December 2021).
12. European Commission. *Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL Establishing Horizon Europe—The Framework Programme for Research and Innovation, Laying Down Its Rules for Participation and Dissemination*; 2018.7.6.2018, COM(2018) 435 final, 2018/0224 (COD); European Commission: Brussels, Belgium, 2018.
13. The European Parliament and The Council of the European Union. Regulation (EU) 2021/695 of the European Parliament and of the Council of 28 April 2021 Establishing Horizon Europe—The Framework Programme for Research and Innovation, Laying Down its Rules for Participation and Dissemination, and Repealing Regulations (EU) No 1290/2013 and (EU) No 1291/2013. *Off. J. Eur. Union L* **2021**, *170*, 1–68.
14. Faulks, B.; Yinghua, S. The COVID 19 Crisis Implications for the Development and Growth of Agricultural Sector in EU countries and Russia. *Int. J. Innov. Econ. Dev.* **2021**, *7*, 37–46. [[CrossRef](#)]
15. Su, R.; Obrenovic, B.; Du, J.; Godinic, D.; Khudaykulov, A. COVID-19 Pandemic Implications for Corporate Sustainability and Society: A Literature Review. *Int. J. Environ. Res. Public Health* **2022**, *19*, 1592. [[CrossRef](#)]
16. European Commission. Recovery Plan for Europe. 2021. Available online: [https://ec.europa.eu/info/strategy/recovery-plan-europe\\_it](https://ec.europa.eu/info/strategy/recovery-plan-europe_it) (accessed on 21 December 2021).
17. Presidenza del Consiglio dei Ministri. Piano Nazionale di Ripresa e Resilienza. #NEXTGENERATIONITALIA. 2021. Available online: [https://www.governo.it/sites/governo.it/files/PNRR\\_3.pdf](https://www.governo.it/sites/governo.it/files/PNRR_3.pdf) (accessed on 21 December 2021).
18. Decree Law 24 Gennaio 2015, no. 3. Misure Urgenti Per il Sistema Bancario e Gli Investimenti. Gazzetta Ufficiale Serie Generale n.70 del 25-03-2015—Suppl. Ordinario n. 15. Available online: <https://www.gazzettaufficiale.it/> (accessed on 21 December 2021).
19. De Martino, M.; Magnotti, F. The innovation capacity of small food firms in Italy. *Eur. J. Innov. Manag.* **2018**, *21*, 362–383. [[CrossRef](#)]
20. De Martino, M.; Magnotti, F.; Santoro, L. Innovation capacity of agri-food small and medium enterprises of the Campania region. *Sinergie. Ital. J. Manag.* **2018**, *36*, 131–158.
21. Confindustria Toscana Servizi. Le Guide Operative di Confindustria Toscana Servizi. SME Instrument lo Strumento per L’innovazione Delle PMI. Available online: [https://servizi.confindustria.toscana.it/wp-content/uploads/sites/3/2019/02/SME\\_Instrument\\_Guida\\_Operativa.pdf](https://servizi.confindustria.toscana.it/wp-content/uploads/sites/3/2019/02/SME_Instrument_Guida_Operativa.pdf) (accessed on 15 December 2021).
22. European Commission. Horizon 2020 Structure and Budget. 2021. Available online: [https://ec.europa.eu/research/participants/docs/h2020-funding-guide/grants/applying-for-funding/find-a-call/h2020-structure-and-budget\\_en.htm](https://ec.europa.eu/research/participants/docs/h2020-funding-guide/grants/applying-for-funding/find-a-call/h2020-structure-and-budget_en.htm) (accessed on 15 December 2021).
23. Gatto, F.; Re, I. Circular Bioeconomy Business Models to Overcome the Valley of Death. A Systematic Statistical Analysis of Studies and Projects in Emerging Bio-Based Technologies and Trends Linked to the SME Instrument Support. *Sustainability* **2021**, *13*, 1899. [[CrossRef](#)]
24. Italian Small Business in Europe (ISB). Orizzonte 2020. Programma Quadro di Ricerca e Innovazione 2014–2020. Guida Sintetica. Strumento PMI. 2020. Available online: [https://www.bo.cna.it/uploads/news/orizzonte-2020-guida-sintetica-strumento-pmi-isb-in-europe/allegati/ISB\\_GUIDA%20SINTETICA\\_%20Strumento%20per%20le%20PMI%20di%20Horizon%202020.pdf](https://www.bo.cna.it/uploads/news/orizzonte-2020-guida-sintetica-strumento-pmi-isb-in-europe/allegati/ISB_GUIDA%20SINTETICA_%20Strumento%20per%20le%20PMI%20di%20Horizon%202020.pdf) (accessed on 15 December 2021).
25. European Commission. EASME—Executive Agency for SMEs. 2021. Available online: <https://wayback.archive-it.org/12090/20210412123959/https://ec.europa.eu/easme/en/> (accessed on 15 December 2021).
26. European Commission. SME Instrument. 2021. Available online: [https://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/sme\\_en.htm](https://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/sme_en.htm) (accessed on 15 December 2021).
27. Mina, A.; Di Minin, A.; Martelli, I.; Testa, G.; Santoleri, P. Public funding of innovation: Exploring applications and allocations of the European SME Instrument. *Res. Policy* **2021**, *50*, 104131. [[CrossRef](#)]
28. European Commission. Catalysing European Innovation. EASME’s Report of the First Two Years of Implementation of the SME Instrument 2014–2015. 2016. Available online: [https://gaeu.com/wp-content/uploads/2017/02/https\\_\\_ec.europa.eu\\_easme\\_sites\\_easme-site\\_files\\_catalysing\\_european\\_innovation\\_-\\_easmes\\_report\\_of\\_the\\_first\\_two\\_years\\_of\\_implementation\\_of\\_the\\_sme\\_instrument\\_2014-2015.pdf](https://gaeu.com/wp-content/uploads/2017/02/https__ec.europa.eu_easme_sites_easme-site_files_catalysing_european_innovation_-_easmes_report_of_the_first_two_years_of_implementation_of_the_sme_instrument_2014-2015.pdf) (accessed on 15 December 2021).
29. European Commission (2021): Topic for the SME Instrument. 2021. Available online: [http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/ftags/sme\\_instrument.html#c.topics=callStatus/t/Forthcoming/1/1/0/default-group&callStatus/t/Open/1/1/0/default-group&callStatus/t/Closed/0/1/0/default-group&+identifier/desc](http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/ftags/sme_instrument.html#c.topics=callStatus/t/Forthcoming/1/1/0/default-group&callStatus/t/Open/1/1/0/default-group&callStatus/t/Closed/0/1/0/default-group&+identifier/desc) (accessed on 21 December 2021).
30. ASTER Innovazione Attiva. La Partecipazione Allo SME Instrument di Horizon 2020. Risultati 2014–2016. 2016. Available online: [https://dc5k4hnhkzdp.cloudfront.net/media/REPORT\\_SME\\_INSTRUMENT\\_ASTER.pdf](https://dc5k4hnhkzdp.cloudfront.net/media/REPORT_SME_INSTRUMENT_ASTER.pdf) (accessed on 14 December 2021).
31. European Commission. SME Instrument. 2018. Available online: [https://cordis.europa.eu/programme/id/H2020\\_EIC-SMEInst-2018-2020/it](https://cordis.europa.eu/programme/id/H2020_EIC-SMEInst-2018-2020/it) (accessed on 15 December 2021).

32. European Commission. *Commission Decision of 10.12.2013 Authorising the Reimbursement on the Basis of a Lump Sum for SME Instrument Phase 1 Actions under the Horizon 2020 Framework Programme*; European Commission: Brussels, Belgium, 2013.
33. Horizon2020news. SME Instrument. 2021. Available online: <http://www.horizon2020news.it/guide/sme-instrument> (accessed on 15 December 2021).
34. European Commission. EIC Accelerator Pilot. 2021. Available online: <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/eic-accelerator-pilot> (accessed on 15 December 2021).
35. European Commission. Enhanced European Innovation Council (EIC) Pilot. 2021. Available online: <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/european-innovation-council-eic-pilot> (accessed on 21 December 2021).
36. European Commission. SMEs. 2021. Available online: <https://ec.europa.eu/programmes/horizon2020/en/area/smes> (accessed on 15 December 2021).
37. European Commission. Horizon Europe Strategic Plan (2021–2024). 2021. Available online: [https://ec.europa.eu/info/sites/default/files/research\\_and\\_innovation/funding/documents/ec\\_rtd\\_horizon-europe-strategic-plan-2021-24.pdf](https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/ec_rtd_horizon-europe-strategic-plan-2021-24.pdf) (accessed on 15 December 2021).
38. APRE—Agenzia Per la Promozione Della Ricerca Europea. Horizon Europe. La guida. 2021. Available online: <https://apre.it/wp-content/uploads/2021/04/guida-Horizon-Europe.pdf> (accessed on 15 December 2021).
39. European Commission. Calls for Proposals and Related Activities under the EIC Work Programme 2021 under Horizon Europe—The Framework Programme for Research and Innovation (2021–2027). 2021. Available online: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:C2021/091/06&from=EN> (accessed on 15 December 2021).
40. European Commission. Commission Implementing Decision of 17.3.2021 on the Financing of the European Innovation Council Component of the Specific Programme Implementing Horizon Europe—The Framework Programme for Research and Innovation (2021–2027) and on the Adoption of the Work Programme for 2021. 2021. Available online: [https://ec.europa.eu/system/files/2021-03/C\\_2021\\_1510\\_F1\\_COMMISSION\\_IMPLEMENTING\\_DECISION\\_EN\\_V4\\_P1\\_1168481%20%281%29.PDF](https://ec.europa.eu/system/files/2021-03/C_2021_1510_F1_COMMISSION_IMPLEMENTING_DECISION_EN_V4_P1_1168481%20%281%29.PDF) (accessed on 15 December 2021).
41. European Innovation Council. EIC Work Programme 2021. 2021. Available online: [https://eic.ec.europa.eu/eic-funding-opportunities/eic-accelerator\\_en](https://eic.ec.europa.eu/eic-funding-opportunities/eic-accelerator_en) (accessed on 15 December 2021).
42. European Commission. Horizon Europe Work Programme 2021–2022 Adopted. 2021. Available online: [https://ec.europa.eu/defence-industry-space/horizon-europe-work-programme-2021-2022-adopted-2021-06-29\\_it](https://ec.europa.eu/defence-industry-space/horizon-europe-work-programme-2021-2022-adopted-2021-06-29_it) (accessed on 15 December 2021).
43. European Union. Horizon Europe. Budget. 2021. Available online: <https://op.europa.eu/en/publication-detail/-/publication/1f107d76-acbe-11eb-9767-01aa75ed71a1> (accessed on 15 December 2021).
44. ART-ER. Bando EIC Accelerator. 2021. Available online: [https://first.art-er.it/\\_aster\\_/viewNews/50471/eic-accelerator-di-horizon-europe-bando-per-pmi-innovative](https://first.art-er.it/_aster_/viewNews/50471/eic-accelerator-di-horizon-europe-bando-per-pmi-innovative) (accessed on 15 December 2021).
45. De Marco, C.E.; Martelli, I.; Di Minin, A. European SMEs’ engagement in open innovation when the important thing is to win and not just to participate, what should innovation policy do? *Technol. Forecast. Soc. Chang.* **2019**, *152*, 119843. [CrossRef]
46. Haddad, M.I.; Williams, I.A.; Hammoud, M.S.; Dwyer, R.J. Strategies for implementing innovation in small and medium-sized enterprises. *World J. Entrep. Manag. Sustain. Dev.* **2020**, *16*, 12–29. [CrossRef]
47. De Bernardi, P.; Azucar, D. Funding Innovation and Entrepreneurship. In *Innovation in Food Ecosystems. Contributions to Management Science*; Springer: Cham, Switzerland, 2020. [CrossRef]
48. Widyastuti, S.; Qosasi, A.; Noor, L.S.; Kurniawati, D. Enhancing the competitive advantage of SMEs through innovation: The role of market and entrepreneurship orientation, learning organizations. *Int. J. Econ. Res.* **2017**, *14*, 203–221.
49. Iqbal, M.; Suzianti, A. New product development process design for small and medium enterprises: A systematic literature review from the perspective of open innovation. *J. Open Innov. Technol. Mark. Complex.* **2021**, *7*, 153. [CrossRef]
50. Schumpeter, J. *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*; Harvard University Press: Cambridge, MA, USA, 1934.
51. Wibowo, M.; Aumeboonsuke, V. Bank financial capability on MSME lending amid economic change and the growth of fintech companies in Indonesia. *Thail. World Econ.* **2020**, *38*, 63–87.
52. Agarwal, M.; Agarwal, A.; Agarwal, Y.; Agarwal, S. Enterprising entrepreneurship & start-ups: Models for growth and financing of micro, small & medium enterprises (MSMEs) in times of recession. *Financ. India* **2018**, *32*, 1125–1208.
53. Dao, H.T.T.; Mai, N.T.; Kim, N.T. Accessibility to credit of small medium enterprises in Vietnam. *Afro-Asian J. Financ. Account.* **2016**, *6*, 241–257. [CrossRef]
54. Mkhairber, A.; Werner, R.A. The relationship between bank size and the propensity to lend to small firms: New empirical evidence from a large sample. *J. Int. Money Financ.* **2021**, *110*, 102281. [CrossRef]
55. Novero, S. Impact analysis of public policies supporting SMEs’ technological innovation: An Italian case. *Int. J. Technol. Policy Manag.* **2011**, *11*, 34–56. [CrossRef]
56. Hasan, A.M.; Halid, A.; Saleh, H.; Rukka, R.M. Perception of entrepreneurs, small and medium industries in household product development and waste processing of chips corn in Province of Gorontalo. *IOP Conf. Ser. Earth Environ. Sci.* **2021**, *681*, 012003. [CrossRef]
57. Zarbà, C.; Chinnici, G.; Pecorino, B.; D’Amico, M.; Bracco, S. The European Union Responses to the Impact of COVID 19 on SMEs in the Italian Agri-food System. In Proceedings of the International Multidisciplinary Scientific GeoConference, Albena, Bulgaria, 16–25 August 2020; Volume 20, Issue 6.2, pp. 161–168. [CrossRef]

58. Burlina, C.; Bettiol, M.; Chiarvesio, M.; Di Maria, E. Industrial district firms do not smile: Structuring the value chain between local and global. *Break. Up Glob. Value Chain* **2017**, *30*, 269–291. [CrossRef]
59. Ricciardi, A. The impact of the crisis on industrial districts: Evolutionary tendencies and future scenarios. [L’impatto della crisi sui distretti industriali: Tendenze evolutive e scenari futuri]. *Ponte* **2010**, *66*, 51–62.
60. Ortega-Colomer, F.J.; Molina-Morales, F.X.; Fernandez De Lucio, I. Discussing the Concepts of Cluster and Industrial District. *J. Technol. Manag. Innov.* **2016**, *11*, 139–147. [CrossRef]
61. Directorate General. European Programmes, Coordination and Development. Horizon Europe (2021–2027). 2021. Available online: <https://www.fundingprogrammesportal.gov.cy/en/programs/horizon-europe-2021-2027/> (accessed on 15 December 2021).
62. Čučković, N.; Vučković, V. The effects of EU R&I funding on SME innovation and business performance in new EU member states: Firm-level evidence. *Econ. Ann.* **2021**, *66*, 7–41.
63. Zarbà, C.; Chinnici, G.; Pecorino, B.; D’Amico, M. Paradigm of the circular economy in agriculture: The case of vegetable seedlings for transplantation in nursery farms. In Proceedings of the International Multidisciplinary Scientific GeoConference, Varna City, Bulgaria, 28 June–6 July 2019; Volume 19, pp. 113–120.
64. Cavallaro, M.; Lepori, B. Institutional barriers to participation in EU framework programs: Contrasting the Swiss and UK cases. *Scientometrics* **2021**, *126*, 1311–1328. [CrossRef]
65. Zarbà, C.; Bracco, S.; Zarbà, A.S. The progress and competitiveness of SMEs from SBA up to Horizon 2020: A new approach of innovation and technological advancement. *Qual. Access Success* **2014**, *15* (Suppl. 1), 202–206.
66. AA.VV. Atti del Corso: “Gestione Dell’Impresa Agricola e Agroalimentare; Business Plan, Marketing e Comunicazione”. Ottobre–Novembre 2010. Available online: <http://www.conaf.it/sites/default/files/ATTI%20CORSO%20GESTIONE.pdf> (accessed on 15 December 2021).
67. Zarbà, C.; Chinnici, G.; La Via, G.; Bracco, S.; Pecorino, B.; D’Amico, M. Regulatory elements on the circular economy: Driving into the agri-food system. *Sustainability* **2021**, *13*, 8350. [CrossRef]
68. Confindustria. Horizon Europe Custer 6—Food, Bioeconomy, Natural Resources, Agriculture and Environment. 2021. Available online: [https://www.confindustria.it/home/confindustria-eu/ceu-programmi/dettaglio/Cluster6HE?WCM\\_Page.ResetAll=TRUE](https://www.confindustria.it/home/confindustria-eu/ceu-programmi/dettaglio/Cluster6HE?WCM_Page.ResetAll=TRUE) (accessed on 15 December 2021).
69. Confindustria. Programmi Europei a Gestione Diretta 2021–2027. 2021. Available online: <https://www.confindustria.it/home/confindustria-eu/ceu-programmi> (accessed on 15 December 2021).