

## **PPI for a sustainable economy: sustainable supply chain management in the agri-food sector\***

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**SUMMARY:** 1. Agri-food logistics chain and Sustainable Supply chain management: a reflection from a managerial point of view. – 2. Public Procurement of Innovation as a tool for innovation in an eco-sustainable economy. – 3. The PPI in the FiLO project. Innovation in the agri-food chain. – 4. The different forms of innovation contracts: the competitive procedure with negotiation. – 5. (*Follows*) The competitive dialogue. – 6. Business networks for the development of the agri-food chain in the procedures for awarding public contracts. – 7. Innovation in agri-food sector and marketing prospects for the sustainable development of the territory.

### *1. Agri-food logistics chain and Sustainable Supply chain management: a reflection from a managerial point of view*

Among the greatest importance issues in the international economic debate there are the themes of sustainability and innovation.

The theme of sustainability, today, fills great centrality, such as to determine a significant change the economic, social and environmental scenario at global level. In this perspective, the United Nations intend to undertake to pursue sustainable development targets through the Agenda 2030 action plan, where sustainability is framed as a key driver<sup>1</sup>. This new paradigm strongly affects towards implementation of a strategy that encases the three pillars of sustainability.

In such a broad and complex context, the territories play a key role, now called to face important challenges for their development from a sustainable per-

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\* This work is the result of a common reflection of the authors. Moreover, paragraphs 1 and 7 were written by Giuseppe Colella, paragraphs 2-6 by M.T. Paola Caputi Jambrenghi

<sup>1</sup> M. Rama, S. González-García, E. Andrade, M.T. Moreira, G. Feijoo, *Assessing the sustainability dimension at local scale: Case study of Spanish cities*, in *Ecological Indicators*, 2020, 117 ss.

spective<sup>2</sup> in order to guarantee resilience to the populations who reside there<sup>3</sup>, to withstand the complexity and speed of socio-economic, technological and environmental changes taking place to ensure their survival<sup>4</sup> and to strengthen their competitiveness<sup>5</sup>. Indeed, although the concept of territorial and urban competitiveness has assumed relevance only in recent decades<sup>6</sup>, remains to implement in terms of policies that allow territories to promote a development that also includes local entrepreneurship<sup>7</sup>. However, the concept of competitiveness has proven to be quite useful and resilient in practical policy making and analysis<sup>8</sup>.

Based on these preliminary considerations, it is possible to take steps to evaluate how the final objective of sustainable development for the growth and protection of the territory can be achieved, through a reconstruction that uses different perspectives typical of the disciplines of management and marketing, offering in this sense important reflections strictly linked to the PPI discipline. In particular, we intend to briefly address the issue of sustainable development of the territories here, passing through the agri-food logistic chains, which drivers of resilient, innovative and sustainable territorial development<sup>9</sup>. In this sense, the scientific debate is constantly evolving, focusing in particular on the methods of creating replicable innovative models, in relation to the organization of agri-food logistic chains capable of contributing to the achievement of sustainability objectives at different levels<sup>10</sup>. These reflections are based on an innovative project

<sup>2</sup> For more details, S. Barile, M. Saviano, F. Polese, P. Di Nauta, *Il rapporto impresa-territorio tra efficienza locale, efficacia di contesto e sostenibilità ambientale*, in *Sinergie Italian Journal of Management*, 2013, 90, 25 ss.; P.M. Paniccia, P. Silvestrelli, L. Leoni, S. Baiocco, *Imprese agricole, territorio e turismo in sinergia per lo sviluppo sostenibile*, in *Impresa Progetto – Electronic Journal of Management*, 2017, 3; P. Ugolini, *Approccio alla sostenibilità nella governance del territorio*, Milano, 2010.

<sup>3</sup> M. De Rosa, *La sostenibilità e lo sviluppo sostenibile nell'economia agroalimentare e nello sviluppo rurale*, in *Connessioni per lo sviluppo sostenibile*, 2019, 32; G. Mazzeo, *Resilienza, circolarità, sostenibilità. Urbanistica Informazioni*. Special Issue X, Giornata di Studio INU "Crisi e rinascita delle città", a cura di Francesco Domenico Moccia, Marichela Sepe, 2018, 272, 218 ss.

<sup>4</sup> G. Colella, *Competitività e sviluppo dei territori nel mediterraneo. Un approccio integrato alla funzione di marketing*, in *Annali del Dipartimento Jonico in sistemi giuridici ed economici del Mediterraneo: Società, Ambiente, Culture*, 2019, 7, 137 ss.

<sup>5</sup> G. Colella, *op. cit.*; A. Deffner, T. Metaxas, *Place marketing, local identity and branding cultural images in Southern Europe: Nea Ionia, Greece and Pafos, Cyprus*, In: Ashworth, G. & Kavaratzis, M., *Towards Effective Place Brand Management*, Cheltenham, 2010, 49 ss.

<sup>6</sup> In this sense Krugman (1996) has argued that the whole debate on competitiveness per se (not only at the urban level) is badly grounded and, thus, futile.

<sup>7</sup> See, J. Gough, A. Eisenschitz, *The construction of mainstream local economic initiatives: mobility, socialization, and class relations*, in *Economic Geography*, 1996, 72(2), 178 ss.; V. Lember, T. Kalvet, R. Kattel, *Urban competitiveness and public procurement for innovation*, in *Urban studies*, 2011, 48(7), 1373 ss.

<sup>8</sup> V. Lember, T. Kalvet, R. Kattel, *op. cit.*

<sup>9</sup> D. Biolghini, *Terra e Cibo, per costruire una comunità resiliente*, in *Scienze del Territorio*, 2019, 7, 168-177.

<sup>10</sup> C. Cicatiello, B. Pancino, S. Franco, *Un modello per la valutazione della sostenibilità territoriale delle filiere agroalimentari: struttura e applicazione alla sfera ambientale*, 1st AIEEA Conference – *Towards a Sustainable Bioeconomy: Economic Issues and Policy Challenges*, 2012; E. Forte, L. Siviero, *Modelli di trasformazione*

already operational on the Italian national territory which incorporates the issues of sustainability and technological and organizational innovation of the agri-food logistics chains. This is the “FiLO - Logistics and Organization” Project which, in addition to promoting and encouraging sustainability through organizational efficiency in the agri-food supply chains, has the main objective of providing companies in the agri-food sector and the logistics supply chain with a high level of technological, methodological and organizational innovation, through the implementation of replicable models.

The current highly globalized and internationalized economic context has led an intensification of international exchanges in which companies increasingly aim at the total availability of their products throughout the year, increasing the strategic importance of the logistics function both for their competitive positioning and to preserve their identity in a global and open market<sup>11</sup>. Indeed, it is precisely the logistics function that today arouses a strong interest both for scholars and for the implementation of innovative development policies, representing a solid strategic development lever for both companies and the territories of the various countries<sup>12</sup>. In particular, among the various sectors committed to guarantee the highest levels of efficiency from the logistical point of view, a central role is assumed by the agri-food industry, above all thanks to the characteristics of this sector which has a favourable impact, as well as on world food, on the same logistic function<sup>13</sup>. In this sense, it seems very clear that the logistic func-

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*del territorio in metropoli e filiere territoriali logistiche*, in *Sistemi di Logistica*, n.1/2010, 7-ss.; E. Forte, L. Siviero, *Trasformazione logistica e città metropolitane del Mezzogiorno*, in *Rivista economica del Mezzogiorno*, 2013, 27(1-2), 121 ss.; E. Forte, D. Miotti, *L'outsourcing, la terziarizzazione dei trasporti e delle logistiche nelle filiere traslog*, in 17th annual conference of SIET, Società Italiana di Economia dei Trasporti e della logistica, 2015.

<sup>11</sup> M. De Martino, *La gestione della logistica nelle filiere agroalimentari: alcune evidenze empiriche in Campania*, in *Economia agro-alimentare*, 2012, 2, 41 ss.; M. De Martino, V. Carbone, A. Morvillo, *Value creation in the port: opening the boundaries to the market*, in *Maritime Policy & Management*, 2015, 42(7), 682 ss.; E. Maruccci, *Le piattaforme logistiche come strumento di competitività del territorio*, in *Quaderni archivio Urbanistica*, 2002, 4 (117), 46 ss.; G. Colella, M.T.P. Caputi Jambrenghi, *Sustainable Supply Chain in the Agri-Food Sector in South-Italy as an Eco-Sustainability Tool for Innovation and Territorial Development*, 2020, in *Journal of Management and Sustainability*, 10(2), 83 ss.; E. Forte, D. Miotti, op. cit.

<sup>12</sup> P. Pulina, G. Timpanaro, *Ethics, sustainability and logistics in agricultural and agri-food economics research*, in *Italian Journal of Agronomy*, 2012, 33 ss.

<sup>13</sup> C.N. Verdouw, R.M. Robbmond, T. Verwaart, J. Wolfert, A.J. Beulens, *A reference architecture for IoT-based logistic information systems in agri-food supply chains*, in *Enterprise information systems*, 2015, 12(7), 755 ss.; From an environmental sustainability perspective, the cold chain of perishable food plays an important role. In this case, perishable and short-lived foods (such as fresh fish and processed meat products) require a temperature-controlled food supply chain, and such products need to be provided in a safe manner to ensure high-quality delivery to the market. We note that in order to ensure food safety and quality, reference regulations play an important role in strengthening the application of innovative technologies and cutting-edge management methods for the best cold chain management of perishable foods. Therefore, considering that the modern food supply chain is one of the greatest damage to the environment, it is necessary to reconsider the traditional management model. In particular, future research areas may involve the use of management models implemented through Industry 4.0 technology that can minimize consumption and waste and make food sup-

tion must follow an orientation linked to the network of companies belonging to the sector<sup>14</sup> and must be able to adapt to the current economic paradigm which is characterized by its disruptive and continuous evolution both in terms of process and service<sup>15</sup>. Therefore, today it is important to consider the implementation of innovative management models from the technological and organizational point of view, capable of withstanding the continuous environmental disturbances affecting the various logistic networks of the agri-food chain<sup>16</sup>.

The important and interesting specialty of the sector made it possible to analyse the state of evolution of the “FiLO project - Filiera Logistica e Organizzazione”, financed with EU public funds (i.e. PSR 2014-2020 - Measure 16 - Sub Measure 16.1 Support for the establishment and management of PEI Operational Groups in the area of productivity / sustainability of agriculture - Umbria region, Italy) which has as its main objective to bring a high level of technological, methodological and organizational, through the implementation of replicable models<sup>17</sup>. Thus, from the analysis of this innovative project that sees the agri-food logistics supply chain as the protagonist, various managerial scenarios emerged to be considered to support the entire logistics and territorial system from an innovative and sustainable perspective, such as the sustainable supply chain system management.

The agri-food logistics chain, today, is no longer limited to mere production and transformation activities of the agri-food industry, but integrates activities relating to intermediation, distribution and catering within the agri-food logistics chain, extending and generating a virtuous induced with a turnover of €

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ply sustainable; on the topic see: M. Babagolzadeh, A. Shrestha, B. Abbasi, Y. Zhang, A. Woodhead, A. Zhang, *Sustainable cold supply chain management under demand uncertainty and carbon tax regulation*, in *Transportation Research Part D: Transport and Environment*, 2020, 80, 102-245; A. Gallo, R. Accorsi, G. Baruffaldi, R. Manzini, *Designing sustainable cold chains for long-range food distribution: Energy-effective corridors on the Silk Road Belt*, in *Sustainability*, 2017, 9(11), 2044 ss.; M. Göransson, F. Nilsson, Å. Jevinger, *Temperature performance and food shelf-life accuracy in cold food supply chains – Insights from multiple field studies*, in *Food control*, 2018, 86, 332 ss.; P. Vrat, R. Gupta, A. Bhatnagar, D.K. Pathak, V. Fulzele, *Literature review analytics (LRA) on sustainable cold-chain for perishable food products: research trends and future directions*, in *Opsearch*, 2018, 55(3-4), 601 ss.; S. Zanoni, L. Zavanella, *Chilled or frozen? Decision strategies for sustainable food supply chains*, in *International Journal of Production Economics*, 2012, 140(2), 731ss.

<sup>14</sup> C. Cerruti, F. Musso, *La logistica nei distretti industriali. Scenari di evoluzione per l'integrazione delle filiere*, in *Finanza, Marketing e Produzione*, 2004, 22 (4), 23 ss.

<sup>15</sup> E. Forte, D. Miotti, op. cit.

<sup>16</sup> E. Forte, D. Miotti, op. cit.; M. De Martino, op. cit.; J.G.A.J. Van der Vorst, A.J.M. Beulens, P.V. Beek, *Innovations in logistics and ICT in food supply chain networks*, in W.M.F. Jongen, M.T.G. Meulenberg (eds.), *Innovation in Agri-Food Systems*, Wageningen, 2005, 245 ss.

<sup>17</sup> The FiLO project, first of all, implemented an internal logistics optimization system, that is, the set of specific activities that take place within and between the plants, through a careful work to improve the efficiency of each stage of production; secondly, it introduced a control and management system within the partner companies of the network, and therefore intended to develop a shared distribution platform through the use of IT tools; finally, it intended to frame a form of common supply contracts along the entire regional supply chain.

538 billion, an export of about € 42 billion and an annual employment of about 4 million employees in the sector, thus increasing the value of the entire supply chain<sup>18</sup>. In this sense, considering this extension of the agri-food logistics chain as a starting point and evaluating its strategic relevance from a sustainable perspective, the implementation of a sustainable supply chain management system plays a decisive role. It is interesting to highlight how in such a broad context the literature has been widely expressed, especially with reference to logistics outsourcing activities<sup>19</sup> which include, in addition to the traditional activities relating to transport and storage, also those relating to the entire organizational system in which the marketing activities fall. According to Hsiao et al. (2010) logistics outsourcing activities in the agri-food chain are divided into execution activities and planning activities, identifying different levels of involvement of logistics operators, such as the simple carrying out of executive transport activities, in forms of full outsourcing or of global logistics outsourcing relating to the management of orders, transport, marketing activities, etc. Therefore, the importance, but above all the need to create a synergistic system of cooperation between the different levels of activity of the operators present in the agri-food logistics chain, which makes up a large, complex, shared and sustainable distribution network, appears in all its evidence.

Therefore, considering the entire logistics system from a sustainable perspective, the companies in the supply chain, using this logic, tend to improve the management of the entire logistics network, in particular taking into account a system of sustainable supply chain management<sup>20</sup>. According to Naik & Suresh

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<sup>18</sup> P. Pulina, G. Timpanaro *op cit.*; see also: The European House Ambrosetti, *La creazione di valore lungo la filiera agroalimentare estesa in Italia*, position paper 2019 [[http://adm-distribuzione.it/wp-content/uploads/2019/11/Position-Paper\\_La-creazione-di-valore-lungo-la-filiera-agroalimentare-estesa-in-Italia.pdf](http://adm-distribuzione.it/wp-content/uploads/2019/11/Position-Paper_La-creazione-di-valore-lungo-la-filiera-agroalimentare-estesa-in-Italia.pdf)] – To better understand the phenomenon, it is interesting to highlight its significance at the Italian national level. In this sense, a latest study by The European House – Ambrosetti (2019) shows that food consumption in Italy contributes to 14.1% of GDP, representing 23.2% of the country's total consumption with a value of approximately 242.9 billion € in 2018.

<sup>19</sup> E. Forte, D. Miotti, *op. cit.*; M. De Martino, *op. cit.*; H.I. Hsiao, J.G.A.J. Van der Vorst, S.W.F. Omta, *Logistics outsourcing in food supply chain networks*, in: Bijman J. *et al.* (eds.), Wageningen. Wageningen Academic Publishers, The Netherlands, 2006, 135 ss.; H.I. Hsiao, R.G.M. Kemp, J.G.A.J. Van der Vorst, S.O. Omta, *A classification of logistic outsourcing levels and their impact on service performance: Evidence from the food processing industry*, in *International journal of production economics*, 2010, 124(1), 75 ss.

<sup>20</sup> A driving role in this process of evolution was undoubtedly played by technological innovation and the disruptive development of information and communication technologies (Information and Communications Technology) in the industrial sector, making the logistics function more and more an important strategic, complex and computerized lever. In this context, even the management principles of the entire supply chain system have had to adapt to the current highly technological and computerized context, making themselves capable of constantly seeking cutting-edge solutions, such as the optimization of production processes, the reduction of costs. within companies, the creation of virtuous induced activities through the outsourcing of various activities that incorporate different distinctive skills and the increase in the overall efficiency of the agri-food logistics chain, making it innovative and sustainable from an environmental, economic and social point of view.

(2018) the agri-food supply chain invests all those activities along the supply chain from production, transformation, distribution and retail to the final consumer, configuring itself as a globally interconnected system characterized by complex relationships, such as to influence the method of production, processing and delivery of food on the market<sup>21</sup>. On this line, it is clear that in order to achieve a management that guarantees the minimization of the environmental impact of all stages of the supply chain, it is important for companies to guarantee increasingly safe and certified products and services capable of fostering an increasingly attentive final demand and informed.

Furthermore, the constant evolutions that have affected the agri-food chain have pushed the companies of the network to rethink their management models in terms of logistics function in an increasingly extended, innovative and sustainable perspective both from a technological and organizational and strategic point of view. Thus, it is precisely this new approach that acts as a driving force for the consolidation of relationships and the birth of new forms of collaboration between companies operating within the same supply chain. Therefore, as already highlighted, logistics and the whole complex system of sustainable supply chain management continue to be of great interest as they are important strategic levers for the development of the country, In particular, because the logistic is intrinsically connected to the issues linked to territorial development, public and private interventions affecting infrastructures and the impact it has on employment, with significant socio-economic consequences<sup>22</sup>. It seems clear, therefore, that the entire agri-food logistics chain system can undoubtedly intersect with other functions, such as territorial marketing, in support of the global development of the territory.

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<sup>21</sup> D. Burch, G. Lawrence, *Supermarket own brands, supply chains and the transformation of the agri-food system*, in *International Journal of Sociology of Agriculture and Food*, 2005, 13 (1), 1 ss.

<sup>22</sup> M. De Martino, op. cit; G. Mazzeo, *Campania: territorio e città di fronte alla sfida della logistica*, in *Journal of Land Use, Mobility and Environment*, 2010, 3(2), 17 ss.; G. Mazzeo, *Resilienza, circolarità, sostenibilità*, in *Urbanistica Informazioni*. Special Issue X Giornata di Studio INU "Crisi e rinascita delle città", a cura di Franco Domenico Moccia, Marichela Sepe, 2005, 272, 218 ss.

## 2. *Public procurement of innovation as a tool for innovation in an eco-sustainable economy*<sup>23</sup>

It is necessary to identify the legal instruments that the legal system makes available to administrations and business networks for the implementation of these innovation inspired territorial management strategies. These are tools that must allow the promotion of services, supply chains and logistic tools that are effective and sustainable for their impact. This research has to shift attention

<sup>23</sup> For bibliographic references relating to paragraphs 2, 3, 4, 5 and 6, see Albisinni F., *Alimenti e salute: la prospettiva del diritto agroalimentare*, in *Riv. dir. agr.*, I, 2014, 449; Id., *Scienze della vita, produzione agricola e lawmakers: una relazione incerta*, in *Riv. it. dir. pubbl. comunit.*, 2018, 729; Id., *Strumentario di diritto alimentare europeo*, IV ed., Milano, 2020, 63; Bernardi A., *Il principio di legalità alla prova delle fonti sovranazionali e private: riflessi sul diritto penale alimentare*, in [www.rivistadirittoalimentare.it](http://www.rivistadirittoalimentare.it), 2015, 43; Borghi P., *Diritto alimentare italiano e integrazione europea*, in *Riv. dir. agr.* 2012, I, 8; P. Borghi, S. Rizzoli, L. Costato, V. Paganizza, L. Salvi, *Compendio di diritto alimentare*, Padova, 2019; A. Brandonisio, *Il fenomeno dell'Italian Sounding e la tutela dell'agroalimentare italiano*, in *Cultura e diritti*, 2019, 101; M. Brocca, *Cibo e cultura: nuove prospettive giuridiche*, in *Federalismi.it*, 2017, 19, 21; Id., *Paesaggio e agricoltura a confronto. Riflessioni sulla categoria del "paesaggio agrario"*, in *Riv. giur. edil.*, 2016, 1; I. Canfora, *Il principio di precauzione nella governance della sicurezza alimentare: rapporti tra fonti in un sistema multilivello*, in *Riv. dir. agrario*, 2017, 447; Id., *Organizzazione dei produttori agricoli*, in *Digesto disc. priv.*, 2018, 355; V. Caputi Jambrenghi, *Interventi sul territorio extraurbano. Ecomusei, paesaggi, periferie*, in [www.giustamm.it](http://www.giustamm.it), n. 11, 2019; L. Costantino, *La problematica degli sprechi nella filiera agroalimentare. Profili introduttivi*, Bari, 2018; L. Costato, *Innovazione tecnologica, agricoltura e alimentazione: una sfida risalente*, Editoriale, in [www.rivistadirittoalimentare.it](http://www.rivistadirittoalimentare.it), n. 2, 2019; R. Dipace, M. D'Orsogna, L. Giani, *Coesione, sostenibilità e sviluppo territoriale: valorizzazione delle aree interne e prospettiva macroregionale*, in (a cura di) G. Colombini, M. D'Orsogna, L. Giani, A. Police, *Infrastrutture di trasporto e sistemi di regolazione e gestione*, Napoli, 2018, 1087; N. Ferrucci, *Agricoltura e ambiente*, in *Riv. giur. amb.*, 2014, 323; F. Follieri, *Decisioni precauzionali e Stato di diritto. La prospettiva della sicurezza alimentare*, II parte, in *Riv. it. dir. pubbl. comunit.*, 2017, 61; C. Galli, *Globalizzazione dell'economia e tutela delle denominazioni di origine dei prodotti agro-alimentari*, in *Riv. dir. ind.*, 2004, 60; A. Germanò, M.P. Ragionieri, E. Rook Basile, *Diritto agroalimentare. Le regole del mercato degli alimenti e dell'informazione alimentare*, Torino, 2014; F. Girinelli, *La gestione del rischio alimentare: certezze consolidate e prospettive per il futuro*, in [www.rivistaadga.it](http://www.rivistaadga.it), n. 5, 2019; A. Jannarelli, *Cibo e diritti. Per un'agricoltura sostenibile*, Torino, 2015, 160; C. Losavio, *Confini e contenuti della materia alimentazione*, in *Riv. dir. agr.*, 2017, 658; G. Maccioni, *Spreco alimentare. Regole e limiti nella transizione verso modelli agroalimentari sostenibili*, Torino, 2018; S. Manservigi, *Verso un uso sostenibile dell'energia, il miglioramento dell'efficienza energetica e la creazione di modelli di produzione di consumo sostenibili anche nel settore alimentare*, in *Riv. dir. agr.*, 2017, 297; S. Masini, *Alla ricerca dei principi del diritto alimentare*, in *Dir. agroalim.*, 2016, 125; G. Mastrodonato, *Diritto alimentare e ambiente. Prospettive del diritto alimentare tra le sfide della globalizzazione e del Covid-19*, in *Nuove autonomie*, n. 2/2020, 433 ss.; R. Palma, *Agro-ecologia e indicazioni geografiche tra magia e razionalità nel diritto dell'ue e dell'omc: reinventare le designazioni d'origine per preservare l'economia rurale, il patrimonio culturale e l'ambiente*, in *Riv. dir. industriale*, 2017, 265; L.R. Perfetti, *Principi della disciplina pubblicistica dell'alimentazione. Premesse ad un diritto amministrativo dell'alimentazione*, in *Riv. dir. agr.*, 2014, 1; P.L. Portaluri, G. De Giorgi Cezzi, *La coesione politico territoriale: i rapporti con l'Europa e coordinamento Stato-autonomie*, in P.L. Portaluri, G. De Giorgi Cezzi, *La coesione politico territoriale*, vol. II, nella Collana L. Ferrara, D. Sorace, a cura di, *A 150 anni dall'unificazione amministrativa italiana*, Firenze, 2016, 9; G.A. Primerano, *Ambiente e diritto agroalimentare. Organizzazione, regolazione e controlli*, in *Dir. amm.*, 2019, 617; Id., *Il carattere multifunzionale dell'agricoltura tra attività economica e tutela dell'ambiente*, in *Dir. amm.*, 2019, 837; M. Ramajoli, *Dalla food safety alla food security e ritorno*, in *Amministrare*, 2015, 271; Id., *La giuridificazione del settore alimentare*, in *Dir. amm.*, 2015, 657; G. Rossi, *Diritto dell'ambiente e diritto dell'alimentazione*, in *RQDA*, n. 1, 2015; R. Rota, *La multifunzionalità agricola nel rapporto ambiente-società*, in [www.astrid-online.it](http://www.astrid-online.it), 2017, 7; P.M. Vipiana, *Musei legati al cibo: introduzione ad uno studio giuridico*, in *Il Dir. dell'econ.*, 2018, 1, 143-156.

to the still little used and understood tool of Public Innovation Contracts, specific procurement procedures for the supply of innovative and environmentally friendly solutions<sup>24</sup>. The procurement of innovation by public entities can have a very significant impact, directing innovation on the demand side, accessing a more rapid modernization of public services and, at the same time, opening up market opportunities for companies across the country. The Horizon 2020 program provides EU funding to initiate innovative procurement, targeting funding to potential buyers of innovative solutions: groups of public procurers, together with other procurers of different legal nature, providing services of public interest and having similar procurement needs (e.g. private entities, NGO contractors).

In particular, Horizon 2020 supports two complementary types of innovation procurement: PPIs and PCPs. Innovative public procurement (PPI) can be used by clients when public interest challenges can be realized by passing through innovative solutions that already exist on the market, although they are not yet widespread. PPI can therefore be used when procurement of new research and development (R&D) is not needed to bring solutions to market, but rather a clear signal from a considerable number of first launch users / customers willing to purchase / deploy innovative solutions, when these can be delivered with the desired quality and price at a specific time. Consider that PPI can involve compliance testing, a kind of testing that guarantees reliable feedback, before deployment.

On the contrary, pre-commercial procurement (PCP) is certainly used by clients when there are no solutions on the market yet close to the client's innovation needs, which meet all the specific requirements and innovation needs of the client itself: in this case, the need arises for new research and development to obtain innovative solutions developed and tested to meet procurement needs. The PCP therefore makes it possible to compare the pros and cons of the alternative solutions offered and reduce the risk that the "in the dark" purchase of an innovative solution can involve, step by step through the design of the solution,

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<sup>24</sup> The doctrinal contributions and those of administrative jurisprudence on procurement in general, even if only to limit themselves to those offered after the enactment of the 2016 Code, are many and very relevant. In this analysis we intend to offer clarity on the simplicity of use of innovative contracts on which, on the contrary, the interest of the doctrine only begins to manifest itself today, where jurisprudence does not offer clear interpretations. In fact, this instrument, while constituting a driving force for the country's economy, has very little use on the national territory, so that no question relating to innovative contracts has ever landed in the classrooms of administrative judges. Among the first contributions after the 2016 code, see Fracchia F. e Carrozza L., "Il difficile equilibrio tra flessibilità e concorrenza nel dialogo competitivo disciplinato dalla direttiva 2004/18/CE", 2004, in [www.giustamm.it](http://www.giustamm.it); Sambri S., *Il dialogo competitivo: ambito di applicazione e portata innovativa nel sistema normativo degli appalti pubblici*, Convegno IGI, 13 luglio 2004; Clarich M., *Il dialogo competitivo come forma di collaborazione tra pubblico e privato*, Seminario Comitato 4P, Roma 27 settembre 2005; M.P. Chiti, *Il partenariato pubblico privato e la direttiva concessioni*, in Finanza di Progetto e PPP: temi europei, istituti nazionali e operatività a cura di G. F. Cartei e M. Ricchi, Editoriale Scientifica, 2015; M. Ricchi, *L'architettura dei Contratti di Concessione e di PPP nel Nuovo Codice dei Contratti Pubblici D.Lgs. 50/2016, 29 luglio 2016*, in [giustizia-amministrativa.it](http://giustizia-amministrativa.it) 2016.



prototyping, development and the first product test. The pre-commercial one is a public procurement of research and development services that does not include the distribution of commercial volumes of final products (for which, instead, the use of the PPI is correct)<sup>25</sup>.

### 3. *The PPI in the FiLO project. Innovation in the agri-food chain*

The FiLO project, which was briefly discussed in this paper, showing how it meets all the “criteria” and objectives referred to here, used a PPI tool, in particular the partnership for innovation, governed by art. 65 of the code of contracts contained in the legislative decree 18 April 2016, n.50. This is a much-discussed regulatory text and, also for this reason, subject to continuous changes, which envisaged some new institutes, or the strengthening of existing ones, to generate a significant contribution of innovation, within the public administration through the public demand for works, services and supplies. The *ratio* of innovative public procurement is, in fact, that of saving in economic terms, or in environmental terms, so that the aim is to procure innovative solutions, fundamental for concrete economic development, which are safeguarded by environmental protection and regeneration standards, in perspective of the well-being of the populations and of the requalification of the territory.

The purpose of Public Procurement is to find resources from the market that are not usable within public administrations, optimizing the quality of public spending, through the generation of a constant balance between user / citizen needs and the use of resources. available.

The institute of the partnership for innovation, used in the FiLO project, identifies an additional public procurement procedure that must necessarily be

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<sup>25</sup> Horizon 2020, the EU framework program for the promotion of research and innovation, offers different types of support for clients: coordination and support actions (CSA) are aimed at supporting the coordination and networking activities of groups of clients, in order to investigate the feasibility and prepare the ground for future innovation procurement. PCPs and PPIs co-finance both procurement costs for groups of clients to purchase research, development and testing (PCP) or implementation (PPI) of innovative solutions, and coordination and network costs to prepare, manage and follow this type of procurement. At least two public procurers from two different EU Member States or Horizon 2020 Associated Countries are required in the Buyer Group, one of which will act as the primary buyer to coordinate and lead a joint PCP or PPI procurement or several separate but coordinated PPI procurements for the buyer group. In addition, other clients, e.g. individuals or NGOs can be part of the buyer group. Other entities (e.g. Experts, certification bodies) may also participate in coordination and networking support activities, with the exception of potential suppliers of tender solutions or those who have another potential conflict of interest with the tender. Entities made up of several public clients from different countries that meet the minimum requirements and have a mandate to tender on their behalf can apply for funding as a single participant (e.g. European territorial cooperation groups - EGTCs, consortia for European research infrastructures - ERIC, central purchasing bodies, etc.).

used only in the event that the needs of public buyers cannot be met by using solutions already available on the market.

This case is governed by art. 65 of Legislative Decree n. 50/2016 and it concerns not only research and development, but also the large-scale marketing of final products and / or services. Unlike the other procedures mentioned above, the peculiarity of the partnership for innovation lies in the fact that the entire innovative process takes place during the execution of the contract itself. The contracting entities must indicate, within the tender documents, the minimum requirements that all economic operators must meet, making them explicit in a clear and timely manner, so as to allow them to identify the nature of the contract and decide whether to participate or less to the procedure. The same, to re-enter the qualitative selection, can formulate a request to participate in response to a call for tenders (or a call for competition), within thirty days of its publication, attaching the information requested by the contracting authority.

Subsequently, the contracting authority may establish the partnership for innovation, inviting one or more economic operators, who carry out research and development activities separately. Contracting authorities negotiate both initial offers and all other subsequent offers submitted by economic operators in order to improve their content, with the exception of final offers, minimum requirements and award criteria. This negotiation can also take place in some stages, in order to minimize the offers to be negotiated, in compliance with the award criteria expressly specified in the tender notice or in the invitation to confirm interest.

The innovation partnership process is divided into three phases: the selection, during which one or more partners (possibly aggregated by means of a network contract) are identified by the contracting authorities at the beginning of the procedure, on the basis of their skills and abilities; the research and development phase, during which the partners develop the new solution with the help of the public buyer. This phase can in turn be divided into other sub-phases, for the development of prototypes, the evaluation of new ideas, quality control, etc. It goes without saying that during this succession of phases, some partners may fail, on the basis of the selection criteria defined by the call; finally, there is the commercial phase, during which the partners who remained in the competition provide the final innovative solutions.

It can be said that the partnership for innovation represents one of the tools that have carried out the pursuit of innovation and environmental protection. This is a particular form of public-private partnership that accesses a special and flexible tender procedure for the award of complex, long-term and innovative

procurement contracts, in a specialty relationship compared to the competitive procedure with negotiation<sup>26</sup>.

#### 4. *The different forms of innovation contracts: the competitive procedure with negotiation*

One of the major innovations introduced by EU legislation is that of the use negotiated procedures in the field of public procurement which lead to the adoption of complete and already applicable solutions, of a very complex nature: the competitive procedure with negotiation and the competitive dialogue. These are specific procedures for innovation, united by the peculiarity of having a spur effect for the market to propose new, more effective and smart solutions, able to meet the needs of an increasingly demanding society; they do not aim only to improve existing technology, but to achieve the right balance in the use of financial resources, which acts as the glue between public interest and private companies.

In this perspective, the contract code grants public buyers the possibility of resorting to the PPI procedures, provided for by the rule referred to in art. 59 of Legislative Decree 50/2016 entitled “Choice of procedures”. Here it is stated that “in the award of public contracts, contracting authorities use open or restricted procedures, subject to the publication of a call for tenders. They may also use the innovation partnership when the conditions set out in article 65 exist, the competitive procedure with negotiation and the competitive dialogue when the conditions set out in paragraph 2 exist and the negotiated procedure without prior publication of a tender notice when the conditions envisaged by article 63” (first paragraph) exist, granting the possibility of calling a competitive procedure with negotiation, notwithstanding the general rule of prior publication of a tender notice, albeit in very exceptional circumstances.

The competitive procedure with negotiation is governed by art. 62 where any economic operator is provided to submit an application to participate, in response to a call for competition, providing the information requested by the contracting authority, in order to allow the latter to carry out the qualitative selection of the bidders concerned to participate. The information provided by the contracting authority (subject of the contract, description of the buyer’s needs, characteristics required for the supplies, works or services to be procured, specification of the award criterion and minimum requirements that the tenderers must meet), must be sufficiently precise to allow economic operators to identify the nature and scope of the contract, so that they can make an informed deci-

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<sup>26</sup> C. Chiariello, *Il partenariato per l’innovazione*, in *Giustamm*, 2016, 2.

sion whether to participate in the procedure. The minimum deadline for receipt of requests to participate is set at thirty days from the date of transmission of the tender notice or, when the tender is announced by means of a prior information notice, from the date of dispatch of the expression of interest in participating in procedure by the economic operator. After careful evaluation of the information provided by the economic operators, the contracting authority will invite the operators it deems to have the required requirements to submit an initial offer which forms the basis for subsequent negotiation. Also in this case, the minimum deadline to receive the initial offers is set at thirty days, except for cases of reduction of the deadlines provided for by art. 61, entitled "Restricted procedure", in paragraphs 5 and 6. Without prejudice to the possibility for the contracting authorities to proceed with the award on the basis of the initial offers – if provided for in the tender notice or in the invitation to confirm interest – these they negotiate their initial offers and all subsequent offers with economic operators in order to improve their content. Final offers, minimum requirements and award criteria are not subject to negotiation.

During the negotiation, contracting authorities are always required to ensure equal treatment between all bidders, observing the prohibition on providing information that may benefit some bidders to the detriment of others, as well as disclosing to other participants confidential information communicated by a bidder participating in the negotiations, without the latter's agreement; they also have the duty to inform in writing all tenderers remaining in the tender of changes to technical specifications or other tender documents, other than those that set minimum requirements, allowing bidders sufficient time to modify and resubmit, where appropriate, modified offers.

In order to be able to access the innovative solutions sought, the contracting authority will have to pay particular attention to the formulation of the functional and performance requirements of the operators, as well as the criteria for assessing the quality and, possibly, to the provision of a real prototyping phase. This is a procedure that offers public buyers greater flexibility in awarding contracts, as well as the opportunity to find innovative solutions immediately available on the market. The undisputed advantage of the competitive procedure with negotiation is to bring public buyers closer to the industry, encouraging direct dialogue on the specific characteristics that innovative solutions must offer to meet the needs of the buyer.

## 5. (Follows) *The competitive dialogue*

Another opportunity for public buyers to equip themselves with innovative smart solutions was introduced by the code of public contracts with the discipline (art. 64) of the competitive dialogue. This is a procedure divided into two phases, where the public purchaser, after a motivated decision on the use of the competitive dialogue procedure, to be awarded solely on the basis of the criterion of the offer with the best quality / price ratio (OEPV), to the inside a purely descriptive document, sets out its needs, establishes the minimum requirements and describes the criteria for awarding the contract. In the competitive dialogue, any economic operator can submit an application to participate, responding to a call for tenders or a call for competition, providing the information required by the contracting authority for the qualitative selection. The minimum deadline for receipt of requests to participate – as for the competitive procedure with negotiation – is set at thirty days from the date of transmission of the tender notice; upon expiry of the term, the contracting authority will open the dialogue only with the operators it deems to invite. Again, contracting authorities may limit the number of suitable candidates to be invited to participate in the procedure.

The dialogue has the purpose of identifying and defining the most suitable means to meet the needs of the public buyer and offers the opportunity for a fruitful discussion with market operators on all aspects of the contract, in order to improve the request. of innovative solutions. Without prejudice to the obligation to ensure fairness and impartiality, the contracting authorities cannot disclose the innovative solutions proposed by an economic operator during the dialogue, without the latter's consent. The dialogues with the operators can take place in successive phases, in order to reduce as much as possible the number of solutions to be discussed during the dialogue that will persist until the contracting authority is able to identify which solutions could best meet its needs. After declaring the dialogue with the "surviving" participants concluded, the contracting authorities invite the operators to produce a final offer, based on the solutions presented and specified in the dialogue phase. Tenders must contain all the elements necessary for the execution of the contract and, at the request of the contracting authority, they can be clarified, modified and / or refined, without affecting the essential elements of the contract, to avoid the risk that they can distort competition between operators.

The innovative potential of this procedure can be traced precisely to the wide range of proposals that the invited economic operators can present to improve the contracting authority's demand for innovative solutions. As part of such an accurate and thorough negotiation, in fact, candidates should have the

time to acquire all the relevant information, thanks to which they can provide one or more customized innovative solutions.

Another tool of the PPI are the design competitions that are usually used to design works in the urban, architectural, engineering and data processing sectors, according to the provisions of art. 3, paragraph 2, lett. ddd) of the public procurement code, although from the framework of the EU rules on PPI, this procedure is also applicable to other types of projects such as those relating to financial engineering.

Through design competitions, the public buyer grants participating operators a wide range of action. The latter, in fact, develop and propose the best solutions that can meet the needs described this time very generally in the public notice. In particular, in Articles 152 and 154 of the code, three types of competition are envisaged: the single level design competition, aimed at the acquisition of a technical and economic feasibility project; the one that consists of two degrees, divided into a first degree aimed at the acquisition of ideational proposals and a second degree for the acquisition of technical and economic feasibility projects; finally, a two-phase design competition: consisting of a first phase dedicated to the acquisition of project proposals of technical and economic feasibility and a second phase dedicated to a definitive and complete project both at an architectural and feasibility level, inherent to the structural and plant engineering part.

The evaluation of the project proposals is carried out by a jury made up of members totally unrelated to the participants and at least one third of the members of the jury must possess particular qualifications, required of the participants themselves.

The main challenge in design competitions is to ensure the application of an evaluation method that is as objective and transparent as possible, in fact there is a tendency to use a proportionate and justified combination of evaluation criteria, such as the cost of the service, the efficiency and quality of the proposed solutions.

It very often happens that public buyers, due to the existence of unsuitable solutions on the market in terms of innovation and R&D or due to the inability of existing solutions to the specific needs of the contracting authority, contract R&D services. Choosing the procurement of services in R&D represents, in fact, a valid option for all public buyers who intend to introduce a revolutionary innovation on the market or to adopt an innovative solution present in another sector to their advantage. Although setting themselves ambitious and complex objectives, if these tenders are carefully prepared, they are capable of producing very positive results in terms of more convenient costs, of better overall quality, as well as social benefits brought about by the innovative solutions implemented.

The code of public contracts allows the use of this unique procedure only for certain contracts, identified with specific codes and provided that the results belong “exclusively to the contracting authority and the contracting entity, for use in the exercise of its activity” and provided that the provision of the service is “fully remunerated by the contracting authority and the contracting entity” (Article 158, paragraph 1, sub a) and b).

Therefore, these are contracts which have as their object all services relating to scientific progress obtained in the various fields of the natural or social sciences including basic research, applied research and experimental development. The administration becomes the exclusive owner of the models produced, so the procurement of R&D services does not allow the acquisition of a model that can be replicated by companies or business networks. It therefore appears evident that in the illustration of the various PPI tools, the one that best suits the needs described in this analysis should be identified, focusing on the distribution of costs and results between the client and the service provider, in order to allow proposal of a model that can be replicated by businesses and administrations that allows the achievement of the proposed objectives in the most disparate sectors not only of the market, but more generally of life in civil society.

The code of public contracts, in the same art. 158, grants contracting authorities the possibility of also resorting to pre-commercial public procurement, “intended for the achievement of results that do not belong exclusively to the contracting authority and to the contracting entity to use them in the exercise of its activity and for which the provision of the service is not fully remunerated by the contracting authority and by the contracting entity...., in the event that the need cannot be satisfied by resorting to solutions already available on the market”.

Unlike contracts for R&D services, PCPs (Pre Commercial Procurement) provide that the public buyer does not reserve all the benefits deriving from the R&D but shares them with the economic operators, so that the public buyer grants the property rights intellectual property arising from the contract to the participating economic operators. This solution can be considered convenient by both parties: economic operators can sell the solutions to other buyers or on other markets, and public buyers can save expensive registration procedures resulting from the ownership of intellectual property rights.

The PCP contract must necessarily be of limited duration and may include the development of prototypes or limited quantities of first products or services in the form of experimental series. The purchase of commercial quantities of the products or services must not form the subject of the contract, however the latter may include the purchase of prototypes and / or limited quantities of final products or services developed during the pre-commercial procurement, when the value of the services exceeds that of the products covered by the contract.

A further double advantage that PCPs can bring is given by the reduction of the so-called “Time to market”: through PCPs, economic operators have the opportunity to implement and deal with innovative solutions for a certain period of time; moreover, public buyers benefit from being in closer contact with market players, while economic operators are able to obtain early feedback from their customers. It is a strategically very advantageous solution for innovative start-ups and SMEs that would obtain references from potential customers in a short time.

R&D contracts are also configured for supplies, although there is no ad hoc rule in the code, but a clear reference to art. 63, paragraph 3, letter a), when it allows the use of the relative procedure, in the case of public supply contracts, when “the products covered by the contract are manufactured exclusively for the purpose of research, experimentation, study or development , except in the case of production in quantities aimed at ascertaining the commercial profitability of the product or at amortizing the costs of research and development». This type of supply contracts is used for the purchase of prototypes, or first products or services obtained following the research and development, verification and evaluation phase, with the aim of finding the best alternative before purchasing in large scale on the final market. Here, too, we find ourselves in the context of the use of the negotiated procedure without prior publication of a tender notice. This procedure can be used as long as a small volume of supplies developed during a pre-commercial procurement is purchased.

Although the challenge to innovation in the Italian legal system is particularly difficult due to the lack of awareness and very limited use of this innovative tool for the improvement of the territory and the life of the community, it is believed that this brief exposition of the tools made available by the legal system can initiate the implementation of virtuous practices in the administration, so that the simplification of procedures, their greater flexibility and their functional adaptation to public sector policies, as well as the possibility of obtaining a better quality-price ratio, can make public procurement more efficient and strategic for the benefit of public buyers, economic operators and the whole of civil society.

#### 6. *Business networks for the development of the agri-food chain in the procedures for awarding public contracts*

For some years now, business networks have represented an important and strategic instrument of industrial policy for the development of SMEs for the Regions <sup>27</sup>, especially with a view to internationalization and innovation, capable of responding to the current needs of competitive repositioning of the Italian

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<sup>27</sup> Source: Reteimpresa Report 2020, based on data on network contracts drawn up by Unioncamere 2019.



production system. For this reason, some regional administrations have heavily invested and supported business aggregation processes in their territories, allowing for a significant growth in network contracts and in the number of subjects involved. At the same time, they have worked to facilitate access to funds from the 2014-2020 Community programming of business networks, through their recognition as final beneficiaries, or eligible subjects. In this context, the use of the different forms of PPI is revealed as the best tool for achieving results in the perspective of improving the territory, developing the circular economy and the local economy, while respecting the environment for future generations.

In this context, the “Farm to Fork” (F2F) strategy, a key component of the European Commission’s Green Deal, aims to transform the EU food systems by supporting the three aspects of sustainability: economic, environmental and climate, social and health <sup>28</sup>.

The strategy includes the promotion of sustainable agricultural practices, such as the so-called precision farming, organic farming and stricter standards for animal welfare or innovative methods to protect crops from pests and diseases.

Thus, entrepreneurial challenges and opportunities emerge for product and process innovation for all operators in the agri-food chain <sup>29</sup>.

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<sup>28</sup> The agri-food sector is the first chain in Italy for networked companies (23% of the national total) with 8,165 companies engaged in 1,637 network contracts (InfoCamere data as of April 3, 2020). The agri-food supply chain has been classified by examining the ATECO codes A01 agricultural crops and production of animal products, hunting and related services, A02 forestry and use of forest areas, A03 fishing and aquaculture and, with reference to processing companies, C10 food industries and C11 beverage industry. Observing the data on the basis of the two types of existing network contract, the network-contract is the most widespread: 78% of agri-food companies choose this form (in absolute values 6,362 companies), compared to 22% that aggregate through networks with legal subjectivity (1,803 companies). This trend is consolidated considering the total number of network contracts in the supply chain (1,637); of which 82% is attributable to contract-networks, which represent the prevalent type (1,346 contracts) and the remaining 18% is represented by subject-networks (291 contracts).

Networked agri-food companies increased by + 4% in the 1st quarter of 2020, a rate which, if compared with that of the same period of 2019 (+ 3.2%), indicates a more sustained growth in the current year compared to last year. On a monthly basis, February (+ 1.86%) and March (+ 1.40%) are the months of greatest growth in 2020, while in April there is a decline (+ 0.54%) probably due to the first effects of ongoing crisis.

Among the sectors of the supply chain, companies engaged in agriculture, animal products, hunting and related services are the most present in the network (83%) followed by the food industry (12%). Source: Rete-impresa Report 2020.

<sup>29</sup> To better understand the drivers of innovation practices for sustainability and current practices, as well as those planned by operators in the agri-food chain, the Agricultural Economics Unit of the Sustainable Resources Directorate of the Joint Research Center has launched this project, with the aim of gathering information through literature review, semi-structured interviews administered to operators (companies and businesses, including farmers and SMEs), active in the stages of primary production, transformation, packaging, wholesale, distribution and retail detail of the food supply chain, as well as related organizations representing or serving these companies and businesses. The analysis also aims to identify how drivers and actions vary between different sectors (e.g. cereals, dairy, meat, fruit and vegetables) and different stages (e.g. farmers, processors, distributors, retailers) of chains. The objective of the strategy is to highlight the main innovation drivers for sustainability (e.g. customer demand, production costs, reputation, regulation) and the practices that operators are implementing or planning to implement in this sector.

For its part, the Italian Government, in the emergency decree issued to cope with the economic and social consequences caused by the SARS-COV-2 pandemic, has issued various provisions aimed at facilitating businesses, in particular SMEs: thus, for example, with regard to the funds provided for by the “relaunch” (law decree n.34/2020) to support, through public intervention, the capitalization of small, medium and large companies, for example by resorting to the subscription of capital increases, equity financial instruments, loans convertible bonds, the purchase of shares listed on the secondary market, etc <sup>30</sup>.

The development induced by the promotion of business networks in the agri-food chain, which in the PPI can find the best partnership tool with the local public administrations, allows a virtuous management of the territory and the quality of life of the people who populate it: in fact, they make it possible to shorten the made in Italy supply chains with the effect of having few interlocutors, organized and qualified to represent an induced group of small and very small suppliers, in order to better manage the relationship with client companies and with international customers.

Furthermore, the decree of 11 June 2020 of the MiSE <sup>31</sup> regulates criteria, conditions and procedures for the granting and disbursement of financial subsidies in support of R&D projects on circular economy issues. The measure, in implementation of art. 26, co. 1, of the law decree n. 34/2019 (so-called Growth Decree), provides that even business networks, consortia and other forms of aggregation may apply to obtain concessions (subsidized financing and direct contribution to expenditure) aimed at promoting a more efficient and sustainable use of resources in productive activities through the development of fundamental enabling technologies.

Nor should the blockchain hypothesis be neglected to oversee the agri-food chain, given that the creation of intelligent, sustainable and supportive growth cannot ignore the use of the tools provided by the technological revolution. The use of the blockchain and smart contracts in the agri-food supply chain is functional to the rebalancing of contractual positions and works to maintain the quality of the product along the path from producer to consumer.

On the other hand, the European Commission, in drafting the draft regulation of the CAP 2021-2027, identifies digital technologies as a tool aimed at improving the quality of life in rural areas and the competitiveness of European

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<sup>30</sup> Business networks have the potential to allow the injection of public capital into private economic initiatives in a less invasive way than in the case of direct shareholding, but equally effective, in support of strategic business projects within the main production chains national, also in order to initiate processes of reorganization and digital and sustainable transformation that are now unavoidable in order to remain competitive in post-Covid and to encourage re-shoring initiatives.

<sup>31</sup> Available on <https://www.mise.gov.it/index.php/it/89-normativa/decreti-ministeriali/2041283-decreto-ministeriale-11-giugno-2020-progetti-di-ricerca-e-sviluppo-per-l-economia-circolare>.

agricultural production. As in other areas, digital innovation and new technologies are no longer a choice, but an essential necessity for long-term growth.

Indeed, the CAP 2021-2027 identifies smart agriculture as one of the main results to be achieved, capable of providing field aid to farmers and public administrations.

Start-ups and innovative SMEs would be involved to give impetus to the digital transformation and sustainability objectives, exploiting the mechanism envisaged by the law for network contracts, which requires the prior setting of strategic objectives and criteria for measuring them and adopting monitoring systems. performance of the Network, on which the public partner would exercise the role of accountability.

### 7. *Innovation in agri-food sector and marketing prospects for the sustainable development of the territory*

Nowadays, sustainability represents a key point in the development of entrepreneurial strategies<sup>32</sup> capable of making territories more resilient through the integration of the three dimensions of sustainable development: social, environmental and economic. In this context, the concepts of sustainability and supply chain management have opened an interesting debate in literature<sup>33</sup>, which has increasingly integrated these two concepts over time<sup>34</sup>.

The continuous transformations that have affected the agri-food supply chain have pushed company networks to rethink their logistics management models, making it increasingly extensive, innovative and sustainable from a technological, organizational and strategic point of view<sup>35</sup>.

A leading role in this transformation process is played by the technological innovation implemented in the last decades in the industrial sector<sup>36</sup>. In

<sup>32</sup> P. Ahi, C. Searcy, *A comparative literature analysis of definitions for green and sustainable supply chain management*, in *Journal of cleaner production*, 2013, 52, 329 ss.

<sup>33</sup> S. Seuring, M. Müller, *From a literature review to a conceptual framework for sustainable supply chain management*, in *Journal of cleaner production*, 2008, 16(15), 1699 ss.

<sup>34</sup> P. Ahi, C. Searcy *op. cit.*; A. Ashby, M. Leat, M. Hudson-Smith, *Making connections: a review of supply chain management and sustainability literature*, in *Supply Chain Management: An International Journal*, 2012, 17(5), 497 ss.; C. Baah, Z. Jin, *Sustainable supply chain management and organizational performance: the intermediary role of competitive advantage*, in *Journal of Management & Sustainability*, 2019, 9, 119 ss.

<sup>35</sup> C. Baah, Z. Jin, *op. cit.*; A. Corallo, M.E. Latino, M. Menegoli, F. Striani, *What factors impact on technological traceability systems diffusion in the agrifood industry? An Italian survey*, in *Journal of Rural Studies*, 2020, 75, 30 ss.

<sup>36</sup> J.M. Meynard, M.H. Jeuffroy, M. Le Bail, A. Lefèvre, M.B. Magrini, C. Michon, *Desining coupled innovations for the sustainability transition of agrifood systems*, in *Agricultural systems*, 2017, 157, 330 ss.; S. Saetta, V. Caldarelli, *How to increase the sustainability of the agri-food supply chain through innovations in 4.0 perspective: a first case study analysis*, in *Procedia Manufacturing*, 2020, 42, 333 ss.

particular, in order for agri-food systems to reach high levels of sustainability, they require equally high levels of innovation<sup>37</sup> making logistics an increasingly important strategic, complex and computerized lever<sup>38</sup>.

Closely linked to the phenomenon of technological innovation is the phenomenon of the modernization of territories, which are now able to adopt development models from a S.M.A.R.T. and sustainable, strongly affecting the identification of new strengths and economic growth and also contributing to the development of new guidelines in terms of marketing<sup>39</sup>. In this sense, literature is increasingly careful to study innovative solutions relating to territorial development in terms of territorial marketing, framing this tool as a real strategic planning tool<sup>40</sup> capable of determining advantageous opportunities and conditions that strengthen competitiveness<sup>41</sup>. Therefore, in the light of this, the evolution of the entire system of sustainable supply chain management imposes and determines precise political choices and the contextual application of territorial marketing actions that could represent important development drivers of a territorial agri-food logistics macrosystem capable moreover, to be able to measure the competitiveness of a territory from different points of view.

Considering these brief reflections, in a context strongly linked to the creation of a territorial logistic macrosystem it is important to identify the levers on which to rely (e.g. the creation of Distripark, cutting-edge logistics centers and logistics axes at the service of important large areas and GDO) in those areas with a high rate of urbanization capable of triggering urban regeneration processes supported by incisive territorial marketing policies<sup>42</sup>. Furthermore, in this context, a correct implementation of public procurement for innovation would tend to create a territory capable of offering advantages to a plurality of subjects<sup>43</sup>. However, a certain role in this sense is fulfilled by the relative scarcity of resources available at the various levels of government, generating a series of associated advantages and disadvantages in the adoption of innovation contracts<sup>44</sup>.

From this it follows that through the agri-food logistic chains of a territorial nature, innovative development models should be triggered such as to induce

<sup>37</sup> J.M. Meynard, M.H. Jeuffroy, M. Le Bail, A. Lefèvre, M.B. Magrini, C. Michon, op. cit.

<sup>38</sup> A. Corallo, M.E. Latino, M. Menegoli, F. Striani, op. cit.

<sup>39</sup> M.M. Montella, P. Silvestrelli, *Heritage e relationship marketing per le imprese agroalimentari italiane*, in *Micro & Macro Marketing*, 2020, 29(1), 71 ss.; N. Tovma, N. Shurenov, L. Bimendiyeva, Z. Kozhamkulova, Z. Akhmetova, *Territorial marketing and its role in determining regional competitiveness. Evaluating supply chain management*, in *Uncertain Supply Chain Management*, 2020, 8(1), 1 ss.

<sup>40</sup> G. Guido, *The peculiar nature of place marketing according to an inductional approach*, in *Plurimondi*, 2017, (10).

<sup>41</sup> G. Colella, op. cit.

<sup>42</sup> E. Forte, L. Siviero, op. cit.

<sup>43</sup> V. Lember, T. Kalvet, R. Kattel, op. cit.

<sup>44</sup> V. Lember, T. Kalvet, R. Kattel, op. cit.

a rethinking of the territorial development strategies according to marketing logics linked to sustainability and technological innovation in order to see virtuous induced development not only linked to the agri-food sector, but to the entire economic and social fabric of a territory.

It seems clear, therefore, that all the actors who work together to ensure sustainable development of the territory must be recognized a central role in the application of best practices capable of creating added value in the environmental, economic and social dimension with the aim of enhancing and to promote a territory capable of ensuring a social balance and a continuous growth of its attractiveness.

These actions would entail the need to accelerate processes for the enhancement and promotion of the territory that integrate policies and actions of territorial marketing, tourism marketing, in particular sustainable tourism, developing a series of joint actions.

Considering the extraordinary evolution of the agri-food logistics chain and of the current system of public procurement law, it was necessary to reflect on the role that both have acquired in the sustainable development of the territories. In particular, the analysis of the current regulatory framework for innovative public procurement, in some ways fragmented and constantly evolving, proved useful.

In this perspective, the solutions proposed in this analysis would be much easier to implement if there was greater attention, in Italy, to public procurement for innovation. While the regulatory framework for public procurement is constantly evolving, greater impetus at national level would be needed for innovation procurement. In particular, the much more flexible procedural system would allow faster and more direct contact between public buyers and market operators and a greater understanding of their respective needs. In other words, they would allow a dialogue between the needs of the public buyer and the organizational and logistical needs of market operators.

*PPI for a sustainable economy: sustainable supply chain management in the agri-food sector*

The aim of this study is to offer an analysis on the agri-food logistics chains so as to guarantee the greatest spread of sustainability practices in the management of the entire supply chain. The use of management and marketing tools and of innovative legal and economic institutes, also in the agri-food sector, is fundamental to guaranteeing an increasingly 'cleaner' agriculture. However, the joint use of these tools still does not seem to have been fully exploited. In this sense, the analysis of the 'FiLO – Filiera Logistica e Organizzazione' project, which aimed to create a network of companies through a European partnership for innovation, and which has the purpose of providing companies in the agri-food supply chain with a high level of methodological and organisational innovation, would like to trace guidelines and reflections relating to the development of the territories through the use of public procurement for innovation.

*Il PPI per un'economia sostenibile: riflessioni sulla gestione sostenibile della filiera agroalimentare*

Lo scopo di questo studio è quello di offrire un'analisi sulle filiere logistiche agroalimentari, al fine di suggerire l'implementazione di pratiche di sostenibilità nella gestione dell'intera filiera. L'utilizzo di strumenti gestionali e di marketing e di istituti giuridici ed economici innovativi, anche nel settore agroalimentare, è fondamentale per garantire un'agricoltura sempre più "pulita". Tuttavia, l'uso congiunto di questi strumenti non sembra ancora essere stato pienamente sfruttato. In tal senso, l'analisi del progetto 'FiLO - Filiera Logistica e Organizzazione', che mira a creare una rete di imprese attraverso il partenariato europeo per l'innovazione, che ha lo scopo di fornire alle aziende della filiera agroalimentare un alto livello di innovazione metodologica e organizzativa, vorrebbe tracciare linee guida e riflessioni relative allo sviluppo dei territori attraverso il ricorso agli appalti pubblici per l'innovazione.