

Local government initiatives to promote sustainable industrial development. The case of Abruzzo Region

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Abstract: The transition to sustainable industrial systems is one of the cornerstones of European Union policy to develop a competitive economy, that are progressively translating into a series of regulatory and other initiatives, both at national and local level. Although these initiatives are now numerous, few have been able to make the most of the advantages of a “bottom-up” collaborative approach, capable of synergistically exploiting the advantages deriving from incentives, financing and tax relief that European policies, at the local level, have promoted in the last few years. In this article, the “Carta di Pescara” initiative will be presented and analyzed. It is a programmatic document of the Abruzzo Region, co-designed together with the business and academic world, which incorporates the guidelines of European policies on environmental sustainability applied to industry. The article describes the inspiring principles of this governance tool, the choice of stakeholders, the structuring process, the selection and definition criteria of the rankings, the rewarding mechanisms. Finally, the first results will be exposed, some statistics on the current members and the potential benefits as well as the criticalities of this initiative.

Keywords: Sustainable Industrial Development; Circular Economy; Regional Policy.

Introduction: The role of regional policies in promoting an industrial sustainable development

Since the 1970s, environmental issue was gradually taking shape worldwide. In this period, the strong industrial development weighed heavily on the natural environment, as there was a belief that the environment was able to metabolize all waste resulting from human activities. At European level, in March 1972, the Commission issued the Second Communication on the Program of the European Community for the environment, which contains the first reference to the linearity of the economy and the possibility of exploiting waste as a source of raw materials (Seconda Comunicazione sulla politica della Comunità in materia di ambiente, 1972). With the 1992 UN Conference in Rio de Janeiro on the environment and development (UN Conference, 1992) and the subsequent approval of Agenda 21, become evident the key role reserved for local governments in pursuing the goals of Sustainable Development, which was further strengthened in the 1997 during the Third Conference of European Regions, meeting in Gothenburg (European Union, 1997).

Most recently, through the EU 20/20/2020 package, the European Union (EU) has promoted several policies and initiatives in order to reduce the impact of pollution by actively involving the industrial systems. In particular, this package defines three main green actions: i) 20% cut in greenhouse gas emissions; ii) 20% of EU energy from renewables; iii) 20% improvement in energy efficiency (Tol, 2012). One of the ways identified to achieve these results, is represented by the implementation of the

approaches and tools of the Circular Economy concept, formally launched through the 7th Environment Action Programme (European Union Decision, 2013).

The concept of Circular Economy (CE), which is widely spreading in recent years, summarizes the current need to move towards more sustainable socio-technical systems. This concept has its origin from the Industrial Ecology (IE) paradigm (Yuan et al., 2006), emphasizing, also through the choice of the two terms ‘Circular’ and ‘Economy’, the IE’s basic concept of closing the loop. Nowadays, CE has become a landmark for policymakers, companies and academia, and substantial public and private funding are turning towards it. In literature, there is still no universally recognized definition of CE; usually CE is defined through specific actions and practices (Schroeder et al., 2018), which can act at different levels and involve different actors.

In this article, the “Carta di Pescara” initiative will be presented and analyzed. It can be considered a strategic tool at company level, able to identify and guide the implementation of individual and collective actions inspired by CE principles.

The “Carta di Pescara” as a tool for the sustainable development of the Abruzzo Region

The “Carta di Pescara” for Sustainable Industry (CdP) (Regione Abruzzo, 2016) originates from the European policy on the environment, and reiterates some general principles sanctioned by the EU, such as: *precautionary*, *correction at source*, *proximity*, *prevention*, *sustainability*, *empowerment*, and *cooperation*, which have found recognition also in the national legislation with the adoption of the law on the environmental promotion of green economy measures and minimization of the use of natural resources (Italian Law, 2015). A further reference of the CdP is the so-called “Europe 2020 Strategy”, a ten-year strategy for advancement of the economy of the EU, in order to reach a smart, sustainable and inclusive growth (Comunicazione della Commissione, 2010a). It provides that, at the local level, each region defines its own Smart Specialization Strategy (S3) which allows the concentration of policy interventions in those application areas that may have relevance for the European regions, in terms of competitive advantage (Comunicazione della Commissione, 2010b). This strategy commits companies, research centers and universities to cooperate to identify the most promising areas of specialization of each region, but also the weak points that hinder the innovation process. The S3 identifies, therefore, the regional research and innovation strategies that allow a more efficient use of the structural funds and an increase of the synergies among the community, national and regional policies.

The Abruzzo Region, through the entrepreneurial discovery process implemented in 2015 to put into practice the S3, has identified its own specialization technological domains, with respect to which it has decided to promote and support the birth and development of a “*Regional innovation and technology transfer system*”, which includes research, companies and training of knowledge and skills in the field of sustainable industry. Among the domains identified, there are *Automotive*, *Life Sciences*, *Agri-Food*, *Fashion Design* and *ICT&Space*, first interested by the CdP.

The development models based on local innovation systems and the regional territory

In the development and adoption of the regional S3, the Abruzzo Region was inspired by the model of local innovation systems, progressively spread in the EU over the last 20 years. In this broad model, the territorial innovation models and regional innovation systems (Crevoisier and Jeannerat, 2009; Moulaert and Sekia, 2003) can be recognized. These systems are defined as a set of elements connected to each other in order to create, share and spread knowledge and technological changes in a specific area, protecting their growth. They can have different spatial scales (regional, local) or different spheres of interest (sectorial, technological or organizational dynamics) and can include individuals from different contexts (public or private bodies, companies, research centers) or different levels of formalization (spontaneous or planned) (Taddeo et al., 2017).

The Abruzzo Region in application of the S3, has promoted the establishment of 14 Innovation Poles, defined as *“groupings of independent undertakings—innovative start-ups, small, medium and large undertakings as well as research organizations—operating in a particular sector and region and designed to stimulate innovative activity by promoting intensive interactions, sharing of facilities and exchange of knowledge and expertise and by contributing effectively to technology transfer, networking and information dissemination among the undertakings in the cluster”* (Official Journal of the European Union, 2006), which played an important role in the development of the CdP.

The Abruzzo Region (Fig. 1) covers an area of about 10,700 km² and has a population, by 2017, of about 1,317,000 inhabitants (density: 121.61/km²). Abruzzo ranks first in Italy for its percentage of protected area, which represents 36% of the regional territory. It has three national parks, a regional park and 38 protected areas including WWF oases, national and regional reserves.

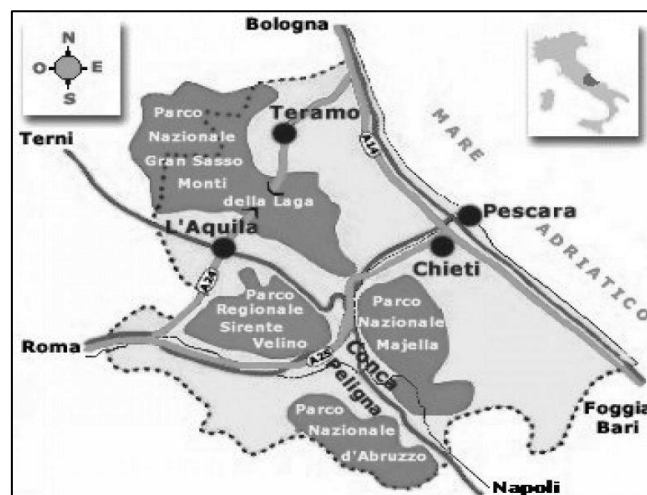


Fig. 1. The Abruzzo Region.

The Abruzzo Region is also one of the most industrialized regions of Italy. In 1996 it was the first region of the south of Italy to come out of Objective 1. In fact, since 1950, regional GDP has grown steadily, making Abruzzo one of the fastest growing regions in the country. In 2015, Abruzzo has reached the second-best GDP growth rate of Italy (+2.6%). In 2015, GDP per capita amounted to €

25,200, the highest in the south of Italy, but below the Italian and European averages, which account to € 27,800 and € 29,900 respectively. The region has one of the highest productivity rate in Southern Italy and its economic structure is largely based on SMEs. In 2015, Abruzzo was the one of the most industrialized region in Italy (29.3% of value added from industry). Abruzzo in fact enjoys industrialization rates that are above the National average (66 enterprises per 10,000 residents *versus* a national average of 64) (Commissione Europea, 2018).

For the reasons given above, the Region presents excellent characteristics for the implementation of the policies promoted by the CdP.

Main objectives of the study and methods of analysis

The article describes the inspiring principles of the CdP. In the following sections, the choice of stakeholders, the structuring process, the selection and definition criteria of the rankings, the rewarding mechanisms are described. The first results obtained, some data on the current members and the potential benefits as well as the critical aspects of this initiative are presented.

The research uses a scientific and secondary literature base and qualitative and quantitative data deriving from direct participation in the project and from direct interviews conducted with the regional referents of the initiative, as well as reports related to the results obtained so far.

The “Carta di Pescara” features

The CdP is the result of a participatory path of co-planning developed together with the entrepreneurial and academic world; it offers companies that sign it a “business-regional partnership path” that recognizes specific advantages for companies that are committed to pursuing the goals of sustainable industry.

In view of this commitment, the Abruzzo Region identifies some benefits in terms of:

- *simplified procedures* (level of bureaucracy and local administrative costs are minimized);
- *reduction of administrative and local taxes* (regional taxes related to production activities are as low as possible);
- *supporting legislation* (dedicated legislative initiatives for simplification are on the way);
- *priority* (every call for proposal founded by European Regional Development Fund 2014 – 2020 Axis I and III is oriented towards the 5 technological dominions; among these, specific additional evaluation score is allocated for companies partner of the CdP).

Within the S3 of the Abruzzo Region, the CdP represents the glue of industrial policy interventions and is aimed at evolving manufacturing activities in the area (or that will be attracted in the near future) by leveraging the ability to integrate and develop new knowledge and technologies and, at the same time, to maximize the synergy among the economic, social and environmental dimensions. The CdP has been defined as a transversal priority of the European Regional Development Fund (ERDF) 2014-2020.

The development path of the “Carta di Pescara”

The choice to focus on environmental sustainability emerged during the entrepreneurial discovery processes, when the stakeholders, involved in a very early stage, explained how sustainability was not just something related to the rules to be respected, but a “market choice” made to be more competitive in the international benchmarking of quality products.

From January 2016 about 500 SMEs and about 10 large companies have been selected, using some shared criteria such as: SMEs participating to Horizon 2020 or to the Seventh Framework Program or at least to ERDF 2007-2013 Program; SMEs having patents registered in the last 2 years; SMEs investing in research more than the regional average, and so on. To improve the process, the selected stakeholders were directly interviewed in order to know their main prospects for medium-term investments. At this point, the decision to focus on sustainability and the CE, as they emerged as salient and interesting aspects by all the interviews, was taken.

How to join the “Carta di Pescara”

To be eligible to become a CdP partner, the *applicant* must meet several conditions, having the environment as the priority. Depending on the number and type (quantity and quality) of conditions met, CdP membership may be “*basic*”, “*intermediate*” or “*advanced*”; each level of membership will offer different types (or rate) of advantages (Fig. 2).

<u>LEVEL OF PARTNERSHIP</u>	<u>CONDITIONS FOR PARTNERSHIP</u>
BASIC	To have to meet at least one basic condition for each dimension of sustainability (environmental, social and economic).
INTERMEDIATE	To have to meet two intermediate conditions of environmental sustainability + at least one intermediate condition both for social and economic dimensions.
ADVANCED	To have to meet at least three advanced conditions of environmental sustainability + at least one advanced condition of social and economic sustainability + at least one intermediate condition of social and economic dimensions.

Fig. 2. Levels and conditions for partnership.

In the CdP, 61 are the total amount of the conditions recognized for the environmental, economic and social dimensions of Sustainable Development. Among the conditions of environmental sustainability (29 in total) solutions on the adoption and implementation of plans to minimize the waste and emissions; solutions for the adoption of systems that enable recycling/re-use of water within the process; implementation of Life Cycle Analysis systems (including carbon footprint assessment) for

products and processes; solutions for the adoption of tools and approaches for waste treatments inspired by CE are included.

Local stakeholders involved

The CdP is the result of the active participation of all the actors involved by the Abruzzo Region. Starting from 5 March 2016, 3 “Sustainability Forums” were organized in which the selected companies were involved. The meetings were organized in two stages, the first more theoretical, with interventions by regional and government political leaders, experts, scholars and technicians involved in the development of the CdP; in the second, more practical, working tables were set up, coordinated by representatives of the Region and of the academic world. The development process involved the three regional universities (University of Chieti-Pescara, University of L’Aquila and University of Teramo) and regional research centers, the unions, the innovation hubs, representing the 5 vertical sectors of the S3 chosen for the CdP (Automotive, Life Sciences, Agri-Food, Fashion Design and ICT&Space). At regional level, the Department of Production Activities, the in-house structures of the Region, and the regional offices corresponding to these activities, such as the Energy and Environment Office, were involved. A control room was therefore established, chaired by the Director of the Region.

Monitoring phase

The progress of the CdP contents and the monitoring of the actual implementation of the commitments undertaken by the Abruzzo Region will be carried out by a steering Committee composed of the following members:

- General Director of the Abruzzo Region;
- Director of the Department of Economic Development, Labor, Education, Research and University;
- A representative of the regional university system;
- A business representative for each of the five technological domains of the regional S3;
- A representative of the trade union organizations.

Discussion and Conclusion

The CDP, as a policy and local government tool in the direction of Sustainable Development, represents a concrete attempt to guide the change towards a regional model of CE.

It uses an *open* approach (any company operating in the Region can try to become a partner), *immediate* (the relative web platform is managed directly by the regional offices), and at *low cost* (no additional resources are needed), to support and promote innovative and sustainable companies, using the funds made available by the EU.

At present, about 130 companies are officially registered on the CdP web platform, with different levels of affiliation: 12% advanced; 25% intermediate; 63% base and actively involved in CE processes; this can be considered a direct result of the initiative. Alongside it, it is worth noting some indirect results, such as: i) stimulating companies to collaborate with each other and with universities and research

centers (a foundation was born from this collaboration in 2018); ii) the possibility of orienting the ERDF towards research programs that have given birth to innovative projects, making research projects admissible even outside the Region with effects on the regional territory.

Among the critical issues recognized, there is still a limited participation of small companies and a limited involvement of the regional training system, for the creation of professional figures suited to the new and evolving context. Other refinements concern the integration of incentives that facilitate the adoption of the CdP by “excellent” companies in the region, in order to produce an emulative effect in the direction of sustainable industry in all the Abruzzo production system.

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