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AN ITALIAN CASE-STUDY OF ECO-INNOVATIONS: DRIVERS AND BARRIERS FOR SMES IN CALABRIA

Nazaria Solferino

University of Calabria, Department of Economics, Statistics and Finance "Giovanni Anania" – DESF
(e-mail: solferinonazaria@hotmail.com)

Info
Via Pietro Bucci, Cubo **0/C**
87036 Rende (Cs) - Italia
tel. (+39) 0984 492434 / 492422

http://www.unical.it/desf

An Italian case-study of Eco-innovations: drivers and barriers for SMEs in Calabria

Nazaria Solferino, Department of Economics and Statistics

Università of Calabria[1]

Abstract

We aim to investigate the drivers and barriers of eco-innovations in Calabria and the role of intermediaries to enhance in the organizations the concept of sustainable development. We analyse three case studies of environmentally sustainable companies. Our analysis shows that several critical issues need to be addressed by national and regional policies to remove relevant barriers to these investments. The interwied companies identified these difficulties mainly in the problems to access credits and get funds alongside to the excess of complicate beaurocracy. On the other side, the attention foto the environmental issues and the opportunity to promote products and services with a lower environmental impact on the market, in order to obtain a competitive advantage and possibly increase the turnover and customer portfolio, represents the most pushing factor for the adoption of radical eco-innovations. Nevertheless, intermediaries play an important role as these companies have in common that hey had the possibility to benefit from the expertises and competences of a provider of services.

Keywords**:** *Eco-innovations, Environmental sustainability, Case study method.*

JEL Codes: *O31,O33.*

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1. Introduction

The model of Sustainable Development is strongly raccomanded by governments and international organizations as the best possible way out from the economic crisis.[2] Sustainability is based on a model of development that must be able to satisfy present needs, without compromising the possibilities and wellbeing of future generations. Within this model, an essential role is assigned to the Green Economy which provides economic policies and regulations devoted to drive cultural changes towards more sustainable consumption and lifestyles. Such policies must also encourage investments in R&D to devise eco-efficient products and technologies.

A strong impulse to the Green Economy comes from the European Union, which has provided substantial funds to direct the market towards the environmental issues[3]. In particular, the EU Policy promotes the adoption and realization of Eco-innovations (since now on also EIs)[4]. The concept of EIs has been defined primarily by OECD through the Environmental Technology Action Plan (ETAP, 2015) which defines eco-innovations as "*the production, assimilation or exploitation of a novelty in products, production processes, services or in management and business methods, which aims, throughout its lifecycle, to prevent or substantially reduce environmental risks, pollution and others negative impacts on the resources use".*

The main advantage of an EI is that it can generate positive results both from the economic point of view and from the environmental one by reducing energy or water consumption, saving natural raw materials, reducing polluting products or CO2 emissions. In addition, it offers the opportunity to compete in "green demand" markets by generating sustainable innovations, improving the reputation of the company and creating new green jobs. [5]

According to the 10th Report 'GreenItaly' issued by Unioncamere-Symbola, the Italian business system has more and more raised its attention towards the green economy. Over 432 thousand Italian companies in the

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[2] The Istat annual report in 2019 certified that Sustainability increases the productivity of companies of around 5% for those with more than 75 employees, 9-10% for those with more than 95 employees and 15% for those with over 99 employees.

[3] The European cohesion policy, the main investment policy of the EU, has planned to devote to the Green Economy more than 50 billion euros a year during the period 2014-2020.

[4] In December 2011 the European Commission adopted the Eco-innovation Action Plan (EcoAP) to speed up the adoption of Eco-innovations, by eliminating barriers and highlighting the opportunities . The action plan has been recently updated with the 7th Environmental Action Plan (7EAP) that defines a vision according to which it is possible to "live well in respect for our planet" and reaffirms the need to "transform the Union in a low-carbon, competitive, resource-efficient and environmentally friendly economy" by 2050.

[5] The central and strategic role of eco-innovations and green technologies for the future of Europe are the focus of the EU policies called Smart Specialization Strategies (S3) which identify some relevant fields for Innovation ranging from ICT to Biodiversity, etc.. A significant role is undoubtedly assigned to the so-called Smart Manufacturing, whose goal leverages the introduction of digital technologies and solutions in manufacturing production processes to define a new industrial paradigm, both in terms of products and methodologies. The core for this change are the Key Enabling Technologies, that is technologies that have already existed in the recent past times, but whose integration with the production systems has yet to be completed to fully show its effects.

industry and services have realized eco-investments in the period 2015-2018, or they are planning to realize in 2019[6]. The total number of companies in the Southern of Italy that have carried out EIs between 2015-2018 or plan to do so in 2019 is over 31% and Calabria is placed 10th in the ranking of the Regions for the invested amount of 11,909 million euros.

Unfortunately the macroeconomic framework of Calabria has several critical features which potentially inhibit the development of EIs. For instance, according to the Report of Svimez 2019 on the economy of the South of Italy, Calabria is the only region to record a negative change in GDP in 2018 (-0.3%). Data analyses from the Bank of Italy show that in the 2018 the growth of bank loans to the firms gradually weakened reaching -0.7% in December and the decline in credit to the production sector continued in the first months of 2019, mainly for the riskier companies. Instead, the cost of credit remains significantly higher in the national comparison, especially for the short-term component (by about 3% points). In addition, according to the indicators of Well-Being in the 2019 Report by Istat, Calabria is at the bottom of the classification for infrastructures and crime. Finally, the 'European Innovation Scoreboard 2019' puts Sardinia, Calabria and Sicily at the bottom of the European ranking.

Despite these negative data, according to the recent survey of the Bank of Italy on regional economies, in 2018 about two thirds of companies in Calabria achieved a positive economic result[7] and the exports recorded a favorable growing trend that affected all the main sectors of regional specialization. The Region can also relies on a stable regional R&D system essentially based on three large state Universities (University of Calabria-Unical in Cosenza; University of Magna Grecia of Catanzaro and the University of Mediterranean Studies of Reggio Calabria), several CNR institutes deployed on the regional territory, the Center for Experiments in Agriculture-CRA) and several so-called Technological Innovation Poles. In addition, today in Calabria there are about 240 innovative startups recorded in the Companies Register, with an increase of 48% in the 2018.

A very relevant experience worth to mention, as a case of private companies to imitate for the enhancement of southern businesses, is the integrated innovation provider Entopan[8], founded in the year 1998, that has been working with private funds, located in the province of Catanzaro.

Entopan's mission consists in promoting sustainable development of the South of Italy, creating social capital, enhancing manufacturing and agri-food qualities, fostering processes of growth and social innovations, building networks of competences and specializations to support the birth of innovative projects, improve the performance of systems and social and environmental impacts. The projects are selected on a national scale, through calls for proposals, implemented with national partners, start-ups, universities, spin-offs, small and medium-sized enterprises and non-profit entities in the most diversified sectors. The selected projects are followed by a network which includes international partners as Bruno Kessler foundation, one of the most

[6] The share reached a value of 21.5%, corresponding to an absolute value of almost 300 thousand companies and 7.2 points higher than that recorded in 2011.

[7] After the negative trend in the years 2008-2014, the return on equity has significantly increased in more recent years, thank to the decrease in the tax charges.

[8] https:// entopan.com

important applied research centers in Europe, the Giacomo Brodolini foundation, universities, banking institutions and investment funds[9].

In this paper we aim to investigate the drivers and barriers of eco-innovations in Calabria for a pair of companies which have in common that they have benefited from the role of intermediaries like Entopan to invest in eco-innovations. We focus our research on the analysis of some case studies of environmentally sustainable firms which also relied on the role of this provider to enhance in the organizations the concept of sustainable development.

Our analysis shows that several critical issues need to be addressed by national and regional policies to remove relevant barriers to investments in EIs identified, by the interwied companies, mainly in the difficulties to access credits and funds and the excess of complicate beaurocracy.

On the other side, the opportunity to promote products and services with a lower environmental impact on the market, in order to obtain a competitive advantage and possibly increase the turnover and customer portfolio, represents one of the most pushing factor for the adoption of radical eco-innovations.

Nevertheless, intermediaries play an important role as all these companies have in common that hey had the possibility to benefit from the expertises and competences of a provider of services.

The remainder of the paper is structured as follows: Section 2 integrates different literatures to derive our research question on the eco-innovations' drivers. Section 3 describes the main features of the companies that we have investigated. Section 4 presents our main results. Section 5 discusses the role of a provider while Section 6 provides our conclusions.

2. The determinants of Eco-Innovations: an overview of the scientific literature

There is a huge amount of scientific literature that has been focused on both the theoretical and empirical analyses of the drivers of the eco-innovations. Some very ehaustive reviews of this literature can be found in Barbieri et al., 2016; De Jesús Pacheco et al., 2016; Del Río et al., 2016; Hojnik and Ruzzier, 2016. In particular, Barbieri et al.(2016) collected the existing scientific literature produced until the year 2016 and came out to the conclusion that an almost unanimous consensus has emerged about the most relevant set of elements which jointly stimulate EIs' adoption by firms and can be grouped into the following clusters:

1)*Firm specific factors* that include all those elements, such as size, location, sector, and age, which generally influence – together with other more relevant determinants – a firm's environmental innovativeness.

2)*Technological conditions* which strongly depend on the knowledge-capital endowment of firms – which can be increased through R&D investments or activities – but also on organizational capabilities and organizational innovations. Very relevant it is the environmental management scheme (EMS) .[10]

[9] There are about 50 collaborators within the provider integrated with synergistic structures, like the Universities of Calabria and Magna Graecia who are ablo to attract global innovation players who want to invest in the development of the South of Italy. Among the latest collaborations there is that with the Bruno Kessler Foundation, Giacomo Brodolini Foundation and Oltre Open Innovation Hub (operational operating sector of Entopan) which gave birth to the Ethical Bank's "Innovate on the net" call, which has decided to finance projects for a total investment of 10 million euros. Process innovations as well as social and environmental innovations are supported. Among the projects, finally, there is also the foundation of the first Open Innovation High School in Catanzaro.

3)*Market condition*s, such as expectations of future turnover, previous economic performance, demand for new eco-products, or consumer preferences, have been confirmed to frame the "green" choices of firms.

4)R*egulatory policies* act bilaterally on both the supply side and the demand side by changing the relative prices of production factors or by setting new environmental standards.

5) D*ifferent type*s of EIs are influenced by different determinants (Kedou,2011; Horbach et al,2012).

6)*Complementarities* among environmental and non-environmental innovation activities exist.

6)*The limited financial resources*, the inability to relate external stakeholders, the lack of regulatory neutrality or actions that are more in favour of large corporations with respect to SMEs(e.g. technology advisory, awareness actions and training programs) imply a lower capability to realize radical innovations (Del Brío and Junquera,2003).

7)The *absorbitive capacity,*that is the notion that the ability to exploit external knowledge, kgis crucial to a firm's innovative capabilities. Cohen et al.(2000) who first devised this concept argued that the ability to evaluate and use outside knowledge is largely a function of the level of prior related knowledge.

More recently, Jove-Llovis (2018) investigated the determinants of eco- innovation strategies in Spanish manufacturing firms. The empirical results confirm that public regulations and R&D efforts encourage firms to place eco- innovation activities among their strategic priorities, although subsidies are not found to be a distinctive driver.

Maruf (2018) analyses ecoinnovations in a sample of Nigerian firms and finds that firms which consistently realized eco-innovations in the past are also more likely to be serial eco-innovators. Rogge and Schleich(2018) explore to what extent the design of the German Renewable Energy Sources Act correlates with innovation in renewable power generation technologies. They find instrument design features are related to eco-innovations. Caianello et al.(2020) show that environmental policy and demand-side factors are both significant in driving the adoption of innovations that promote recycling, reduce waste and decrease the use of materials. Aiello et al. (2019) use data from the Orbis data set provided by the Bureau van Dijk on patents of Italian manufacturing firms. The authors show that family firms are less likely than non-family firms to implement innovations in green technologies, but this strongly depends also on the role played by the stock of knowledge and the environmental management system certification.

In this paper we aim to give an additional contribution to this strand of literature on Eco-innovations trough an explanatory analysis based on case studies to highlight the main drivers and the role of an intermediary to enhance the adoption of EIs in disadvantaged areas likes the South of Italy.

We follow an approach similar to Wagner et al.(2011) who derive results from the analysis of some case studies and find that the realization of eco-innovations is often an activity originating at the micro-level which however requires simultaneous integration of environmental aspects with the overall corporate strategy. Furthermore,

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[10] This represents a formal change in the organization of a firm that is defined as "a collection of internal efforts at formally articulating environmental goals, making choices that integrate the environment into production decisions, identifying opportunities for pollution (waste) reduction and implementing plans to make continuous improvements in production methods and environmental performance" (Khanna & Anton, 2002, p. 541).

market demand is identified as a crucial driver and regulation as a complementary institutional factor for the diffusion of eco-innovations.

For the purpose of our work we use an explanatory analysis based on some case studies to derive results about EIs drivers in Calabria whose innovative process has been successful managed also with the help of a provider. We think that in a very difficult macroeconomic environment, like the Italian Region Calabria, the innovative companies face many difficulties when they decide to realize or adopt an innovation and the work of specialized intermediaries may be very useful to overcome such difficulties.

In order to gain greater insights into eco-innovative firms, which benefited from the cooperation with Entopan in the achievement of more sustainable business practices, we conducted an exploratory study based on a Questionnaire (see the Appendix), interviews and informations on the web to detect the following issues: 1)The way companies are funded are relevant to finance EIs. 2) The factors driving or barriers perceived as obstacles to realize ecoinnovations.

3. Description of the case-studies.

We have analysed three companies by taking into account of real innovations with a sustainable environmental impact, introduced by the subjects both in the organization and in the production processes. The Companies represent structured realities with a socially responsible vocation, aimed to give a contribution to the great contemporary questions about the environmental sustainability. Web also discuss the case of a very innovative company that unfortunately had to stop its activity.

The companies (listed on Table 1) are all virtuous cases of environmental sustainability in Calabria. Our case studies include: 1) a company that produces furnitures mainly for schools by using material with low environmental impact, whose quality, environmental and safety management systems are certified according to the international standards ISO 9001, 14001, FSC and 18001, and 2) company working in the Agriculture Sector where the circular economy system built in the company is one of the largest in Southern Italy. All processing waste is reused to produce biogase e)We also discuss the case of a very successfull company which gas been leader in the circular economy for long time which has currently stopped its activity.

The two first companies has been founded before the year 2000 so they can relate on high experiences, a consolidate market position also abroad (the exports in the company that produces furnitures count from 40-50% of its turnover), strong reputation and great capital accumulation. These companies could represent a good opportunity for the development of the full Region because they create positive externalities and make products from Calabria well known abroad. The companies may rely on cumulated internal funds from their longtime activity and can use these now to invest in eco-innovations but in general getting public funds remains one of the most important need for almost all the companies.

But the real greatest challenge for Calabria is to hold on such excellence in the regional territory instead of letting them being absorbed or transfer their location outside of Calabria, asv the case of some young start up born in Calabria and now located outside, that show there is room for successful younger companies to set up

and to realize technological EIs in straight sense,mainly thank to the role of partnerships with Institutions and with Universities.

Table 1. The Companies and their main environmental sustainable activities.

Fattoria della Piana(1936) Sector:Agriculture/Agritourism No.Employees: 1-200 The Farm is the most important example in Calabria when it comes to Circular Economy. The farm is a cooperative owned by donors and breeders. It has about 70 between employees and collaborators. Everything is digitally traced. The company is recently turning into Industry 4.0. It is now the leader in Calabria in the production and distribution of fresh produced in the 409 regional municipalities. The circular economy system built in the company is one of the largest in Southern Italy. All processing waste is reused to produce biogas. Energy is also fed into the GSE network. http://fattoriadellapiana.it	Sirianni Arredamento(1909) Sector:Furnitures No.Employees: 1-50 This is among the leading companies in the production of furniture for schools. Through a complete production cycle of wood transformation, steel processing, painting and packaging, the company today designs and manufactures over 1,000 items and exports to over 35 countries worldwidee The quality, environmental and safety management systems are certified according to the international standards ISO 9001, 14001, FSC and 18001. It has obtained the prestigious certification of the Social Responsibility Management System according to the SA 8000 standard and the recognition by Rina of the BEST FOUR certificate.The company has long since activated the compliance of most of the items produced with the provisions of the GPP (green public procurement) and the Italian Ministerial Decree on Minimum Environmental Criteria. http://www.sirianni.it

These companies are cases of successful experiences still working in Calabria, but we must point out that nowdays, after the economic crisis which impacted even more the most disadvantaged areas like Calabria, public aids are necessary to enhance eco-innovative projects. Very worth to mention on this point of view it is the experience of a leading company in circular economy such as Ecoplan showing that during an economic crisis this support should be going on even for already well established eco-innovative firms, as they can't rely on the support from the banking system.

Born in 1994, thank to the public funds for 'young enterprises' to the development of the South of Italy, starting to operate since the year 2000s, the company realized, trough a partnerships with the three Universities in Calabria, a very innovative project based on the use of residuals from olives to build materials for eco-sustainable building and furnitures. These materials are also highly recyclable. Despite being very successful and pluri-awarded as a experience of excellence in the circular economy in Calabria (its story has been described in the book of E. Realacci, Green Italy,2012), called for a partnership with multinational companies' like Procter and Gamble, the company had to stop its activity because of the lackness of financial credit. Due to the economic crisis and a not supportive banking system, the company has become unable to pursuit its still promising and pionieristic activity depriving the Region of one of its excellence in the green

sector but also leaving a disincentiving example for other activities who want to imitate its behavior and invest in EIs. Probably an energetic action of support and financing, in terms not only of credit concessions or delays but also by creating a privileged channel of loans and tax reduction, could have allowed the survival of ingenious realities like this during an economic crisis that mainly affect enterprises located in the most disadvantaged like Calabria.

Moreover, the lack of state intervention and a supportive banking system for higher-risk activities, such as those investing in environmental or technological innovations, has not been counterbalanced by a system of eco-sustainable companies that make a network. This meeant creating a supply chain that allows green experiences of different kinds to support each other, so that those who want to convert their production processes and products into new ones with high environmental sustainability can on turn become partners and clients of the realities that already invested in radical innovations. This gives an important role to the providers like Entopan to intermediate among green companies for the aggregation of these experiences to create a real green industrial district in Calabria.

4. Perceived Determinants and Barriers for Eco-Innovations and the role of intermediaries.

In this Section we summarize our findings about what factors represent the main drivers and barriers for EIs in Calabria. To investigate the reasons that prompted companies to adopt initiatives and tools in favor of the environment, the firms were asked to express a score on the influence exercised by each driver indicated in a setlist. The various reasons listed, following the main drivers indicated in the literature, concerned the possibility of reducing the company's environmental risks; the need to comply with recent environmental regulations; the desire to publicely demonstrate compliance with environmental and ethical principles; the reduction in costs due to a more efficient use of resources.

Moreover, the adoption of tools that allow companies to manage environmentally efficiently often represents an opportunity for the company. The opportunity concerns the ability to offer new goods and services that are more respectful of the environment, and to differentiate themselves on the market from their competitors. Therefore, companies may acquire a competitive advantage potentially deriving from the offer of more environmentally friendly products and services.

On the other side, we investigated what the firms consider the main obstacles that make difficult to introduce or going on with the adoption and realization of EIs. The main obstacles investigated are the lackness of internal, external or public funds, the absence of networks relationships, demand's uncertainty, high costs to innovate and difficulties in founding raw materials or qualified employees. Finally, we detected the role of markets' competitivity, inefficient burocracy and insufficient infrastructures.

Companies were asked to rate from 1 to 5 the relevance of each motivation and each barrier. Results hsve been summarized by using radar charts (Figure 1-2).

In the Figure 1 we focused our attention oe these 9 selected dimensions:

A. Reduce the environmental impact(Environment)

B. Environmental legislation at national and community level(Legislation)

C. Reduce production costs(Costs reduction)

D. Obtain a competitive advantage (Comp. Adv.)

E Increase the value of the company(Value)

F. access to public funds (Funds)

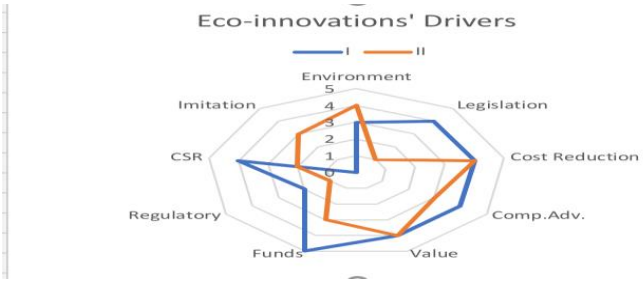
G.Access regulatory simplification measures (Regulatory)

H. Leadership in corporate social responsibility (CSR)

I. Imitate the adoption of similar practices by companies in the same sector (Imitation).

Fig. 1 shows that the companies consider the most common pushing factors the for the realization of EIs, alongside to the interesting firvthe environment, also the opportunity to gain a competitive advantage in the green markets, to reduce production costs and increase the value of the company. In fact, the vertices of the figure for both the companies,regardeless their sector of activity, tend to the higher value for these variables..

Fig1. Radar Charts on Drivers.



For what concerns the barriers, we divided the answers into three groups. One on financial resources, one on market characteristics and the other on production costs including bureaucratic inefficiency and the lack of infrastructure

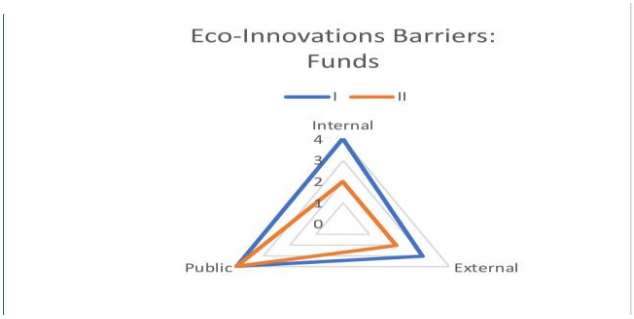
In detail, the three groups are made up as follows:

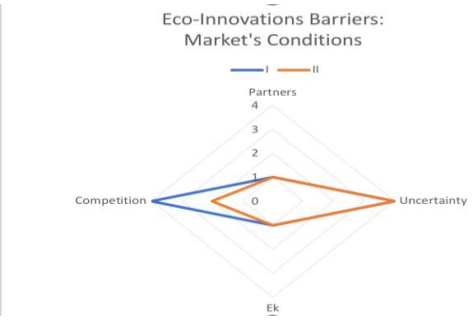
I-Funds	II-Market Conditions	III-Costs
Lack of internal financial resources for innovation(Internal)	Lack of partners to collaborate with(Partners)	Too high innovation costs(General costs)
Lack of external financing (credit or private equity(External)	Difficulty in accessing external knowledge(EK)	Lack of qualified internal staff(Qualified staff)
Difficulty in obtaining public funding(Public)	Market demand uncertain(Uncertainty)	Lack of infrastructures(Infrastructures)
	Market characterized by strong competition(Competition)	Excessive or inefficiente beaurocracy (Beaurocracy)

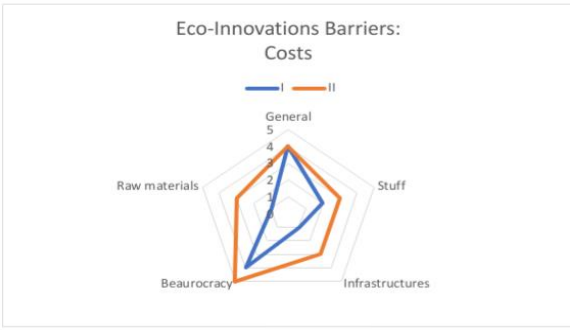
	Difficulty of supply or excessive cost of raw materials(Raw materials)

Fig.2 shows that among the kinds of financing the firms agree that the most problematic is the lackness of public funds. Instead the characteristics of the market are differently perceived as the most disadvantageous: for one company the uncertainty prevails while competitivity is more relevant for the other one. Finally, general costs and beaurocracy are considered the most impeding factors. It's interesting to notice that for none of the companies infrastructures are considered like a serious obstacles .

Fig2. Radar Charts on barriers







5. The role of the provider.

The collaboration between SMEs and innovations' intermediaries can lead to an enhancement of the SME's innovation capacity, and more specifically it results in building up absorptive capacity for eco-innovations. In fact, the innovation intermediary can support recognizing and understanding new external knowledge through knowledge processing; gathering and combination, as well as accreditation and standards. The intermediary can facilitate assessment and evaluation of projects regulation and arbitration; testing, validating and training; gatekeeping and brokering. Finally, the process of enabling the firm to continue to create new knowledge can be facilitated at the level of commercialization and intellectual property rights.

A provider company may play a very important role both for the drivers and barriers that in the precious section we have found are the most relevant for eco-innovative firms in Calabria. In fact may enforce incentives, by helping the a company to realize its project and acquire more visibility on the market, and to

reduce barriers, by intermediating to search funds and helping to solve beauracrating issues. In particular, the innovations' intermediary activity of the provider we have analyzed Entopan consists in all of these above and mainly in devising ad hoc plans for companies and startups, supporting them in the acceleration and integration processes with a view to open innovation, digital transformation, industry 4.0 and circular economy.

Entopan is a complex innovation intermediary that pays particular attention to the needs of their customers. Trough a multidisciplinary approach, they guides companies and business networks step by step from the incubation phase to the realization of projects.

The main support to innovative companies concerns these four areas: 1)*Advisory*-The company carries out Integrated Strategic Consulting activities. 2)*Finance*-The company identifies and animate investors, donors and lenders, building networks between them and the innovative firms to develop a common objective. 3)*ICT*-A team of expert study and improve the relationships between on-line and off-line logics,to simplifying daily actions and improving the quality of life, through automation and digitalization of processes. 4)*Communication&Multimedia*-To facilitate brand positioning with a strong and recognizable identity the company build communication projects by creating contemporary shapes and styles .

Entopan has created a network of Calabrian and non-Calabrian companies, not only to help them find lenders or funds, calls or programs useful for their growth, but also to make the companies talk to each other and create a network in which realities can support each other and create useful partnerships. In addition, Entopan cooperate with many partners (financial, research & development, strategic, etc.) that at the right time can put in contact with realities. So Entopan is also an intermediary and offer internal support services to the companies themselves, also advisoring services, acceleration and incubation paths. As for bureaucracy, they also have a legal administrative office that also deals with such issues.

To sum up, Entopan covers every business area: Advisoring, Marketing & Communication, Graphics, IT and Legal and where it can'e be enough with the internal staff, it have partners who cover the service. Finally, the provider keeps a constant and continuous close partnership with the three Calabrian universities are always present in its programs and calls. For example, with the unical a Hub was born, it's called Harmonic Innovation Hub (https://oltreinnovation.it).

6. Conclusions

In this era where there is an increasing attention to production systems and products with low environmental impact, Calabria shows a dynamic and pionieristic production. An analysis based on the examination of some case studies reveals that there are surprising green realities in an efficient and original way, not only in terms of goods and services offered, especially in the agritourism sector, but also in the introduction of innovative production processes aimed at recycling and energy saving. Our cases-sudy analysis show that innovative realities of this type can arise and grow up even in difficult economic contexts such as that of the Region Calabria, with a low GDP growth rate and high unemployment rate. However, the difficulties to overcome are not a few. In fact, from the evidence collected, companies identify the main barriers in the difficulty from

financing, mainly missing public funds, getting credit from the bank system and the complicated or inefficient beaurocracy.

We therefore need policies that seriously address these issues also to prevent that brave and advanced ideas realized in loco, mainly due the opportunity to gain a competitive advantage in the green markets, are then transferred in other locations outside of the Region where markets and bureaucratic conditions are more favourable.

A good help in this sense may come from providers. The experience gathered on the companies analyzed, which all have in common the fact of using the help of an intermediary, confirms that where infrastructures and bureaucracy are inefficient, making use of the skills of staff who help in all phases of innovation from selecting projects to procuring the financiers and the identification of the main opportunities and outlet markets, has a not insignificant impact on the progresses of these companies in the long term.

In this sense, it is desirable not only that governments set up green policies that directly help businesses but also policies that act on territorial shortcomings, as well as support for the development of intermediation activities that insert them precisely to fill where the territorial information gaps are more pressing.

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The Appendix

QUESTIONS ABOUT DRIVERS AND BARRIERS

Methodological Note: *In this Survey we use the term Eco-innovation in a broad sense, to define an innovation with environmental benefits that can be a new or significantly improved product (good or service), a process, an organizational method or a marketing method that creates environmental benefits over alternatives.*

• *Environmental benefits can be the primary goal of innovation or a by-product of other goals.*

• *The environmental benefits of an innovation can occur during the production of a good or service, or during its consumption or use by the end user of a product. The end user can be an individual, another company, the government, etc.*

Section 1. General Informations

1.1. Location_____

1.2. Main Activity(code ATECO)_____(_____)

1.3. N.Employees_____

1.4. Year of birth_____

I. From 0 to 5 set the importance of each of the following options that push your Enterprise to introduce Eco-Innovations:

Reduce the environmental risks to which the company is subject and improve the prevention and management of accidents and environmental emergencies

0 1 2 3 4 5

Adapt the organization and the corporate structure to the requests of the most recent environmental legislation at national and community level

0 1 2 3 4 5

Being able to reduce production costs by saving natural resources (such as energy, water etc.) or by reducing the tariffs paid due to pollution (e.g. costs for waste disposal) saving resources

0 1 2 3 4 5

Promote your products and services with a lower environmental impact on the market in order to obtain a competitive advantage and possibly increase its turnover and customer portfolio

0 1 2 3 4 5

Increase the value of the company (also possibly on the stock exchange) thanks to the guarantees of correct management and control of the environmental aspects and the reputation that derives from it

0 1 2 3 4 5

Demonstrate a leadership position in the social responsibility area of your industry

0 1 2 3 4 5

Seize opportunities to access funding funds

0 1 2 3 4 5

Access regulatory simplification measures (e.g. tax benefits, reduced controls, etc.)

0 1 2 3 4 5

Imitate the adoption of similar practices by companies in the same sector

0 1 2 3 4 5

II. From 1 to 5, how much have each of the following factors burdened (or do you think they can burden if you have not already implemented Eco-Innovations but intend to implement them by the end of next year) on the start or implementation of eco-innovation activities?

A. Lack of internal financial resources for innovation

0 1 2 3 4 5

B. Lack of external financing (credit or private equity)

0 1 2 3 4 5

C. Difficulty in obtaining public funding

0 1 2 3 4 5

D. Too high innovation costs

0 1 2 3 4 5

E. Lack of qualified internal staff

0 1 2 3 4 5

F. Lack of partners to collaborate with

0 1 2 3 4 5

G. Difficulty in accessing external knowledge

0 1 2 3 4 5

H. Market demand uncertain with respect to the proposed innovations

0 1 2 3 4 5

I. Market characterized by strong competition

0 1 2 3 4 5

L Lack of infrastructure (specify which ones, internet, roads, etc.**)**

0 1 2 3 4 5

M. Other priorities for the company

0 1 2 3 4 5

N. Excessive or inefficient bureaucracy

0 1 2 3 4 5

O. Difficulty of supply or excessive cost of raw materials (natural resources) necessary for the realization of Eco-Innovation

0 1 2 3 4 5