

## SMART SPECIALIZATION AS AN ESSENTIAL STRATEGY FOR ENTREPRENEURIAL DEVELOPMENT IN A CONTEXT OF AN ECONOMIC DOWNTURN

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**Abstract:** A key component of efforts to support the economic environment in order to identify solutions to counteract the effects of a potential economic recession is the intelligent specialization, an innovative strategy for economic transformation at regional and local level. The prospect of facing an economic downturn highlights a clear need to support entrepreneurial initiatives, namely a bold approach to increase the costs associated with investments in innovation and research as these are the basic elements that can stimulate a return to growth. In the process of entrepreneurial discovery start-up companies are obviously in the best position to identify new opportunities, respectively in developing solutions, by combining strengths, taking risks, looking for new ideas along the value chain, needed to identify and implement innovative solutions and thus to generate jobs and growth. This paper aims to study the role of smart specialization in identifying solutions that can be used to support the entrepreneurial initiative as a central role for the economic recovery. The present paper is of current interest as the chances of a worldwide economic crisis to occur are considerable and a high level of entrepreneurial development through intelligent specialization can lead to the reduction of its effects.

**Keywords:** Entrepreneurship, smart specialization, innovation, creativity, economy.

**JEL Classification:** G32, O10.

### 1. Introduction

In a competitive environment the key to face the market conditions is to focus on finding a differentiated competitive position. Other said, to identify those niches of activity where not only situation is better, but is better compared to competitors. As a result of the increasing technological changes, these findings must be developed in time in a continuous seek for obtaining a competitive advantage.

Generating new solutions to face market needs requires innovation, which may be obtained by combining experiences, ideas or best practices in the field. At the same time, in order to have a continuous process of economic renewal, is required to systematize the innovating approach at a national or regional level for a certain type of activity, while, at the core of this process should be found the entrepreneurial initiative that has the power to dynamize the economic growth by applying a specialized diversification model.

This mode, popularized as Smart Specialization has known an increasing relevance in the European Regional Policy, to the point of becoming an ex-ante condition for the Structural Funds. Though Smart Specialization may offer many opportunities, the fact that is not very well known throughout entrepreneurs, some risks may have to be considered in applying it.

Thus, one deficiency of the model is that, despite the lengthy theoretical literature, there are some shortcoming in terms of guidelines to carry out a process of this kind. Moreover, when referring to entrepreneurial discovery concept, by applying Smart Specialization model, a background with solid examples of the approach is missing.

However, for income generation and job creation in a framework of sustainable competitiveness in the medium term, this type of discovery is a key element for the realization of specialized diversification processes.

The objective of the paper is to clarify the concept of entrepreneurial discovery and establish its placement in the context of economic development. At the same time, another goal is to obtain a knowledge regarding the role of entrepreneurial discovery in Smart Specialization strategies that enables decision makers to identify and support initiatives in the processes of this nature that can support sustainable economic growth.

A research of related literature was pursued in order to facilitate the theoretical and methodological elements that address their application in the Romanian context, with an assessment of the implementation possibilities and the necessary tools.

We will analyze from a theoretical point of view the phenomenon of entrepreneurial discovery by establishing some defining and characteristic elements, discussing at the same time the reflection on the implications of entrepreneurial discovery when it comes to economic growth and business diversification in case of economic instability, taking as an example the Romanian agricultural sector.

## **2. Smart specialization**

Smart Specialization is a part of Europe 2020 Strategy and targets to be an in-depth innovative strategy that will allow Europe to better provide smart and applied solution for economic development. Smart specialization is a decision developed and implemented in a dynamic process of entrepreneurial discovery that involves key stakeholders in a form of collaborative leadership (European Commission, 2020).

According to Europe programmatic papers, Smart Specialization represents a strategic approach to economic development through targeted support to research and innovation, which implies concentrating resources on key priorities in a certain territory based on the region's economic potential rather than spreading efforts and investments too thinly. Smart Specialization involves a process of developing a vision, identifying competitive advantages through an entrepreneurial process of discovery, setting strategic priorities and making use of smart policies to maximize the knowledge-based development potential of any region, strong or weak, high-tech or low-tech (European Commission, 2020).

The concept proposed by European Union is not a new one, being in fact a reconceptualization of the existing methodology for Structural Funds programming, based on a more than 15 years' experience in providing novelty process applicable in regions characterized by defining common elements.

The concept is already put in place in, as stated by the European Commission in the National/ Regional Innovation Strategies for Smart Specialization (European Commission, 2020). Thus, Smart Specialization is about identifying the unique characteristics of each country and region, highlighting each region's competitive advantages, and rallying regional stakeholders and resources around an excellence-driven vision of their future. It also means strengthening regional innovation systems, maximizing knowledge flows and spreading the benefits of innovation throughout the entire regional economy.

It is about reconciling two logics of political action:

- setting vertical priorities regarding fields, technologies and activities, rather than generic priorities such as increasing cooperation between research and industry or improving human capital;
- involving dynamism, competitive entries and entrepreneurial knowledge combining science, technology, engineering with knowledge of market developments, business needs and emerging opportunities.

Through Smart Specialization, European Commission meant to focus its attention on providing methodologies, expertise and advice guidance to national and regional policy makers, as well as to contribute to academic debates around the concept with application in

fields related to SMEs, in general, ICT and digital growth, advanced manufacturing and rural innovation.

Whatsoever, the Smart Specialization concept recently gained more significance as it represented a ground for European regional policy in the framework of the “Europe 2020” strategy and its “Innovation Union” initiative (European Commission, 2020). The concept was actually promoted after a strategic reflection carried out by a mission of a group study, between 2006 and 2009, of which prior scope was to study the EU gap compared to US in terms of R&D expenses associated to investments in economic development.

In fact, the study underlined that, beside the labor market differences, the economic structure in Europe represents a shortcoming when it comes to translating R&D to increase productivity and to properly adapt to SMEs characteristics (Pontikakis and Van Bavel, 2009).

Thus, as an answer to the issues raised, the study offers the concept of Smart Specialization, starting from the idea that, in order to obtain a competitive advantage, at regional or national level some sound technological or knowledge fields must be identified through entrepreneurial discovery process (EDP).

Given that, a Smart Specialization strategy should focus on seeking specialized diversification by exploiting the territorial variety and, in eventuality that these possibilities are identified they should be implemented through the process of entrepreneurial discovery.

### **3. Entrepreneurial discovery**

Largely inspired by Dominique Foray's work, this principle is based on two concepts. The first, known as “Entrepreneurial Discovery”, is intended to stimulate, release and structure a specialization strategy based on a limited number of themes. The second relates to the choices to be made in terms of “grain size” during the selection process of the themes on which to focus the funds. It is not a matter of choosing a full-fledged sector or a particular project, even if it is a large one, but of being at an intermediate level, that of the thematic allowing outbreak of new activities.

Despite all the achievements it could have taken advantage of in terms of in-depth knowledge of business demands, the regional partnership has also taken note of the importance of two factors, specific to the Smart Specialization strategy, capable of questioning some of the usual methods of applying support mechanisms to the regional innovation ecosystem (fig. 1):

- The exclusive nature of the areas of specialization, leading to a concentration of investments, that call for the creation of synergies where regional, national and European instruments and supports must meet and complement each other;
- The growing importance of stakeholders, especially those representing the private sector, in the governance of the system.



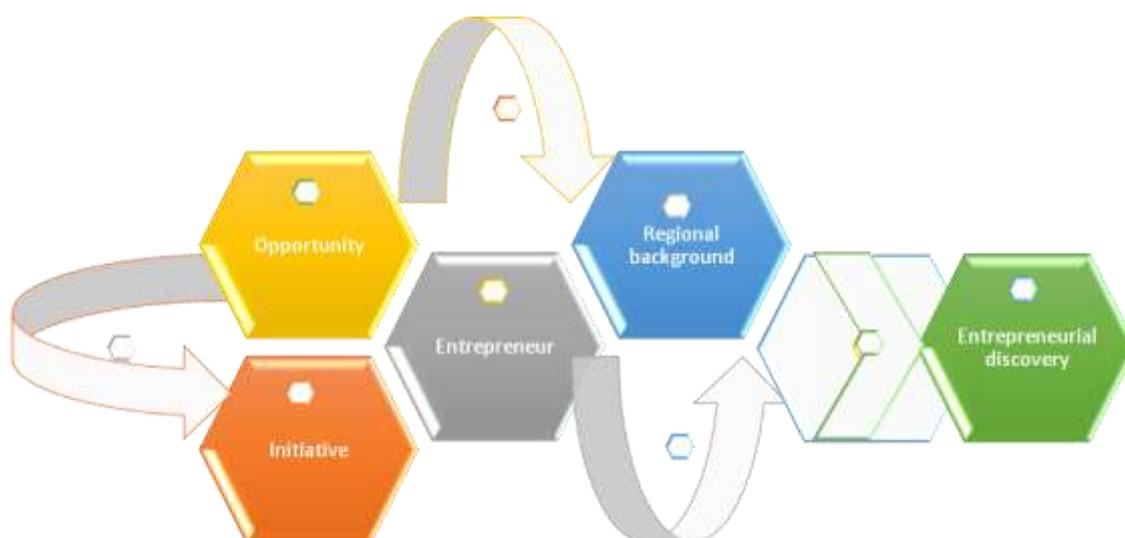
**Figure no. 1. The cyclical of the entrepreneurial discovery process**

*Source: elaborated by the authors*

Entrepreneurial discovery requires:

- to involve in the selection of the priorities of entrepreneurs with a vision on the areas in which it is important to invest to overcome future economic changes (agricultural challenges for example such as the transition to achieving smart growth by supporting forms of cooperation between research institutions and farmers and other actors in the rural economy);
- to base these choices on the basis of the most objective criteria and data possible;
- to change the priorities over time so the entrepreneurial discovery adapts to a dynamic environment.

Discovery refers to the process of forming an idea to achieve a business concept, while initiative refers to the implementation of the concept in the market (Davidsson, 2008). Even if Entrepreneurial Discovery is linked to a micro vision, the approach of the intelligent specialization model seeks to overcome it in order to reach a macro level. Other said, it is not a question of concentrating on individual processes or initiatives, but on a wide range of them which makes it possible to obtain systematic results in terms of regional development (fig. 2).



**Figure no. 2. EDP. From initiative to discovery**

*Source: elaborated by the authors*

A process to stimulate and identify entrepreneurial initiatives at global innovation system can be built around a collaboration platform for innovation in the world, on a regional scale, which should allow:

- better circulation and improved access to information useful for innovation with a maximum of "regional entrepreneurs", in order to continuously support and stimulate their motivation and capacities to undertake or develop their activities;
- more precise identification by continuous raising of problems or initiatives with high potential that may arise during the activities that will be carried out by "regional entrepreneurs" throughout the territory;
- to broaden the spectrum of actors involved in the process of identifying high-potential initiatives or raising stakes emanating from the realities of the socio-productive territory at the level of regional radars, without resorting to the methods traditionally used so far.

#### **4. Economic Business Cycle**

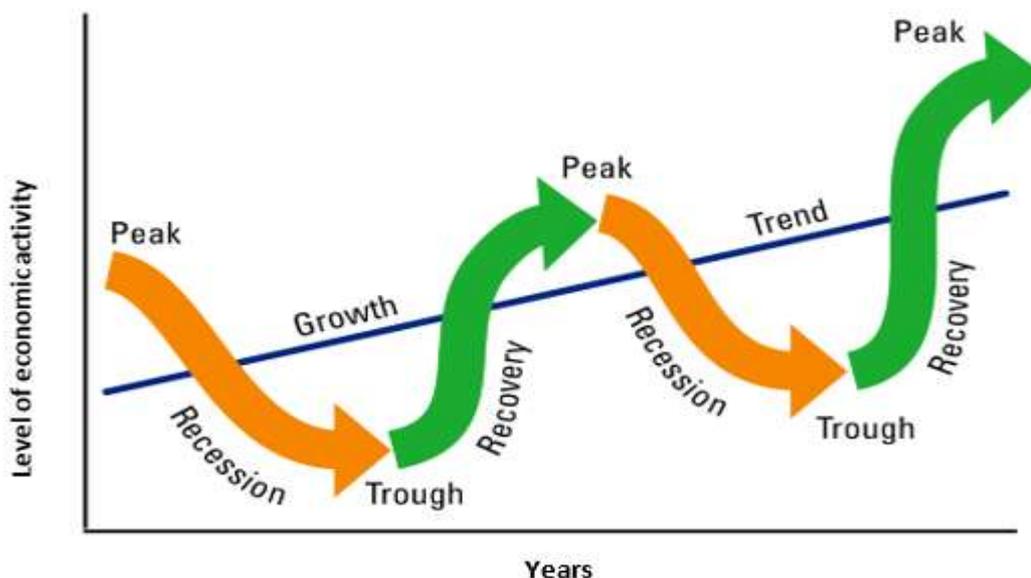
Given the long period of growth experienced by Western economies until the mid-1970s, the concept of economic cycle has become relevant in recent years. The long period of expansion experienced by the American economy since 1983 raises questions about the possibility of a recession, in other words about whether or not a cyclical crisis is likely.

In this perspective, economists are again interested in the problem of "business cycles", the starting point of the analysis in terms of "economic cycles" being relatively simple: the evolution of economic activity is not regular, but is marked by the existence of cyclical fluctuations. more or less periodic.

To use the empirical definition proposed in 1946 by Burns and Wesley, "business cycles" correspond to the fluctuations of general economic activity characterized by a practically synchronous existence of expansion phase for most activities, followed - also synchronously - of a reversal phase, then of the recession phase and, finally, of the recovery phase.

In a simple way, around a trend we can characterize a cycle by the existence of "peaks" - above the trend - and "gutter" - the lowest trend - with a recurrent nature of these

peaks and gutters. Each peak marks the end of the expansion period of a cycle and each through the end of the recession and contraction phase (fig. 3).

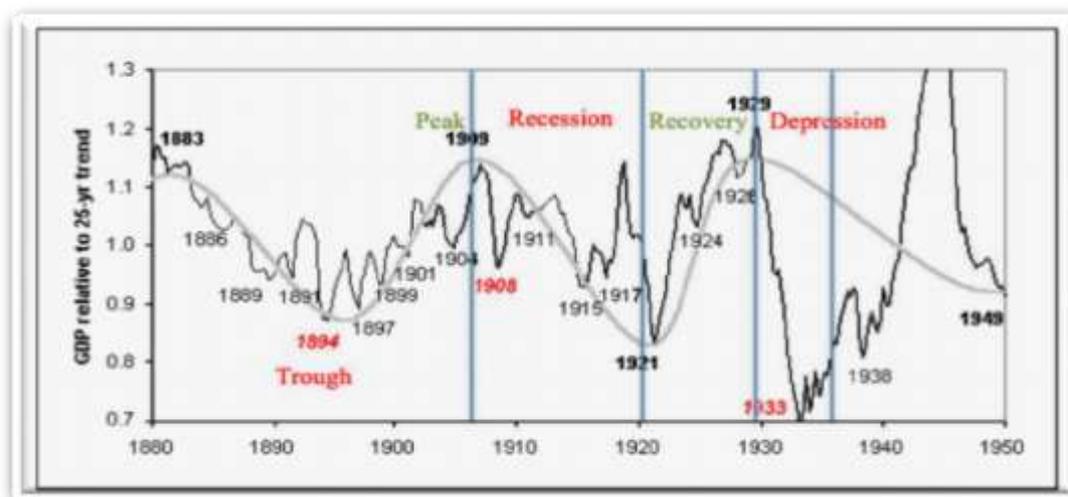


**Figure no. 3. The economic cycle**

Source: elaborated by the authors

A business cycle consists of a peak followed by contraction or recession and a sewerage followed by recovery and expansion, as shown above. Shrinkage or recession is defined as a period of significant decline in total output, income, employment and trade.

A depression is a recession that is major in scale and duration. This is the minimum level that the aggregate economic activity reaches. Recovery is a period of significant growth in total production, income, employment and trade. Boom is a period of extended economic expansion in which total economic activity is high and growing, cycle exemplified below for US economy (fig. 4).



**Figure no. 4: Business Cycles in the US (1880-1950)**

Source: NBER

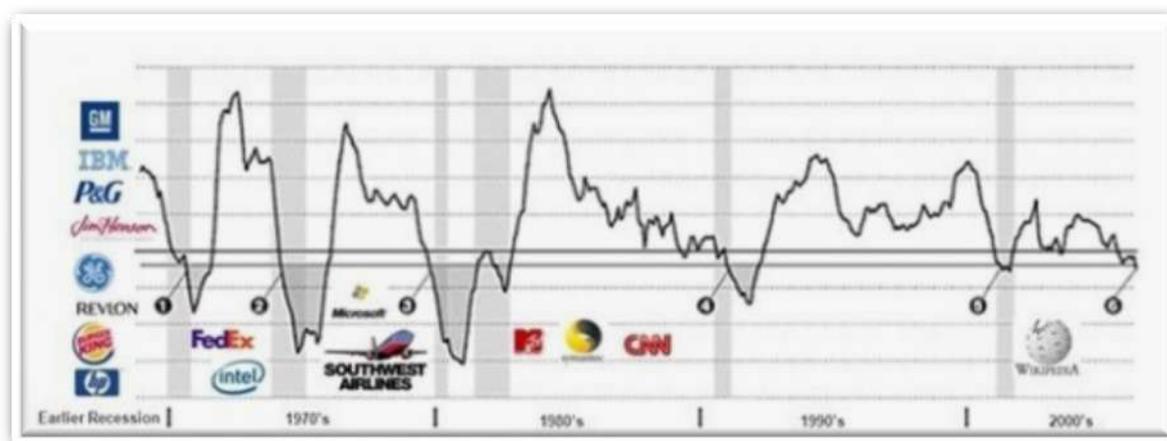
Recessions are characterized by negative real GDP growth and increase in unemployment that can be induced by various factors. Historically, recessions have been induced by factors like the bursting of housing bubble (2008-2009), the bursting of dot-

com bubble (2001), the oil price shock (1973), etc. Recession is not a rare economic phenomenon. Excluding the great recession, the US has had seven recessions since 1960 (above represented in fig. 4) resulting in a cumulative loss of 3.16% in output, while only the recent recession had a huge impact in the US, resulting in negative 2.6% GDP growth rate.

So, how can an economic recession be prevented or limited as proportion. A response may come from innovation, as an important part of entrepreneurship process, base for new businesses emerge. Drucker (1985) described creative imitation as another aspect of entrepreneurship, which probably describes a lot of entrepreneurs coming from places like developing and underdeveloped countries.

Filion (2011) proposes that any comprehensive definition of entrepreneurship should encompass six main components: 1) innovation, 2) opportunity recognition, 3) risk management, 4) action, 5) use of resources and 6) added value. He goes on to provide some sample definitions, one of which defines entrepreneur as: “An intuitive, resourceful, tenacious actor who is able to recognize and develop risky opportunities with potential for innovation, and who adds value to what already exists by setting up activities that involve a scarce use of resources.”

During the economic crises period, a lot of businesses have emerged in developed countries, like US, period in which well-known companies were founded: General Electric (1890), IBM (1896), General Motors (1908), Disney (1923), Burger King (1953) and Microsoft (1975) (fig. 5).



**Figure no. 5. Big companies founded during recessions**

Source: NBER

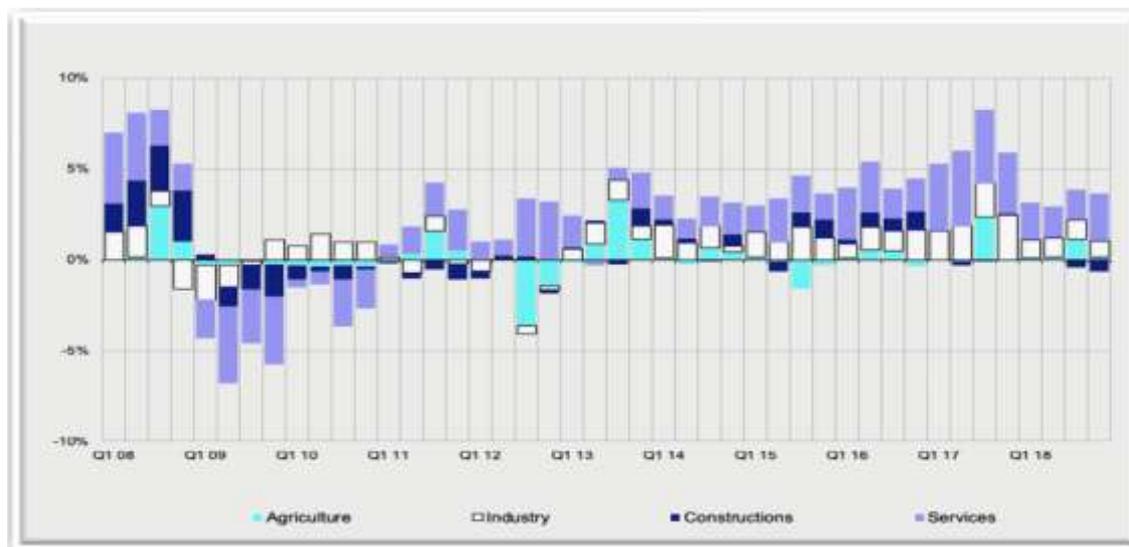
Different aspects of recession act in opposing directions with regards to entrepreneurship leaving the net effect of those forces decide the fate of entrepreneurship. As Farlie (2011) argues, “On the one hand, recessions decrease potential business income and wealth, but on the other hand they restrict opportunities in the wage/ salary sector leaving the net effect on entrepreneurship ambiguous.” There is also the interesting dynamic between the reduced supply of finance and increased supply of labor (through increased unemployment), with these forces acting in opposing directions.

The issue of financial constraints during recession may demotivate entrepreneurs to start a business. On the other hand, the rising unemployment can give rise to necessity entrepreneurs or cheap labors, opportunity that entrepreneurs can exploit, thus increasing the odds of entrepreneurship.

### 5. EDP as a solution for a potential economic downturn

According to Business Review analysis (January 2019) Romania's economy is facing uncertain at the end of a two-decade growth cycle, while it managed a fast-economic growth and closing the gap with Western Europe.

Since 2000, the first year of the current cycle, Romania has experienced 17 years of GDP growth and only two years of economic decline (2009-2010), the real convergence being among the most impressive on the European continent. Thus, in 2000, Romania's GDP was EUR 40 billion (less than EUR 2,000 per capita), while in 2017 the values hit EUR 188 billion, or EUR 9,600 per capita, and exceeded EUR 200 billion or EUR 10,000 per capita in 2019 (fig. 6).



**Figure no. 6: Romania drivers of GDP y/y growth**

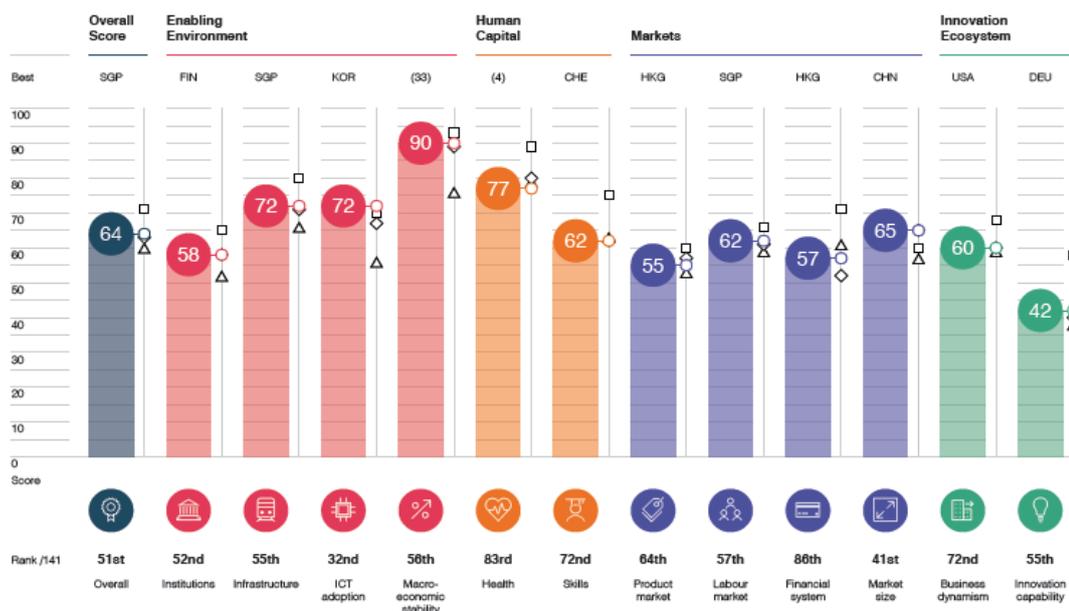
Source: INSSE

In terms of purchasing parity standards, used to better compare nations taking into account price differences, Romania entered the EU with 39% of the EU average (in 2006) while the indicator reached 63% in 2017, according to Eurostat, ranking above Bulgaria (49%) and Croatia (61%), and approaches Latvia and Greece (67% each), Hungary (68%) and Poland (70%).

Experts point out that after a decade of EU membership, the Romanian economy has grown rapidly despite the financial crisis and has even managed to become the largest in the region. Whatsoever, in the very same period impressive number Romanians has left the country in search of a better life in western countries.

According to Global Competitiveness Index 4.0 (2019), a report that measures national competitiveness, defined as the set of institutions, policies and factors that determine the level of productivity, covering 141 economies, Romania ranks 51st place in top (fig. 7).

## Romania



**Figure no. 7. Global Competitiveness**

Source: World Economic Forum, 2019.

In recent years, the government has adopted a growth strategy driven by wages, stimulating household consumption and GDP growth rates, but this model has generated larger budget and current account deficits.

For 2020, many economists forecast a recession of the economy with these levels depending on the health of the European and global economy, a possible world crisis automatically affecting Romania. Thus, it must be underlined that the evolution of the Romanian economy is linked to the evolution of European economies, to what is happening in the global space, given the fact that Romania has an open economy.

The performance of economic entities founded during recession has been researched (Boeker, 1989; Gerosky, Mata & Portugal 2009), the studies suggesting that the founding conditions leave long lasting impressions on economic entities and hence determine their fate in terms of survival and performance to a large extent. The strategic choices that firms can make in course of their life can be limited by the conditions at the time of their market entry.

With Romania and Europe both facing global competition and potential economic slowdowns, there is a need to focus resources on job creation and sustainable growth. For rural areas, the necessary competitive advantage can be obtained by finding niche markets or by integrating new technologies into existing industry.

Three issues that are especially pronounced when working with Smart Specialization in a rural area are:

- First, find the right niche activity that promotes innovation and spinoffs. It is important to identify resources in rural areas from the perspective of current challenges and trends in society. The objective is to diversify the system by generating new options.
- The second challenge relates to finding the resources and conditions necessary to design effective policies. It is important to bring together the sectors and stakeholders concerned at the regional level, in order to jointly explore the

possibility of their contribution to everyone's growth activity by integrating and exploring the broader concept of innovation.

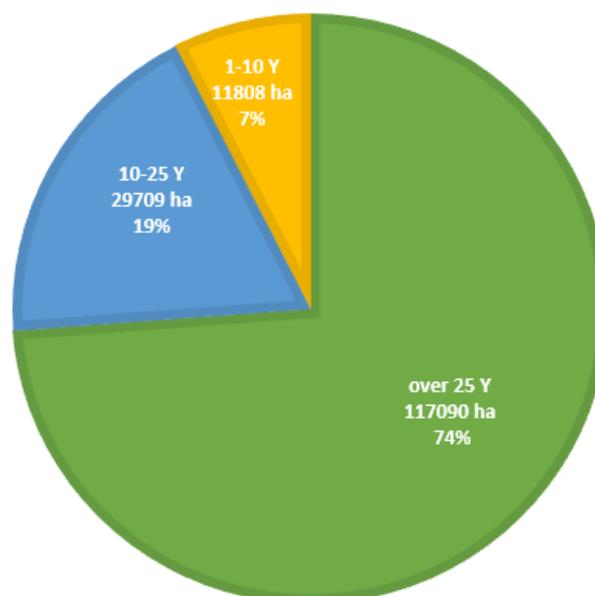
➤ The third major challenge is to effectively maintain the policy and the monitoring system in place. Capacity must be built to meet the challenges and meet the demands of the new generation.

The European Regional Development Fund has supported the development of a decaying agricultural area into a region encouraging development and creativity. Many start-ups have been founded in the area dedicated to young farmers who wish to start a business in rural area, both in agricultural and non-agricultural activities. Young entrepreneurs receive logistical support, as well as services such as consultancy and accounting.

The Smart Specialization strategy highlights the role of incubators and other business support structures in enhancing entrepreneurship and the creation of innovative companies in the agricultural sector, where the region retains a competitive advantage, with implementation of smart precision agriculture.

For example, in the context of the need for sustainable development of the fruit sector in Romania, it is necessary to start from the current realities of the field, by radiographing the determining elements of this segment of activity.

According to 2019 report of Agricultural Payments and Intervention Agency the fruit growing areas in Romania cover an area of 102,000 hectares (for which payments request were submitted), of which more than 84% are located in rural areas. The population of approximately 9 million inhabitants of these regions is experiencing a demographic decline, which is continuously aging (fig. 8).



**Figure no. 8. Areas occupied by fruit plantations by age groups (2013)**

Source: MADR, 2020. *RNDR*. [online] Available at: <<http://madr.ro/docs/dezvoltare-rurala/rndr/buletine-tematice>> [Accessed 3 April 2020].

The territory covered by the thematic fruit sector sub-program covers around 1,300 localities with a total fruit area of about 158,000 hectares, representing approximately 1.2% of the agricultural area used. During the period 1990-2013, the area occupied by fruit

plantations decreased by approximately 50% (from 313.4 thousand hectares in 1990 to 158.6 thousand hectares in 2013).

Most fruit plantations are old, over 25 years old, with low production potential, declining or abandoned. Only 7% of the total area consists of young plantations. Fruit plantations occupy 67,110 hectares and represent 42% of the total area. According to the cropping system, a very high percentage (68%) belongs to conventional plantations, 30% to intensive plantations and only 2% to super-intensive plantations. As for the area of organic fruit farms, it went from 211 hectares in 2006 to 6,083 hectares in 2012. Of this number, around 86% are in conversion and only 14% certified.

Excessive fragmentation of land, particularly in the hilly region (favorable to fruit crops) is a determining factor in the decline of the fruit sector. In 2010, the average area of a fruit farm was 0.38 hectare, well below the minimum area required for a fruit farm viable (about 5.0 ha), according to data from the General Agricultural Census.

The low volume of investments in the fruit sector has several causes, among which we mention: the high costs of setting up new plantations, the long period until the fruiting of trees, the low income of households in rural areas, the low number of jobs available in rural areas, reduced access to financial resources and high costs of credit products.

The weak association and cooperation for the purposes of production, but especially of the joint capitalization of fruit production is another important factor which has negatively influenced the capitalization of production and, implicitly, the incomes of fruit growers.

Supported by excellent agricultural sectors and an efficient food sector, specialized agriculture covers two inseparable areas to meet the challenge of competitiveness by reconciling ecological and economic dimensions, while maintaining intrinsic qualities of products:

- development of new technologies available for compliance with agricultural practices and food processing operations (drones, remote sensing, biosensors);
- control of production procedures (limiting inputs, biological control, energy reduction, recovery of co-products, industrial performance, conservation, clean labeling).

In these circumstances, a precision agriculture offers many opportunities to improve agricultural productivity by optimizing crops and production quality, based on cross-fertilization with aeronautics, robotics and ICT players. It also participates in the development of organic farming and in the search for an optimized use of Agri-Resources to cover the entire chain of agri-food values for eco-efficiency. The latter, reinforced by the expectations of the food industry and "consumers", refers to the development of quality food at a competitive price, by reducing the environmental impact and resource use at each stage of the chain.

The regional potential issue is considerable, as the fruit sector accounts for over 100.000 square km to which can be added the significant workforce in the field, as well as indirect jobs (suppliers, producers, equipment, logistics). The vast fruit segment in Romania stands high in total agricultural production, characterized by a great diversity of production, due mainly to the contrast of agricultural conditions - pedoclimatic conditions between its departments and the sectors of excellence already involved in ambitious projects that fall within the theme.

Thus, given the potential segment of activity, consistent entrepreneurship initiatives may be successful, even in a period of an economic downturn, by organizing the activity around new applicable technologies for crop observation and management (drones, remote sensing, proxy detection) with a very specific field of application and having the necessary critical size.

## 6. Conclusions

Some regions in Romania have a high level of innovation capacity and are among the regions with high prospects in Europe. Other regions are characterized by economic deficiencies that are less inclined to innovate. Therefore, the methods of mastering and translating the concept of Smart Specialization are in a way variable.

It is necessary for each region to clarify and guide its strengths and positioning in terms of innovation and to catalyze a process of entrepreneurial discovery that mobilizes the regional innovative ecosystem around a strategy developed, shared and implemented.

These strategies provide a new strategic framework to maximize the leverage effect of support for innovation in regions, to generate more innovation, to support more innovative products and solutions on the market, to maximize and disseminate their effects in a crucial moment in strengthening the competences of the regions in terms of economic development even in an economic downturn period.

Taking into account and implementing the principle of Entrepreneurial Discovery, it is necessary to strengthen the structuring of regional governance of innovation, identify areas of Smart Specialization and based on the assets and driving forces of the region and integrate the principle of openness.

Defining the strategy is only the first step in the Smart Specialization process and will be continued with action plans and implemented, monitored, evaluated and subject to adjustments, depending on changes in the economic structure and the regional innovation ecosystem in particular. It is necessary for the areas of Smart Specialization to evolve in order to guarantee the achievement of the objectives set by the regions.

Establishing an effective monitoring and evaluation system is one of the important steps in the development of strategies, as this system will monitor both the progress of the territories in terms of the objectives they have set, but also to sustain the territories to change strategy over time.

The success of these strategies will depend in particular on the ability of the regions to mobilize and focus resources on action plans in support of their strategic objectives and activities.

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