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Policies for innovations in the new Rural Development Programs (RDP): the Italian regional experience

The rural development policy for the period 2014-2020 gives an important role to the knowledge system and the innovation diffusion. In summary the main topics are: the same importance of tacit and scientific knowledge for the human capital development and the innovation diffusion, the better results for the innovation transfer when all the innovation chain players are involved (farmers, researchers, advisories etc.), the usefulness of the interactive approach to define farms' problems and to find some innovative solutions. This article attempts to understand if the Europe 2020's high and farsighted objectives had an effective implementation into the planning and rules of the Rural Development Regulation and if in Italy there are some ongoing problems.

1. Introduction

The rural development policy for the period 2014-2020 gives an important role to the knowledge system and the innovation diffusion. It is one of the two financial instruments with which the European Union has created, for the agricultural sector, the objective of Europe 2020 to promote the knowledge and the innovation. The other is the Framework Program Horizon 2020.

In summary the main topics are: the same importance of tacit and scientific knowledge for the human capital development and the innovation diffusion, the better results for the innovation transfer when all the innovation chain players are involved (farmers, researchers, advisories etc.), the usefulness of the interactive approach to define farms' problems and to find some innovative solutions.

This article attempts to understand if the Europe 2020's high and farsighted objectives had an effective implementation into the planning and rules of the Rural Development Regulation and if in Italy there are some ongoing problems.

It is structured in four sections:

- the main novelties of the rural development policy on knowledge and innovation;

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- the set of the Italian problems that this policy allows to take on;
- the importance that the Italian Regions have given to these actions and related funding and the first planning difficulties which arose during the relationships with European Commission Services for the Rural Development Programs approval;
- the critical points of the present European approach and some solution proposals.

2. The main novelties of the rural development policy

In the 2014-2020 rural development planning phase, the innovation diffusion and the knowledge growth are the first priority of the Regulation (EU) n. 1305/2013 and, especially, it is a cross priority because is considered to be a support for the other five priorities and almost all measures of intervention.

This is a new approach compared to the planning period 2007-2013, when the agricultural knowledge system was promoted with some specific actions, often not connected to each other (the measures 111, 114 and 124). In addition, the interventions' subjects were delimited into few topics concerning the cross-compliance and the labor security; the only innovation involved the content of the Measure 124 where the focus was on partnership and cooperation rather than the innovation effects for the farms' productivity and performance.

The Italian Regions, together with the others European Member States, stressed these issues during the last planning period underlining the importance of knowledge and innovation to implement many other actions from the farm investment to the reduction of the environmental impact.

The main novelties are:

- the knowledge transfer and the innovation diffusion concern a wide field of topics: cross-compliance, agricultural practices beneficial for the climate and the environment, farm modernization, competitiveness building, sectorial integration, market orientation, promotion of entrepreneurship, general principles of integrated pest management, occupational safety, climate change mitigation and adaptation, biodiversity, water safeguarding;
- the target is more expanded since it included farms, but also forest holders and SMEs; moreover the subjects involved can be single or associated;
- the whole intervention is composed by complementary and interrelated actions: information and training (art. 14 – Measure 1), advisory services (art. 15 – Measure 2), partnerships for the innovation (art. 35 – Measure 16).

The new European approach is interesting also for the specific features required for training, information and advisory actions; indeed the instruments

that can be used are various from the traditional courses to the activities demonstration, from information actions to the farm and forest exchange schemes and visit; the European Commission Services' documents that supported the Rural Development Programs (RDP) editing specify even the difference between the information and the advisory: the first is a general support, the second is a tailor made support for the farm. In the last years these topics have never had so much interest and such in depth analysis.

The intervention that stimulated the greatest interest from both public institutions and private subjects is the European Innovation Partnership for agricultural productivity and sustainability. It deals with the funding of Operational Groups who are composed by several players of the innovation chain (researchers, advisories, farmers etc.) and the creation of programs to promote the innovation diffusion and the link between research and farms in reference to the topics mentioned above. The European Union and the Member States support the OG with the EIP European network and the National rural network. The aim of these networks is to facilitate the exchange of expertise and good practices and to establish a dialogue between farmers and the research community.

The novelties mentioned above are also a consequence of an important change of the European approach , especially for its theoretical basis and the methodology.

The evidence that knowledge isn't produced only by research and scientists and that the technological innovation is introduced in the enterprises where there are available skills and expertise, is well-known (Nitsch U. 2000, Leeuwis C. 2004, Dosi G. 2006). However, a lower educational level of some farms compared to other farms, and the widespread belief that innovations propagate through a mechanism of imitation (Rogers E. 1962), have complicated for the agricultural sector the adoption of this approach. In this period the European Commission has promoted some interesting studies (In-Sight, Solinsa, Pro-AKIS) and the Standing Committee of Agricultural Research (from DG Research) dedicated a working group to deepen many features of the wide theme of knowledge and innovation.

These research results and the debate with the national stakeholders have changed substantially the European approach and have underlined as "the innovation is a driver of transition and the network is a driver of innovation for transition" (Moschitz *et al.*, 2014). The network is necessary not only inside the Agricultural Knowledge and Innovation System (AKIS) but also between AKIS, the rural and agricultural actors, consumers and the other actors of the society.

Moreover, other qualitative analysis drew attention on the non-sequential structure of the innovation process (Buscaglia, Cerroni, Di Paolo, Vagnozzi

2014). They underlined that the incentive for change and innovation is triggered by the need of solving a problem and it isn't structured in phases following one another but it rather consists of simultaneous choices and events that are both incentive and effective. Therefore, the intervention promoted by the European Innovation Partnership is appropriate because the players of the innovative process work together, the problems and the innovative solution are examined by all participants, thus creating a potential network that could remain active for the future.

Also the innovation concept is now very changed. It is not linked only to the technical topics *"but also non-technological, organizational or social. Innovation may be based on new but also on traditional practices in a new geographical or environmental context. The new idea can be a new product, practice, service, production process or a new way of organizing things, etc."*[1]

This innovation concept is the same of the Oslo Manual (OECD 2005) which provided to the new European policy also the definition of the innovation activities: "*Innovation activities include all scientific, technological, organizational, financial and commercial steps which actually lead, or are intended to lead, to the implementation of innovations. Some of these activities may be innovative in their own right, while others are not novel but are necessary to implementation*". It clarifies that the innovation activities and R&D are not the same thing, that the phase of innovation construction requires the involvement of more entities and more action fields, giving substance to the implementation and diffusion of innovation through the creation of composite groups.

3. The Italian regional situation

In Italy the institutional competences for the agricultural development services are at a regional level, so the Regions enact laws and programs and allocate funding for information, training, advisory services, technical support, demonstration activities. Research is a topic that concerns both State and Regions, so they can plan programs and funding; usually the State issues the framework laws and finances basic research and/or multiple sector research, the Regions issue regional programs and finance applied research.

Therefore, the innovation diffusion is considered jurisdiction of both, but, whereas the Regions are responsible for the Rural Development Programs,

[1] EC - DG for agriculture and rural development, H.5. Research and Innovation, "guidelines on programming for innovation and the implementation of the EIP for agricultural productivity and sustainability -Programming period 2014-2020", Updated version December 2014.

they are planning the innovation actions expected by the Regulation (EU) 1305/2013.

The chance offered to the Italian agriculture to foster the innovation diffusion, and consequently productivity and sustainability growth, is very important since most of farms has an inadequate profitability and has not still overcome some old technical and management problems. This situation emerged from the data analysis of the farm accounting (source: Farm Accountancy Data Network) and from some activities aimed at veryfing the innovation farms' needs that the Ministry of Agricultural, Food and Forestry Policy and the Regions created during the Rural Development Programs preparatory phase.

In Table 1, we can see some economic and profitability indices of Italian agricultural farms in 2012. They relate to the land and work agricultural productivity (Total Output/Utilized Agricultural Area – TO/UAA and Total Output/Annual Work Unit TO/AWU) and the land and work net productivity (Farm Net Value Added/ Utilized Agricultural Area – FNVA/UAA, Farm Net Value Added/ Annual Work Unit – FNVA/AWU). The Italian farms are clustered in classes of Economic Size, measured as the farm's total standard output, that allow identifying five farm's typologies: small-sized (4,000 < 25,000 €), medium-small- sized (25,000 < 50,000 €), medium-sized (50,000 < 100,000 €), medium-large-sized (100,000 < 500,000 €), large-sized (> 500,000 €).

These data show the different economic situation of the farms: one of the economic and profitability farm index, the agricultural land productivity (TO/UAA), changes with the farm Economic Size even substantially. Considering the Italian situation, large or medium/large-sized farms have an higher index compared to the medium and medium-small-sized farms. Considering the situation, in the Marche Region, medium-small and large-sized farms have the index higher than that one detected in farms with different economic size.

An important effect of the implementation of innovations in the production processes is to increase farm's productivity, both in terms of quantity and quality. If this is true, a part of the above-mentioned farms' condition can depend on the different innovation level of these farms and the lower value of the productivity could be determined by a lack of investment in innovation. Of course the information contained in Table 1 is not exhaustive, it would be useful to have more detailed data, but this data permit to assess that the innovation farm needs change, especially when considering the economic results and different rural territories. Therefore, it's important to plan the innovation diffusion evaluating the specific needs and problems; in summary, all innovations are not positive for everyone.

More detailed information are emerging from the direct debates that MIPAAF and many Regions are organizing with the exponents of farm trade unions, producer associations, cooperative companies and with the complex Ital-

Tab. 1. Economic and profitability indices of Italian agricultural farms (2012)

	Economic Dimension*						
	Small	Medium Small	Medium	Medium Large	Large	Average	Change ** %
Italy							
farms represented	491,930	127,445	87,388	75,860	9,643		
TO/UAA	2,630	2,814	2,874	4,124	9,513	2,913	*3.3*
TO/AWU	21,800	34,813	44,830	77,157	151,507	33,313	*3.7*
FNVA/UAA	1,725	1,857	1,855	2,492	5,097	1,875	*-0.9*
FNVA/AWU	14,301	22,968	28,925	46,616	81,180	21,216	*-0.6*
Marche							
farms represented	14,757	2,892	1,954	1,855	183	21,641	
TO/UAA	1,961	3,411	2,244	2,452	3,038	2,232	*16.6*
TO/AWU	21,339	54,480	51,881	76,426	112,406	34,018	*13.7*
FNVA/UAA	1,206	2,002	1,336	1,467	1,750	1,351	*9.3*
FNVA/AWU	13,126	31,978	30,884	45,716	64,745	20,479	*6.0*
Marche/Italy							
farms represented	3.0	2.3	2.2	2.4	1.9	2.7	
TO/UAA	75	121	78	59	32	77	*13.3*
TO/AWU	98	156	116	99	74	102	*10.0*
FNVA/UAA	70	108	72	59	34	72	*10.2*
FNVA/AWU	92	139	107	98	80	97	*6.5*

* Economic dimension:
Small 4,000< 25,000 €
Medium Small 25,000< 50,000 €
Medium 50,000<100,000 €
Medium great 100,000<500,000 €
Great >500,000 €
**change in 2012 compared to the average 2010/2011
Source: RICA/INEA

ian research system[2]. Some of the problems and needs outlined by the productive sectors are:

[2] MiPAAF, Analisi del fabbisogno di innovazione dei principali settori produttivi agricoli, Politiche di sviluppo rurale 2014 -2020 - strumenti di analisi, Roma 2013.

- the improvement of the fresh fruit quality and the counter-action of the consumption decrease;
- the structural difficulties of olive growing to innovate and increase productivity;
- the improvement of the innovation process in viticulture so as to adapt it to the same level achieved by the wine processing;
- the persistent difficulties of cereals to differentiate productions on the basis of their qualitative characteristics;
- the organizational fragmentation of horticultural farms;
- the progressive decline in the profitability of the livestock sector;
- the inadequacy in assessing the potentiality of the Italian forests;
- the difficulty of organic farming in disengaging from a pioneering approach.

The problems and needs already mentioned are not so new and they are the indicator that, in these years, the innovations have been introduced only by excellent farms whereas the average farms have experienced many difficulties in modernizing.

Another issue for regional agricultural knowledge systems (AKS) is the progressive fragmentation; it is caused by the high number of subjects and structures that work for AKS with various objectives and tasks, often similar, but with a lacking coordination. It would be important to improve the AKS governance using the traditional public instruments like framework programs, coordination tables and increasing the interdisciplinary projects and networks.

During the above mentioned debates, the producer associations underlined two other AKS lacks:

- the serious decrease of advisory personnel;
- the innovation supply doesn't always comply with the farms' needs.

4. The regional RDP and first results of the European negotiates

If the Italian situation is that presented above, it's easy to imagine the importance acquired by the funding of rural development policy to improve the Italian AKS and to promote a detailed innovation diffusion.

In this phase, the European Commission approved all regional RDPs and the two national programs, the National Rural Network program and the national RDP.

It is now possible verify the amount of funds that the Regions decided to allocate (Table 2). The total amount of funding for innovation initiatives amounts to around 870 million of euro, equal to 4.7% of the total RDP public expenditure. There is a great variance among Regions; the percentage can

range from 9.5% of Molise and 8.6% of Piedmont to 2.1% of Sicily and 2.3% of Sardinia and up to 0.9% and 0.5% of the province of Bolzano and Valle D'Aosta. The measures with the greatest amount of funds are those ones financing the EIP Operational Groups and the cooperation actions for the development of new products, practices, processes and technologies (Measure 16.1 and 16.2) and that one relating to the advisory service (Measure 2), the Measure on training and information has approximately 80 million euro less than the others.

At the moment, it's not easy to understand some regional choices relating to the different amounts of public expenditure for innovation and knowledge, but we can focus on those choices that have been influenced by administrative and financial issues.

For example, the funds regarding the cooperation for EIP Operational Groups certainly will enjoy of a larger amount of resources, but now it isn't clear why some Regions decided to finance the Operational Groups using this measure for covering only the co-ordination /organisation costs of their projects and other rural development measures for covering the costs arising more directly from the activities of the projects (measure 1 for information, measure 2 for advisory service, measure 4 for investment and so on).

There is another possibility for financing the Operational Groups: covering all costs through the *Co-operation* measure, including those which "fit" under other measures; the Commission services offered this chance to reduce the possible administrative burden of using several measures together.

Some Italian Regions opted for the first procedure essentially for two reasons:

- they aren't sure that the OGs will succeed and they don't want to risk not spending the funds;
- the institutional controls on the measure 16.1 are more complex, if it contains all the direct costs,.

However, this choice could represent a conflict with the significance of the OGs since they should be the place where all innovation players work together. If the Operational Group' s project is financed by different measures, it is more likely that each Group works alone. Moreover, the management of an intervention, using plus measures, is more complex because it needs various simultaneously procedures and the timing for closing the practices are long-lasting.

This isn't the right place to deepen these problems but it is just an example of when the administrative rules and procedures can trigger some obstacles to the aims of the policy actions. An important task of public institutions, at all levels, is to handle these difficulties and find a solution. In few words, this is a typical governance problem.

Tab. 2. Financial resources allocated in regional RDPs 2014-2020 for innovation and knowledge intervention - €

Regions	Measures			Total public expenditure for innovation and knowledge	Total public expenditure RDPs	a/b (%)
	1	2	16 (16,1 e 16,2)	a	b	
Abruzzo	4.650.000	5.150.000	7.000.000	16.800.000	432.795.833	*3,9*
Basilicata	9.090.910	3.801.652	6.375.000	19.267.562	680.160.331	*2,8*
Pr. Bolzano	1.400.000	non attivata	1.800.000	3.200.000	366.405.380	*0,9*
Calabria	8.000.000	18.347.100	9.133.333	35.480.433	1.103.562.000	*3,2*
Campania	29.000.000	14.000.000	21.000.000	64.000.000	1.836.256.198	*3,5*
Emilia Romagna	21.745.887	8.436.809	50.022.602	80.205.298	1.189.679.963	*6,7*
Friuli Venezia Giulia	5.000.000	6.900.000	3.500.000	15.400.000	296.110.000	*5,2*
Lazio	6.644.889	13.671.645	11.700.000	32.016.534	780.120.594	*4,1*
Liguria	5.085.000	2.740.000	5.600.000	13.425.000	313.708.702	*4,3*
Lombardia	9.750.000	40.800.000	9.750.000	60.300.000	1.157.646.104	*5,2*
Marche	10.600.000	5.000.000	13.500.000	29.100.000	537.961.503	*5,4*
Molise	6.000.000	8.000.000	6.000.000	20.000.000	210.469.000	*9,5*
Piemonte	44.500.000	34.000.000	15.850.000	94.350.000	1.093.054.267	*8,6*
Puglia	25.000.000	33.000.000	33.000.000	91.000.000	1.632.880.992	*5,6*
Sardegna	3.000.000	16.000.000	13.500.000	32.500.000	1.308.406.250	*2,5*
Sicilia	9.000.000	7.000.000	31.160.000	47.160.000	2.212.747.107	*2,1*
Toscana	8.000.000	38.000.000	22.500.000	68.500.000	961.841.373	*7,1*
Pr. Trento	2.500.000	1.250.000	4.000.000	7.750.000	301.482.000	*2,6*
Umbria	10.300.000	19.300.000	32.300.000	61.900.000	876.651.206	*7,1*
Valle d'Aosta	400.030	non attivata	350.023	750.053	136.835.088	*0,5*
Veneto	23.191.096	36.873.840	19.666.048	79.730.984	1.184.320.501	*6,7*
TOTALE	242.857.812	312.271.046	317.707.006	872.835.865	18.613.094.392	*4,7*

Source: our elaboration on regional documents

By comparing the total expenditure in the period 2014-2020 with that one of the period 2007-2013, we notice that the actual amount has almost doubled.

It's a signal that the Italian Regions want to invest in the knowledge and innovation, therefore it's necessary that the provided actions have a simple and flowing itinerary and the beneficiaries have a clear knowledge of aims, rules, funding possibilities.

Another possible problem could arise with the measure supporting the use of advisory services (measure 2) because, for the first time, the Commission services decided to adopt the public procurement law rules. This choice modifies traditional procedures to finance the advisory bodies and, especially, it wouldn't permit the choice of the trusted advisor by the farmer. In the 2007-2013 phase, the advisors participated to a call and, if they had the specific requirements, they were enrolled in an accreditation list where the farmers could choose and then could ask for the refund of their costs. In this period, the farmers can't be the direct beneficiaries of funding, the beneficiaries will be the advisory bodies chosen with the rules mentioned above. Also in this case, it will be important to study procedures that don't discourage the use of the counseling service.

5. Conclusion

Promoting knowledge growth and innovation diffusion with public intervention is a complex issue: too many subjects, too many issues, high importance of methods and instruments (if you make some mistakes in this area, it may fail the entire intervention), different kinds of needs and different kinds of targets

One possible solution to achieve these results is to organize a strong governance structure with the collaboration of the different institutional levels; in the case of a regionalized state they are three and perhaps four (with local level). It's necessary because the key words are: needs, tailor made innovations, expert services, interactive approach, coordination, link, network.

The rural development policy offers many instruments: the official networks (European EIP network and National rural network) and funds to create new local network, the technical assistance measures for each RDP and the necessary ex-ante administrative conditions that each institution had to demonstrate to have. One of these is the existence of public framework documents, like research programs or services programs, and the public and private structures to create what has been planned.

The lack of this governance commitment could undermine the general policy objectives and the effectiveness of the intervention. The public expenditure will be also high and it will create many punctual innovative initiatives, but it couldn't achieve the real innovative change of the agricultural produc-

tive base. It couldn't achieve the critical mass to make a breakthrough to the agricultural Italian sector.

In Italy the situation is positive because the Regions are well organized in interregional networks specialized in research and innovation services, the MiPAFF promoted the editing of an important strategic plan on innovation and research that has been recently published, the National rural Network providing animation and support activities for EIP Operational Groups and the other innovation actions. Now, the institutions on duty should start a coordinated action in order to achieve some common objectives.

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