

Evaluating Extension Systems Using a Systems Approach: A Comparative Study in Greece, Italy and Slovenia

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Abstract: In this study we compared the effectiveness of agricultural extension services in three countries with notable differences but also important commonalities in the agricultural sectors: Greece, Italy and Slovenia. Adopting a service marketing perspective, and viewing farmers as co-creators of service value, we analyzed the organizational structures of agricultural extension services and we investigated the extent to which extension systems in the three countries are customer-oriented. Results revealed that, despite the remarkable differences in the systems under consideration, common problems arise from a deficit focus on the elements dominating the process of value creation.

Key words: agricultural extension, systems approach, international comparative research, extension systems, value co-creation

Introduction

Worldwide, agricultural extension systems (AES) are in continuous evolution, trying to adapt to the economic, political, social, environmental and technological changes which affect contemporary agriculture. Recently, a great deal of research has been dedicated to evaluating the effectiveness of AES in different countries and in diverse sociocultural contexts (e.g., Prager et al. 2016; Labarthe and Laurent 2013). Work in this area, although important and interesting, typically examines AES's effectiveness from a macro-level approach which puts emphasis on the organizational and structural characteristics of extension services, without devoting an equal share of attention to the customers of these services. On the other hand, the amount of comparative research is still very limited, since the use of single-case designs remains a common practice.

Agricultural extension services are complex, heterogeneous and highly intangible services, which are heavily influenced not only by the multifaceted nature of agriculture but also by the intensity of farmers' participation and involvement in the process of service production (Lioutas and Charatsari 2012). Hence, to capture the complexity of AES and to grasp their transformations analytically it is important, first, to take a systems approach – in which farmers are considered not as the end users but as an important component of the system – and, second, to use research designs that permit the evaluation of AES performance across different societal and cultural contexts. In this study we applied a systems approach to AES, in order to better capture the objectives, the functions, and the components or the sub-systems of extension services in three countries: Italy, Slovenia and Greece. According to

O.E.C.D. (2015), Greece ranks in the lowest position among the EU 28 member states in the percentage of farmers who receive extension support, Slovenia is classified in the first position, whereas in Italy the corresponding percentage is comparable to the EU 28 average. To gain insights into the issues under investigation we synthesized findings from peer reviewed and gray literature, as well as key policy reports.

Method

Our analysis is organized in two main strands. From a service perspective, we compared the organizational structure of public AES, the forms of public-private mix in the three countries, and the aims, targets and foci of the three AES. To this end, we used an analysis of organizational models, recently reconsidered at European level by Knierim et al. (2015). Although, on the one side, recent literature has pointed out the two key variables of AES, types of services and actors involved, on the other side, the organizational dimension has been either systematically neglected or not deeply analyzed. Nonetheless, analysis of organizational models is relevant, in that it permits eventual failures in the model of governance to emerge (Stiglitz 2000; Umali and Schwartz 1994). Therefore, we intend to fill this gap in literature by concentrating our attention on the organizational variables affecting the provision of extension services, starting by internationally recognized best fit approaches (Birner et al. 2010). This is particularly true in a new “innovation system perspectives,” where “several actors are seen as relevant to agricultural innovation, including agricultural entrepreneurs, researchers, consultants, policy makers, supplier and processing industries, retail, customers” (Klerks and Leeuwis 2008, p. 366).

Therefore, questioning organizational models becomes a relevant field of analysis. Against this background, there is a gap in literature concerning organizational aspects whose analysis let eventual governance failures to emerge. As a matter of fact, previous research has not explored with the necessary detail the key aspects of various steps characterizing organizational dimensions of AES: planning, production, provision, monitoring, and budgeting. According to Birner et al. (2009), organizational variables are fundamental to apply an internationally recognized model for the analysis of AES: best fit.

In the first part of the analysis, instead of looking at “h-type” questions (how extension systems operate, how they are organized, how many actors are involved in AES, etc.) we shifted our attention to “wh-type” questions, such as: what types of extension services are consumed by farmers, who provides what type of extension services, where services are delivered, and which factors enhance or reduce the effectiveness of AES.

In the second strand, adopting a relationship marketing perspective, we examined the degree to which the systems under consideration are customer-oriented. To this end, we analyzed the levels of AES organizational flexibility and responsiveness, the degree to which service customers (farmers) are involved in the co-production of services, and the quality of extension services as experienced by farmers. As pointed out in the relevant literature, a starting point of this empirical approach is the conception of farmers as consumers of AES (Charatsari, Papadaki-Klavdianou, and Michailidis 2011). Recent service marketing theories support that the value of a service is created collaboratively and that an organization cannot deliver value but the value is derived through the active participation of the customer (Vargo, Maglio, and Akaka 2008). Within this fresh – and robust – line of thinking, which is already widely accepted in the field of services marketing, the ways customer

experiences a service and her/his perception on its quality are the two constructs which determine the value of the service (Vargo and Lusch 2006). Hence, a critical examination of the ways farmers (customers) interact with AES (service providers) could shed more light on the modes the value of AES is created.

Italy

Organization models of AES

In Italy supply of agricultural extension services is organized at regional level as the result of a decentralization process started in the 1970s. In the 1990s AES have been ruled by the National Plan of Services, providing regions with specific functions. As a consequence, AES are ruled by regional laws (21 regions in Italy), then going along with a best fit perspective which has replaced in the last years “one-size-fits-all” approaches (Birner et al. 2009). In addition, regional laws have always followed linear approaches for innovation provision (Cristiano, Proietti, and Striano 2015).

Therefore, if, on the one side, the regional perspective may be acceptable in account of the big diversity of both territorial agricultural systems of production and physic/climatic conditions, on the other side, the adoption of this approach has originated a relevant set of problems, ranging from diversity in quality and quantity of services offered, lack of coordination, scarcity of financial resources (Caggiano and Labarthe 2014). As a matter of fact, the actual system of extension services is extremely fragmented, being provided by diverse public/private actors with different skills (freelance professionals, veterinarians, agronomists, trade unions, producers’ organizations, agricultural cooperatives, agrifood industries, etc.).

As posited by La Rocca (2013), decentralization, privatization, contractualization and pluralism have become key dimensions in the supply of AES, whose institutional assets are articulated on a regional basis. Moreover, he puts forwards a methodological proposal which takes into account key-functions (planning, management, realization, coordination, monitoring, budgeting), actors involved (public, private, mixed) and type of services (both individual and collective).

Role of public and private sectors in different modes of governance

Each element has been investigated by integrating a previous methodology of classification (De Rosa, La Rocca, and Longordo 2011) based on share indicators of governance like decentralization, privatization, pluralism, completeness of regional law, participation, diversification, specialization, contractualization, through a questionnaire submitted to the responsible of regional extension services. Consequently, three main organizational models emerge.

Public (centralized and decentralized) structures. A significant presence of the public sector typifies this mode of governance, which marks a discrete number of Italian regions. The presence of public sector is provided either through centralized or decentralize models of governance. In a centralized structure of governance, low level of privatization and limited pluralism are evident. This governance is marked by a relevant presence of the public sector even though less evident with respect to the centralized model. In regions characterized by a decentralized structure, regional public agencies act at peripheral level in order to grant a more participated system, where the strategic role of the public is confirmed.

As regards functions, planning, monitoring and budgeting are entirely carried out by the public actor. However, some functions are sometimes neglected, for example the triennial regional plan for agricultural services is presented only in few

regions with decentralized regions governance. With respect to actors involved, regional administrations or agencies for agricultural development are in charge of planning AES provision, even though in regions with centralized governance, agencies have been downsized. Type of services offered is limited to the budgeting and monitoring, sometimes within the framework of the rural development plans. Coordination function is developed within an advisory board, made up by representatives of either public, and private and not governmental bodies. In many cases (especially in centralized governance), this board is coincident with the monitoring committee provided by the rural development plans. If, on the one side, management and realization functions are carried out by private actors, in regions with public governance they are implemented by regional administration (centralized system) or by regional agencies (decentralized system). For example, region Campania (public centralized system) is involved in private typical extension activities usually developed by private subjects. Private actors working within prevalently public structures of governance carry out marginal and subsidiary roles, even though recent rural development plans provide them with numerous opportunities in the field of both training and advising. On the whole, a clear distinction emerges, in terms of types of services offered. Public sectors are typically public goods, which private actors are not willing to offer: general information, support services to information, websites, publicity materials (for example, magazines), training for disadvantaged categories or on topic of public interest (Caggiano 2014). Private actors, with different extent, deliver highly specialized training services, sometimes funded by the operational programs of the producers' organization (50%) or by the rural development plans within the dedicated measures for farm training (100%). Other relevant services provided by public actors are framed within the measures of the rural development plans for technical assistance to the realization of the plans (for example previous measures 511 of the past programming period).

As regards aims and target of public and private services, in all types of governance, public system aims at delivering support on thematic of public interest, like environmental compliance, implementation of both national and regional policies, funded within the technical assistance provided by the communitarian regulation. Target is represented by the generality of actors working in rural areas, with special attention devoted to farmers, above all localized in rural marginal areas. Private actors are mainly producers' organizations and aim at delivering highly specialized services in the field of the phytosanitary defense and nutrition, by making use of the support regional agencies. Support services provide laboratories for the soil profile, phytopathological aspects, varietal experimentation and process innovation. Product innovations, being patentable, are principally produced by private (fertilizers, pesticides, other technical instruments). Private advisors work mainly in the field of both fiscal and job regulation assistance and in the access to European funds for rural development. In many cases, services delivered by public actors may move towards a typically private sphere of competence. This is the case of supporting farmers through specialized assistance or for the application to rural policies.

As far as long-terms plans are concerned, coordination activity, monitoring and budgeting are the main functions carried out by various categories of public actors (department office of agriculture, or regional agencies of regional development). This aspect characterizes all modes of governance. Moreover, public role is not limited only to the provision of support services or to training, information,

advice interventions but also to deliver advisory services, especially in rural marginal area, or in most professional farms. Consequently, AES represent the tool for realizing the aims of regional agricultural policies.

Usually in Italian extension systems, private actors are more involved in the provision of 'market' services, while training agencies are involved in planning long-term training activities funded by public sector (training course, technological transfer, demonstrative activities, etc.). Funding source is represented by the regional budget for dependent personnel and by the funds from rural development policies of the EU provided in the framework of the first priority.

Sources of funding are limited to the regional budget and to the resources provided within the regional rural development plans, especially provided in the measures of the Priority 1. In the case of public decentralized system, sometime there are some budget dedicate to AES (extra pro-quota PSR).

Privatized structure. Privatized structures marked a limited number of regions, characterized by a significant release of public sector in the field of AES. In some regions (Liguria, for example) extension services are managed jointly with major near regions, in account of the limited relevance of primary sector. Actors involved in some of these regions are regional agencies for agricultural development and innovation, whose main scope is the promotion of regional products and the safeguard of geographical indications. A problem of these agencies is the reduced personnel employed in extension services. Another public actor is the Agricultural Research Centre, whose function concerns support activity and research activity. Functions carried out by public bodies are limited to planning, funding (co-financing interventions provided by rural development policies) and monitoring (but these functions are strictly included in the RDP procedure and function of regional competence).

Coordination activity is not provided within privately developed functions: the only role for public system is monitoring these activities if funded within the rural development policies framework. Management and realization is by no means provided by public actors, exclusively in charge of private subjects working in the field of training and advice. Support services are also provided by private bodies. As far as scope and target of public services, they are limited to funding and monitoring, information, planning of activities provided within the regional rural plans and to activity reporting. Moreover, another role is related to the bodies to be accredited for both training and advisory activities and, in general for providing market oriented services. Consequently, private actors work in the training sector. Other private actors, as producers' organizations provide highly specialized advisory services in the field of phytosanitary defense or nutrition. Finally, long term plans and objectives for public services are related to research and experimentation, while private sector privileges the delivery of market oriented services, with the risk of exclusion of rural marginal areas. To summarize, privatization of AES is realized within centralized governance, in that regional administration frame the strategic framework of action within which private actors can deliver market oriented services.

Pluralistic governance. Pluralistic models of governance characterize regions where agriculture is really important (for example, Veneto and Emilia Romagna). This brings about a balanced intervention of the public sector jointly with the involvement of private actors. As far as public actors are concerned, all regions with this type of governance have a regional agency for agricultural development and innovation. Moreover, public agencies may also offer support services (for example

meteorological services), while sometimes research and experimentation are carried out by consortia of cooperatives. Regional administration takes on the role of programming, monitoring and budgeting. However, the number of regional officers involved in the provisions of these services is really limited and also concerns the management of public resources from the rural regional plans.

Participation of private actors is strongly encouraged through call for accrediting private bodies, with the purpose of providing AES for agricultural sector and rural areas. Planning activity is at the basis of a multiannual strategy of AES delivering through a high degree of involvement of potential actors in the organization of AES. For example, in region Veneto a very important and innovative structure (Veneto Agricoltura) works in the field of experimental research through 15 centers. This structure is able to carry out its activities thanks to high levels of access to regional and European funds for rural development; other source of financing are drawn on contributions of private firm testing their products (seed companies, or fertilizer and pesticide companies). Other revenues come from private actors buying extension services delivered by the Agency. Regional laws individuate advisory services to be accredited through official calls. Public sector is mainly involved in the coordination, planning, monitoring and in second level services, like meteorological services, experimentation, phytosanitary laboratories, etc. (La Rocca 2013). As far as Trade Unions are concerned, they are mainly involved in fiscal and welfare advisory services. Services delivered by public sector are limited to information (through either periodic bulletins or a dedicated web site). Training activities are delegated to private actors. What marks this type of governance is the presence of specialized units in the regional administration to whom the programming of AES is delegated. This activity is shared with the Trade Unions and the consortia of cooperatives. Private and producers' organizations work in specialized provision of services, like phytosanitary defense and nutrition and cooperate with the decentralized centers of the regional agency. Trade Unions work in fiscal advisory services and in stimulating access to rural policies.

To summarize, a limited but strategic presence of the public sector is at the basis of the success of this mode of governance: good results of the pluralistic mode of governance is attributable to high attention devoted to AES by regional administration. For example, in region Veneto, the regional public Agency through self-financing is able to deliver efficient agricultural services. Moreover, through widespread presence on the entire regional territory, it offers support to private actors in various fields of information and advice. Therefore a dense network of actors provides efficient services to support transition towards multifunctional and competitive agriculture.

Access to AES, customer orientation and quality of services offered

A recent study (De Rosa, Bartoli, and La Rocca 2014), revealed that Northern and Central regions of the country show higher access to AES, with farm advisory services getting the most important share of farms. Of course, this could be attributed to the incentives provided by rural development policies for using advisory services at farm level. On the other hand, this opportunity has been caught with different intensity in various regions considered. An interesting finding is that – across the country – farmers exploit to a lesser extent the given opportunities for training and information.

Nonetheless, a critical question is “who” offers these services. Relevant analyses indicate that the answer to this question is not uniform across regions. For instance, in the region Veneto access to AES is strongly supported by not governmental organizations, with the particular role carried out by agricultural trade unions. About 60% of farms have consumed services through the intermediation of these institutions. This percentage is halved in the region Lazio, then reducing to 16% in Campania. In this region of Southern Italy, a relatively relevant role is played by the public sector too, which absorbs the highest percentage of farms with a public support.

By taking into account types of rural areas, rural marginal areas seem to suffer of highest lack of access to AES, with the highest percentages of no use of services, 35.5% in Veneto, 28.2% in Lazio and 48.2% in Campania. In Northern Italy (Veneto) high access is revealed in intermediate rural and in specialized agricultural areas. Similarly, as far as central Italy is concerned, 80% of farms use AES, with the highest percentage in agricultural specialized and in intermediate rural areas. On the contrary, in rural marginal areas access is more limited: 28.2% of farms do not use AES. In Southern Italy, the percentages of access are really low: on the whole, 44% of farmers declare that they do not use agricultural services, with a peak of 48.2% in rural areas with complex problems of development.

As the above mentioned study (De Rosa, Bartoli, and La Rocca 2014) showed, farmers express moderate levels of satisfaction with the quality of the services offered by AES. Nevertheless, farmers’ perceptions on the quality of AES are region-dependent. Interestingly, the satisfaction from advisory work is generally higher than the satisfaction from training and information provision.

Slovenia

The organizational structure of public AES

Since their establishment, agricultural extension services (AES) in Slovenia have evolved through three different organizational structures. As formally organized activity it dates back to the beginning of the 1970s when it started to operate within the system of agricultural cooperatives. At that time it encompassed approximately 100 experts originally coming from regional agriculture institutes, faculties and cooperatives. Formerly its mission was more of a commercial than advisory nature and its functioning was subsidised in equal share by the state, municipalities and cooperatives (Debeljak 2016). In 1992, after the Slovenian independence and the adoption of the new legislation on cooperatives, AES were organized as a public administration service within the ministry for the field of agriculture, though the slow process of transition of the advisors (official employment status) from the cooperatives to regional agriculture institutes began a few years earlier. The key issue was that farm advisory service (FAS) should be available to all farmers, not just to members of cooperatives. The occurrence of this idea was also the beginning of the slow separation process of the advisory service and research and education institutions (Erhart 2014). In 2000 AES turned to be constituted in eight regional agricultural institutes under the umbrella of The Chamber of Agriculture and Forestry (CAF), an organizational form which has been maintained until today.

The CAF operational levels are threefold. The first one consists of the Chamber’s Headquarters in Ljubljana; the second level pertains to 13 district subsidiaries established throughout Slovenia while 59 local units are operating on a local (third) level. Such divided organizational structure intends to enable the

provision of AES in every part of the country. Organizational structure of CAF is divided into General Sectors (coordination of elected bodies, public relations, international cooperation and general affairs) and the Sector for Agriculture and Forestry. The latter consists of four sectors (livestock production, plant production, rural development, forestry and renewable sources) and provides three public services: FAS, selection and monitoring production in stockbreeding, and public forestry service. FAS operates within the Departments for Agricultural advisory at 8 Agricultural and Forestry Institutes, though farmers can also get support in 59 local units throughout Slovenia as already mentioned. Through those institutes and local units, CAFS performs public FAS as well as other activities, such as research, implementation of services of national interests, training, seminars and promotion activities.

Today AES encompass 310 agricultural advisors among which 60 % are females: 177 field advisors, 73 specialists, 37 counsellors for the farm family and supplementary activities and 8 heads of Agricultural and Forestry Institutes and another 15 people who coordinate the work of all the aforesaid employees (CAFS 2016). Agricultural advisors have at least college equivalent qualifications and the major share of employees have university degrees (Erhart 2014). The core tasks of AES are defined in Agriculture Act and Chamber of Agriculture and Forestry Act (adopted in 1999 and revised in 2004) and are further defined in detail in the annual Program of Activities and in the financial plan. The program is confirmed by the government, e.g. in 2013 and consecutive years the priority tasks for AES were (Erhart 2014):

- Technological and environmental advisory and protection of production sources (e.g.: improvement of competitiveness, education on environmental topics, information and education of farmers related to cross compliance, implementation of Rural Development Programme (RDP), etc.); 64%.
- Farm management consultations and business cooperation (e.g.: gainful activities on the farm, producers' cooperation, establishment of social entrepreneurship, quality schemes, economic issues including Farm Accountancy Data Network, etc.); 12%.
- Implementation of Common Agricultural Policy (CAP) (e.g.: information campaign on CAP, subsidy campaign and support to farmers when filling the forms); 22%.
- Fostering of development potential of the agriculture and rural areas (e.g.: support to societies on the field of agriculture, organisation of national competitions, natural disasters and risk reduction system, etc.); 5%.

Other non-public providers of ES in Slovenia

In addition to official national AES there are several institutions and organizations that provide different types of support to farmers. They can be divided into four groups: institutions officially responsible for public service on rural development, forestry, nature preservation (publicly financed), regional and local institutions involved in rural development and other issues important for the development of their territory (financed by municipalities or funds from different projects/funds), and private companies providing support to farmers (commercial activities). There are very few private companies and private consultants that provide support to farmers on basic agriculture and forestry issues, as the market for this type of service is centralized. The biggest reason for this is the political influence of national

institutions. However, the consultancy support to the organization and management of producers' groups, marketing, etc. is established (Erhart 2014).

Sources of funding

AES are funded from different sources according to annual plan of service agreed by the government. The majority of funds are provided from national funds, though recently its share and the total amount has been decreased considerably. That is, in recent years the share of financing of AES from the state budget is getting lower while the share of other sources coming from the market is increasing – in the period 2010-2013 the increase of commercial service was fivefold (Erhart 2014). According to the work program in 2015, it was determined that AES carry out 68% of their duties as public services (source of financing through the budget and public users), while the other activities are financed from other sources of funding (through projects activities and chargeable services). In 2015 as an additional resource the public orders were established in connection with financing a certain activities implemented in the frame of the RDP 2014-2020 (CAFS 2016). Additionally, because of lower share of public resources earmarked for AES operation, since 2008 also the index of adviser's salaries has been reduced considerably. While in 1999 the value of this index was 100 it decreased to 75 in 2009 and 59 in 2014 (Debeljak 2016). Because of a significant decline in public funding in recent years, there is insufficient investment in the purchase of fixed assets and renewable parts of mechanization/infrastructure of AES. The reduction of public funds is also visible in the absence of recruitment of the new staff and scarce investments in new knowledge and technology which hinders AES to the appropriate adaptation to the needs of farm practice (CAFS 2016).

Customer-orientation and quality of extension services experienced by farmers

The targeted research project Development Orientations of Farms in Slovenia (Udovč et al. 2013) revealed that, in their work activities, farmers most strongly rely to close family members. However, agricultural advisors and other farmers are also very important to them. Additionally, AES and agricultural cooperatives are the most frequent business partners of the farmers under investigation. Most of the farmers of both genders reported about good experience they had with agricultural advisor. Though, they highlighted that nowadays they rely on their services more frequently in terms of support in fulfilling the forms needed to receive agricultural subsidies than in terms of receiving their advice in the field. However, the farmers reported that they are missing the agricultural advisors in the field and not being individually treated by them. They see the problem of AES insufficient functioning in relation to the CAP; agricultural advisors are overwhelmed with the implementation of agricultural policy measures. Thus, according to farmers' views the increased presence of agricultural advisors in the field and their greater focus on economic and entrepreneurially contents, but not just the technological ones, are much needed.

The results of the targeted research project "Transfer of Knowledge to Agricultural Practice: the Case of Slovenia" (Černič Istenič et al. 2012) showed that after 2004 – when Slovenia entered into the EU – and the inclusion of AES in CAP implementation this service did not change its organization but the amount and form of its activities. Consequently, today agriculture advisors are less presented in the field by visiting the farmers in their farms but they much more often communication with them through the phone calls as this was the practice before the abovementioned changes.

The abovementioned targeted research (Černič Istenič et al. 2012) also revealed that the practice of involving farmers as co-producers of services is not very common in Slovenian ES. For instance, as regards to knowledge exchange the survey data showed that only one third of agricultural advisors believe that farmers are important source of their knowledge creation.

Greece

Organization of AES

In Greece, public AES were established in 1951, aimed at helping farmers increase their production ensuring the food security not only of farm households but also of the Greek society. According to Koutsouris (2014a), during the first 15 years after their entrance, AES were managed to sufficiently address these targets. Nevertheless, the degree to which this can be attributed to the operational performance of AES or to the wide margins for improvement that characterized Greek agriculture during 1950s and 1960s is questionable. The start-up of AES coincident with a period of political, social and productive uncertainty for Greece (Charatsari 2014), in which low input family farming was the common practice.

After the country's admission to European Union in 1981, AES shifted their focus from extension and advisory work to the administration and distribution of EU's subsidies to farmers (Koutsouris 1999). Concurrently, profound changes in the agricultural sector were observed (introduction of new crops, modernization and mechanization of agriculture, etc.), altering the structure of Greek farming (Charatsari and Papadaki-Klavdianou 2017). Today, the provision of consultancy services or advisory work is not a priority for public AES. On the contrary, extension offices represent a sub-division of public agricultural services, without however a definite orientation. As Koutsouris (2014b) notes, there is a lack of an appropriate national policy agenda on public extension services, while the various actors involved in the agricultural knowledge and information system act in an uncoordinated manner.

In such a context, farmers rely mainly on the private sector to receive consultancy assistance (Charatsari 2011). Although the main activities of agricultural supply companies or freelance agronomists are centred on the selling of agricultural inputs and equipment, they also offer information, consultancy and advisory support to farmers as additional services, free of charge. Hence, unlike Italy and Slovenia, the Greek extension system is notably "informal" in the sense that extension services are provided as "secondary services" by the private sector, whereas the high demand for these services – resulting from the intense changes in agriculture and the recent economic crisis – remains unsatisfied.

Moreover, there is a remarkable lack of collaboration networks between public and private organizations, and a considerable unwillingness of both sides to create partnerships and alliances in order to meet farmers' needs. Especially in the case of public sector, this unwillingness can be attributed to the dominant (traditionally problematic) administrative traditions (Featherstone 2015) which have shaped a negative perception towards public-private collaboration schemes.

Production, consumption, and value of AES

In Greece, research findings show that farmers are unsatisfied with the quality of the extension services offered by the public sector (Lioutas, Folinis, and Charatsari 2009). The most critical determinant of this dissatisfaction is the lack of responsiveness to the real needs of farmers (Charatsari, Folinis, and Lioutas 2010).

AES's providers have failed to appreciate farmers' needs and wants, probably due to a particular mindset that emphasizes more on the service itself than on the customer. In addition, public AES pay the lion's share of attention to large-scale farmers, adapting thus their services to them (Lioutas and Charatsari 2012), and leaving unmet the needs of other groups, such as small-scale producers (Lioutas, Tzimitra-Kalogianni, and Charatsari 2010) and women farmers (Charatsari, Čerňič Istenič, and Lioutas 2013).

Moreover, to date, AES have overlooked the factors which motivate farmers to participate in agricultural extension projects (Charatsari, Lioutas, and Koutsouris 2017). The dominant logic for the public sector is grounded in the premise that "everyone would be willing to accept a free-of-charge service." Hence, efforts to improve both the production and delivery of extension services remain low-throughput. These shortcomings eliminate farmers' willingness to engage in activities designed by the public sector (Charatsari, Papadaki-Klavdianou, and Michailidis 2011). On the other hand, private sector's agronomists, offer tailor-made information and consultancy services (Charatsari, Papadaki-Klavdianou, and Koutsouris 2012), but their extension background is insufficient – a problem arising from the absence of extension and agricultural education courses in the curricula offered by Greek universities.

Conclusions

Our findings showed that, despite the notable differences, AES in the three countries share common problems and confront similar challenges. In Italy, the great variability in the perceived quality of extension services among regions indicates a great heterogeneity in service delivery. A more persistent focus on the standardization and an intensive emphasis on the developing of customization schemes could reduce this inconsistency, improving in parallel the overall performance of extension systems in the country. In Slovenia, there is a clear organizational framework for public AES, while foci and aims are centrally determined. Such an organizational flow permits a better monitoring of AES's performance, while it allows a more effective customer management. On the contrary, Greek AES suffer from an absence of organization, while the supply of extension services cannot satisfy the demand, neither quantitatively nor qualitatively.

Matching the services offered by public extension agencies to the diverse needs of farmers remains a major concern, while in all three cases little systematic attention has been paid to the ways different actors can relationally co-create value for the whole system. As current marketing thinking suggests (Vargo and Lusch 2016), the conception of farmers not as end-users but as co-developers of service value is expected to enable AES's providers to better target the multifaceted demands, wants and needs of the various rural sub-groups. The implementation of appropriate strategies for the delivery and communication of AES, the placing of more emphasis on customer satisfaction, and the development of valid instruments for the measurement of service quality are policies which can reinforce the link between farmers and AES. Furthermore, as service marketing research has shown (Meijerink, Bondarouk, and Lepak 2016) employees' empowerment through new knowledge is an essential prerequisite to sustain the overall performance and quality of a service. Hence, it is important for AES's providers to understand the positive potential training may have on extensionists' empowerment and motivation. Finally, the collaboration between public and private sector is expected to increase the capacities of extension systems in the three countries.

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