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Public research in agricultural economics: organisation models, objects of investigation and targets¹

Many changes affected rural society and economy in the last decades, requiring a rethinking of the whole system of public research in support of the policy making in agriculture and rural areas. In this context, INEA promoted a workshop with other research Institutes in order to discuss about the evolution, changes and perspectives in the public research for agriculture, the targets of the research activities and the new challenges for public research institutes in the economic, social and environmental analysis of agriculture. This paper summarizes the main results of the INEA's event that was a unique occasion to present and discuss the rationale of a public research system and its long-term perspectives and to create conditions for useful network for European research projects, allowing to develop and enhance the circulation of ideas and researchers.

Introduction

In Italy the debate about the role and the future of the public research system around and for agriculture is quite intense. Many changes affected rural society and economy in the last decades, requiring a rethinking of the whole system of public research in support of the policy making in agriculture and rural areas. These changes can be summarized as following:

- A change in the units of production. Farms nowadays are very different from the past, including new functions and activities and pursuing new strategies and goals. The spectrum of farm typologies is an issue that needs further investigation, also in order to better define and qualify the «model of European agriculture» that is at the base of all the new EU policies for agriculture and rural areas.

¹ Held in Rome, October 14, 2014, the event was financed by INEA within the activities of the Observatory of Structural Policies. The Observatory, launched in 1996 with the aim of supporting the Ministry of Agriculture, Food and Forestry and the Italian Regions for the evaluation of structural intervention programs, promotes research activities on issues relevant to the design of rural and agricultural policies.

- A change in the relationships of the primary sector with the other actors of the agro-food *filiere* (processing, marketing, exports).
- A change of the role of agriculture in the socio-economic systems of the EU Member States. Agriculture is increasingly seen not only as an economic sector but also as a main actor providing environmental services, social and touristic services, and also featuring a residential function. At the same time, rural areas are not anymore seen just as production sites but also as a place for consumption and recreational activities. For these reasons, new research in agricultural economics need to take all these considerations on board and focus on the interrelationships between the “core” of the agricultural business and the role of agriculture in the environment, landscape, natural resources management, labour, markets, consumption, leisure.
- A change in rural society and economy. In recent years neo-liberal principles have called for the retreat of state intervention in rural development, the privatisation of public services and the application of commercial principles to utilities that remain under state control, leading to the dismantling of uneconomic services and facilities in rural communities. As a consequence, a problem of persistent rural poverty has emerged that cannot be addressed only by raising farm incomes, but rather securing the family farm as the key social unit of rural life and maintaining agricultural employment and population in rural areas.

In this context, INEA promoted a workshop with other research Institutes in order to discuss the following themes:

- The evolution, changes and perspectives in the public research for agriculture, with specific regards to the forms of organisation and management within the public research structures, the relationships with the public and private institutions governing the sector (EU institutions, Ministries, local institutions, stakeholders, professional organisations) and the possible forms of support supplied to institutions and other actors;
- The targets of the research activities, types of publications and ways to communicate the results of analyses.
- The new challenges for public research institutes in the economic, social and environmental analysis of agriculture as a consequence of the new topics emerged in agricultural economics (multifunctionality, sustainability, diversifications, small farms, green economy, blue economy).
- The ways and opportunities for public research to contribute to the diffusion of innovations and to address the results of the policy analyses to economic and social actors.

The event was divided into four panels linked to the above mentioned objectives. Each panel was introduced by an INEA staff member and discussed

by an expert (academic, professional...) who summarized the main results. Seven research Institutes/Agencies (of the EU area) joined the discussion: LEI Wageningen UR (Netherlands) with two participants – Mr. Krijn J. Poppe and Ms. Laan Van Staalduinen; The Irish Agriculture and Food Development Authority (Ireland) with Mr. Gerry Boyle; The Thünen-Institut of Market Analysis (Germany) with Mr. Martin Banse; the National Institute for Agricultural and Food Research and Technology (Spain) with Mr. Andres Montero Aparicio; the National Agricultural and Food Centre (Slovakia) with Mr. Ivan Masar; the Austrian Federal Institute of Agricultural Economics (Austria) with Mr. Thomas Resl; the Leibniz Centre for Agricultural Landscape Research with Ms. Annette Piorr. In addition to these participants, Ms. Elena Saraceno, Consultant at European Commission, Mr. José Maria García Alvarez Coque, professor at the Universitat Politecnica de Valencia and Mr. Gianluca Brunori, professor at University of Pisa participated at the Workshop.

Panel 1. Public research in agriculture: scope, organisation, institutions. Moderator: Francesco Mantino, Senior researcher at INEA. Discussant: Janet Dwyer, Director of Countryside and Community Research Institute (United Kingdom)

Object: The research system around agricultural economics is quite vast and features various organisational models. In most cases it lays on independent Institutes (Italy, Austria, Poland, Japan), in other cases it is part of a larger net of research institutes for agriculture (France), other times it is a component of the academic network (Netherlands) or it is a body of the Ministry of agriculture, in all its different definitions (USA, UK). This last feature is predominant in non EU countries (USA, Canada, Australia). It is a field in which changes occur quite quickly and at a fast pace, due mainly to budget reasons, the need to rationalising resources, or to better focusing on the main research topic. There are also many private or semi-private institutes and agencies that work in the field of agricultural economics and other fields that are contiguous to it (agricultural and rural policies, environment, food, etc.). They also have a crucial role in the sector analysis and in the institutional support, often interacting with the public institutes. The panel investigated different organisational models of public and private research in agriculture, with a specific focus on the sources of funding (especially EU funds), the research structure and the relationships with European and National Government Institutions and Universities. How the change in funding and research priorities is affecting organization?

Panel discussion

T. Resl (AWI, Austria) pointed out that in Austria public research in agricultural economics is fragmented among many different institutes, although there is a lot of shared work. AWI is an independent Institute, under the Ministry of Agriculture and funded by 90% by public national funds. However this is a very fluid situation, depending on access to European funds or projects of a different nature. The discussion about funding and budget constraints is always central and somehow affects the life and the production of the Institute. Coming to the issue of organisational change, there is always a trade-off between the search for funds and the topics, which are mainly defined with the Ministry. For this reason, it is very difficult to look for other sources of in-coming resources. In the recent past AWI got more autonomy from the Ministry, but then the Institute sorts of «returned home», so it is now more difficult to claim for access to resources and other funds. In the future, AWI could become a private company, so that it will have to hunt for funds totally on the market. This will make also employment policies easier, because AWI will be able to choose whom to employ and with what specific skills.

A. Montero Aparicio (INIA, Spain) highlighted how in Spain there is a downward trend of public budget for agricultural research, combined with a high level of instability. At the same time, private research has grown up, even though it does not fill in the gap. Budget constraints have affected highly the two main institutions dealing with public research in agriculture: INIA and the National Research Council (NCR). INIA has undergone many changes in the last few years, and at the moment it is both a funding institution and a research institute. Moreover, in 1982 the system of public research was de-centralised, with the transfer of regional branches to the regions. They are financed by the local governments, while INIA depends on the National governments, and specifically on the Ministry of economy and competitiveness. On the other hand, the NCR deals with technical aspects of agriculture, in the domain of agricultural science, while agricultural economics is considered a social science, so it is not included in the interests of the NCR. A very interested case in Spain is that of IRTA in Cataluña. This is an interesting model because it switched from department organisation to a programme organisation, and one of that is on agricultural economics. So the research is actually organised along programmes rather than departments, allowing them a higher rate of multi-disciplinarity and better capacity to access to funds. In the last years funds coming from international sources are increasing.

A. Piorr (ZALF, Germany) described the process of global rethinking of the whole German Institutes after the reunification, the so-called “Blue List

Institutes” which gave rise to the Leibniz Association to whom ZALF is part of. Leibniz gathers about 70 Institutes that stems from social sciences to natural sciences, based on the idea of inter-disciplinarily and crossing boundaries of academic disciplines. In the case of ZALF, they try to merge rural areas with cultural aspects, land use and social issues, such as labour. Funds originate 50% from the federal government and 50% from the State of Brandenburg, where the Institute is located. In spite of the origin of funds, ZALF is totally free to organise and choose research issues and methods, included the possibility to bid for international projects. This brought also to a quite significant increase in the staff, both scientific and support, which is, however, often tied to the specificity of the project and not permanent. One of the key point we try to address is the integration among Institutes, trying to favour cross-cutting instruments and methodologies that can become common and shared knowledge. This is not an easy task, since very often languages, backgrounds and approaches are quite distant. Another relevant and complicated issue is the institutional level to deal with, given the federal structure of Germany and the different origin of funds, but also the increasing share of European and International funds. The main topics now are land use change, structural change and multi-functionality and climate change.

L. Van Staaldin (LEI, Netherlands) recalled how LEI is part of the Social Science Group of the Wageningen University and Research Centre since 2012. It was born as an independent private institute in 1940 and then became part of Ministry of Agriculture, but in 2000 it was transferred to the Wageningen University. Most funds come from the Ministry of Economic Affairs, but an increasing share comes from the EU (research projects) and a little but significant share from private subjects. It is worth to underline that in the Netherlands there isn't a Ministry of Agriculture, which merged few years ago with the Ministry of Economic Affairs. After this merge the Institute became less vulnerable to budget cuts so that now it is seen as a more reliable partners also by the private sector. Being part of the University affects a bit the topics on which the Institute works: food, feeds, bio-based production, and LEI specialises in the economic analysis and also on land use, bio-based economics and resource economics. The approach is mixed: from micro to macro, from producers to consumers. Some researchers are highly specialised and work on specific topics but their goal is to improve multi-disciplinarity and the team work becomes key in order to better focus on the client's demand and translate that into useful and high quality scientific work. Food security and sustainable food with respect to water, climate and energy are the subjects where LEI wants to be leading in the next years. With regard to the organization, people working at LEI want to specialize on different tasks: research, fundrais-

ing, communication, development of new products and services. These functions require different skills and specialization.

M. Banse (VTI, Germany) added a few elements to the presentation of A. Piorr about the German system of public research in agriculture. The van Thünen Institute is fully financed by the Federal government, through the Ministry of agriculture, which funds the Institute but the Institute is fully independent. Actually, within the VTI are fourteen Institutes dealing with agriculture, forestry and fisheries with a focus on three aspects: economics, technology and ecology. So it is like a matrix system: fourteen Institutes by three broad topics, and according to the specific issues the team is built as the combination of the two dimensions. With regards to funds, they are provided in different ways: at the federal level, through three main sources: the Research Association, which is an agency that funds general projects on agriculture, forestry and fisheries; the Ministry of Science and Research, concentrating resources especially on climate change and crop science; and the Ministry of Agriculture, which at the moment is focusing especially on renewable resources. In terms of sectors, it is especially livestock the challenge in Germany, because it involves topics that are considered society-sensitive for environmental, landscape, ethical, nutritional and economic reasons.

I. Masar (NPPC, Slovakia) brought at the table the experience of the Slovak Republic in public research in agriculture. Also in Slovakia, like in many other European countries, the NPPC merged with other specialised institutes into one large research centre, dealing with food and agriculture. This new centre merges nine institutes, with the aim to cut costs and make research projects more efficient, creating linkages and synergies among fields of activities and researchers. It could be stressed that the merging involves institutes quite different both in size and topic: some of them are highly specialised, such as the Research Institute of Viticulture and Enology, the Food Research Institute and the Grassland and Mountain Agriculture Research Institute. The new Institute is financed mostly from public funds via Ministry of Agriculture and Rural Development and Ministry of Education, Science, Research and Sport but also by a specific Slovak Research and Development Agency for science and research support. However, it must be said that the new Institute still faces serious budget problems with dramatic consequences on the level of employment and quality of research.

J. Boyle (TEAGASC, Ireland) pointed out that his Institute is an autonomous, non-commercial State agency funded for the highest part by the government and by the research market (EU and national funds for research).

Interestingly enough, the Agency hosts many Ph. D students, who are integrated in the research projects. The Institute works on the fields of agriculture, food processing and rural economy, with an applied focus. The Institute covers also the fields of agricultural extension and agricultural education. The influence of the funding institutions is rather limited on the day-to-day business. However, there are continuous informal exchanges of opinions and point of views on most topics TEAGASC deals with, and especially on CAP design and implementation, water quality and climate change issues. TEAGASC features also regular relationships with two public national universities and some international ones. The main task is to create joint programmes, so that we can host students and collaborate in two projects. This is quite challenging because TEAGASC is very mission focused, while Universities are more theory oriented and the research approach is more individualistic. The Agency has also extended relationship with the private sectors and, in particular, with processing food companies and multinational companies. As many other Institute participating in this workshop, we face a serious problem of employment, which is in decline since 2008. The other tricky issue TEAGASC daily faces is to find the right balance between strategic objectives, that are nationally oriented, we pursue and the need of some of our funders, especially in the case of the private sector.

J. Dwyer (Concluding Discussant) A few common themes emerged from the discussion. The first issue is the process of change that is affecting, in one way or another, all the research Institutes dealing with agriculture and close themes. Reorganisation and merging respond mainly to the logic of budget cuts and expenditure efficiency, less common is the case of a rationalisation of the topics and the tasks of research projects. The second theme is represented by the issue of funds. The common problem of the shrinkage of the public funds forced research organizations to look for different sources of finance to sustain themselves and to generate more stability, considering that traditional funding sources are becoming less stable or narrower in what they are willing to support. As a consequence, many organizations are moving away from what had been a traditional relationship with the central ministries, working more intensely with the private sector and mixing several sources of funding. The variety of sources of funds (national, European, regional or local) has an impact on the agendas and on the organization of research Institutes because these have to be responsive to external political agendas and financial rules. In this sense, the diversification of income sources might give more stability to research organizations, but it might also make them more vulnerable. Furthermore, research Institutes that work close with governments get very affected by political changes. Changes of government mean changes in respect of governance and in respect of public spend-

ing in order to deal with the economic challenges. The discussion has shown very different organization typologies with regard to the nexus with other disciplines. In relation to research fields, some Institutions operate as separate social science institutes and others carry on agronomical or technological research. In some countries, these two functions seem to be separate while in others they are brought much more together, so that agricultural economics and sociology work very closely with the natural sciences. Finally, the other relationship which came out from the discussion concerned the role of extension. Traditionally, there were models of agricultural research where the research was directly linked to the extension which meant that government funding went directly to farmers. However, extension services across Europe changed and now the relationship between research and extension is not so clear. Finally, in relation to priorities, it is very clear that research organizations are addressing four or five main topics: structural change, farm accountancy, the environmental agenda and the community's agenda, the rural economy agenda that lead automatically into multi-disciplinarity or trans-disciplinarity. Multi-disciplinarity and trans-disciplinarity require to develop methodologies which work across the boundaries of traditional scientific disciplines.

Panel 2. Whom do we talk to? Dissemination of results and publishing in public research institutes, Moderator: Annalisa Zezza, Senior researcher at INEA, Discussion: Piero Conforti, Senior statistician at FAO

Object: The theme of this panel can be summarized as follows: what are the major challenges in generating and disseminating scientific results of research work? One of the key points in the activities of public research institutes (and more in general about research) is how to combine the quality of work done on the matter and the communication and dissemination of results to a wider audience. By definition research does not reach a wide public because the main users of the immediate results are experts, institutions, stakeholders. In agriculture, the audience is even more restricted due to the apparently small contribute of the primary sector to the overall economy. Since public research relies mainly on public funds, it is increasingly "under the spot", especially in a context of reduction of financial resources and increasing competition among different possible utilisations. As a consequence, trying to reach a wider audience with simple but effective messages is currently a priority. There seems to be an apparent trade-off between publishing on high-rated scientific journals and having an impact on society. Moreover, a lot of work we do and papers we produce are in the grey area of supporting documents for the Institutions and they often do not fully meet requirements for peer-review scientific publications.

This panel focuses on the crucial issues of the beneficiaries of the research work in public and private Institutes: what, where and how to disseminate results, what publishing policies should be adopted in order to ensure and enhance quality research products, at the same time realizing results that are useful for technical support to National and European Government Institutions. Also, there are technical relevant issues that add on to the difficulties to disseminate research work in a affective and efficient way: is a good executive summary useful? Is the language a barrier? Are websites a good and feasible way to disseminate results? All that has clearly a cost, in terms of financial resources but also of human capital and time.

Panel Discussion

T. Resl (AWI, Austria) opened the discussion pointing out how public Institutes often bridge between scientific research and economic and political practises in support of different institutional levels. With this regards, the relationship with the Universities is very important. In Austria AWI collects data from farmers, in various ways, then it builds together with the Universities a valid methodology in order to analyse them properly and infer from them behaviours and support policy. Another relevant issue is the trans-disciplinarity: economy has to be looked at together with ecology, animal welfare and so on. A cooperative approach is necessary and welcome, both on the scientific side and on the practices. The size of the Institutes is also an issue for the right balance between the two approaches: AWI is a small Institute and it would be more difficult and costly to develop methodologies on its own. So working together with Universities and other Institutes is not only encouraged for scientific reasons, but also for the efficiency of the expenses. The second issue has to do with generating an impact of our works and evaluating it. Generally speaking, what AWI does has to have an impact on farmers and society but it is delivered as a first and crucial step to politicians and Ministries. AWI does not talk directly to farmers because it does not cover the extension service. This job is done by the Chamber of Agriculture, with which AWI cooperates. So a flow of information and results transmission is progressively built although sometimes is not easy to make it work properly. Furthermore, the media have a key role in it, because it is in their responsibility how results are delivered to the whole society and transmit the sense of whether and to what extent our job is useful. Finally, the language is an issue, especially in the effort to collaborate at the international level, so AWI tries to have at least some of its published works and the website in English.

J. Dwyer (CCRI, United Kingdom) brought the point of view of a British research Institute based within a University. This is a rather unusual combination because the University is relatively small and CCRI is by far the largest research entity within the University. As often is the case in the UK, CCRI is on the market for project financing, so the issue of dissemination is absolutely critical. The Institute has its own marketing team in order to publicise its works. Policy makers are a very important audience because the ultimate goal is having an impact on policy design and implementation. Also the general public is very important in order to “build a reputation”. Another relevant issue is how to enlarge the spectrum of the audience, trying to reach and involve other actors such as the agri-food industry, the third sector, the local communities. The challenge is to find a common language with them, which can be different to the language CCRI is used to. Trying to have an impact is what really characterises and drives the job of public research institutes compared to Universities, which tend to be less demand-driven. The other big challenge is to build and defend a credibility, with applied research, in academic and scientific circles, given also the specific histories and paths: agricultural economists, development economists, policy analysts, sociologists, and so on.

E. Saraceno (ENRD, Belgium) pointed out how the system of knowledge for agriculture or rural development and environmental practises are very different. The former has been highly codified, like an academic discipline that is transmitted to the final beneficiaries through the extension service. The latter cannot rely on the same type of organisation, since the body of knowledge has not been codified in the same way. For this reason the marriage of these two subjects in the research institutes is always a bit difficult and each Institute has dealt with that in different ways. Linkages between agriculture and rural areas, between farmers and rural population need to be further explored and so must linkages between policies be. This is the real challenge for public research in agriculture and in rural development because, in the end, the main goal is that of making it clear what policies are meant for and who has access to the body of policies and for what. Farmers often do not understand the policies they are forced to follow and sometimes they do not understand whether and to what extent there are benefits for them in those policies. It becomes then paradoxical that you have a supply of knowledge that is not relevant for farmers (or it seems to them not relevant) and a demand of knowledge from farmers that is not satisfied by extension services and research Institutes.

A. Montero Aparicio (INIA, Spain) underlined the relationships of the activities within the European research Institutes and the network of European

research such as Horizon 2020. How to combine the research excellence and the perception of a relevant service for farmers and rural areas? On this matter the debate in a large part of the research Institutes is quite intense because it is not an easy task to get the right balance between these two aspects. Of course on a daily base research Institutes do not talk directly to farmers because that is not their job and it requires skills and a specific language that is not part of the research job, but what you do as a researcher should, in the end, be useful or perceived as useful by farmers and actors of rural areas. One of the successful words for that is “co-ownership”. This will allow to go beyond the traditional line of the knowledge transfer: getting all the subjects involved and make them co-owner of the ideas. That means to participate since the very beginning in the conceptualisation of the ideas of the projects, of the development process, so that in the end relevant solutions will come up and everybody will feel part of the same common experience.

A. Piorr (ZALF, Germany) highlighted how the support work that is done in favour of national and European institutions is very often short-time, and it becomes outdated even before any possibility to reach peer-review journals. However, even projects where work on methodologies and policy tools is conducted sometime the end up in the institutions drawers or on websites where they disappear from after a few years. Scientific paper publication is still at the top of the criteria for evaluation also in the case of public research institutes and so that becomes a priority for each individual researcher. To that end, a single researcher has to find a sort of balance between proper research and support, between policy analysis and methodological work, but also between consolidate research patterns and new frontier topics, which are more interesting for publication on international peer review journals. Language is also a key issue, and from that point of view it is often the case that researchers work in English for European projects and then they must translate their work in their mother language because that is the only way to disseminate the work at the domestic level. So this becomes also a time issue, a cost issue and, after all, an issue of scale economies and sizes of the Institutes.

K.J. Poppe (LEI, Netherlands) pointed out that the main targets of research output are represented by policy-makers (the Ministry of Agriculture, the Parliament and the Ministry of Environment) and farmers. This is for two reasons: a) a lot of research institutes get data from farmers in the FADN; b) the second reason consists on the fact that it's important to give to farmers relevant information about their business. In this context, scientific papers are not the main objective of research institutes but they are important in order to build their scientific credibility and to play well in competitive bidding within

the European system. But LEI publishes also practical abstracts for farmers and citizens. LEI has a policy of making available for the general public the results of its research but this may not be always possible when working with the private sector.

M. Banse (VTI, Germany) underlined that working mainly for the government but being evaluated by researchers is a challenge. Generally research evaluation criteria are based on scientific outcomes, papers, peer reviewed articles. On the other hand, working for the government implies to process complex requests on a short-term base and to adopt a different communication style. In this sense, evaluation criteria applied to policy reports should be based more on the political impact that they have. The second challenge that researchers in agricultural economics have to face is to translate research outcomes to farmers that requires the ability to communicate with them. The Von Thünen Institute decided to hire two journalists in order to write good executive summaries and to translate research results into «normal people's language». In this way it was possible to integrate scientific excellence with a communication strategy. In addition, the communication of scientific results in a way that is understandable to the broader public helps research activity to continue in the future because taxpayers are guarantees of continuous work in governmental support.

I. Masar (NPPC, Slovakia) remarked the importance of involving different parties such as advisory services, companies, consumers, the civil society and policy-makers in a joint preparation of research, research tasks and research fields. The application of a transdisciplinary approach in research tasks is also a specific requirement of the European Union and European Commission in Horizon 2020 that try to involve different parties from various countries and research fields. Cooperation between research institutes helps to create synergies, avoiding duplication of efforts, and to maximize benefits from public research that are mostly funded from the State money or State budgets. However, the research outcomes should be communicated in a concise and understandable way and in English that is becoming the world language. This could allow agricultural institutions, policy-makers and farmers to know more about research activities in other countries.

J. Boyle (TEAGASC, Ireland) pointed out that research institutes are facing the same challenges with different funding sources. For this, TEAGASC tried to harmonize the project selection by establishing some common elements between funding agencies with the objective of emphasizing the impact and the scientific excellence of research. These criteria -impact and scientific excel-

lence- are particularly stressed by the major science funding entity in Ireland that requires projects to be first acceptable in impact sense. The impact also represents the third stage of the research internal evaluation process adopted by TEAGASC that is based on a three step system where the first stage is represented by the KPI based on scientific publications while the second is the practice adoption. TEAGASC disseminates research outcomes taking into consideration the differences in processes and ultimate users in agriculture and food research. For agricultural research, TEAGASC generally produces “technology updates” that are a joint production between researchers and extension specialists. The extension service transmits this to farmers. For research in the food sector, the end user is a company. For this, TEAGASC has established a series of customer relationship through expos in which they can engage a dialogue with researchers.

G. Brunori (University of Pisa) emphasized that it is not possible to escape from the combination between impact and scientific rigor. However, the trade-off between solving real problems and having good science is apparent. Some examples of that are shown by scientific journals (e.g.: Nature, Science) that publish articles easy to read which have a huge impact factor. Open access is changing the way to communicate scientific results. Often researchers belong to multi-disciplinary groups so they try to address a problem from different perspectives, bringing their specific body of knowledge. Since it is a collective endeavour, building networks is an investment that requires researchers to travel, to build infrastructures, to integrate different laboratories, to produce research and disseminate it. All this requires different skills and approaches and the capacity to see forward, to reflect on the processes and try to organize them. This can be done with institutions that are nearer to the societal challenges. Research institutes can help to identify these challenges and, to a certain extent, give an idea of how science can be related to them.

P. Conforti (Concluding discussant): The first element emerged from the discussion was that communication is a difficult task for researchers because it's something that forces to see things in a different way and to deal with different types of expertise. People who are expert in communication know nothing about research, but they still have a say on what researchers are supposed or not supposed to be saying. In addition to this, there is a need to work by problem and across disciplines, that is something which communication can highlight. Trans-disciplines is an effort in trying to combine specialization, which is typical of research, and, at the same time, the need to addressing problems. This highlights the problem of resources because hiring journalists or people specialized in communication demands resources that,

on the other hand, require to develop partnerships and join forces across the work to do. Finally, the discussion about communication also highlighted the need for feedbacks. The research system has to be oriented by some feedbacks that tell whether it is doing right or wrong in the direction it is moving. In this sense, indicators could be useful.

Panel 3. Agriculture and beyond: what is moving in Europe? Moderator: Roberto Henke, Head of Macroeconomic and Short-Term Economic Analysis Unit at INEA. Discussion: José María García Álvarez-Coque, Professor at the Universitat Politècnica de Valencia

Object: Agriculture itself is becoming something very different from the past. Now, agriculture is not only an economic sector because it provides environmental, social and touristic services. As a consequence, agricultural economics institutes started to look beyond agriculture, also to address the budget problem and to be more competitive or more interesting for the public and other institutions. However, the new role of agriculture requires to develop a more comprehensive approach in conducting research in this field, to hire people with different skills and to change criteria of recruitment. The new role and concept of agriculture need to build relationships with new actors (Ministries, rural entrepreneurs, new professions in agriculture...). The Ministry of Agriculture is, traditionally, the institution to whom the agricultural economics institutes turn to, but other institutions such as the Ministry of Environment and the Ministry of Health are also involved in this process. The panel investigated these new topics arising in the broad fields of agriculture and agri-food systems, paying particular attention to the transformation of the role of agriculture in Member States and the new functions of agriculture in contemporary societies, as well as the links and nodal points of the agro-food systems.

Panel Discussion

T. Resl (AWI, Austria) illustrated how the Agricultural Economics Institute is shifting from agriculture to rural development research. AWI is still negotiating with the Ministry of Agriculture the whole responsibility for the evaluation of the rural development – two of the European programs in Austria – as consequence of the European Commission request for an independent evaluation of rural development policy in Austria. This process is leading this institute to be more independent from the Ministry of Agriculture. In ad-

dition, the Agricultural Economics Institute is developing new programs that allow to use economic resources of the Pillar 2 for activities that are not only related to agriculture, launching new projects to boost regional tourism in order to diversify the farm income. From the Austrian Institute point of view, food security will be one of the main challenges in the future. AWI wants to form with other institutions a sort of Agency for Food Security with the responsibility of whole food security. However, food security is a challenge that calls for global solutions, requiring to find partners on European and international levels. The second challenge for research in agriculture that needs to work with international partners is represented by the food supply change and the economics of food supply change because the cost of foodstuffs is, continuously, rising with negative consequences for farmers. In the future, the Institute wants to support farmers to find the good way to produce, taking into consideration the economic and ecological aspects of the food production.

J. Dwyer (CCRI, United Kingdom) pointed out the importance of interdisciplinary in order to analyse economic problems. CCRI is inter-disciplinary within the social sciences having sociological, anthropological and geographical expertise. Also effective partnerships across disciplinary boundaries with institutions of different research areas are very important. CCRI, for example, worked with ecologists of the Food and Environment Research Agency or with soil scientists on projects in the FP7.

E. Saraceno (ENRD, Belgium) highlighted that the new role of agriculture has added a whole different range of issues besides the traditional modernization of farming strategies, including part-time farming and multiple activities. In this context, it is becoming important to understand these linkages that have completely changed the way in which farmers think about their business. This represents a difficult task especially for small research centres. However, establishing networks with people in other disciplines is very important as well as doing field work in order to be in contact with a specific community or specific types of farmers and understand how they work. Multi-disciplinarity has added new dimensions in governance arena with the need to talk with more than one authority.

A. Montero Aparicio (INIA, Spain): pointed out that changes in agriculture affected farmers and research. In Spain, for example, the number of farmers reduced but their capacities increased as well as their activities that are more related to environment. Changes in agriculture research become clear looking at the case of IRTA, the regional research centre in Catalunya. IRTA moved from departmental organization to programs organization in order

to develop a more transdisciplinary research. This represents a challenge because the interdisciplinary relations between different programs is difficult to put into practice considering that each program has its objectives and problem solutions. However, as a consequence of changes in agriculture research Institutes should provide resources to our end users in order to adopt the technology and to face future trends.

A. Piorr (ZALF, Germany) emphasized the idea that research Institutions are facing main challenges for agriculture such as: food security, climate change, rural development etc. What is needed is to understand the linkages by identifying the cause-effect relationship. In order to cover this broad complexity, that represents a challenge, institutions have to broaden the disciplinary composition of their staff. ZALF staff, for example, is currently composed by: planners, geo-ecologists, policy scientists, agronomists and economists. The collaboration between them is generally fruitful but difficult as a consequence of different approaches adopted by each discipline. Research needs a new approach beyond themes and territories, some communalities and some kind of middle level research.

L. van Staalduin (LEI, Netherlands): highlighted that sustainability, risk management, food safety, food management and the credibility of the food chain are some of topics that LEI wants to develop in next years. In addition, there are topics such as health, food and consumers (healthy foods, consumer choices, the consumer behaviour) that need to further develop. The relation between food and health became important in the last 20 years and several joint program initiatives – such as Healthy Diet for a Healthy Life – are ongoing in Europe. This relation will probably be more important in the next 10–15 years with an impact on public policies in agriculture on national level. In Wageningen social scientists try every year to build scenario analysis to meta-analysis that can help colleagues from the technical divisions to understand which are the main areas of research to invest in. Important research issues regard finance, succession issues, risk management and the circular economy that closes the resources circle.

M. Banse (VTI, Germany): stressed that research in agriculture has to look beyond the agricultural production taking into consideration societal and health aspects. In this sense, agricultural economists and experts in social economic science can built a bridge between the more production oriented sciences and sociology. Talking about food and health allows researchers to inform a large arena about what is happening in agriculture going beyond the traditional farming system.

I. Masar (NPPC, Slovakia) highlighted some of the main challenges of agricultural economics beyond 2020. In particular, environmental issues and the sustainable use of natural resources will be probably on the top priorities of the EU agenda. Another issue is the distributional value and equity along the food chain. New challenges for agricultural research will be food standards and labelling of food products, the elimination of food waste and food security. Finally, scarcity of raw materials and rising cost of inputs will probably result in high volatility that will assume an increasing importance for research in agriculture. Beyond 2020 period, changing tastes and preferences of consumers will be other important topics as well as the fair price formation and the transmission along food supply chains.

J. Boyle (TEAGASC, Ireland) highlighted the partial view that often is applied to the arising challenges in agriculture. Research specialization has definitely narrowed the scope of the issues that are the subject of most research requiring to have appropriate skills. TEAGASC focuses on the improvement of rural communities livelihood, mainly farmers, applying two strategies: maximizing the utilization of resources on the farms and facilitating diversification on farm and off farm. Regarding to this, TEAGASC had a very large program on diversification and, in this context, it hired a series of technical specialists but these did not work. In this case it could be that a business school people that could have been better in order to assist farmers to think strategically and plan strategically. The multi-disciplinarity approach can work when research is problem driven that is happened often in the environmental area.

G. Brunori (University of Pisa) highlighted how boundaries are set by problems suggesting to look for problems instead that for boundaries. Boundaries need to be crossed understanding our limits to see how is possible to go beyond them. With regard to policies, our research should be aimed at anticipating policies more than analyse the implications of the policies already in place.

J.M. Garcia Alvarez Coque (Concluding discussant): The discussion focused on priorities of research in agricultural economics in the next future and the applicable approach addressing many subjects as water, climate change, low carbon economy. In this context, governance and asymmetries in the food chain represent important topics. However, there is the need to help organizations to be more efficient, effective and participatory taking into consideration that there is a separation between the leadership and the base in the organizations. Other challenge for research in agricultural economics is to overcome the trade-offs between sustainability and competitiveness, to change the style of life of society, the way people consume and treat food,

the education of people. Innovation is also useful in order to enhance capacities of the farming sector but it requires to adopt the participatory approach to make knowledge more effective for farmers. The approach to apply in research should be inter-disciplinarity and networking oriented. In this way, research institutions can use new methodologies applied in other countries by working with partners of other parts of the planet. This is useful not only for farmers across the European Union but for all social actors in the society. It was also highlighted how some foresight exercises on priorities in agricultural research have taken place and are going on in the EU but often they are moved by interests in specific fields so independent exercises are needed.

*Panel 4. Innovation, research and partnerships: what role for public Institutes?
Moderator: Guido Bonati, Senior researcher at INEA, Discussion: Gianluca Brunori,
Professor at University of Pisa*

Object: Public institutes can play a crucial role as a “transmission belt” between research and analytical work and the production world, including the downstream components of processing, distribution and consumption. This specific role can become very relevant also in the international research and policy analysis arena, such as Horizon 2020 and the OECD working tables. This panel investigated ways and opportunities for public research to contribute to the diffusion of innovations and to address the results of the policy analyses to economic and social actors and the main challenges to face in participating in international projects and partnerships with the private sector, including the establishment of research economic institutes. In addition, it wants to analyse ways and room for collaboration with private sector in response to its specific demand.

Panel Discussion

M. Banse (VTI, Germany) underlined that the interaction between the Federal Research Institute and the private sector is becoming more important in last few years and this is encouraged by Horizon 2020. Besides, the private sector approached the Institute in many areas. One of the most important initiative of the Institute was represented by the *Agribenchmark*, an international farm comparison network that allows to compare farm costs related to different agricultural activities (organic farming, vegetable production, beef) and farms of all over the world. Private companies that finance the *Agribenchmark* network project have an exclusive access to the current work of the Institute in

this area. Regarding the establishment of networks he recalled the initiative of the global club of directors and announced that there is some work to do for re-launching it in the next months.

I. Masar (NPPC, Slovakia) pointed out that agricultural research has to find a balance between providing public goods and producing research for the private sector (agriculture and food industry). However, in the Slovak Republic the farmers demand for research and innovation is low because the industry provides them good extension services. In addition, Slovak farmers don't have financial resources to cover research projects. In this context, the establishment of an intermediate broker who connects farmers or companies of the food industry and research institutions could be an option to optimize their interactions and strengthen cooperation. This broker could also support farmers to find out the financing to transmit to research institutes. At European level, innovation could be improved by the establishment of a centralized database of research projects, considering there is not a real interconnection within the European countries and there are many project databases owned by separated Institutions (e.g.: libraries, ministries and universities).

J. Boyle (TEAGASC, Ireland) stressed the difficulties to gain adequate economic resources by working for the private sector. In particular, TEAGASC tried to persuade farmers to contribute to research activities by the way of levy. The Institute currently has small levies in dairy, pigs and cereals. TEAGASC has also public-private partnerships with processing companies -meat companies and dairy companies. These companies are interested in working with TEAGASC and farmers because their primary interest is in facilitating or encouraging greater efficiency in the production of primary products. In this context, an important partnership example is represented by the triangular relationship between TEAGASC, the beef processor and the major farming newspaper in Ireland. This collaboration has an important dissemination component because they weekly publish the results of the on-farm activity. TEAGASC is also involved in pre-competitive research activities financed by private companies and the State in the areas of food for health, human gut microbiota and some initiatives in dairy and meat. The relationship with the private sector, although not relevant in final terms, can be important for a political point of view in order to gain visibility and credibility at societal level. Our role is also justified by the prevalence of SME in the food sector, that are not big enough to pursue their own research.

J.M. Garcia Alvarez Coque (Universitat Politecnica de Valencia) brought the point of view of the University at Valencia where the collaboration with

technological platforms represents an opportunity to have contact with the private sector - such as Food for Life and other technological platforms- and work close with the stakeholders in the food chain. However, these activities are not necessarily profitable as a consequence of the fact that the agri-food sector is fragmented with a prevalence of small and medium enterprises. This represents a limit for research demand coming from the private sector. However, cooperation with the private sector could be a way to have money for marginal activities that are not funded by public sources. This is the reason why the Universitat Politècnica de València collaborates with inter-professional organizations and farming organizations, cooperatives, organization of cooperative federations and foundations. Especially foundations are increasingly linking universities with farmers.

T. Resl (AWI, Austria) underlined the importance of cooperation between research institutes of public and private sectors, on national and international levels, in order to overcome the lack of economic resources and have good research outcomes. Cooperation is particularly useful in order to apply for international tenders such as Horizon 2020 and to exchange experiences and information. An example that shows the importance of cooperation is represented by the AWI research on taxation systems of agro-fuel in response to a specific question from the Ministry of Agriculture. In this context, AWI had a lot of difficulties to get information on mineral tax or energy tax in force in other countries that could be avoided by cooperating with institutions of these countries.

J. Dwyer (CCRI, United Kingdom) focused on the third sector as possible partner of research institutes. Non-profit organizations are increasing their centrality in the society as a consequence of the government institutions failure. The limited amount that the third sector can invest in to research is of minor importance with respect to the knowledge on rural development that it owns. That's why collaborating with non-profit organizations represents an important opportunity of learning for research institutions.

E. Saraceno (ENRD, Belgium) underlined that the private sector is a reality composed by many figures: farmers, SMEs, large business, NGOs that ask for different types of research and services that do not find an adequate supply. An example is the technical assistance for bureaucratic activity which doesn't get supplied by the public sector but also the financial aspects of pre-financing projects that generally require the involvement of banks. The role and answers to private sector demand depend on the type of circuit of the agri-food chain -national or international- and its length. Indeed, the type of

support needed when the production and transformation processing and marketing take place within a relatively small area is very different than that demanded in longer circuits.

A. Montero Aparicio (INIA, Spain) highlighted the role of European Innovation partnerships (PEI) in connecting with demand of innovation. The agri-food sector is fragmented because the majority of farms are small and medium size. This represents a limit for the demand for research and innovation that comes from the private sector. However, initiatives funded by the rural development program and Horizon 2020 could help to create a better environment for innovation in the agri-food sector in EU, increasing the demand for innovative activities. For this, it is important to incentivize the participation in Horizon 2020 by creating networks for researchers that represent the main issues in order to develop new ideas.

A. Piorr (ZALF, Germany) underlined that innovation in terms of technological or social innovation, management and governance is one of the most important activities that research institutions offer to the private sector. Research institutions help to analyse processes taking the role of brokers of knowledge. In particular, the ZALF takes part in several technological platforms, creating new models like crowdfunding. However, cooperation on international level is a key issue in order to have knowledge advantages. In this sense, networks play an important role to respond to calls and to be active in setting the political agenda.

Krijn J. Poppe (LEI, Netherlands) put in evidence that working with the private sector represents an opportunity to finance research but could create tensions between public and private goals of research institutes that have to give political advices and to support the private sector. For this, innovation is part of policy research that has to be done in public-private partnership. There are opportunities of public-private partnerships in particular in the food supply chain. One example is the development of sustainability indicators within a sustainability consortium. In addition, opportunities for European research institutes come from countries extra Europe: for example in developing FADN in other countries.

G. Brunori (Concluding discussant): The relation between public and private sectors changed in the last few years. Before, agricultural research was strongly embedded in agricultural social welfare state and, as a consequence, had objectives defined by the State, in a top-down approach, such as: promoting agriculture, avoiding fluctuations, volatility and ensuring to farmers

a level of income equals to that of other sectors. This model was replaced by a new model where the public sector lost its centrality and the private sector becomes more important. But the private sector is not always able to express its demand for innovation. The private sector has to face short-term problems while research is, generally, related to middle-term or long-term problems. In this context, partnerships between public and private sectors can help to fund long-term research in order to face common challenges and respond to the need of innovation. The relationship between public and private sectors is also beneficial to public research institutes that have the opportunity to learn from various actors – corporations, farmers and third sector. These forms of collaboration public – private give also benefits to private companies that want to develop new concepts and products or to anticipate change because they have the opportunity to influence the process of regulation-making and innovate before the regulation enters in place. Indeed research activity can influence or generate dialectic between policy-makers and companies, the third sector, etc.. helping to develop concepts and to address emerging social challenges. In this sense, research innovation is not good by itself e but only if is able to address what is relevant to society. In Horizon 2020 research is related to societal challenge and not only productivity gain but these challenges do not match short term needs of the private sector. The establishment of a network is a key issue in order to participate to international calls but it requires a lot of preparatory work starting from the mobility of researchers, the exchange of Ph. Ds or stages.

Conclusions (prof. Giovanni Cannata)

The event was a unique occasion to present and discuss the rationale of a public research system and its long-term perspectives but also to discuss and compare the relationships with the wider research system inside the single countries and also outside them (Academic research, International agencies, and so on). However, the event represented also an opportunity to discuss about some common problems that research institutes have to face in next years that seem to be related to the research budget, topics and the way of disseminating results. To this regard, the discussion has shown the existence of a trade-off between scientific and educational approaches in research and difficulties to disseminate research outcomes to specialized and not specialized audience, especially considering the scarcity of resources. Indeed, research institutes are facing budget constraints in several European countries that ask for more efficiency in the way in which public or private resources are used and to collect more resources from the private sectors. The development of

new themes represents in this context an opportunity and a challenge for research in support of the private sector that requires more attention to inter-disciplinarity and a switch from short-term problems to longer-term problems. That's why, research institutes have to be able to anticipate change and to give to stakeholders the opportunity of understanding the change. Cooperation within research institutions, at national and international level, is a key factor because it could help to keep changes, manage inter-disciplinarity, having research funds and spread research results. The workshop helped to create conditions for an useful network for European research projects, allowing to develop and enhance the circulation of ideas and researchers, sharing projects, exchanging young professionals and senior researchers.