

# TECHNOLOGY TRANSFER TO PRIVATE FARMERS THROUGH COMPETITIVE (RESEARCH) GRANT SCHEMES IN SOUTH EAST EUROPE

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## Abstract

Since 1991 many changes occurred in Central and Eastern European Countries. In general all Central European economies have changed from a central led economy into a market oriented economy. This shift tremendously affected all sectors in the economy and in particular the agriculture sector. Before the changes private farmers did not receive support in terms of services. Virtually all the support services had focused on the publicly owned structures in the agriculture sector. The political and economic changes therefore needed a strong reconstruction of the agricultural research and extension system. Projects have been established to support and guide these changes in most countries of Central and Eastern Europe. Several projects used the tool of Competitive Grant Schemes (CGS) for the re-orientation of the agricultural research systems towards private farming. In a CGS the leading organisation, in this case the Ministry of Agriculture, contracts research projects out to those research organisations that have submitted the best proposals on selected research themes.

The established projects support the development and implementation of new policies, which strive to restructure and re-orientate agricultural services for the private farming communities. Although each country has its own dynamism in the restructuring process, similarities between countries can be found. This paper therefore compares the processes in Albania, Croatia and Macedonia to draw conclusions that can help others in their restructuring processes or in setting up a CGS. The CGS developed in three South Eastern European Countries have the basic elements needed for the implementation: a council, calls and contracts, an implementation and monitoring system and a transfer system. All implementing organisations consider the development process to be satisfactory, but also put forward the need for further improvements.

## Introduction

Since 1991 many changes occurred in Central and Eastern European Countries. The changes in the society caused political changes which on their turn led to policy changes. In general all Central European economies changed from a central led economy into a market oriented economy. This shift tremendously affected all sectors in the economy and in particular the agriculture sector. Within some years the strong, or in some cases like Albania the complete, orientation on public agricultural production changed into an orientation on the private production systems, mainly consisting of privately farming small holders.

Before the changes private farmers did not receive support in terms of services, like advises, extension messages, or research oriented for small holder private farming. Virtually all the support services had focused on the publicly owned structures in the agriculture sector. The

political and economic changes therefore needed a strong reconstruction of the agricultural research and extension system. Projects have been established to support and guide these changes in most countries in Central and Eastern Europe : the National Extension Project in Albania (ANEP), the Farmer Support Services Project (FSSP) in Croatia, the Private Farmer Support Project (PFSP) in Macedonia.

All these projects started their implementation phase between 1996 and 1998 and used the tool of Competitive Grant Schemes (CGS) (Gill and Carney, 1999) for the re-orientation of the agricultural research systems towards private farming. In a CGS the leading organisation, in this case the Ministry of Agriculture, contracts research projects out to those research organisations that have submitted the best proposals on selected research themes.

All the aforementioned projects exclusively organised CGSs for agricultural research activities. In projects that have recently started their implementation, like the Agricultural Support Services Project in Romania, or will soon do, like the Agricultural Services Project in Albania, also extension, advisory and technology transfer activities can be proposed for financial support through a CGS.

The established projects in Albania (ANEP), Croatia (FSSP) and Macedonia (PFSP), support the development and implementation of new policies, which strive to reconstruct and re-orient agricultural services for the private farming communities. In Albania before 1990, private farmers didn't exist and after the changes and the land distribution in 1992 more than 450.000 small farms emerged. Before 1990 in Croatia and Macedonia respectively 40% and 20% of the arable land was not in private hands, but the Government mainly supported the developments of large farms which were publicly owned. Till the establishment of the projects mentioned before (1996, in the Macedonian case, and 1998, in the Croatian case) the Ministries of Science and Technology mainly financed the agricultural research system (and continues to do so), while the Ministries of Agriculture were not involved in agricultural research at all. With the establishment of the projects additional funds became available for research projects.

Although each country has its own dynamism in the reconstruction process, similarities between countries can be found. This paper therefore compares the processes in Albania, Croatia and Macedonia to draw conclusions that can help others in their reconstruction processes or in setting up a CGS. The paper mainly follows the lines of the implementation schedule that a CGS is going through:

- a Council that manages the CGS, is established,
- calls for proposals launched, proposal selected, awarded and project teams contracted,
- research projects implemented and monitored,
- results transferred to extension services and other beneficiaries.

For each of these issues the paper describes the strong and the weak points

## **1. The councils**

The councils in the different countries were set up by the Ministries of Agriculture, but the composition differed from one country to the other, as well as their task description (Box 1). In most cases the Ministries established the councils on an ad hoc base, upon discussions in the project steering committee or the project management team. The projects prepared documents about the functioning of the councils, indicating the number of members involved, the objective of the council's functioning, the tasks to perform. These documents further mentioned some themes that are important for agricultural development in the country considered. Research proposals should be oriented towards these themes. But in terms of policy development and policy documents little was put on paper.

## Box 1: Characteristics of the Councils and Committees that manage the Competitive Grant Scheme

<p><b>Albania</b></p> <ul style="list-style-type: none"> <li>• <i>Members of the National Research Extension Advisory Committee:</i> i) 2 staff members of the Ministry's Directorate of Science and Extension Services, ii) 2 staff members of technical departments of the Ministry, iii) 1 staff member of the Agricultural University, iv) 5 regional extension coordinators, v) 1 private sector representative, vi) 1 representative of the donor agency</li> <li>• <i>Objective of the Committee:</i> i) to set priorities among research themes submitted by research institutes and extension services, ii) to advice in matters related to applied and on-farm research</li> <li>• <i>The Committee's tasks:</i> i) to assess and select OFR suggestions, ii) to decide on the conditions and regulations for OFR contracts between MAF and research/extension groups implementing OFR, iii) to evaluate the OFR results by evaluating the derived extension messages, iv) to advice on further dissemination of the OFR results.</li> </ul>
<p><b>Croatia</b></p> <ul style="list-style-type: none"> <li>• <i>Members of the Agricultural Research Council:</i> i) 9 farmers representatives, ii) 3 representatives of scientific institutions, iii) 1 representative of the food processing industry, iv) 1 staff member of the Croatian Agricultural Extension Institute, v) 1 staff member of the Ministry of Science and Technology, vi) the ARC President, being staff member of the Ministry of Agriculture and Forestry, vii) the ARC Secretary, being a staff member of the Faculty of Agriculture.</li> <li>• <i>Objective of the Council:</i> to initiate knowledge transfer processes from scientific institutions to farmers' fields through the extension service; this knowledge generation and transfer mechanism will indirectly strengthen research policy development process, resulting in stronger research-extension-farmer linkages.</li> <li>• <i>The Council's tasks:</i> i) to define the research priorities in agriculture, ii) to finance applied and development oriented research projects through the Fund for Applied and Development Research. It is the Fund's mission to increase the competitiveness of the agricultural sector on domestic and world markets, iii) to monitor the implementation of the research projects.</li> </ul>
<p><b>Macedonia</b></p> <ul style="list-style-type: none"> <li>• <i>Members of the Agricultural Research Committee:</i> i) the Secretary of the Ministry of Agriculture, Forestry and Water Economy, ii) the director of PFSP, iii) a representative of the Ministry of Science, iv) a staff member of the Faculty of Agriculture, v) a representative of the Extension Service, vi) a member of a Farmers Association, vii) 3 farmers representatives.</li> <li>• <i>Objective of the Committee:</i> to set priorities among the research proposals submitted to the Committee</li> <li>• <i>The Committee's tasks:</i> i) to assess the submitted proposals and select a number of them for awarding a contract, ii) to monitor the implementation of the research projects, iii) to approve the AARP coordinator's activities.</li> </ul>

The Croatian Agricultural Research Council reflects the highest involvement of farmers (9 representatives) in their midst, followed by Macedonia (3 farmer representatives and 1 board member of a farmers' association). The Albanian National Research Extension Advisory Committee does not have any representation of the farmers' community. The Croatian ARC further represents a broad spectrum of stakeholders from the agricultural sector. The fact that farmers represent the majority of the Croatian ARC members, makes them responsible and somehow independent from Government structures. It motivates them to take sound and viable decisions. This is the only example in the Croatian agricultural sector where the farmers participate in decision making and managing public funds.

However, it remains very difficult to assess the influence of the farmer's representation on the selection of the research proposals. Despite of their majority in the Croatian ARC, they are one of the three parties involved in the selection procedure. Their votes count as 1 out of 3 in the total score of a proposed project; their influence is important, but not decisive. In the

Croatian case researchers were allowed and submitted proposals for development oriented research, which was not the case in Macedonia. These councils and committees contribute to the ownership of agricultural development. The farmers' community is supposed to take progressively at hand its own development. The councils furthermore provide a platform for exchange of opinions and points of view between the private sector and the Government. The more this stakeholder participation is guaranteed at various levels, the more decisions are taken in line with good governance principles, very important for equal and democratic developments.

## 2. Calls and contracts

Setting up a Competitive Grant Scheme requires a minimum of policy and strategy papers, which mention the main scheme development guidelines. For all three countries, Albania, Croatia and Macedonia, such documents are available, but their content is rather different (Table 1).

**Table 1: CGS policy environment**

	<b>Albania</b>	<b>Croatia</b>	<b>Macedonia</b>
Medium (to long) term agricultural policy available	yes	no	no
Issues mentioned in (CGS) policy documents	<ul style="list-style-type: none"> <li>• on-farm research</li> <li>• stakeholders</li> <li>• identification of research questions at farmers' level</li> <li>• multidisciplinary character</li> </ul>	<ul style="list-style-type: none"> <li>• research standards</li> <li>• applied or development research</li> <li>• involvement of extension service and farmers</li> </ul>	<ul style="list-style-type: none"> <li>• applied research, solving production problems</li> <li>• profitability increase at farm level</li> <li>• large eligibility</li> </ul>
Priority setting	yes	no	yes
Application procedure	two steps: 1) research suggestions 2) full proposals	one step – direct	one step – direct

In Albania, the mid term strategy for the development of the extension service, established in 1995 (MAF, 1995), served as a guideline for the development of the CGS. This policy document mentioned among others that applied agricultural research, in particular on-farm research, has an important role to play in the provision of new technologies for the agricultural sector. All issues stated in the strategy paper were translated into criteria for assessing the proposals and the organisation of the proposed applied research projects. The Ministry of Agriculture and Food has further developed the Green Strategy in 1998, a medium term agricultural development policy, offering a sound base for longer term plans. The National Research Extension Advisory Committee uses the Green Strategy for priority setting for applied research themes.

Albania successfully introduced a two-steps system for calls and applications. The Ministry firstly launched a call for research suggestions. The researcher mainly described the problem encountered by the farmers, the solutions proposed to solve these problems and the way these solutions will be tested in the research suggestion (about 2 pages). Upon submission, the

National Research Extension Advisory Committee selected a number of suggestions, based on the priorities set for on-farm research. The Committee requested the researchers, whose suggestions were selected, to submit a full proposal.

The Croatian ARC has developed a policy document for the implementation of the Fund for Applied and Development Research, stating several criteria for the assessment of the research proposals. However, a long term strategy on agricultural development in general and on the development of agricultural research in particular are not available in Croatia. It would have been easier for researchers to plan and to prepare research proposals if the Ministry or the ARC had set research priorities for the coming years. However, priorities are set every year through brainstorming session in the ARC meetings, before launching a new call for proposals.

The Croatian procedures for the evaluation of research proposals have changed several times since its establishment, due to internal evaluations. Transparency became the key word in these changes. The procedures are described in 'The ARC Manual'. Research peers, extension staff and ARC members assess the research proposal according to pre-set and clear criteria in a triple evaluation process.

The collaboration between the researchers and the extension service (the Croatian Agricultural Extension Institute – CAEI) has improved over the years. Before submitting a research proposal to the ARC, the researcher and the CAEI sign a Letter of Intent for Collaboration. Upon project awarding, this Letter of Intent is changed into a contract of collaboration and signed. The contract contains the description of the services, which the extension service has to provide to the researcher, the list of involved people and the costs. In that way also the collaboration becomes more transparent and all involved parties exactly know their duties. In the vast majority of the projects extension agents function still as learners and as supporting staff who tend to become technology transfer agents after finishing the project.

**Table 2: Calls and contracts**

	<b>Albania</b>		<b>Croatia</b>		<b>Macedonia</b>	
	<i>calls</i>	<i>contracts</i>	<i>calls</i>	<i>contracts</i>	<i>calls</i>	<i>contracts</i>
<b>1997</b>	-	-			1	6
<b>1998</b>	1	10	1	62	2	16
<b>1999</b>	1	23	1	34	1	3
<b>2000</b>	1	32	1	40	-	-
<b>2001</b>	1	42			-	-
<b>Total</b>	4	107	3	136	4	25

In Macedonia, between 1997 and 1999 the ARC launched 4 calls for proposals. In order to receive as many proposals as possible 7 major topics (IPM in crops and fruits, animal production, farm management, effective use of water in crop irrigation, effective soil cultivation, implementation of new varieties, processing of agriculture products) were specified in the open calls for proposals (World Bank, 1996).

The ARC prepared 10 criteria for the assessment of the proposals with a total of 100 points (Andonov and Van den Broek, 2000) to provide a unique system for evaluation of the proposals. Each of the criteria had a different value The ARC gave the highest score to proposals with a high potential to increase profitability (28 points). This ensured a strong orientation of the researchers to the market economy.

Each member of the Committee evaluated each of the proposals according to the criteria. Finally the Committee prepared a list of the most competitive proposals and proposed the Ministry to award these proposals with a contract. Out of 4 calls and more than 130 proposals the Ministry awarded 25 of them with a contract (Table 2).

### 3. Implementation and monitoring

Prior to the on-farm research implementation activities in Macedonia, researchers and their co-operating extension officers received training on on-farm research, AKIS (Agricultural Knowledge and Information System) development, communication and linkages between actors. The Macedonian project coordinators considered the training an essential element in the development of the applied research programme.

The training also strongly influenced the number of farmers involved in the on-farm research activities as well as their role in the research project. In all projects at least 8 farmers participated and in some research projects this number increased over the years (Table 3).

**Table 3: CGS implementation characteristics**

	<b>Albania</b>	<b>Croatia</b>	<b>Macedonia</b>
Training of research teams	same training separately organised for researchers and extension staff	different training sessions separately organised for researchers and for extension staff	same training organised at the same time for all the team members
Contracts between stakeholders	yes	yes	no
Number of participating farmers	less than 5 for a research theme	less than 5 for a research theme	more than 8 for a research theme
Monitoring teams	national co-ordinator and international expert	ARC members	national co-ordinator and international expert
Monitoring process	<ul style="list-style-type: none"> <li>• reporting</li> <li>• field visits</li> </ul>	<ul style="list-style-type: none"> <li>• reporting</li> <li>• field visits</li> </ul>	<ul style="list-style-type: none"> <li>• reporting</li> <li>• field visits</li> <li>• peer counseling</li> <li>• quality assessment</li> </ul>

PFSP in Macedonia developed a comprehensive monitoring process. It included reporting, field visits, peer counseling among researchers and quality assessment (Andonov and van den Broek, 2000). Technical reports and management reports were required for the reporting part.

During the field visits the monitoring team discussed the progress of the research with farmers, extension staff and other stakeholders involved. Based on these discussions, at the end of a monitoring week, the team organised a peer counseling session. The session aimed at the exchange of experiences between researchers. Although the researchers were not used to it, they started to understand that colleagues, even if they were working on other subjects, but in the same institute or university, could contribute to the resolution of problems faced during research implementation.

The quality assessment directly linked the implementation of the research project to the issues at stake during the training workshops, but also with the objectives of the PFSP. For the following criteria the monitoring team scored each project on a scale from 1 (bad) to 5 (excellent): i) adoption and profitability for farmers, ii) research design, iii) communication and linkages, iv) knowledge and skills transfer, v) research management. The team communicated the results in a transparent way to all the participating researchers.

Project co-ordinators in Croatia noticed that it was evident during the implementation process that all the stakeholders involved in the projects, and particularly the researchers as leaders and

managers, lacked knowledge and experiences on how to conduct on-farm research. Therefore, workshops were organized to train the researchers, while other workshops were organised to train the extension staff on research methods (on-farm research) and project proposal development, including diagnostic survey and problem identification.

But the researchers still lack the specific knowledge on how to prepare and write a good research proposal. The majority of them do not know how to carry out a diagnostic survey, to identify and precisely describe the problem, to make an ex-ante economic analysis, to assess the number of farmers or quantity of production affected by the problem and to describe the proposed solution. They can not distinct the basic principles of an on-farm and on-station research methodology. The lack of clarity and preciseness in the research proposals sometimes lead to low evaluation scores even though the research idea and proposed solutions are good.

Also Albania reported considerable improvements related to the implementation of on-farm research activities after training courses had been organised for the researchers and for co-operating extension officers. Not only did they learn more about on-farm research, but also the understanding between researchers and extension staff improved. Extension staff participate in the OFR activities not only in the identification of research questions but also during the implementation phase. Upon proposal agreement, researcher, farmers and extension workers sign a contract. The contract includes, among others, commitment of the extension worker to participate in OFR trial, the description of tasks and responsibilities, an agreement on collaboration concerning the preparation of extension materials and instructions for the organization of demonstrations after conclusion of the trials.

Due to the limited availability of financial resources, each of the parties involved had to contribute to the OFR-activities, through co-financing. The research institutes and the extension services paid salary costs from their normal budget, while the farmers contributed in kind through the provision of land and labour and all inputs not part of any treatment.

In Albania and in Croatia a very limited number of farmers participated in the OFR activities. The number of participating farmers influenced the control and management of the research activity. In all cases the researchers liked to control and to manage the research plots, as they are used to do under on-station conditions. But they did not take into account one of the objectives of on-farm research: farmers' assessment of new technologies. A farmer can only fully assess (economic, socio-cultural and technical aspects) a new technology, if s/he has really worked with it. And if more farmers are involved, more comments on the new technology and its applicability are collected

#### **4. Transfer of results to extension services and other beneficiaries**

In the whole process, from the development and through the implementation of a CGS, the transfer of results to as many beneficiaries as possible is the last, but most important step. The experiences in the different countries have learned us that the entire programme design, and as a consequence also the design of the individual research projects, should focus much stronger on this last step in the projects.

After two years of implementation the Croatian Agricultural Extension Institute (CAEI) complained about the few extension messages they were able to conceive from the research reports. A table summarizing for each project to what extent the tested technologies were clearly described, the results of the each treatment were given in a quantitative way in technical, economic as well as in socio-cultural sense, showed many open cells. This experience improved the reporting instructions, but more important many researchers became aware of the final aim of the on-farm research activities.

Upon these discussions the CAEI reviewed the procedures for contracting out their staff to on-farm research projects and included an article related to reporting and deliverables in order to guarantee a good transfer of the research results. The institute further concluded that the

communication between researchers and specialists in the institute's headquarters could be improved.

In the Macedonian case the monitoring made clear that in more than half of the cases the participating farmers adopted the proposed new technologies and practices, resulting in a rapid dissemination in the community. In several cases farmers decided to apply the new technology on all their plots. Then the 'control' plot, being the farmer's normal practice, didn't make any difference with the trial plot and the researcher had to identify neighboring farmers with control plots.

In a number of cases farmers and researchers modified the initially proposed technology and adapted it to the local situation. The regularly organised meetings with participating and non-participating farmers proved to be very useful for this adaptation and adoption process. The technology adoption rate of more than 50% was remarkably high, possibly because of long time neglected contacts and links between researchers and private farmers.

In Albania the adoption rate of introduced new technologies and practices extends clearly the 10% rate, but exact figures are not available, due to a lack of field evaluation activities.

Although agri-business are rapidly growing as a consequence of general liberalisation processes, their involvement in the on-farm research projects is very limited. This concerns not only direct implementation, but also the transfer of results. Identifying missing links in AKIS communication, agri-business seems to be one of them.

## **Conclusions**

The Competitive Grant Schemes developed in the South Eastern European Countries have the basic elements needed for the implementation: a council, calls and contracts, an implementation and monitoring system and a transfer system. All implementing organisations consider the development process to be satisfactory, but also put forward the need for further improvements. The councils and committees established to steer the CGS, clearly contribute to the ownership of agricultural development: the farming community is supposed to take its own development at hand. A strong farmer's representation should be considered. The councils furthermore provide a platform for exchange of opinions and points of view between the private sector and the Government. The more stakeholder participation is guaranteed at various levels, the more decisions are taken in line with good governance principles, important for equal and democratic developments.

Policy development for the agricultural sector in general, but for the development of a CGS in particular, has proven to be important. Policy and strategy documents offer a framework for efficient and effective implementation, as well as guidelines when important decisions have to be taken. All CGS coordinating units have worked out these policy documents into manuals, including tasks and responsibilities of the councils or committees, criteria for proposal assessment and selection, procedures for assessment, selection, monitoring and evaluation, etc. All mentioned countries, Albania, Croatia and Macedonia, worked on creating transparency in their procedures, every one on its own way. In this context the two-steps application system offers a more efficient system for the assessing councils and the submitting researchers.

Competitive (research) grant scheme in South Eastern Europe have proven to be an effective tool for technology transfer to private farmers, if a number of conditions have been fulfilled:

- all stakeholders, having a stake in the technology development and transfer process, should be involved in the process, to guarantee success,
- stakeholder involvement goes much further than asking for opinions; the requirement of (financial) commitments often create a clearer picture of stakeholders interests,
- stakeholders, in all cases, need training on new concepts of technology development and technology transfer, as well as on the cost-benefit calculations for the new technologies,

- discussions between the participating stakeholders during project implementation increase the adoption rates,
- good contracting procedures appeared to be important for transparent and sustainable development of linkages,
- besides training, a well developed monitoring and evaluation system is indispensable in order to provide follow-up to the theoretical concepts discussed during the training courses.

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