

## **AGRICULTURAL EXTENSION SERVICE IN THE FUNCTION OF RURAL DEVELOPMENT**

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## **AGRICULTURAL EXTENSION SERVICE IN THE FUNCTION OF RURAL DEVELOPMENT**

### **Abstract**

Agriculture and agricultural extension service are facing numerous problems in present times when good solutions are not easy to find.

Providing of agricultural extension service is important foreign-political instrument of a state which has stimulates the development of agricultural production. Agricultural extension service must provide effective link between holdings-producers, agricultural research and other sources of information. Agricultural extension agents must be aware of psycho-social and social aspects of group action and individual counselling.

Therefore, one of priorities in agricultural development of our country is rising of the level of extension operation and establishment of extension service based on modern principles. This is the reason why in this paper, some of the traits of the genesis of extension services were indicated, as well as types of extension services and models of the organization, financing and human resources at disposal and structuring of these resources according to main characteristics, for the purpose of modernization and agricultural and rural development.

**Key words:** agricultural extension service, types, models, functioning, human resources

### **Introduction**

Extension service in agriculture is indispensable and it offers more than just expert assistance in improvement of production and processing, it also enables flow of information and transfer of knowledge and scientific findings to practice. These activities are performed according to rules which regulate establishing of organization, functioning, goals and fields of operation, ways to execute extension activities by the extension agent, their obligations and rights.

Extension service has undergone numerous changes and has influenced unevenly application of certain scientific achievements in the practice.

It took Serbia over one century to reach comprehensive institutionally established and organized service.

Forming of the service started in the period 1953-1960 through network of agricultural stations and forming of the Department of animal recording and livestock selection, which was subsequently unified by establishing of the Institute of science Application in Agriculture.

Agricultural extension activity is important agrarian-political instrument of the state which stimulates the development of agricultural production.

Agricultural extension service has to be competent in agricultural skills, to communicate efficiently with producers and stimulate them to acquire new knowledge.

Dominance of large number of small family farms, holdings and need to adjust to new scientific achievements and results, as well as lower educational level of agricultural producers, compared to workers in other fields of economy and industry, in numerous World countries has lead to forming of special institutions as part of their own policies of technical-technological development of agriculture, and these institutions would be engaged in application of scientific results in agricultural production.

### **Development of expert extension services in agriculture**

First association of farmers was formed in Scotland in year 1723. Similar associations were formed in France in 1756, in Denmark in 1769 and in England and USA in 1784.

Analysis of the organization and functioning of extension service in developed world countries and their experiences in this activity are of course very useful for institutional organization of innovation in the field of agricultural technology and knowledge.

Developed countries on other continents formed their own national extension services at the end of 19<sup>th</sup> and beginning of 20<sup>th</sup> century (Australia 1890, Canada 1907, New Zealand 1910, USA 1910).

In Japan, national extension service was established in 1898, but farmers didn't accept it before 1910 and under force.

Diffusion of extension forms is common characteristic of agricultural extension service all around the world. It is pointed out that in the future, private initiative will gain importance in this field. In a broader sense this occurrence can be characterized as a phenomenon "untying of businesses in companies (DRUCKER 1990)."

Extension service in Serbian agriculture is organized through joint Agricultural expert/extension services of the Republic of Serbia (active in the form of institutes, stations, departments, etc.).

Before 2009 they all operated in public sector and were coordinated by the Institute of Science Application in Agriculture and experts from agricultural cooperatives and food industry.

Approximately 750 persons were employed in 35 agricultural services all over Serbia, in the Institute of Science Application in (IPNP) and 34 regional agricultural services (13 in Vojvodina, 20 in Central Serbia and 1 on Kosovo and Metohija).

Every extension agent is obligated to follow the latest scientific and expert results, findings and achievements related to his field, also to develop skills and improve knowledge of the methodology of extension work and have to participate in certain seminars every year.

Mutual interests cause organizational and economical links between state/government, producers, processors and extension service.

It is true that in 2009, extension service went from public ownership to state ownership, which means that the state, i.e. Ministry of Agriculture, Forestry and Water Management became the founder of extension service.

Consolidation of extension service is expected in defining of the rules of the operation of agricultural services, through rulebook on conditions, requirements and ways to provide extension service to agricultural producers.

### **Characteristics of different types of extension work**

Depending on the concept and main tasks of the extension service it is possible to define following types of extension work:

1. **Compulsory extension service** is related to the early stage of the development of agriculture when farmers are economically dependant and are at the lowest educational level, so for the purpose of achieving certain goals the legalized forcing is used and punishing of those who wouldn't subdue to this obligation.
2. **Economical extension service**, this type of extension work is possible in market conditions and uses economical incentives for realization of its goals, and its efficiency is demonstrated in capital deficiency.
3. **Educational extension service** provides, offers opportunities for learning through educational materials, publications, organizing of short courses, study trips, etc. This type of extension work is used for protection of the environment and nature.
4. **Universal extension service** established on legal basis and using economical incentives such as:

- price bonus/recourse
- insurance incentives
- lower interest rates
- assistance in organization of the market.

This type of extension service is very effective when economical and educational levels of farmers are high.

5. **Optional extension service** is based on free will of the farmers to receive advice and information on their request and if needed. It is efficient in circumstances

when farmers are able to develop and progress on their own, give initiative and have sufficient level of financial resources.

### **Scope of activity and tasks of extension service**

Agricultural extension service has the objective to assist family holdings or farmers in improvement of the methods and techniques of agricultural production, farm management, and increase of income and of productivity and production quality, increase of standard of living and elevating of social and educational standards in villages.

Objective is to help the farm i.e. holding to gain new information and develop new abilities, as well as to apply directly on the farm the latest scientific knowledge (transfer of technology).

- Extension work related to technological, economical and protected area of agricultural operation.
- Extension work in development of new guidelines for small and medium enterprises and agricultural holdings. Investments, business plans, plan for development of regions for agricultural production and processing, and additional activities.
- Extension work and assistance in adoption of measures of agrarian policy (assistance in submission of requests and documents for subsidies and other calls, providing information and keeping records).
- Assistance in organization and work of organizations for primary production and other forms of producer associations.
- Building of capacity of agricultural producers for more successful managements of the farm/holding.
- Directing of rural development of the local community.
- Preservation of natural resources and environment (sustainable development).
- Directing and harmonizing production with natural resources and market demands, as well as development of entrepreneurship in agriculture in rural areas.
- Inducing forming of producer associations and other social groups in the villages.

Set goals can be realized if the service is keeping up with latest scientific results and EU trends and market demands, relying on the results, knowledge and experience of scientific, research and expert educational institutions in agriculture. Extension service must establish good cooperation with all mentioned institutions.

### **Education of agricultural producers with review of selected agricultural holdings**

Providing information and educating agricultural producers (beneficiaries) can be realized by extension agents by organization of different expert lectures requested by producers on different locations and different periods. Most often such lectures are organized in winter time and they are harmonized with producers' needs.

Priority in the work of extension agents are selected agricultural holdings which are carriers of the production, role model in regard to quality of product and economical efficiency of the production.

Extension agent is obligated to establish good communication with each selected holding and to develop work program which would relate to improvement of organization and economical efficiency of production.

All types of extensions services provided by extension agents are recorded within typology of advices and services.

### **Methods of work of extension service**

Extension work is realized in application of several methods: individual, group and mass extension methods.

- Individual extension methods represent intensive method of extension work. They are applied in form of house visits and advisory discussions, talks (visit to the farm, field, etc.), practical demonstration methods, farmer going to the extension office, etc.
- Group extension methods provide relatively broad spectrum of influences on beneficiaries of extension services. Types of group extension methods are diverse: expert lectures, group discussions, “field days”, and group extension work in training centres for villagers and farmers, working groups for farmers and so called “extension clubs”, different types of demonstrations of experimental results and new work techniques, expert excursions and trips, mutual (informative) meetings, etc. Group extension work can be realized in groups formed with the idea to improve extension work (for instance farmer groups, extension clubs, etc.) or work with producer associations (producer associations, cooperatives, etc.).
- Extension work by way of mass media includes use of television and radio stations, expert brochures, expert articles in newspapers, leaflets, internet, etc. Each of the new media has its own specific traits and depending on these traits they can be used for informing and educating potentially large groups of agricultural producers. Extension agents are obligated to use all types of mass media using clear extension forms (short, clear, unambiguous and expert presentations, work instructions and solutions for certain production problems, etc.).

### **Human resources in agricultural extension service**

Unique strategy of integral rural development (which includes development concept of agriculture) includes clearly and precisely defined human resources policy which aim to manage human potentials at our disposal within extension service. Human resources policy relates to planning of future needs related to extension service, from the stand point of following aspects total number and

structural characteristics, engagement in certain rural regions, i.e. territorial distribution and expert competence of the employees.

Researches carried out by Jovan Samardžija and associates (12) show that on the territory of Republic of Serbia, of total number of employees in agricultural extension service, 52,02% is in Vojvodina and 47,98% in Central Serbia.

**Table 1** - Number and structure of employees in republic and regional agricultural services in Serbia (2002)<sup>\*)</sup>

Qualification	Total AES		republic		regional	
	number	%	number	%	number	%
<i>Qualification of extension agents</i>						
Ph.D.	34	5,7	5	17,2	29	5,2
M.Sc.	33	5,6	5	17,2	28	5,2
Specialists	7	1,2	1	3,5	6	1,1
Graduated	252	41,9	11	37,9	241	42,1
engineers	266	45,6	7	24,1	259	46,7
Other						
Total	592	100,0	29	100,0	563	100,0
<i>Educational profile of extension agents</i>						
Crop production	98	30,1	2	9,1	96	31,8
Livestock prod.	73	22,4	15	68,2	58	19,1
Fruit and wine growing	31	9,5	2	9,1	29	9,5
Plant protection	68	20,9	1	4,5	67	22,0
Mechanization	8	2,5	1	4,5	7	2,3
Technology	29	8,9	-	-	29	9,5
Agro-economy	7	2,1	-	-	7	2,3
Melioration	10	3,1	-	-	10	3,3
Total	326	100,0	22**	100,0	304	100,0

<sup>\*)</sup> Excluding employees in 6 organizations of specialized agricultural services

<sup>\*\*)</sup> Difference of 1 expert is the IT specialist

Source: Calculation of the author based on documentation of the Republic agricultural service

The highest share within the structure of employees are agricultural experts 65,9%. More than ¼ of all employees are administration approx. 16% and 12,3% others.

### Organizational solutions

There is a need for investment into development of institutions needed to build capacities as well as institutional support which can provide maintenance of services.

Investment into education of farmers is necessary, which should be developed on principles of ownership by the farmer community, training which would satisfy the needs and development of the training program. Financial procedure can be powerful means focused on orientation towards needs. General framework in regard to financing of extension services offers guidelines on how to finance development of services in such a way that the beneficiaries manage the funds and pay for services according to agreements between mutual interested sides/parties.

Agricultural extension agents are of interest to beneficiaries of services if they are capable to offer practical solutions and new solutions for their problems, which impose the dynamics of cooperation between research institutions and extension services.

Through next three models it is possible to present organizational solutions of agricultural extension services in countries in transition and ways of financing:

1. Extension service based on government choice of financing which is present in countries (Romania, Bulgaria, Croatia, and Poland) where low capacity family holdings, farms are predominant.
2. Extension service consisting of private consultants. This concept of extension service is present in Hungary, Estonia, Slovakia and Czech Republic. This extension service is functioning in the following way: the government is not providing to farmers this type of service, but through application of different mechanisms it supports the use of extension services. So, consultant services are directed to market economy, but the government is still financially supporting economical and other incentives to farmers to use such services.
3. Government service collecting money from the private sector. In this concept, agricultural extension service exists within department of certain competent ministry and they as departments have the right to charge farmers for certain services (Lithuania and Latvia).

In our conditions of economy the potential model of organization of extension service would consist of three components:

1. Extension national centre for agriculture founded within the Ministry of Agriculture, Forestry and Water Management of Republic of Serbia, financed by the state with centralized functions.
2. Networks of regional services as agricultural and veterinary institutes, agricultural departments/bureaus, agricultural and veterinary stations, all over Serbia.
3. Service beneficiaries and management in family holdings, specialized agricultural cooperatives and other food producers.

Constant dynamics of social-economical relations imposes solution in practice which would mean presence of commercial extensions services which provide for financial compensation to profitable agricultural holdings high quality services (D. Živković, R. Tomić, P. Munćan, S. Jelić).



In spite of high contribution of agricultural production in national product of Serbia, the decrease of the contribution of competent ministry in the budget of Republic of Serbia is obvious/apparent (from 8,6% in 1996. to 3,6 in 2002.) as well as share of agricultural extension service in the ministry budget (from 2,50 in 1994. to 1,14% in 2001).

Agricultural extension service is partially financed by the competent ministry (107 million RSD in 2002.), and partially by the Provincial Secretariat for Agriculture, Water management and Forestry (80 million RSD in 2007.).

Additional means derive from agricultural activities and fees for services provided to independent agricultural producers.

It can be concluded that financial position of agricultural extension service in Serbia is not satisfactory which indicates inadequate relation of the competent ministry to this very important part of the institutional infrastructure in our agriculture.

At the end it should be pointed out that this service should be based on achievements and accomplishments of science, with complete division of scientific and expert activities, it has to be adjusted to objectives, using foreign experiences, critical and creative approach with provided continuity on long term basis with unique organizational models.

### **Conclusion**

Agricultural extension service in Serbia is indispensable for providing scientific-expert services to agricultural producers. Historical path of its development in the world and in our country changed over time. Predominance of large number of small capacity family holdings, farms indicates the need for providing of services by this extension service. Diffusion of extensions forms is mutual characteristic of agricultural extension work all over the world.

Mutual interests determine the organizational and economical correlation between the state, producers, processors and extension service. Types of extension services have been pointed out depending on the concept and main tasks of extension service, also scope of their activities and tasks, education of agricultural producers, work methods, human resources, organizational solutions and financing of extension service in agriculture.

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