



Agricultural Extension and Advisory Services in Bosnia

SINISA BERJAN*

University of East Sarajevo, East Sarajevo, Bosnia and Herzegovina

Email: sinisaberjan@yahoo.com

HAMID EL BILALI

Mediterranean Agronomic Institute of Bari (CIHEAM-MAIB), Valenzano, Bari, Italy

ALEKSANDRA DESPOTOVIĆ

Biotechnical Faculty, University of Podgorica, Podgorica, Montenegro

JASMINA SIMIĆ

Cooperative Union of the Republic of Srpska, Banja Luka, Bosnia and Herzegovina

MIRKO KULINA

University of East Sarajevo, East Sarajevo, Bosnia and Herzegovina

NOUREDDIN DRIQUECH

Mediterranean Agronomic Institute of Bari (CIHEAM-MAIB), Valenzano, Bari, Italy

Received 15 December 2012 Accepted 30 January 2013 (*Corresponding Author)

Abstract Bosnia and Herzegovina (BiH) consists of two governing entities; the Federation of Bosnia and Herzegovina (FBiH) and the Republika Srpska (RS). Agriculture employs almost a fifth of the total labor force. Around 61% of the population lives in rural areas. Easy and timely access to reliable and updated information provided by extension services is crucial for agricultural and rural development. The paper aims at analyzing the public agricultural extension and advisory services (AEAS) in Bosnia. In particular, it analyses governance; human resources; gender; cooperation projects; decentralization; financing; role in building social capacity as well as advisory approaches, methods and media. Some recommendations to improve the AEAS performance are made. The paper is based on a literature review and semi-structured interviews as well as focus group discussions carried out in March 2011 with agricultural advisors in the RS. Modern AEAS started to exist in BiH in 2002 and are organized on entity level: the Agency for Providing Services in Agriculture in the RS and cantonal agricultural extension services in the FBiH. The National Extension Services for BiH project helped establishing cantonal and regional offices. The Advisory Services Agency has five regional offices. Advisors use many group (*e.g.* lectures, seminars, field days) and individual (*e.g.* farm visits, phone calls) extension methods and media (*e.g.* internet, leaflets, posters, brochures, mass media). Advisors focus mainly on crop and animal production, processing and marketing. They also assist producers to gather in cooperatives. Advisory services face many financial, management and technical problems. The traditional top-down approach is still widely used. Bosnian AEAS should be supported by providing them with the necessary means and resources as well as technical, managerial and soft skills to fully assume their crucial role. That is necessary to develop a well performing pluralistic, participatory, bottom-up, decentralized, farmer-led and market-driven advisory system.

Keywords agricultural extension, performance, governance, Bosnia

INTRODUCTION

Bosnia and Herzegovina (BiH) consists of two governing entities *i.e.* the Federation of Bosnia and Herzegovina (FBiH) and Republika Srpska (RS); and a self-governing administrative unit *i.e.*

Brčko District (BD), under the State sovereignty. During the post-war period, the rural scenario in BiH has changed dramatically. Rural economy in BiH is getting more diversified but agriculture still plays an important socio-economic role. Agriculture share in GDP was 8.1% in 2011 (EC, 2012). Agriculture employs a fifth (20.6%) of the total labor force i.e. 167,000 persons (ASBiH, 2012). Rural areas cover 81% of the country's territory and approximately 61% of the total population can be classified as rural (Lampietti et al., 2009).

Easy and timely access to reliable and updated information is crucial for agricultural and rural development (ARD). The term "extension" was first used to describe adult education programs in England starting in 1867 (Swanson and Rajalahti, 2010). One can simply say that "*extension is getting knowledge to farmers so that they will make a positive change*" (USAID, 2012). Advisory service is commonly used as an alternate term for extension services. Apart from their conventional function of providing knowledge and technology to improve agricultural productivity, agricultural advisory services are also expected to link farmers to markets, promote sustainable production techniques, etc. (Swanson and Rajalahti, 2010).

Good extension is recognized as a key to agricultural development (USAID, 2012). Agricultural extension is the defining metaphor for all technology transfer activities and models. However, too few farmers have access to the extension services they need and extension workers themselves cannot easily tap all the information they need to help farmers (USAID, 2012). According to Leeuwis (2004), extension as a communication for innovation should serve as a "two-way" or "multiple-way process", which may have implications for all involved parties (farmers, researchers, extension agents, policy makers, agricultural industries, etc.). In fact, agricultural and rural extension needs to provide a wider range of services to a more diverse clientele to improve their capacity to access, adapt and use knowledge, inputs and services (World Bank, 2008). For extension to be successful, it needs to include credible content, effective delivery and be relevant to and applicable by clients (USAID, 2012).

In the Western Balkans, current agricultural extension structures have been developed mainly within the last two decades with the help of international donors. Public extension structures exist besides other providers such as NGOs and commercial extension agents (FAO, 2011).

OBJECTIVE

The paper aims at analyzing the public agricultural extension and advisory services (AEAS) in Bosnia and Herzegovina.

METHODOLOGY

The paper is based on a review of secondary data from different sources such as the FAO Regional Office for Europe and Central Asia; Agency for Statistics of BiH; USAID; the European Commission (EC); Arcotras GmbH; the Institute for Statistics of the RS; the International Bank for Reconstruction and Development (IBRD); the Ministry of Agriculture, Forestry and Water Management of the RS (MAFWM-RS); the World Bank; etc.

Primary data were collected by semi-structured interviews as well as focus group discussions carried out in March 2011 with agricultural advisors in the RS. The prepared checklist dealt with many issues regarding the AEAS in BiH and the RS such as (i) governance; (ii) human resources; (iii) gender; (iv) main cooperation projects; (v) decentralization; (vi) financing; (vii) role in building social capacity; and (viii) advisory approaches, methods and media.

Taking into consideration the problems and weaknesses that were identified some recommendations were made to improve the Bosnian AEAS performance.

RESULTS AND DISCUSSION

Generally speaking, the performance of the agricultural extension system is strongly correlated to that of the research, development, education (formal, non-formal and informal) and training

(including vocational training) systems. As for existing agricultural training and education capacities, seven agricultural (cantonal level in the FBiH and regional level in the RS) faculties provide agricultural studies in BiH (FAO, 2011). The main agricultural research institutes and faculties in BiH are (Arcotrass et al., 2006): Agricultural Faculty in Sarajevo (FBiH); Agricultural Faculty in Banja Luka (RS); Veterinary Faculty in Sarajevo (FBiH); Faculty of Technology in Banja Luka (RS); and Agricultural Institutes in Sarajevo, Mostar (FBiH) and Banja Luka (RS).

Agricultural extension and advisory services, as known in practice worldwide (cf. Swanson and Rajalahti, 2010) started to exist in BiH in 2002. They are organized on entity level: Agency for providing services in agriculture in the RS, cantonal agricultural extension services in the FBiH and the Department of Extension Services in Brcko District. Responsibility for extension activities in the FBiH is in the hands of cantonal ministries in charge of agriculture. In Brcko district, the Office of Agricultural Extension Services operates within the Department of Agriculture and Forestry.

With the strong support of international donor projects the establishment of advisory services in BiH started after the civil war. A World Bank project is still active at national level (FAO, 2011). Within the EU PHARE pilot project (Co-ordination, Institutional Development and Advisory Services to Support Private Farmers; 1998-2000), extension service offices were founded throughout BiH (Arcotrass et al., 2006). In the RS, PHARE project financed the establishment of seven advisory services in Banja Luka region with a central office in Banja Luka. In the second phase (2000-2002), five regional centers have been established covering the entire territory of RS. Funds were provided also through the National Extension Services for Bosnia and Herzegovina (EU-ESP) project (MAFWM-RS, 2010).

In May 2002, the Agricultural Extension Service of the RS (Official Gazette of the RS, No 36, June 21, 2002) was established within the Ministry of Agriculture. Two years later, the Government of the RS established the Agency for providing services in agriculture, as a separate professional and legal organization, with a wide range of activities including agricultural extension services. The Agency is headquartered in Banja Luka and has five regional offices *i.e.* Banja Luka, Dobo, Bijeljina, Sokolac, and Trebinje; where work 21 advisors and administrative staff (about 48% female) for 221,000 rural households in the RS. All regional offices are financed by the government of the RS and each one of them covers from 9 to 21 of municipalities (MAFWM-RS, 2010).

The agricultural extension system in the RS includes municipal based advisers - within the Department for Economic and Social Affairs - supported by a central support unit with specialist adviser capacity, based in Banja Luka (Arcotrass et al., 2006). The number of officers for agriculture in municipalities in each region ranges from 9 (Trebinje) to 28 (Banja Luka) (MAFWM-RS, 2010). The Advisory Services Agency (ASA) in the RS is financed by the Entity budget but can also apply for funds from development projects. Seven municipal offices in Banja Luka area (*i.e.* Kozarska Dubica, Gradiska, Prijedor, Novi Grad, Laktasi, Prnjavor and Kotor Varos), are financed by municipalities. Generally the service appears to be well appreciated and used, though it remains poorly equipped, under-funded and generally under-manned (Arcotrass et al., 2006). The fact that extension is managed by a state agency provides some space for extension management and maintaining distance from day-to-day political decisions (FAO, 2011).

The EU-ESP project helped also establishing cantonal agricultural advisory services in the FBiH. The extension system was established at canton level but the commitment of most cantons was minimal and no central services were established to support the system (Arcotrass et al., 2006). Field advisors are part of the municipal administration (FAO, 2011). With this organizational setup extension superiors in the cantonal ministries of agriculture usually have little say regarding the extension service managed by municipalities. The relative advantage of having advisors who are close to the field and its actors, as well as the apparently positive ratio of farmers to advisors, is quite often counteracted by a deficiency of funds for transport and a great burden of administrative tasks, minimizing the time available to carry out advisory work. This has led to an almost asphyxiation of advisory work since the end of the last EU-funded project (FAO, 2011).

All services provided by the public advisory systems in BiH are free; the work of the advisors is paid for with entity, canton or municipality money (FAO, 2011) (Table 1).

As for agricultural extension methodological procedure, more or less clearly defined individual contact farmer approach has been implemented, focusing the advisory contacts on 40-50 example farms per extension agent (FAO, 2011). Advisors use many group extension and communication methods (*e.g.* lectures, seminars, demonstrations, field days, events, etc.) and individual methods (*e.g.* farm visits, contacts at extension offices, phone calls). The main media used are the internet, leaflets, posters, brochures, and mass media (Table 1).

Table 1 Characteristics and methodological procedure of the public advisory services in the entities of the FBiH and RS

Characteristics	RS	FBiH
Institutional Setup	State agency: Advisory Services Agency	Under responsibility of cantons
Field advisors	Field advisors are agency staff (agriculture administration)	Field advisors are part of municipality administration
Finance	Agency budget (300.000 € in 2009)	Cantonal budget
Resources of field advisors	Office, telephone, PC, Internet access, vehicle	Office, telephone, PC, Internet access
Approach to farm families	Individual contacts (sample farmer)	
Media	Leaflets, brochures, Radio, TV	
Priority setting	No defined procedure/ policy dependent	

Source: Adapted from FAO, 2011

Advisors provide services dealing mainly with agriculture production, processing and marketing (*i.e.* vegetables and fruit growing, animal husbandry, processing and quality of agro-food products, agro-economy). In the RS, most of extension agents are agriculture engineers that have general educational orientation (*e.g.* crop production, livestock production, fruit growing) while the number of specialists *e.g.* plant protection, irrigation, agricultural machinery, is modest. The fact that the majority of the field staff are agricultural experts induces a strong focus on production techniques and a relative preference given to large farms (FAO, 2011). The target group includes mainly farmers eligible for incentives. Extension generally lack market or farm management focus (Arcotras et al., 2006). According to Swanson (2008), in most developing countries, extension's focus has concentrated on technology transfer for the major food crops. Extension agents also assist agricultural producers to gather in cooperatives and associations, help them to prepare business plans and to apply for credits. However, such an ambitious plan is far from matched by personnel, technical equipment and financial resources.

The Bosnian public agricultural extension service is strongly focused on production techniques, while farm management, markets and marketing, regional rural development and the promotion of producer organizations are only partially served. Extension agents are only able to thinly cover the areas of farm economy and farm development planning. Bosnian farmers' knowledge and skills requirements encompass issues of production, farm management (*e.g.* data recording), marketing and rural development. Rural development is not systematically supported by the public advisory systems due to an overload of work, and to the general lack of knowledge (on projects and programs) and skills (on group facilitation and group management) (FAO, 2011).

Advisory services face many finance, management and technical support problems as well as those related to mentality, low motivation and enthusiasm, overload with non-advisory activities, etc. According to the MAFWM-RS (2010), the main problems faced by the public extension system are: low number of extension agents; limited funding; lack of information flows between the advisory services and the Ministry of Agriculture; weak participation in international projects; confusion about the role and functions of the Agency; low interest of farmers for training; lack of long-term agricultural policy; and lack of specialized research institutions.

Advisors spend most of their working hours doing administrative tasks, first of all those related to incentive measures. According to FAO (2011), the handling and the administration of regional and national support programs dominates part of the activities of the public extension

services (FAO, 2011). Moreover, there is still a strong legacy of the former Yugoslav socialist system and the traditional top-down approach is widely used while the Agricultural Knowledge and Information System (AKIS) (Engel, 1997; Röling, 1996) and, the more recent, Agricultural Innovation System (AIS) (World Bank, 2006; Hall et al., 2006) concepts diffusion is limited.

Besides public extension services, many institutions provide advisory services such as cooperatives, agricultural and veterinary institutes and stations as well as private actors. In general, there are four types of private actors in agricultural extension: input suppliers; agricultural products purchasers; private trainer-advisor-outreach agencies; and mass media (Neuchatel Group, 1999). In BiH, communication and cooperation between the public, semi-public and private actors involved in the agricultural extension system is generally weak and unsystematic. In fact, Bosnian extension agents have no regular cooperation with the applied research institutes, universities, NGOs, and private extension providers. Meanwhile, they have poor cooperation with input suppliers and processors while cooperation with farmers' groups and associations is sporadic (FAO, 2011).

Bosnian extension agents lack systematic offers of professional training as there is no systematically planned and performed in-service training program. However, there are donor projects that provide training on a broad range of agriculture and rural development issues. Nevertheless, these trainings are not coordinated and planned, nor institutionalized at national and/or regional level and are thus potentially not accessible to all agricultural advisors. Agricultural advisors need training regarding the following issues: farming systems approach; extension methodology; farm economy and management; marketing, market development and value chains; environmental impacts of farm production; EU regulations; etc. (FAO, 2011).

In future, the agricultural knowledge system including education, research, extension and agribusiness needs to focus on how to improve the farm household's income, as opposed to just improving production. This requires a much sharper focus on the economics of technology and investments and on risk acceptability to farmers. In the reorganization of the extension services it must be realized that the technologies devised for the social farms are inappropriate for the private farms. A complete reversal of production technologies is now required (Arcotrass et al., 2006). The extension system must be flexible, user-driven, and focused on local problems (World Bank, 2008). Both public and private extension resources should be fully used; accountability to clients increased and more responsibilities transferred to the private sector (Arcotrass et al., 2006).

Linkages between advisory services and public stakeholders as well as research and education institutions dealing with ARD should be strengthened. Agricultural education, training and research systems should be strengthened as well. It is essential that the research system engages universities, private sector research and civil society organizations, and stimulates the scaling-up of innovations (Hall et al., 2006 and World Bank, 2008). Research needs to be more integrated into the agricultural sector transformation by moving from agricultural research and development to Agricultural Research for Development (AR4D). The agricultural education and training system needs to adapt as well to meet the new dynamics of agricultural innovation. Education institutes, both higher and vocational, have to offer more relevant subject matters for agricultural innovation (Daane, 2010).

CONCLUSION

Access to information and knowledge is crucial for the development of Bosnian agriculture and rural areas. Modern agricultural extension and advisory services in BiH are organized on entity level. There are also cantonal (FBiH) and regional (RS) offices. Bosnian advisors use many group and individual extension methods and media. However, advisors focus mainly on crop and animal production. They also assist producers to gather in cooperatives.

Advisory services face many financial, management and technical problems. The traditional top-down approach is still widely used. Funds available for field-level extension activities and in-service training courses for the extension staff are very limited. For all these weaknesses and problems the involvement of other actors in the extension work is crucial if the system is to keep with rural people's expectations and to meet their needs. In the framework of the agricultural innovation system, there is a clear role for public, private and civil society organizations to work

together in providing extension services to rural households.

Higher attention should be paid to modernizing and supporting Bosnian advisory services to allow them to assume fully their role as a main bridging actor in the dissemination of knowledge and the promotion of rural innovation, diversification, multifunctionality and sustainability. It is necessary to develop a pluralistic, participatory, bottom-up, decentralized, farmer-led and market-driven advisory system. The agricultural extension system should use advice, non-formal education and facilitation paradigms not only to achieve food security but also to manage natural resources; improve rural livelihoods; and build rural social capital. Well-performing agricultural advisory services are indispensable for achieving sustainable agricultural and rural development.

ACKNOWLEDGEMENTS

Authors would like to thank all the extension agents that participated to the semi-structured interviews and took part in focus group discussions.

REFERENCES

- Arcotrass, et al. 2006. Study on the state of agriculture in five applicant countries: Bosnia and Herzegovina country report. Study undertaken by Arcotrass GmbH (Germany), in association with Vakakis International SA (Greece), EuroCare GmbH (Germany) and AKI (Hungary).
- ASBiH. 2012. Anketa o radnoj snazi 2012 (Labour Force Survey 2012). Agency for Statistics of BiH (ASBiH), Sarajevo, Bosnia and Herzegovina.
- Daane, J. 2010. Enhancing performance of agricultural innovation systems. *Rural Development News*, 1/2010, 76-82.
- EC. 2012. Bosnia and Herzegovina: 2012 progress report. European Commission (EC), Brussels, Belgium.
- Engel, P. 1997. The social organization of innovation. Royal Tropical Institute, Amsterdam, the Netherlands.
- FAO. 2011. Assessment of the human capacity development needs for, and gaps in, the Agricultural Advisory Services in Western Balkans. Food and Agriculture Organization of the United Nations; Regional Office for Europe and Central Asia, Budapest, Hungary.
- Hall, A., Mytelka, L., and Oyeyinka, B. 2006. Concepts and guidelines for diagnostic assessments of agricultural innovation capacity. United Nations University, Maastricht, the Netherlands.
- Lampietti, A.J., Lugg, D.G., Van der Celen, Ph., and Branczik, A. 2009. The changing face of rural space: agriculture and rural development in the Western Balkans. *Directions in Development (DID) - Agriculture and Rural Development*. The International Bank for Reconstruction and Development (IBRD), Washington D.C., USA.
- Leeuwis C. 2004. *Communication for rural innovation: rethinking agricultural extension*. Blackwell publishing, Oxford, UK.
- MAFWM-RS. 2010. Strategija savjetovanih aktivnosti u poljoprivredi (Strategy for the development of Agricultural Advisory Service in the RS). Ministry of Agriculture, Forestry and Water Management of the Republika Srpska (MAFWM-RS), Banja Luka, Bosnia and Herzegovina.
- Neuchatel Group. 1999. Common framework on agricultural extension. Paris, France.
- Röling, N. 1996. Towards an interactive agricultural science. *Journal of Agricultural Education and Extension*, 2/4, 35-48.
- Swanson, B. 2008. Global review of good agricultural extension and advisory service practices. FAO, Rome.
- Swanson, B., Rajalahti, R. 2010. Strengthening agricultural extension and advisory systems: procedures for assessing, transforming, and evaluating extension systems. *Agriculture and Rural Development Discussion Paper 45*. The International Bank for Reconstruction and Development, Washington D.C., USA.
- USAID. 2012. Expert consultation on the G8 new alliance for food security and nutrition ICT extension Challenge. October 11-12, 2012; Final report. Washington D.C., USA.
- World Bank. 2006. *Enhancing Agricultural Innovation: how to go beyond the strengthening of research systems*. The International Bank for Reconstruction and Development (IBRD), Washington D.C., USA.
- World Bank. 2008. *World development report 2008: Agriculture for development*. World Bank, Washington D.C., USA.