

Research Article

Evaluation of Public Agricultural Extension Programs: The Case of Hatay Province (Turkey) #

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Abstract

Today, in the majority of developing countries, the agricultural sector still maintains its importance in the economy. In a rapidly changing world, developing countries are facing more complex issues as a result of the innovations in agricultural and food industries. In these countries, public agricultural extension and training activities are reducing the problems of the agricultural sector and has important role in the rural development. Therefore, governments, assumes the financial burden of agricultural extension work carried out. In this study, agricultural extension programs in Hatay province are examined within the framework of rural development. The agricultural extension practices being carried out in the region have been evaluated in terms of the agricultural production processes and other agricultural issues needed by producers. Implemented during the period discussed in agricultural extension activities, demonstration, field days, courses, meetings, competitions and various campaigns have been executed. During those activities, the printed material prepared in various subjects were distributed among farmers. In addition, technical training for extension personnel was organized within the scope of the development of agricultural extension capacity. Although extension studies in the region have increased in terms of number of participants and activities over time, it has been found that there are some problems about extension staff and organization. For the delivery of more efficient extension services to farmers, cooperation with the university and the increase of the use of information communication technologies are suggested.

Key words: Agricultural extension, farmer education, rural development, Hatay province

Kamu Tarımsal Yayım Programlarının Değerlendirilmesi: Hatay İli Örneği (Türkiye)

Özet

Bugün, gelişmekte olan ülkelerin çoğunda tarım sektörü hala ekonomideki önemini korumaktadır. Hızla değişen dünyada, gelişmekte olan ülkelerin tarım ve gıda sektörü, yeni teknolojik gelişmeler nedeniyle, daha karmaşık sorunlarla karşı karşıyadır. Bu ülkelerdeki kamu tarımsal yayım ve eğitim çalışmaları, kırsal kesimin sorunlarının azaltılmasında ve kalkınmasında önemli role sahiptir. Bu nedenle hükümetler, yürütülen tarımsal yayım çalışmalarının maliyetlerini üstlenmektedir. Bu çalışmada, Hatay ilinde yürütülen kamu tarımsal yayım programları, kırsal kalkınma çerçevesinde incelenmiştir. Bölgede yürütülmekte olan tarımsal yayım uygulamaları, üreticilerin ihtiyaç duyduğu, tarımsal üretim süreçleri ve diğer tarımsal konular bakımından değerlendirilmiştir. Ele alınan dönemde uygulanan tarımsal yayım çalışmaları arasında gösteriler, tarla günleri, kurslar, çiftçi toplantıları, yarışmalar ve çeşitli kampanyalar yer almıştır. Bu faaliyetler sırasında çeşitli konularda hazırlanmış olan basılı materyal çiftçilere dağıtılmıştır. Bunun yanında, tarımsal yayım kapasitesinin geliştirilmesi kapsamında, yayım personeline yönelik teknik eğitimler düzenlenmiştir. Bölgede yürütülen yayım çalışmalarında, zaman içinde katılımcı ve faaliyet sayısı bakımından artışlar olsa da, yayım personeli ve organizasyonu bakımından bazı sorunlar yaşanmaktadır. Çiftçilere daha etkin yayım hizmeti sunumu için, üniversite ile işbirliği ve bilgi iletişim teknolojilerinin kullanımının artırılması, ilgililere önerilmektedir.

Anahtar kelimeler: Tarımsal yayım, çiftçi eğitimi, kırsal kalkınma, Hatay ili

Introduction

In many developing countries, agricultural sector is still one of the most prominent sectors in their economy. In fact, it is generally stated that the economic development in those countries is still significantly related to the development in agricultural sector. In other words, it is observed that agricultural development remains as a major driving force for the economic development in those countries (Özçatalbaş and Gürgen, 1998; Hunt et al., 2013). The backbone of agricultural extension efforts is formed by an agricultural knowledge transfer to farmers for increasing their production capacities. For countries, embracing new technologies and production approaches in agricultural activities, facing the challenges of rapid population growth and increasing the productivity of lands with agricultural production have a crucial importance. In the beginning of 21th century; almost every increase in agricultural production in the world was achieved by the inclusion of new lands in agricultural production. Today, however, almost every increase in agricultural production is achieved by higher output per hectare since low-cost land transformation opportunities do not exist (Judd et al., 1986; Ruttan, 1987). This long-term process of transforming from the resource based to technology based agricultural system is the main source of supply and demand for the agricultural knowledge. This transformation is creating more responsibilities for the agricultural extension sector. The agricultural knowledge and technology shaped by the agricultural system based on novel and constantly growing technology are vital for farmers; however, it is also creating necessities and concerns that are reverted back to researchers and policy makers (Umali and Schwartz, 1994; Anderson and Feder, 2007; Far and Rezaei-Moghaddam, 2017). The aim of the agricultural extension personnel is to transform knowledge from researchers to farmers, to provide consulting during their decision making process, to educate them for better decision making, to assist farmers to clarify their objectives and opportunities and to promote the utilization of desired agricultural advancements (Van den Ban and Hawkins, 1996). Extensive and supportive extension services exert a significant role in the promotion of the production (Sattaka et al., 2017).

The agricultural extension practices in Turkey are executed primarily by the Ministry of Agriculture. Legally, it is the biggest and the most significant organization in the country assigned with organizing extension activities. Along with the Ministry of Agriculture, various organizations of agricultural producers are conducting extension activities on limited fields. Additionally, various

business enterprises providing agricultural input to the market (agricultural pesticides, fertilizers, seeds etc.) are providing informative activities for producers that are arguably referred as extension activities (Özçatalbaş and Danış, 2004; Kızılaslan, 2010). Small-scale suppliers involve millions of households in Turkey and play a significant role in rural economy. However, the technical support that these farms need is often disregarded. In Turkey, the public is also involved in agricultural extension and research activities. However, the public in Turkey, similar to other countries, is been criticized for putting insufficient work, showing poor performance and being indifferent to the agenda of rural areas. For companies and farmers, the ability of transferring and adapting new technologies was enhanced thanks to liberal regulations in 1980s (Subaşı and Ören, 2013). Various organizations of agricultural producers including agricultural chambers, production unions, cooperatives and various associations and foundations are performing agricultural extension activities on specific topics. However, those activities are organized on limited topics and fields. The privatization of the national agricultural counselling services affects small-scale farms greatly. The studies conducted demonstrate that the privatization of agricultural extension and counselling services may result in several unexpected outcomes in small-scale farms (Labarthe and Laurent, 2013). The small-scale farms, by and large, that have benefited from extension services have marked a better productivity when compared to middle and large scale enterprises (Baloch and Thapa, 2016).

Compare to other cities in Eastern Mediterranean region such as Mersin and Adana, Hatay province have made a relatively slower progress in agricultural production. Albeit having similar ecological characteristics, it has not reached the same production and productivity level on agricultural and animal production as neighbor regions. Thus, extension activities that are planned or implemented in the region are gaining a bigger importance. In this study, agricultural extension activities in Hatay province that were implemented by the public in the period of 2014 -2016 are examined. In the study, topics that were addressed in extension programs, organized activities, the participation status and the training of the personnel working in extension programs are reviewed. Insufficiencies and problems observed in public extension practices were evaluated and were presented to the attention of people who are concerned along with measures that should be taken against these issues.

Materials and Methods

The main material in this study is based on activities and records of Hatay provincial directorate of the Ministry of Food, Agriculture and Livestock (MFAL) - the main organization for public extension programs. Additionally, public agricultural extensions activities organized by the ministry, as well as, their related publications are also used in this study. By examining related scientific publications, different examples of public agricultural extension activities are also presented in this study. Along with MFAL, various public organizations are also performing various practices in the region that can be considered as agricultural extension and training activities. However, those practices are not included in this study since they were conducted on a limited field with a low participation level.

The historical development of public agricultural extension work in the world and Turkey, and examining the current situation, agricultural extension work carried out in Hatay province were examined in this context. Agricultural extension activities in Hatay province were determined by examining interviews with public agricultural extension staff and extension plans and implementation programs. Public agricultural extension practices organized between 2014 and 2016 are evaluated by considering agricultural extension and training practices that were planned and executed based on identified needs and problems of producers regarding agricultural and animal production and other issues. Number of visual and printed materials used and distributed during public agricultural extension practices and trainings were evaluated and extension and in-service training programs that were organized and designed for extension personnel were examined in terms of training type and the number of participation. The deficiencies in the public agricultural extension studies conducted in the region have been compared and proposals have been made within the scope of examples of successful implementation in this area.

Result and Discussion

Another important factor in agricultural development is extending the implementation of new agricultural techniques and thereby increasing the current agricultural production. Thus, agricultural extension plays an active role for providing an increase in production through transferring new technologies (Özçatalbaş and Gürgen, 1998). The influence of agricultural extension on the worldwide agricultural development is certain. Therefore, agricultural extension will always be regarded as a top priority

among subjects that are addresses on agricultural and rural development. It is necessary to support public sectors to foster agricultural extension and communication for providing rural development and food safety.

Public agricultural extension in the world

In a rapidly changing world, innovation systems designed for food and agricultural production are facing new difficulties and challenges that are gradually becoming more complex. The fight against poverty and supplying food and food security without damaging the environment are significant problems that the practitioners of global development are still facing. In order to strength the means of achieving knowledge and to fasten the development and expansion of the innovations, new mechanisms are required. Newly developed information and technology are shared with small farmers, families without food security and other vulnerable groups to provide them with certain benefits (Kumar and Dhananjai, 2016). Agricultural sector, still, mainly consists of small and geographically disjointed units and resultantly, the information is still internally preserved. The distribution of knowledge becomes even more significant due to those characteristics (Allaire and Wolf, 2000).

In the last 50 years, supporting agricultural activities with technological enhancements, scientific dependency on agriculture and transferring this advanced knowledge to farmers in a fast and efficient manner are gaining a bigger importance. Technological preferences of the farmers and their decisions on the distribution of resources are based on their knowledge. Farmers and societies in general will benefit from accessing to the advanced knowledge and embracing this knowledge which will contribute to the productivity growth and nutritive enhancements. Additionally, rapid advancements in electronics and communication technologies have expanded and fastened the means of knowledge transformation (Umali and Schwartz, 1994; Anderson and Feder, 2007). Public agricultural extension services play an important role for the implementation of rural development strategies based on sustainable management of natural resources. However, financial and human resources in agriculture are finite (Pokorny, et al., 2005). In developing countries, one important aspect of agricultural extension is that it is spreading through relevant extension strategies including technologies developed by universities and public research institutions, exhibitions, farm and house visits, farmer meetings, the usage of printed materials and media. This type of top-to-bottom extension

models are generally preferred by the Ministry of Agriculture. One of the examples is Training and Visiting system (T&V) introduced by the World Bank in 1970s. This system was designed as public extension services and in multiple countries; it became an important model for enabling and managing extension.

Agricultural extension services are generally defined as an activity branch setting against various problems including complexities that are also involving extension services, the environmental impact of wider agricultural extension policies, the input supply, the critical role of other institutional support services including loans and agricultural marketing, the deficiencies in political support and commitments, the insufficient public funding and the inadequacy of proper and relevant technologies (Gebremedhin et al., 2006). Three main suggestions are presented to the governments; (1) developing a newly designed political agenda to support agricultural extension and communication in rural development; (2) adapting a diverse and pluralistic national strategy to promote an agricultural extension and communication in rural development and (3) forming a platform to enhance the dialog and cooperation between related organizations that are present in multiple countries and are forming the diversity of multi-sector agricultural extension services. The objective behind these suggestions is to enhance the source of income, in other words, the food security and means of income generation for impoverished people in rural areas (Rivera and Quamar, 2003).

Public agricultural extension in Turkey

A great number of methods and projects have been applied within the scope of agricultural extension for a period of time in Turkey (Oymak and Özden, 2013). During early years of the Republican Period, practices of public agricultural extension in Turkey were mainly consisted of practices based on agricultural production extension. Until 1980s, governmental practices of agricultural development were mainly focused on essential outputs such as imported products and grains. In Turkey, agricultural extension services for farmers are mainly performed by the Ministry of Food, Agriculture and Livestock. The extension services are regulated by provincial directorates affiliated with the ministry. The agricultural extension approaches that are adapted are based on the principal of "technological transfer". In Turkey, Agricultural Extension and Applied Research Project (AEARP) and Training and Visiting Approach (T&V) was applied countrywide in 1984 (Özçatalbaş, 2011). On the Fifth Development Plan (1990-1994), extending the knowledge transfer between

farmers, personnel working in extension programs and researchers and increasing the cooperation between organizations of agricultural extension research was emphasized. Additionally, the scope of agricultural extension and applied research project become wider and the project was continued (Kızılaslan, 2010). The inadequacy of research, education and extension services in agricultural sector was determined on 7th. Five-Year Development Plan (1996-2000). In order to enhance productivity and quality in the production, the necessity of putting extension and research of extension and research findings into practice was emphasized. In this period, the main focus was trainings designed for farmers and the technical personnel. It was planned to restructure the Ministry of Food, Agriculture and Livestock to make it more efficient (MOD, 2017). Additionally, it was aimed to continue the implementation of previous rural development projects and to adapt upcoming projects. Since the agricultural productivity was negatively affected due to the insufficiency of agricultural extension services, the necessity of developing human resources and enabling their involvement in every process of the extension was emphasized in the five-year plan of 2001-2005. Strengthening the institutional capacity, eliminating the problems observed in organizational services flow, enabling productivity and rational usage of resources during the distribution of agricultural resources and strengthening the farmer's organization were emphasized. For this period, reforming agricultural extension organizations and enhancing farmer trainings and current education and research & development (R&D) systems was pointed as main working areas. Additionally, the role of the private extension on the public extension will be specifically reconsidered and reevaluated. In the following periodical plan (2007-2013), fastening the land consolidating services to minimize the problems of agricultural unproductivity, strengthening producer organizations and activating the usage of education and extension tools were considered as main topics that will be taking into consideration. In the current five-year development plan (2014-2018), the small and scattered organization of agricultural businesses, insufficiencies in market access and sectorial organization and the lack in the extension of education-extension services are mentioned as serious problems. The following targets were mentioned in the plan; integrating agricultural information systems by enabling its common usage and the efficient utilization of vocational and technical trainings for agricultural sector, as well as, information and communication technologies on extension related topics.

Today, the ministry is providing following services for educational purposes; collecting and evaluating any type of information and documents related with agricultural topics, preparing or having prepared movies, slide shows, photographs and other related materials and executing archive, documentation and library services related with its working field. Additionally, the ministry is responsible for following tasks; organizing or make it organized any type of educational activities related with the working field of the ministry, collaborating with related public and private institutions regarding upcoming extension activities, executing farmers trainings, as well as, agricultural extension and consulting services, enabling the designation and implementation of projects of the ministry in accordance with the IT infrastructure of the ministry, following technological advancements, taking measures towards data safety and requirements of data safety and determining related policies and principals and finding solutions in accordance with public informatics standards (GTHB, 2015). The methods of public extension services that are practiced by different institutions in Turkey vary widely. The Ministry of Agriculture has organized the rural governance in accordance with T&V System and still, it organizes their activities. Other public institutions, on the other hand, is adapting different approaches depending on their work field and characteristics of regions that they are operating. One of the main features of these extension activities executed by public institutions is that inclusive methods are significantly underutilized (Tatlidil and Ceylan, 2000; Boyacı and Yıldız, 2016).

Public agricultural extension in Hatay Province

The distribution of public agricultural extension practices executed in Hatay province between 2014 and 2016 is summarized in Table 1. Agricultural extension practices that were executed are mainly focusing on the topics of agricultural and animal production, especially animal health. Along with those, various practices related with agricultural infrastructure, food and pellet feed were also organized. In the demonstration studies (the result or method demonstration) various practices were carried out on various plant species (species of olive, citrus, strawberry and apple) to enhance plant production in the region. Along with those, extension practices for various topics including soil analysis, production of plants with gymnosperm, fighting with plant pests and the secure usage of agricultural vehicles were realized. In order to enhance animal production in the region, various animal production topics (farming

milk cows, sheep and goats and beekeeping) and flock farming were also included in extension practices. During farm days, various topics were covered including certified seed plantation, organic farming (strawberries and olives), integrated fighting (farming grains, cottons and olives, as well as, greenhouse production and viniculture), developing alternative production methods (strawberries and blackberries), extending modern irrigation techniques and expending the plantation of honey plants for increasing the productivity in beekeeping. In the region, the most preferred method used in agricultural extension practices is farmer meetings and resultantly, the highest participation rates are achieved in these activities. During the farmer meetings organized in the region, it is noted that various topics including the animal production, the animal health, the food safety, the agricultural insurance, the protection of land and environment, the plant production, the plant health, the organic production, good farming practices, the alternative plant production, the domestic economy, the job security, agricultural subsidies and the agricultural organization were included on the meetings' agenda and the related information regarding these topics were transferred to the farmers during training and extension activities. Through various courses organized in the region, farmers were received trainings on various topics (pruning, fertilization and etc.) that farmers needed for the plant production. Developing alternative production methods (mushrooms, strawberries, medicinal plant and aromatic plants and beekeeping) were also covered in other organized trainings. In the region, the knowledge and skills of the farmers are developed within the scope of a course program. In the region, it is noticed that other agricultural extension methods designed for farmers including the study trips to farms, promotional contests, exhibitions, campaigns, conferences and panels were organized in accordance with periodical requirements and public facilities. The trips were mostly organized in agricultural fairs held in Hatay and its neighbor regions, fields of alternative plant production and organic and alternative production fields. In this context, a photograph exhibition with the theme of agriculture and human, an opening ceremony of a range improvement, a field camp for kids, land and harvest feasts are other alternative extension practices organized in the region.

In 2014, 16 different in-service trainings for extension personnel working in the region were organized with 642 participants. The number of trainings was 29 with 573 participants and the decrease in these numbers continued in 2016 (Table 1). Among the topics of organized in-service

trainings are the food safety, the work safety, the animal health, the agricultural consulting, good agricultural practices, the licensee and certificate training for agricultural prescribing, the law of inheritance and the environmental protection. The extension personnel should have a sufficient knowledge to answer farmers' questions in understandable and satisfactory manner. For farmers, believing the value and irreplaceability of the knowledge is depended on extension workers to have the sufficient and essential knowledge (Kızılaslan, 1999; Sezgin, 2010; Kızılaslan and Ünal, 2013; Robert et al., 2013). Despite being an experienced country regarding agricultural extension, several other extension systems are to be developed in addition to public extension system for purposes of adaptation and dissemination of agricultural innovations in Turkey. Inclusion of all farmers into target group of the extension activities and effective identification of extension services requirements are to be ensured to be able meet the needs of small-scale farmers while accountability systems have to be developed in order to ensure

better agricultural extension services (Hu et al., 2012). In general, the personnel of public extension institutions that are assigned with extension and training activities have sufficient technical knowledge and background, however, they lack in extension related knowledge initially (Kızılaslan, 1998). To gain this knowledge or to acquire advancements in agricultural production techniques, in-service trainings should be organized continuously. In order to improve the communication of the farmers with the extension workers, it is necessary to provide harmonious work and establish a confidence environment. In order to resolve the information sharing problems between the public agricultural extension stakeholders in Turkey, a single organization should be established where information is collected and distributed as well as coordination among the relevant organizations. In addition, private extension and research services should be supported and encouraged in this respect (Özçatalbaş, et al., 2004; Kızılaslan, 2006; 2009).

Table 1. Public agricultural activities in Hatay

Agricultural Extension Activities	2014		2015		2016	
	Count	Participant	Count	Participant	Count	Participant
Demonstration	15	79	4	36	28	487
Field Days	2	148	3	204	20	517
Farmers' Meetings	1317	14250	755	8391	2320	26443
Courses	10	201	16	381	34	575
Travels-Competitions	10	126	19	1547	13	204
In-service training	16	642	29	573	16	239

Source: GTHB, 2016.

During the execution of public extension practices in the region, various printed and visual materials were used to assist these practices. Those published materials are distributed and transported to participants in various ways. Radio and TV programs as mass media tools are playing a significant role in agricultural extension practices; however, these communicational means are not utilized in Hatay province. The most preferred printed materials that are used in the region are circular letters (Table 2). On circular letters distributed in the region during agricultural extension practices, various current topics were covered including the farm management, domestic economy, animal production, animal health, plant production, fighting with plant pests and plant diseases, food safety, agricultural insurances, agricultural subsidies, environmental protection, alternative plant production, plant culture

techniques in plant production, plantation of certified seeds and soil analysis and sampling.

Table 2. Materials used in agricultural publication activities

Agricultural Extension Materials	2014	2015	2016
Circular letter	7529	4347	25115
Brochure	1482	2459	1760
Liflet	2144	1210	4790
Journal	2000	1000	3000
CD	-	20	200
Banner	149	180	270
Book	585	-	-
Slide	2	-	-

Source: GTHB, 2016.

Conclusion

In this article, practices that were executed by the employees of Hatay provincial directorate of the Ministry of Food, Agriculture and Livestock – the most important practitioner of public agricultural extension services - in last three years (2014-2016) are examined. In general, it can be said that public agricultural extension practices that were executed in the region are showing a steady increase in terms of the number of activities and participants, as well as, means of extension. Additionally, this increase is also likely to continue in the upcoming period.

The extension practices that are realized are limited to the organizational capacity (the manpower, budget, tools and equipment etc.) Thus, demands or problems of farmers regarding extension practices should be determined carefully, as well as, extension practices that are chosen to fight those problems. In specific to Hatay province, additional practices should be realized to eliminate the lack of collaboration with the university on executing public agricultural extension practices and the insufficient usage of technological tools including radios, TV, internet and cell phones for mass communication purposes.

When the effectiveness and the span of working field of the ministry on public agricultural extension are taking into consideration, other extension systems along with the public extension system should be promoted in applicable regions. Additionally, a switch from supply-oriented extension to participant-oriented extension approaches should be realized. When agricultural extension is evaluated within the scope of public and private extension, extension systems and approaches in public extension should be updated. The legal reforms with regards to agricultural extension and counselling are also to be considered within the framework of the EU harmonization process. It would be wrong to solely assign public or private institutions with executing extension practices. In certain fields, assigning private extension institutions, non-governmental organizations and vocational institutions with extension practices would be more suitable. However, the regulating, controlling and intervening role of the public institutions should still be remained.

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