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CONTENT

1 Introduction and background

1.1 Introduction to rural technology transfer

The technology generation and transfer system is a crucial factor in the modernisation of the agricultural sector, and largely depends on the quality of information and knowledge flows among the different components of this system; public institutions, private organisations, researchers, extensionists, technicians, and others. Technology transfer can take many different forms such as education, direct training courses, TVs, radios and internet.

Traditional transfer of technology is defined by Keating (1993) as transmitting the scientific research findings to the farmers. One of the prerequisites for effective technology transfer is the appropriateness of the technology. Appropriate technology refers to a technology package which must be technically feasible, economically viable, socially acceptable, environment-friendly, consistent with household endowments, and relevant to the needs of farmers (FAO, 1996).

As of 2005, there were approximately 35,000 villages and 40,000 sub-village settlements. In Turkey, since the rural settlements are unplanned, scattered, small and numerous, and a significant part of the villages are located in high, steep, rough terrain it causes hindrances in provision of physical and social infrastructure services and also results in the failure of rural settlements to reach the economic scale which is known as a determining factor in respect of development (National Rural Development Strategy, 2006).

According to the results of the Household Information Technologies Utilisation Survey, access to information is limited in the rural areas considering long-term goal of Turkey's transformation into an information society. The ratios of possession of a personal computer and of households having Internet access at home are relatively low. As of 2005, while the ratio of households that have access to Internet was 11.6% in the cities, the same ratio was recorded as 3.5% in the rural settlements. Considering the limited socio-economic integration with the urban areas and the relatively earlier withdrawal of the individuals from formal education, it is of great importance, particularly for the young population, to increase the opportunities for access to information (National Rural Development Strategy, 2006). Many rural areas of Turkey are still not linked by the information super highway. For them, extension workers remain their gateway to knowledge and skills of productivity-boosting techniques and technologies, which is small-scale farmers' lack (Bostan Budak & Agunga, 1999).

Agricultural extension had become one of the activities of technology transfer or rural development in Turkey. In many situations, the transfer of technology of public sector systems has been re-conceived.

Different types of link will be required for different types of technology, the most important linkages are: research-extension-farmer, private-public, regulatory agencies-policy-R&D and agriculture-industry. Technology transfer takes place an atmosphere where extension agents and farmers are in full co-operation. Also, research should be in this place because extension feeds from research. Unfortunately, research-extension-farmer linkage is very poor in Turkey for effective technology transfer.

According to investigation in Manisa province, direct farmer participation in extension and research is not seen yet (Boyaci, 1999).

1.1.1 Agricultural and rural training

Agricultural training and extension are the most important ways to improve agricultural production. The main problems with regard to agricultural training and extension services are lack of infrastructure, resources and skilled people. Some of the main factors which limit productivity in rural areas are inefficiency of agricultural training, education and extension services and lack of information and documentation centres and difficulties in accessing these centres. Training and education is vitally important in rural areas, in that it gives rural people the capability to transfer into the industry and service sectors. Agricultural and industrial integration will also increase employment opportunities (Ozcan, 2005)

Education is concerned with knowledge and training is deal with skills and attitudes (Kumuk and Oktay, 1993). The education level of rural labour force is one of the most important constraints in respect of accelerating rural development in Turkey. As of 2004, only 24% of the rural labor force had completed

primary (eight years) education, equivalent vocational education or above, and 14% had completed high school education, equivalent vocational school or above. Provision of non-formal training services keeps its significance in the rural areas in terms of skill development and job creation both in agricultural and non-agricultural sectors, which enable to increase income, business and employment opportunities (National Rural Development Strategy, 2006).

Besides the socio-economic circumstances, the limited access of rural population to formal education after primary education cause students to withdraw from the formal education process in earlier ages. While 73% of all primary schools are located in villages, only 7% of the secondary education institutions are in villages. On the other hand, mobile education services are provided in order to ensure efficiency and continuity in the provision of education services to villages in where population is diminishing, and subject to difficulties in accessing education services with their limited number of students (National Rural Development Strategy, 2006).

In the rural areas, despite of the progress yielded from education policies, the inequality between the education levels of rural and urban population, and gender inequality in access to education services in the rural areas are still significant. As indicated in the 2002 Household Labour Force Survey results, the literacy rate was 80.5% for the population aged 15 and above in the rural population. On the other hand, as of 2004, 88 female students attended the village primary schools against every 100 male students (National Rural Development Strategy, 2006).

As mentioned before, positive links with research services are essential for both the extension and research services, the same is true for links with the formal education service. Extension is part of a continuing education process and is an integral part of agricultural development.

The extension service has a role in helping the education specialists develop their curricula so that the students meet the needs of the industry now, and are able to adjust to the inevitable changes that will occur. University and college lecturers should also have a role in the training and continuing education of the extension workers. Formal and informal links between extension services and agricultural education establishments are necessary to meet these needs.

1.1.2 Agricultural and rural advisory/consultancy services

Private consultancy service is well-known in Turkish agriculture. Many agricultural consultants give services individually to the farmers at the regions where agricultural production is well integrated into the market. Furthermore, there are 11 Farmer Associations that hire agricultural consultants in order to meet information needs of their members. While member farmers pay 50 percent of the operating expenses of Association (membership fee), Union of Turkish Chambers of Agriculture pay 50 percent. However, until KOY-MER Project there was not any official attempt to institutionalise private consultancy services in Turkish agriculture. The main objective of this project was to increase income level in rural areas through giving information about improved agricultural technologies to the farmers and to achieve diffusion of these technologies among farmers. Consultants who are willing to live and work in village made contract with local institutions (i.e. Farmers' Union, province administration) at province. Fifty four percent of project cost (consultancy fee) is paid by local institutions; Ministry of Agriculture and Rural Affairs (MARA) and private organisations pay the rest amount. There are 1021 hired consultants in 81 provinces and the number of hired consultants for each province varies from 10 to 15. The duties for agricultural consultants are specified as follows;

- Giving advise about inputs and input use
- Providing support for 'Direct Income Support' and 'National Registry of Farmers Systems'
- Production planning
- Supports credit use and pay back
- Achieves diffusion of improved agricultural technologies among farmers
- Informing authorities about animal and plant epidemics

- Encouraging farmers about forming farmer organisations in marketing
- Carrying out extension activities (i.e. group discussion, demonstration, field day)
- Preserving natural resources
- Encourages co-operation between private and public institutions (Ceylan, et.al, 2005).

1.1.3 Role of farmers' groups, including national or regional farmers' organisations

The needs of rural communities are mostly met by the public sector, which supplies the major services. Some services are provided by civil society organisations. The organisations which make an important contribution to rural areas include: special provincial administrations, municipalities and administrations, farmers' organisations (chambers of agriculture), producer unions, irrigation and drinking water unions and village service providers.

Farmers in rural areas have long felt the need to be organised. The Union of Turkish Chambers of Agriculture (TZOB) was established in 1963 in order to assist farmers and help resolve their problems. Its duties include: informing the authorised public bodies about farmers' problems, representing farmers domestically and abroad, supplying production inputs, finding markets for products by developing co-operatives and farmers' unions on a commodity basis, increasing farmers' incomes by organising vocational courses and providing training in their production activities. Its recently amended Statute now permits TZOB to establish insurance companies to increase services. The head of the Union of Turkish Chambers of Agriculture is located in Ankara. There are 700 local Chambers of Agriculture and about 4 millions registered members all over Turkey. Turkey's Hazelnut Growers Union (Fiskobirlik) has more than 230,000 members (Ozcan, 2005).

There are several socio-economic, semi-official and civil society organisations operating in Turkey's rural communities. The most important ones are the agricultural sales co-operatives which are organised around particular commodities, such as olive and olive oil, cotton, hazelnuts, figs, sunflowers, soybeans, canola, mohair and wool, peanuts, raisins, apricots, roses and rose oil, legumes, red peppers, citrus and bananas and forestry products. There are also number of co-operatives and producer unions, which provide services to farmers in relation to monetary affairs and the various agricultural commodities in the rural sector. These include organizations focusing on; bee and bee products, milk and dairy products, cut flowers, silkworms and associations of beet planters and cattle breeders (Ozcan, 2005).

1.2 Agricultural and rural skill level

As of year 2004, Turkey's total population was around 70 million, and 34% of that live in villages and sub-districts. Agriculture is still the main sector for employment. According to 2003 Household Work Force survey results, the ratios of working population in agriculture, industry and services are 33.9%, 18.1% and 48%, respectively. Nation-wide rate of contribution to work force is 48.3%, while it is 70.4% for men and 26.6% for women. On the other hand, the rate of contribution to work force in rural areas is 55.5%, while it is 72.9% for men and 39% for women. Moreover, 69.4% of people employed in rural regions are employed in agriculture, and this rate is 55.5% for men and 89.1% for women. In other words, almost all of the women employed in rural regions are employed in agriculture (Gülçubuk, 2005).

Most of the women in agriculture/rural regions perform their production activities in small family farms as unpaid household workers.

Agricultural employment rate in rural regions is especially high for women. The sector employs 50.1% of men as opposed to 83.9% of women (Türktan, 2006).

To create non-agricultural employment opportunities for women in rural regions, Employment Education Projects have been carried out by some state organisations and skill developing courses have been organised.

Even though Ministry of Education has tried many policies and regulations to create fair education opportunities for all, the education facilities and opportunities are still poor in rural regions. Most of the village schools do not have enough physical superstructure and infrastructure, equipment and teachers. Therefore, literacy rate in agricultural/rural employment is lower than in other sectors. The rate of

illiteracy in agriculture is 18% while it is 3% in construction sector. Around 33% of women, who have 60% share in agricultural employment in rural regions, have never attended any school, i.e. illiterate. Of course, this is a very big obstacle for people who plan to migrate to urban to find non-agricultural jobs. Increasing education level will increase the agricultural labour quality and hence increase the productivity in agriculture. In addition, this will increase non-agricultural employment opportunities both in rural regions and urban. As of 1999, literacy rate of women was 77.4%. This rate was 82.2% for women in urban, and 67.8% for women in rural(Türktan, 2006).

Changing mandatory education time from 5 years to 8 years is a positive policy. This way education level of the country (especially for rural people) has been increasing.

Most of the people in rural areas are unskilled. They mainly work in small family farms and do conventional farming. Almost all of the farmers in Turkey do not have any formal agricultural education. Moreover, extension and training services in rural areas are quite limited. As a result, it comes as no surprise to see that farmers use neighbours or peers, instead of established institutions, as their principal source of extension information. In this sense, well organised agricultural extension, training and technology transfer is very crucial for the future of Turkish agriculture.

2 Specific technology transfer issues

Rural services in Turkey started in the mid-18th century. The first organisation was founded in 1838 under the Ministry of Foreign Affairs with the name of "Agriculture and Industry Council". However, main state institution which provides extension and training services and rural technology transfer is Ministry of Agricultural and Rural Affairs (MARA). In 2001, the total budget of the ministry was 317.6 million YTL, and it served to approximately 7 million farmers (http://www.tarim.gov.tr ; DIE, 2002).

Even though private sector research, extension and training services have grown since 1980s, still state agencies dominate the rural services.

2.1 Training provision

Public and private sector, and NGOs have an important role to play in training, extension, consultancy and technical assistance services for people who have employed in agricultural sector. In this framework, training and extension activities have become more efficient by specifying appropriate models according to the experience and evaluation results derived from the "Support to Village Centred Agricultural Production Project", implemented by service procurement method in one thousand villages all over Turkey and aims to provide rural training and extension activities at the closest level to the farmers.

Current national agricultural research and development system in Turkey can be classified into 4 groups (Oksam et al, 2004):

1. State research agencies: 84 institutions, of which 56 belong to the General Directorate of Agricultural Research; 12 belong to General Directorate of Rural Services; 11 belong to the General Directorate of Research, Ministry of Finance; 3 belong to Ministry of Industry and Trade; and finally 3 belong to Sugar Beet Research Institute.
2. Council of Higher Education: 24 Faculty of Agriculture, 19 Faculty of Veterinary, and 9 Faculty of Forestry.
3. Independent research institutes founded with the co-operation of state and private sector: Marmara Arastirma Merkezi (Marmara Research Centre), Nükleer Tarimsal ve Hayvansal Arastirma ve Egitim Merkezi (Research and Education Centre on Nuclear, Agricultural and Animal Breeding).
4. National and International Development Organisations, NGOs, Farmer Unions etc.

The most important and dominant one is surely Ministry of Agricultural and Rural Affairs, which employs 1,300 researchers (TKB, 2000). On the other hand, there are 1,351 faculty members in the colleges of agriculture (Eris ve ark, 2005).

2.1.1 Quality and suitability of provision

34 percent of the population is living in rural areas and mainly employed in agriculture, while it is 5.4% in EU-25 and 13.4% in the 10 members of EU, which joined in 2004 (Türktan, 2006). As a result, dealing with this huge rural population mass and educating and training them is very difficult. Current programmes are not enough to overcome this problem both in terms of qualities and quantities.

The medium- and large-scale producers receive more extension services than the small producers, and their rates of satisfaction are much higher than among the smaller farmers. This demonstrates a bias in extension services, a trend which must still be validated at the national scale (Yavuz, F. et al., 2005).

Producers are not provided access to market information, or if they are, it is infrequently.

As a result, it comes as no surprise to see that farmers use neighbours or peers, instead of established institutions, as their principal source of extension information. This is not necessarily a bad thing. If the best farmers on farms of similar size and resources are in learning groups with the rest, farmers will always prefer to learn from other farmers who face the same practical realities and constraints as they do, and this could be used to develop a sustainable approach to extension provision.

2.1.2 Availability and spatial issues

Extension services are carried out in all 81 provinces and 802 districts by Ministry of Agriculture.

Since the rural settlements are unplanned, scattered, small and numerous, and a significant part of the villages are located in high, steep, rough terrain it causes hindrances in provision of physical and social infrastructure services and also results in the failure of rural settlements to reach the economic scale which is known as a determining factor in respect of development.

Besides the socio-economic circumstances, the limited access of rural population to formal education after primary education cause students to withdraw from the formal education process in earlier ages. While 73% of all primary schools are located in villages, only 7% of the secondary education institutions are in villages.

2.1.3 Practical issues

The technical staffs mostly determine the content of the assistance to be offered throughout the year, without taking producers' needs into account.

Some of the main factors which limit productivity in rural areas are inefficiency of agricultural training, education and extension services and lack of information and documentation centres and difficulties in accessing these centres.

In the rural areas, despite of the progress yielded from education policies, the inequality between the education levels of rural and urban population, and gender inequality in access to education services in the rural areas are still significant. As indicated in the 2002 Household Labour Force Survey results, the literacy rate was 80.5% for the population aged 15 and above in the rural population. On the other hand, as of 2004, 88 female students attended the village primary schools against every 100 male students. (Ozcan, 2005).

2.1.4 Demand side issues

The education level of rural labour force is one of the most important constraints in respect of accelerating rural development in Turkey. As of 2004, only 24% of the rural labour force had completed primary (eight years) education, equivalent vocational education or above, and 14% had completed high school education, equivalent vocational school or above. Provision of non-formal training services keeps its significance in the rural areas in terms of skill development and job creation both in agricultural and non-agricultural sectors, which led to increase income, business and employment opportunities (Ozcan, 2005).

2.1.5 SWOT analysis

Training provision

Strengths	**Weaknesses**
- Existing state agencies in provinces and sub-districts - Growing private sector involvement - Development trends of non-agricultural sectors, - Growing food industry - Relatively homogenous rural population mass - Abundance of agricultural land	- Shortage of trained professionals and experts - Shortage of funding - Poor linkage among the agencies - Small scale and fragmented agricultural holdings, - Existence of unregistered agricultural system, - Poverty in rural areas and large scale of semi-subsistence farming - Lack/shortage of non-agricultural sectors and agro-industry - Low education level of rural people
Opportunities	**Threats**
- Technological developments - Easier to reach farmers via TV or internet - Emergence of private extension providers - Increasing education levels of farmers - EU Accession process and harmonisation, - Accessibility to international resources-funds, - Increasing concern for the empowerment of local governments and improvement of public administration. - Increasing pressures of public regarding health and environmental issues - Enhanced opportunities to access foreign markets,	- Farmers fear of change - Migration of young and educated (qualified/skilled) people - National economic instability - Spatial issues (diffuse small farms, harsh climates, steep lands) - Poor superstructure and infrastructure - Increasing pressure of rapid urbanisation, industrialisation, and developing tourism activities on natural resources, - Growing intra and inter-regional development disparities.

2.2 Extension and advisory services

2.2.1 Public sector services

Agriculture has been benefited from agricultural extension services, which has been seen as a government service, for a long time. Ministry of Agriculture and Rural Affairs provides agricultural extension services as free of charge to improve farmers' living conditions in Turkey since 1943.

In Turkey, MARA is organised in 81 provinces, 803 counties and 894 villages through Provincial and County Directorates and Village Group Agricultural Centres (VGAC). Each Provincial Directorate of MARA is organised in seven sections, dealing respectively with Projects and Statistics, Plant Protection, Food Control, Farmers' Training and Extension, Animal Health and Administration. The Farmers' Training and Extension section is responsible for programming, planning, implementing, monitoring and evaluation of agricultural extension activities in the province. At the county level, each County Directorate employs a County Extension Specialist, while groups of from four to six counties are served by County Extension Groups linked to the Farmers' Training and Extension section of the Provincial Directorate (Ozcatalbas, et.al, 2004).

In 2006, 6,965 agricultural engineers, 733 food engineers, 2,441 veterinarians, 1,819 veterinarian technicians, 3,828 agricultural technicians and 908 home economist (total 16,674) have worked in extension service in Turkey (htt://tarim.gov.tr/-use/9/habergoster.asp?ID=967)

General Extension approach and the T&V system of extension (since 1984) have been used in Turkey. T&V approach may have simplified and even improved the administration of extension in Turkey. However, it has done little to involve small-scale farmers in agricultural decision-making and did not solve the problems of extension system. The main problems of the public agricultural extension service are: it is too top-down, and the T&V approach too prescriptive and too costly to reach the majority of farmers (as found elsewhere in the world where the World Bank has stopped funding it).

2.2.2 Private sector services

The Government of Turkey has expressed its commitment in agricultural extension. Different extension approaches have been applied but none of them fully solved the agricultural extension problems in Turkey. Agricultural extension in Turkey has more than 50 year history – long enough to evaluate whether it has been able to meet the objective for which it was established (Bostan Budak and Agunga, 1999).

In most countries, agricultural extension services are not fully privatised. They have followed different pathways, such as commercialising the service, shifting public sector delivery services to private sector delivery or pursuing cost recovery measures to pay for the service. So, the phrase "privatisation of agricultural extension" generally is misleading (Rivera and Cary, 1997).

The contracting private firms provide extension advice to the contracted farmers in Turkey. Also, extension cost is shared between farmer groups and the Government through the Chambers of Agriculture.

The privatisation of some State Enterprises, such as TSEK (Turkish Dairy Industry) and EBK (Turkish Beef and Fish Institution), Agricultural Equipment Institution (TZDK) and Tobacco and Tobacco Products (TEKEL), which provided inputs for agricultural production and contributed to marketing, caused an increase in input prices which made it difficult for some small-scale subsistence holdings to work economically and produce agricultural commodities at reasonable prices (Ozcan, 2005).

2.2.3 Demand side issues

According to the results of the Household Information Technologies Utilisation Survey, access to information is limited in the rural areas considering long-term goal of Turkey's transformation into an information society. The ratios of possession of a personal computer and of households having Internet access at home are relatively low. As of 2005, while the ratio of households that had access to Internet was 11.6% in the cities, the same ratio was recorded as 3.5% in the rural settlements. Considering the limited socio-economic integration with the urban areas and the relatively earlier withdrawal of the individuals from formal education, it is of great importance, particularly for the young population, to increase the opportunities for access to information (SPO, 2006). Many rural areas of Turkey are still not linked by the information super-highway. For them, extension workers remain their gateway to knowledge and skills of productivity-boosting techniques and technologies, which is small-scale farmers' lack (Bostan Budak & Agunga, 1999).

The attributes of villages and farms vary a lot among the regions in terms of farming practices, management skills, education levels, cultures, geographical and climate conditions etc. Therefore, appropriate extension and training services have to be developed and applied for each region based on these variations (Yavuz, F., et al., 2005).

2.2.4 SWOT analysis

Extension service

Strengths	Weaknesses
- Complete organisation from national to village level - Extension encourages professional growth - International support - Increasing number of non-governmental organisations - Prevalence of public institution - Wealth of experience	- Lack of funding and resources - Poor motivation of extension staff - Inadequate linkage among research-extension-farmer - Cumbersome bureaucratic setting - Low educational level of farmers
Opportunities	**Threats**
- Ability to change - Progress in production, communication and information technology - Emergence of private extension providers	- Farmers fear of change - Migration of young and educated (qualified) people - Limited use of appropriate extension methods - Multiplicity of extension advisors – some giving conflicting advice - Inadequate budgets

3 Overview and prospects

3.1 Training

Public and private sector, and NGOs have an important role to play in training, extension, consultancy and technical assistance services for people who have employed in agricultural sector. In this framework, training and extension activities have become more efficient by specifying appropriate models according to the experience and evaluation results derived from the "Support to Village Centred Agricultural Production Project", implemented by service procurement method in one thousand villages all over Turkey and aims to provide rural training and extension activities at the closest level to the farmers.

Information technology is the most important development axis in the world. Agricultural extension has many difficulties to exchange information between farmers and many other actors.

3.2 Extension

Agricultural extension activities are mainly based on volunteerism. Therefore, the wants and needs of farmers have to be taken into consideration (Yurttas, 2001). In most cases, if the extension services are not adapted to the cases of farmers correctly, failure becomes inevitable. For that reason, extension people do need income generating, potential improving and financially effective activities to attract the farmers (Bernet et al., 2001). Due to insufficient financial sources, effective extension systems cannot be used. Major extension services in charge are being conducted by the directorates of Ministry of Agriculture and Rural Affairs in the provinces and towns. These directorates do receive very little financial means from the Ministry. In addition, technical people in these directorates are few in terms of numbers and do have too many other duties to spare time for extension.

Agricultural extension services are important policy tools in rural development. These services in Turkey have been provided by public service as free of charge. The extension activities have aimed to teach farmers informally about their agricultural practices so that they can adopt new productivity and profit increasing technologies in their farming activities (Mülayim, 1995). Extension people are those who use available tools effectively to help farmers adopt and apply the new technologies as fast as possible

(Ceylan, 1988). One of the most effective extension tools is television (TV) with the capability of spreading news very quickly and efficiently. Hence, farmers can be easily informed about new technologies via TV.

3.3 Linkages between technology transfer agencies

As can be seen in figure 1, linkage amongst state extension agencies is relatively strong, but linkage between state and private extension agencies is quite weak.

Different types of links will be required for different types of technology, the most important linkages are research-extension-farmer, private-public, regulatory agencies-policy-R&D and agriculture-industry. Technology transfer takes place an atmosphere where extension agents and farmers are in full co-operation. Also, research should be in this place because extension feeds from research. Unfortunately, research-extension-farmer linkage is very poor in Turkey for effective technology transfer.

There is a very little coordination among the different extension groups: they do not coordinate to define either their schedules or their methods.

As mentioned before, positive links with research services are essential for both the extension and research services, the same is true for links with the formal education service. Extension is part of a continuing education process, an integral part of agricultural development.

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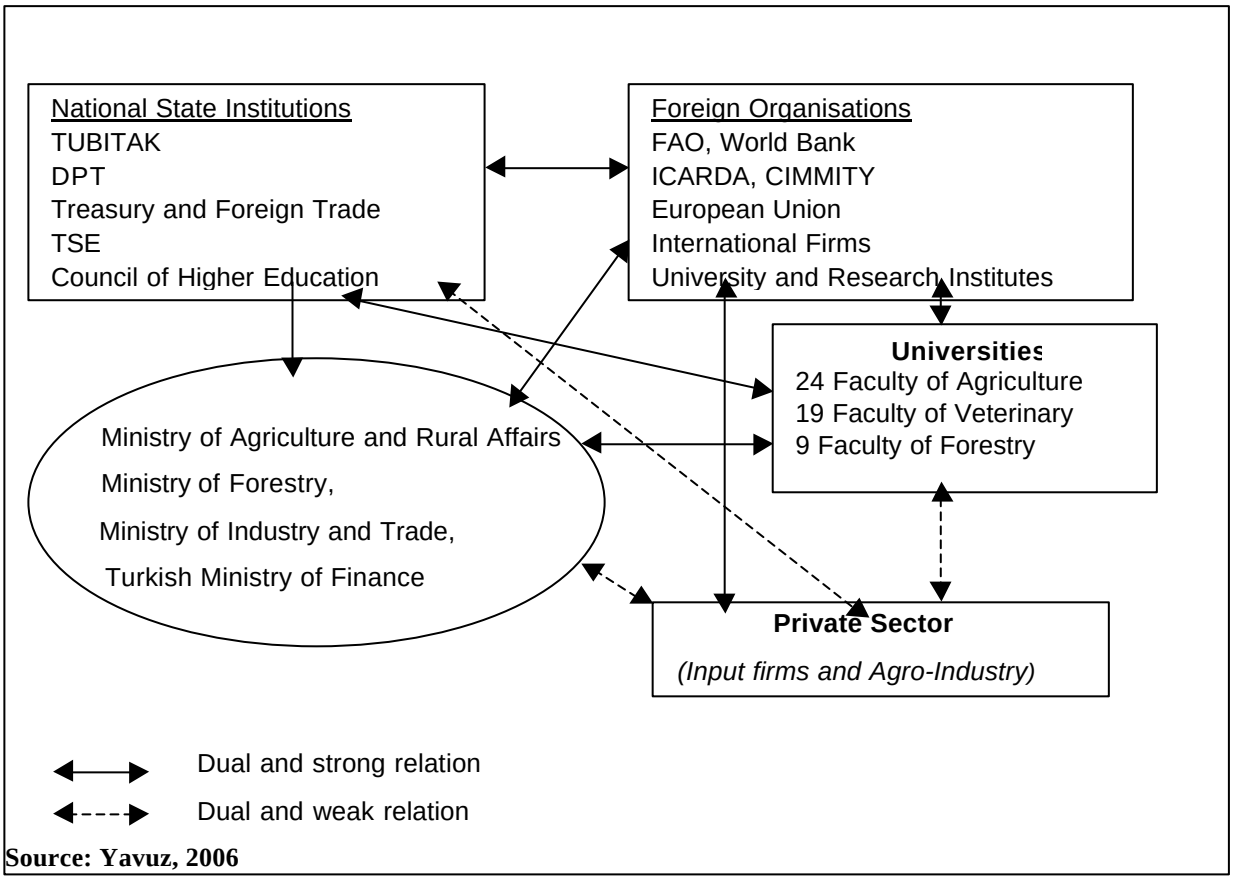
ANNEX

Main actors effective on agricultural researches in Turkey



Source: Yavuz, 2006

Training provision and use by the rural population

Approx. % of population that is rural by:	
(a) place of residence	%
(b) place of work	%
Approx. % of all workers in rural areas in:	
(a) agricultural employment	% 67.5
(b) non-agricultural employment	% 32.5
Number of universities and similar institutions with agricultural courses	24
Number of colleges and similar institutions providing agricultural training	
Number of other training providers:	
(a) publicly funded	%
(b) privately funded	%
Approx. % of agricultural personnel with:	
(a) degree or equivalent	

(b) diploma or equivalent	
(c) certificate or equivalent	
(d) full secondary education	
(e) less than full secondary education	
(f) little or no formal education	
Estimated level of demand for further training: (use A=high, B=moderate, C=low)	
Agriculture – arable/cropping production	
Agriculture – livestock production	
Business management	
Other [please specify; add rows as necessary]	

Advisory and extension services available to agricultural and rural businesses

Public sector organisations by name	Approximate number of advisors or consultants
MARA	
Private sector organisations by name	Approximate number of advisors or consultants
[add rows as necessary]	
Estimated % of farmers actually *using* advisory services of some sort	%
Estimated % of NAE rural businesses actually *using* advisory services of some sort	%
Estimated demand for *new* advisory services - % of all farms and other rural businesses	%

Annex

Citation	Yurttas, Z., et.al (2005). Sustainable Human Development and Twelve Important Quality Criteria for Extension Projects – and a Case in Eastern Turkey, *17th European Seminar on Extension Education*, August 30-September 3, 2005, Izmir, Turkiye.
Annotation	The objective of this paper is to emphasise the importance of the sustainable human development (SHD) or capacity development (CD) on the part of the human resources and put forward some important criteria to ensure quality in extension projects.

Citation	Ozkaya, T. (2005). How to Institutionalise Participatory Approaches in Extension System: the Case of Turkey, *17th European Seminar on Extension Education,* August 30-September 3, 2005, Izmir, Turkiye.
Annotation	The objective of this paper is to emphasise the importance of the participatory approaches in Turkey. As for author, if the process cannot be progressed rationally, either the participatory attempts in Turkey will not be succeeded, the existing top down approaches will be continuing to be the main stream or the participation will be abused.
Citation	Armagan, G.(2005). Information Needs of Dairy Farmers and Agricultural Extension Organisations: A Case Study of Aydin Province, *17th European Seminar on Extension Education,* August 30-September 3, 2005, Izmir, Turkiye.
Annotation	This study focused on the information needs of the increasing activity of dairy farming and

	efforts of the agricultural organisations. The extension efforts of agricultural extension organisations in Aydin, i.e. Agriculture Service of Aydin, and producers' organisations operating in the region were investigated. As a result, in the production stage, the producers are thought to need information about herd management and nutrition. This information is disseminated to the producers by means of appropriate extension methods.

Citation	Ceylan, C.I., et.al (2005). Private Agricultural Consultancy Service in Turkey, *17th European Seminar on Extension Education,* August 30-September 3, 2005, Izmir, Turkiye.
Annotation	This research study focuses on KOY-MER Project that is considered first step towards privatisation of extension in Turkey. The purpose of this study is to examine the role of the hired consultants in KOY-MER Project, at the meeting of the farmers' information needs. This project is still going on.

Citation	Bostan Budak, D. et.al (2005). Livestock Producers' Needs and Willingness to Pay for Extension Services in Turkey, *17th European Seminar on Extension Education,* August 30-September 3, 2005, Izmir, Turkiye.
Annotation	In this study, the livestock producers' information needs and willingness to pay for extension service was analyzed with using a survey data of producers in Adana. Contingent Valuation Method was used to measure livestock producers' willingness to pay for agricultural extension service. It was found that producers' most needed information was marketing of their products and 52.5% of producers were willing to pay for extension service.

Citation	Demiryurek, K. and Guzel, A. (2005). Extension in Organic Agriculture: The Case of Kelkit, Turkey, *17th European Seminar on Extension Education,* August 30-September 3, 2005, Izmir, Turkiye.
Annotation	In this paper, a special attention is given to the current problems of the organic agriculture, in order to identify the extension needs of all the stakeholders in the research are. Also, a proposed extension program is presented.

Citation	Karaturhan, B. and Yasarakinci, N. (2005). Extension Activities of Integrated Pest Management in Turkiye, *17th European Seminar on Extension Education,* August 30-September 3, 2005, Izmir, Turkiye.
Annotation	In this study, the concept of IPM, an alternative agricultural approach, extension approaches applied in IPM (particulary Farmer Field School) firstly is introduced, and then the applications in Turkey is explained.

Citation	Boz, I. (2005). Opportunities and Obstacles of Volunteer Participation in Turkey's Agricultural Extension System, *17th European Seminar on Extension Education,* August 30-September 3, 2005, Izmir, Turkiye.
Annotation	Based on literature review, the paper gives a theoretical background of volunteerism, discusses volunteer organisations in Turkey's rural areas, and the strategies of including farmer volunteers in the agricultural extension service. The author concluded that the main obstacles of volunteer development are lack of professional volunteer organisations in farming sector, and a lack of trust between farmers and extension agents.

Citation	Dinc, Z. and Ozkaya, T. (2005). Success Factors of Self-Help Groups in Rural Extension: Experiences from Turkey, *17th European Seminar on Extension Education,* August 30-September 3, 2005, Izmir, Turkiye.
Annotation	In this paper, the importance of self help groups explained and the summary of four projects about self-help groups which are applied in Turkey are given.

Citation	Gumus, S.G. and Oktay, E. (2005) The Contracting Farming for Tobacco and the Role of Extension Regarding the New Law, *17th European Seminar on Extension Education*, August 30-September 3, 2005, Izmir, Turkiye.
Annotation	This study is particularly focusing on the recent implementations and contract farming system. As a result, farmers need new alternative crops for solving the important problems like marketing etc. For this reason, it is necessary to start the new extension program for the tobacco growers. The authors advice new participatory approach implementations to producers in the research area for solving very important problems.

Citation	Bostan Budak, D., et.al (2005). Women farmers and extension services in small ruminant production in mountain areas of Turkey. Journal of Arid Environments. 62 (2005) 507–515
Annotation	A survey was conducted in ten villages in the Taurus Mountains with 100 women to find out women's role in the labor distribution, decision-making, reasons for rearing small ruminants and the importance of the agricultural extension service as an information source. In this research area, women spent an average 2.8 h of a total 12.6 h working day in small ruminant activities. If these activities involved technicalities and money, like vaccinations and stallion, men and/or veterinarians made the decisions. In 94.0% of the farms, the women and girls were responsible for milking. The main reason for keeping small ruminants was the opportunity for cash income. It was determined that the women's attitudes toward the training/educational programs about small ruminant production were extremely positive, but very few programs were offered to them and only 3.0% of the women had a chance to participate in these limited educational programs offered by extension or veterinary services.

Citation	Kumuk, T., et.al (2005). Role of Extension for Sustainable Agriculture, *17th European Seminar on Extension Education*, August 30-September 3, 2005, Izmir, Turkiye.
Annotation	In this paper, it has been pointed out that changes will be needed in extension methods and approaches, organisation and structures, and the content of extension service.

Citation	Ozcatalbas, O., et.al (2004). The Agricultural Information system for Farmers in Turkey. Information Development. 97-103.
Annotation	The general aims of this paper were to discuss the general model and the current status of the Turkish agricultural information system and to explore the roles played by research-extension agencies. The authors suggest that, in addition to increasing effectiveness of public extension, steps must be taken to increase the effectiveness of farmers' organisations and the private sector in the field of extension.

Citation	Yurttas, Z., Atsan, T. (2003). Participation and Ownership in Agricultural Extension – Two Cases in Eastern Turkey, *16th European Seminar on Extension Education*, September 2-8, 2003, Eger, Hungary.
Annotation	The objective of this paper is to highlight the importance of participation and ownership in Extension projects and put forward recommendations for future extension activities. Extension components of ERDP and UPRDP was compared with regard to participation and ownership and conclusions were made as how ERDP failed and UPRDP succeeded.

Citation	Yavuz, F. et all., 2005
Annotation	In this paper, the factors that affect the farmers to have extension services are analyzed. The results conclude that the larger the size of farm, the more extension services the farmers demand.