

Impact of Mass Media on Agricultural Development

A case study of Toloikon village, Kara Suu region, Osh oblast, Kyrgyzstan

Meerim SEITOVA

Leading Specialist

Kuntu Local Government

Sokuluk raion, Chui oblast, Kyrgyz Republic

meerim.au@gmail.com

Keshav Lall MAHARJAN

Professor

Graduate School for International Development and Cooperation

Hiroshima University

1-5-1 Kagamiyama, Higashi Hiroshima, 739-8529

mkeshav@hiroshima-u.ac.jp

Abstract

The aim of this paper is to analyze the impact of mass media on agricultural development, what benefits farmers can get from mass media. Addressing of these issues may influence on increase of the level of knowledge among farmers which in turn may lead to efficient agricultural production in the country. The study was conducted in Toloikon village, Kara Suu region of Osh oblast by randomly selecting 84 farmers living and working in the selected village and by using the questionnaire to collect the preliminary data, as well as by conducting the content analysis of 9 print versions of newspapers printed within the same time and disseminated in the target area. The study shows that respondents under 45 years old (29%) prefer television, television news, programs, talk shows and 9% of farmers listen to the radio in order to get agricultural information. 13% of respondents whose age is between 25 and 30 prefer to use internet, referring to the fact that they can get any information related to agriculture in very short time and many variants in comparison with televisions and print media. But other of respondents whose age is between 40 and 55 still believe that print media (books, newspapers and magazines) has positive educational influence and suggest to develop print media as a tool to disseminate agricultural technologies among farmers, so they prefer print media to get agricultural information.

Keywords: Mass Media, Farming, Kyrgyzstan, Agricultural information, Farmers

1. Introduction

Kyrgyzstan is basically an agricultural country and its development mainly depends on this sector, it employs more than 40% of the country's labor force and around two thirds of population (66%) lives in rural areas (NSC) and according to the National Statistic Committee's data its share is about 19% of gross domestic product. This sector has been receiving high priority in development plans because of its significant contribution to Kyrgyz economy. It means that agriculture in Kyrgyzstan has not only economic, but also social and political importance (Country Development Strategy, 2007). However, the sector dominated by small-scale farmers reorganized from former kolkhozes and sovhozes in 1990s. Today there are functioning 1.2 million peasant and individual farms, more than 10 thousand collective farms and 45 thousand cooperatives (World Bank, 2011). But this kind of transformation as a result of land and agrarian reform led to inadequate increase of small agricultural producers in the country and mainly small — scale farms are characterized with low productivity due to lack of access to farm inputs, inadequate marketing infrastructure and services, and poor access to finance. This low productivity also creates many socio-economic problems, primarily poverty problems in rural areas. It may be due to low/no access to new farm technology which is beyond small-scale farmers' scope and resources.

Additionally the situation in Kyrgyzstan is aggravated by lack of modern agricultural technologies and means of production

and mainly by limited knowledge and skills among farmers as most of them had previously little or no farming experience. One of the constraints in agriculture production is poor access to information on improved agricultural technologies (Adburasulov, 2011). Although the Government of Kyrgyzstan with funding from external donors in the late 1990s established Rural Advisory Service (RAS), which is the only extension service delivering a wide range of rural development services. However, the coverage of RAS is significantly limited and majority of the Kyrgyz farmers are still using primitive methods, because of the lack of access to advisory services and agricultural information, they do not have sufficient training in the techniques of land management, crop and animal husbandry. They are not well informed about marketing channels and markets, credit and other financial services; therefore, unable to extend their productivity and incomes. Only 30% of farmers are provided with agricultural information (Adburasulov, 2011). A study conducted by USAID (2002) has shown that majority of rural population (51%) were not satisfied with the quality of services provided by local self-government and extension services in their village. And other 70% of farmers uncovered by extension services are forced to seek other sources of information. Consequently weak agricultural extension services lead to low farm production in agricultural sector; farmers require additional knowledge and skills in operation of agricultural production infrastructure.

In these circumstances, there is a huge need to inform farmers about the latest agricultural technology, farm business planning, and access to credit, rural and agricultural, economic and finance innovations. Mass media can address these issues and deliver agricultural information to a large number of farmers quickly. This issue has even political importance. As one of the main directions of the information policy of the Government of Kyrgyzstan within 2013-2017 will be the interaction with mass media with the aim to improve the ways of provision and dissemination of agricultural information for rural producers. Newspapers, radio and television may provide information related to economy, agriculture and finance, managing and saving money, with recommendations and analysis of experts, and with explanations how it works (Dobretsova, 2011). For instance, if the farmers are informed about unfavorable weather conditions, they can make reasonable decisions that will lead to early and timely preservation of yield; accordingly farmers will not have big losses. As well as the Ministry of Agriculture is to provide rural population engaged in agriculture with agricultural information related to market, statistical data, mid and long-term prognosis through effective use of mass media as it is recognized as one of the ways to transfer agricultural technology and deliver information to farmers (Agrarian Policy Concept, 2010).

Mass media has the mission to make changes and impact on the society referred to as the fourth estate. Mass media can make the country become developed and prosperous, the society to be more educated, understand economic issues and the use all the opportunities provided by it. Mass media both digital and print media is one of the powerful tools to cover big amount of farmers to disseminate agricultural information faster than face-to-face-contact. As for print media the information described can be saved and used several times (Dobretsova, 2011). But despite the big interest and necessity in agricultural information among farmers economic, including agricultural information disseminated by mass media (TV, print, radio and internet) is presented in the form of short news and lack of expert evaluation and analysis. A majority of audience expressed dissatisfaction with the quality of provided information on economic (agricultural) issues (USAID, 2002). It is important to note that information is the most significant resource for provision of technical efficiency and profitability of agriculture at all levels and in all forms of production. Receiving and using the high quality information is essential part of agricultural and rural development.

Keeping in view the importance of mass media for the society, especially for rural population engaged in agriculture, the present study is designed to assess whether mass media is playing a role in agricultural and rural development in Kyrgyzstan, if so to discuss the significance of mass media, namely print media in agricultural production and, in distribution of agricultural information among farmers, and to find out the difficulties impeding farmers from receiving agricultural information

1.1 Objectives

The objectives of the study is accomplished through conducting i) survey assessing the importance of mass media in agriculture and rural development in Kyrgyzstan and ii) content analysis displaying the importance of print media in providing agricultural information and its dissemination among rural population; and exploring:

- a) popular sources of agricultural information among farmers;
- b) farmers' need in agricultural information and their preference of mass media;
- c) external and internal factors impeding farmers from getting agricultural knowledge and information;
- d) effectiveness of print media and constraints in dissemination of agricultural information;
- e) contribution of print media in dissemination of agricultural information among farmers;
- f) local farmers' thinking and making decision impacted by mass media;
- g) adequacy of agricultural information provided by print media;

2. Materials and methods

2.1 Data collection

Before the study it was decided to conduct the survey in one of the villages located in the southern part of the country. As previously supposed, that the population living there is limited in access to agricultural information in comparison to population living in the northern part — close to the capital city — Bishkek. One of the southern regions is Kara-Suu region, one of the 7 administrative regions of Osh oblast it was randomly selected for this study. This region is divided into 16 village districts and one of them is Toloikon village which was also selected at random like 84 farmers living and working in the selected area. During the survey it was found out that Toloikon village has balanced agriculture and livestock production and fruit growing, as 80% of local population is engaged in agriculture, most of them are unemployed and mainly keep livestock for subsistence.

The developed methodology made it possible to consider and compare quantitative and qualitative methods of information gathering. To collect the data it is designed to use both forms of instruments (questionnaire and interview). The quantitative method covered information on the social and economic state of respondents, their attitude to and necessity receiving additional agricultural knowledge and using it. The questionnaire and in-depth interview are worked out according to literature reviewed and keeping in view the objectives of the study. It is proposed to observe respondents with different fields of occupation (farmers, processors, officials of Ayil Okmotu (rural government), local journalists and chief editors of newspapers in order to gather more detailed information and better compare the data.

For the content analysis 9 print versions of 4 different categories were collected:

- a) specialized agricultural newspapers, distributed within the country: *Novy Fermer (New Farmer)*, *Ayil Demi (Rural Breath)*²
- b) popular public newspapers, distributed within the country: *Evening Bishkek*, *Jany Agym (New Wave)*, *Kyrgyz Tuusu (Kyrgyz Flag)*
- c) regional newspapers, printed and distributed only within concrete region: *Osh Janyrygy (Osh News)*, *Echo of Osh*, *Osh Park*
- d) economic newspaper, distributed within the country: *Finansist*

All of them were printed within the same time and disseminated in the target area. A special classifier in Excel program was worked out to analyze the collected data. All newspapers were published within May, 2013. Synchronous edition of all newspapers determines the common political and economic context and common news within this period, which in turn could have an impact on both content of the newspapers and respondents' choice of a specific newspaper. This month was selected due to beginning of field works in rural areas and increasing level of interest among rural population in receiving more agricultural information.

3. Results and discussions

3.1 History

Traditionally, the Kyrgyz people were breeding horses and sheep. By the 19th century, permanent housing has become the norm of life for shepherds and accordingly irrigated croplands have been expanded. During the Soviet times agriculture in Kyrgyzstan had become more diverse and intensive: the collectivization of agriculture began in the 1920s; agricultural enterprises (kolkhozes and sovkhozes)³ cultivated from 2500 and 3000 hectares of arable land (almost 98% of arable land) by using a specialized working power. But after the collapse of the Soviet Union⁴ share of agricultural in arable land had gone down to 25%, while the share of the individual sector (peasant farms emerged in 1992) had increased to 75%. The individualization of land holdings has been accompanied with also livestock inventories from enterprises to family farms: former agricultural enterprises lost all their animals, and livestock began to be concentrated in household plots and individual and peasant farms (FAO, 2009). According with the economic changes Kyrgyzstan faced the other reconstructions: the country has inherited an unbalanced and inefficient economic system; the country lost the economic relations with other countries, production fell down, and poverty in the country began to grow especially in rural areas. In 1999, 55.3% of population lived below the poverty line, and 23.3% lived in extreme poverty (World Bank, 2004). But later on despite these facts individual and peasant farms began to achieve higher levels of land productivity than agricultural enterprises with help of credits and grants provided by the government and international organizations including local financial agencies and banks. Accordingly, it led to significant recovery of agricultural production in Kyrgyzstan. Agriculture has become the dominant sector of the Kyrgyz economy. In 2004, agriculture contributed 36% of the gross national product and 53% of employment (World Bank, 2004). As a result of development of peasant and individual farms a new profession began to be formed. (Helvetas, 2006) like a profession of a farmer. But new farmers faced another problem: they were educated people but on different specialization like teachers, tractor-drivers, accountants, economists, and technicians, who had to

become farmers due to economic and social circumstances in the country without any understanding of farm management in a broader sense. Accordingly they faced a lot of challenges and difficulties: most “new” farmers had no agricultural machinery, were forced to rent them; used manual labor instead of mechanized mode of production; did not use improved seeds and fertilizers, were not provided with any agricultural information, did not know the sources of agricultural information provision.

3.2 Natural conditions of the region

One of the southern regions of Osh oblast — Kara-Suu region is located to the north-east of the regional center of Osh and borders with Uzbekistan. The region is divided into 16 village districts and one of them is Toloikon village which was selected for this study.



Figure 1. The map of Kyrgyzstan showing the territory of Kara-Suu region (highlighted in brown color)

The climate of the region is subtropical and arid. Winters are short and mild. Temperature in the coldest month is around -3 -5 degrees. Remoteness of the region from the seas and oceans causes a small amount of annual rainfall. Summers are hot and long. Daytime temperature in the hottest month is about $+34$ $+36$ degrees (Wikipedia, 2013).

3.3 Characteristics of households

With the population of more than 8.5 thousand people Toloikon village has about 1.8 thousand households. One or sometimes several households manage a peasant farm. Usually they are relatives. Each member of the farm has his/her own working responsibilities: women are mainly engaged in household work by producing handicrafts, milking the cows, processing agricultural products, poultry breeding; and men generally do the work connected to livestock breeding, crop production, forage preparation and machinery fixing. But all of them are equally involved in the growing of fruits and vegetables and harvesting. Farmers produce products not only for their own consumption but also for the sale, thereby aiming to increase the family income. But they are faced with many hardships like poorly developed agricultural infrastructure in the region, lack of water for irrigation of arable land and the lack of additional agricultural information. Mostly almost all respondents need information on farming, processing of agricultural products (milk, vegetables and crop production); they are lack of skills in marketing of products and market information. Survey results show that most of respondents have no special agricultural education. 18% of them have secondary education, 18% obtained higher education, 62% of farmers completed various technical schools, and only 1 old aged farmer is a candidate of economic sciences. Accordingly they do not know optimal agro-technical dates for seed and fertilizer introduction, as well as about struggle methods against diseases and plant pests, and norms of application of plant protection means. For instance, most cattle breeders don't have information about keeping, feeding and maintaining animals, about keeping veterinary and sanitary rules.

3.4 Characteristics of farming

The main resources of the peasant and individual farms are land and livestock. Usually farm consists of a house, where family farmers live, a storehouse, bath house, and garage and sheep yard for keeping cows, calves horses and sheep. The forage is

kept under the shed, as for the hay sometimes it is kept in the open air. Each farmer has small garden with the size from 6 to 10 hundreds of land, where they grow vegetables or fruit for own use. Land allotments are located far from the house, where they grow crops, vegetables and fruit for sale. Not all farmers have agricultural machinery, most of them rent it while cultivating the land and harvesting. 88% of farmers cultivate land up to 1 hectare, 9% of farmers work on land of 1 ha, and 3% of respondents replied that they use the land from 1 to 5 ha. As the following figure shown most of farmers have small homestead land and plots which means small-scale commodity production, accordingly almost all of them receive low profit from their agricultural production. Actively working farmers additionally rent land plots.

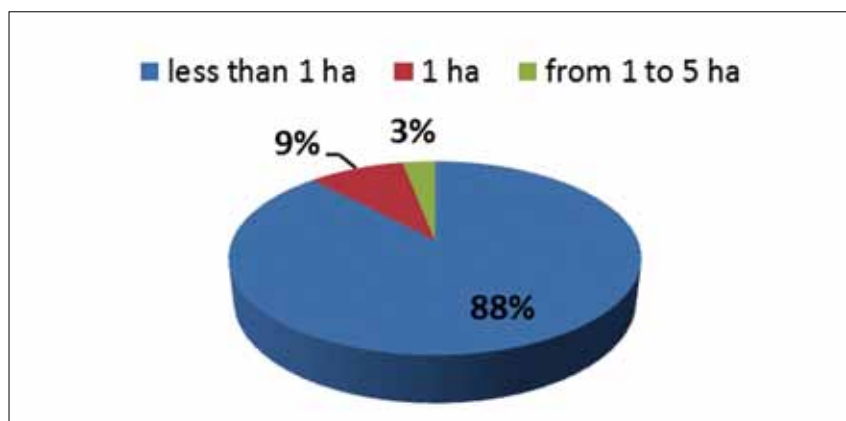


Figure 2. Farm division by availability of land plots

43% of respondents have their own allotments to 0,1ha of land. 39% of farmers rent the land including those with own allotments. None of them has own land of more 2 ha of land. Only 9 farmers could buy the land of size less than a hectare with help of taking credits. 5 respondents use the land free of charge. In most cases this kind of land is inherited from parents. Totally 32.7 ha are cultivated by 84 respondents.

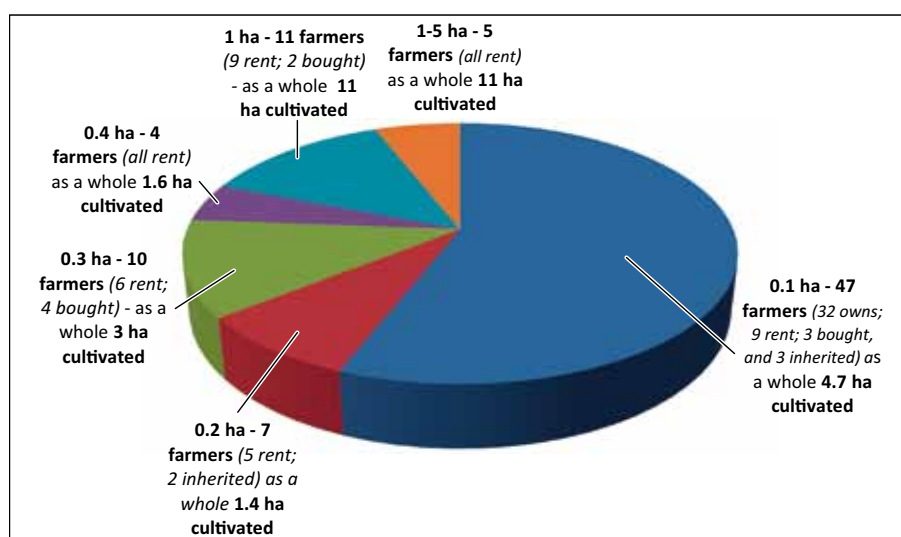


Figure 3. The average size of used farm land

Data analysis has shown that 14% of farmers as a rule keep diversified farming (plant growing and animal breeding). 74% of farmers keep farming more in plant growing, as most of them think that this form of farming allows achieve production results in short time. Only 4.7% of the respondents replied that they process agricultural production (they have their own mini mills). It is also essential to mention that Kara-Suu region's farmers are busy with both plant growing and animal husbandry; but Toloikon village's farmers are mainly occupied with plant growing.

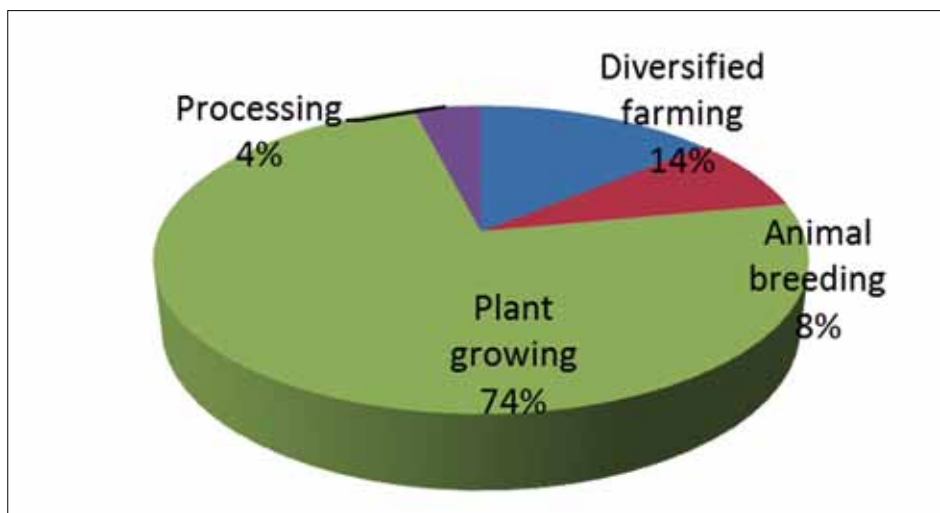


Figure 4. Type of farming

On average, each farmer produces from 6 to 10 kind of agricultural products both for their own consumption and sale.

Table 1. The main products produced by farmers for own use and sale

#	Name of the agricultural product	The number of farmers producing the product	%
1	Crop products (wheat, corn, barley, oats, rice)	51	60.7
2	Milk products (milk, yogurt, butter, cheese)	19	22.6
3	Vegetables (potato, onion, tomato, cucumber, carrot, cabbage, pepper and etc.)	62	73.8
4	Fruit (apple, peach, grapes, pear and etc.)	38	45.2
5	Oil seeds (sunflower and safflower)	18	21.4
6	Meat products	21	25.0
7	Processed products (flour)	4	4.7
8	Eggs	11	13.0

3.5 Main problems of farmers

While farming all respondents are faced with many difficulties. Their responses were analyzed and divided into the following groups (Table 2).

76% of respondents face with the lack of knowledge, and 98.8% of them need knowledge and more information on accounting, planning their farms perhaps due to short working experience in farming and processing agricultural products. Taking into account the facts with changing the climate they noted that they also need the knowledge in climate and weather changes (and how to behave themselves), as most of time they do not know what to do when they have a hot or a cold weather to protect the yield.

Table 2. Main problems faced by farmers

Most important problems	Explanations/Reasons	Number of farmers	%
Lack of water for irrigation	Insufficient supply with irrigation water / old and dirty canals and irrigation ditches / lack of canals	74	88.0
Lack of agricultural machinery or old agricultural machinery	Manual harvesting / delayed haying and late harvesting	71	84.5
Lack of fuel	Price for fuel is increasing during harvesting season	35	41.6
Lack of quality seeds and fertilizers	High price of seeds and fertilizers / poor quality of seeds / seed package does not match the content / farmer does not have skills in determining the quality of seeds / no seed quality control / lack of knowledge in proper use of fertilizers	24	28.5
Lack of knowledge	Lack of knowledge in farming / processing agricultural products	83	98.8
Insufficiency of provision of extension services / need in extension services	Insufficient coverage of local farmers / lack of knowledge about sources of agricultural information / insufficient number of competent extension workers	81	97.0
Poor marketing	Lack of knowledge and information on marketing / difficulties in selling the products / lack or insufficiency in receiving market information	69	82.1
Poor infrastructure	Frequent electricity cuts (especially in winter time) / no gas supply in the region / bad condition of roads in the region / lack of water for irrigation / no specialized veterinary drug store (remote location)	82	97.6
Lack of clean drinking water	Dirty canals / poor / no system of water supply	77	91.6
Lack of funds	High interest rates / large number of documents for processing credit / distrust of people in banks / fear / uncertainty of people in their abilities to repay credit / low income	61	72.6
Unemployment in rural areas	Work on for hire / only short time jobs / emigration to Russia and Kazakhstan	79	94.0
Natural damage / climate change	Mudflow / thaw / warm winters / rainfalls / drought and etc.	73	86.9

3.6 Impact of climate change on residents

Half of the survey participants noted that climate change has been positively and favorably affected agriculture. Elderly residents mentioned that destructive spring frosts occur rarely, warm summers were favorable for growing apples and pears and there was enough water for irrigation. But 20% of respondents whose lands are in arid zones have mentioned that climate change has resulted in a higher demand for irrigation water, which is not met in the summer by water from the canal alone. As well most of farmers are faced with other changes in climate like reducing of snow and rainfalls which in turn influencing on the quality and quantity of the fodder for the livestock. Harvesting winter crops depend on snowfall that is reducing each year. They also noted that within the last 5 years the climate warming happens in the selected village with more sunny hot days and warmer winters. To address these problems respondents suggested to have more information about weather forecast in regular form and to have knowledge about growing and keeping the agricultural products in such climate conditions.

3.7 Awareness and need of farmers of extension services

The survey revealed that 42% of respondents were not aware of any extension services providing consultations in agriculture or rural development. Moreover, most of these respondents (60%) were sure that nothing had been done at all in their village, whilst 10% of respondents suggested that these services perhaps were being provided in Chiu and Issyk-Kul oblasts⁵ due to their geographical location close to Bishkek. However half of all respondents could not recall the details of extension services at all. Thus, we can draw the conclusion that almost half of respondents are not aware of the work carried out in this field by the government agencies or international organizations. Despite this, this amount of people is eager to receive information provided by extension services, as they do not have sufficient experience in agricultural production and the need for extension services is still very high. 97% respondents replied that they need extension services, even including those who never received any consultations from extension services. Other 3% of respondents who are not aware of any extension services working in the region or who are totally rely on their experience and knowledge gave negative answer. As well 27% of respondents have used or applied for services

before which were provided by local self-government, NGOs and international organizations (RAS, Tes-Centre, Jer Azygy, LARC⁶).

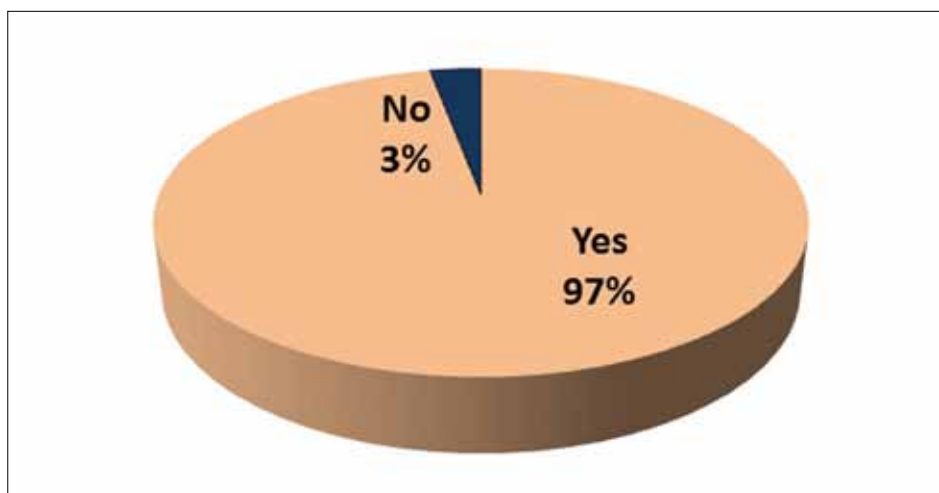


Figure 5. Necessity of respondents in extension services

3.8 Support services

Support services such as veterinary, technical, legal, water supply services and credit services should be developed along with the provision and development of agricultural media. Farmers should have an access to credits, quality input (seeds, fertilizers, relevant animal species) and etc. Real development happens only if these key spheres are developed together. Agricultural media is to link farmers with credit resources and access to quality inputs. Accordingly respondents were suggested to evaluate the importance of support services development using 4 point scale (4-highest point, 1-lowest point). Analysis of average evaluation showed that the highest point was given to agro-chemical provision development (3.9), water supply (3.9), financial and credit services (3.8), veterinary services (3.7) and legal assistance (3.4) points. The study findings showed that the abovementioned 27% of respondents also used applied for organizations providing support services in Osh oblast⁷.

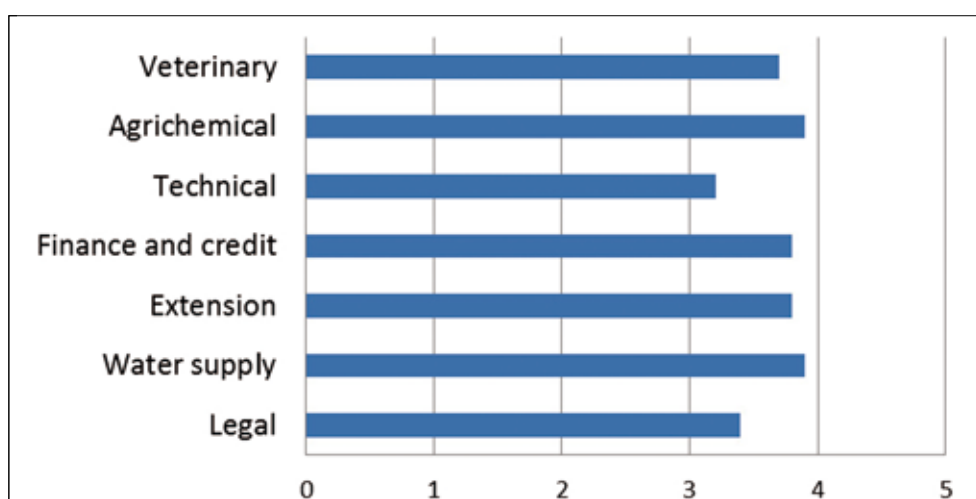


Figure 6. Importance of and necessity in support services

3.9 Agricultural Information Sources

3.9.1 TV and Radio

It was revealed that local radio broadcasts do not provide neither economic nor agricultural information, as only 9% of respondents prefer to listen to the radio broadcasts; mostly commercial news connected to selling of agricultural machinery,

products and crediting. No one considers himself as a regular radio listener.

As for the viewers of TV channels only 29% of respondents who's age is under 45 give the preference to national TV channels like KTRC and EITR⁸ provided in Kyrgyz language; 21% of farmers including those who prefer watching national channels prefer to watch Russian TV channels; and 9% of respondents gave their preference to Uzbek TV channels as the southern part of the country is resided by Uzbeks. Most of the respondents (54%) prefer to watch TV very seldom, it may connects to lack of free time, big amount of work and fatigue, and 31% of respondents watch TV from time to time; and only 15% of respondents watch TV regularly. It was also noted by farmers that they do not have access to the most local TV channels like NBT, Channel – 5 and NTS⁹ broadcasted only in Bishkek and Chui oblast. Accordingly most of the respondents get very small amount of agricultural information through local TV channels, which do not provide special programs describing rural life and agricultural issues. Even realizing the high necessity in agricultural information no one of respondents go to public research institute consultants or state extension experts for getting consultations, even libraries and specialized books in agriculture are not popular among farmers, almost all respondents confessed that they do not want to waste time for reading books, they need short information in short time.

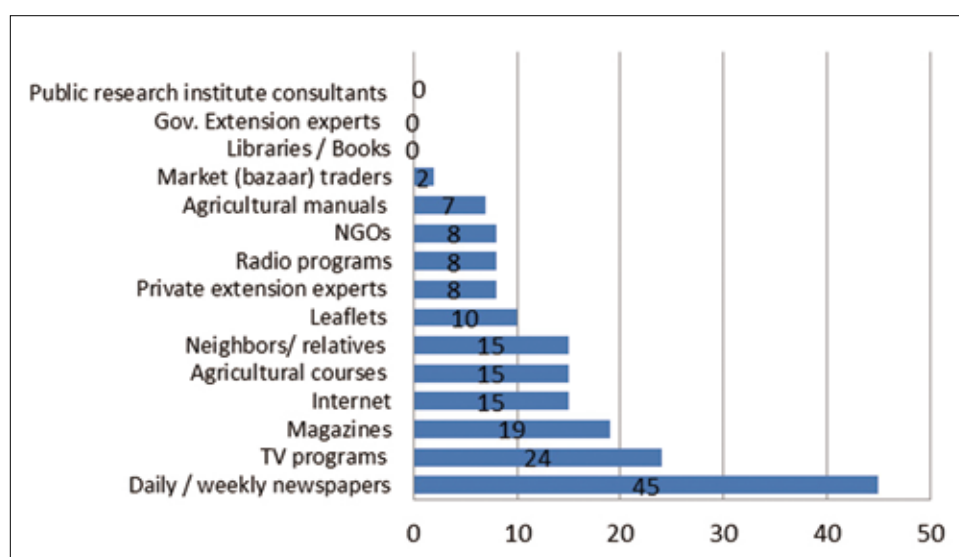


Figure 7. Preferable sources of receiving agricultural information

3.9.2 Internet and print media

13% of respondents whose age is between 25 and 35 prefer to use internet, referring to the fact that they can get any information related to agriculture in very short time and many variants in comparison with televisions and print media, but not everyone in rural areas has the access to it. And other part of respondents whose age is between 45 and 55 still believe that print media (book, newspapers and magazines) has positive educational influence and suggest to develop this source to disseminate agricultural technologies among farmers, as well the information can be saved for long time in comparison with special agricultural TV programs and news. Other 10% of respondents use none of the sources; they just rely on their own experience though most of them have from 2 to 5 years of agricultural experience.

3.10 Agricultural newspapers

Not all Kyrgyz newspapers cover economic issues; mainly most of them are oriented on lightening social and political problems. Most of the respondents have selected the newspaper *Vecherny Bishkek* (Evening Bishkek)¹⁰ as the most preferable newspaper, explaining that all provided materials are true with full facts, understandable and easy to read, written by competent journalists. Along with *Vecherny Bishkek*, *Ayil Demi* and *New Farmer* were chosen but the respondents. These newspapers are totally devoted to rural and agricultural issues. But the advantage of *Ayil Demi* is it is distributed free of charge, even this slight nuance is very important for farmers. Additionally all farmers buy other regular newspapers available in Osh oblast like *Osh Janyrygy*, *Ekho Osha* and *Osh Park*, and *Jany Agym* which covers most political and legislative (decrees, resolutions) information. According to the survey results 39% of respondents are regular readers of newspapers and agricultural magazines; they have total access to them: big amount of newspapers and magazines are sold in each post office, kiosks and small shops, additionally free

leaflets with rural and agricultural information can be distributed by local extension services and representatives of local self-government. They confess that information provided by print media can be saved for long time and if they forget the information, any time they can re-read it.

3.10.1 Theme content in print media

Articles on economic and agricultural issues cover 37% of the newspaper's content. Top topics of all selected newspapers cover political, agricultural, social issues; as well legal news and education are also covered. Science holds the last place; following health, ecology and climate change (these topics remain unclaimed in Kyrgyz print media). On the other hand, journalists should cover these topics in order to make them more popular and more interesting among population.

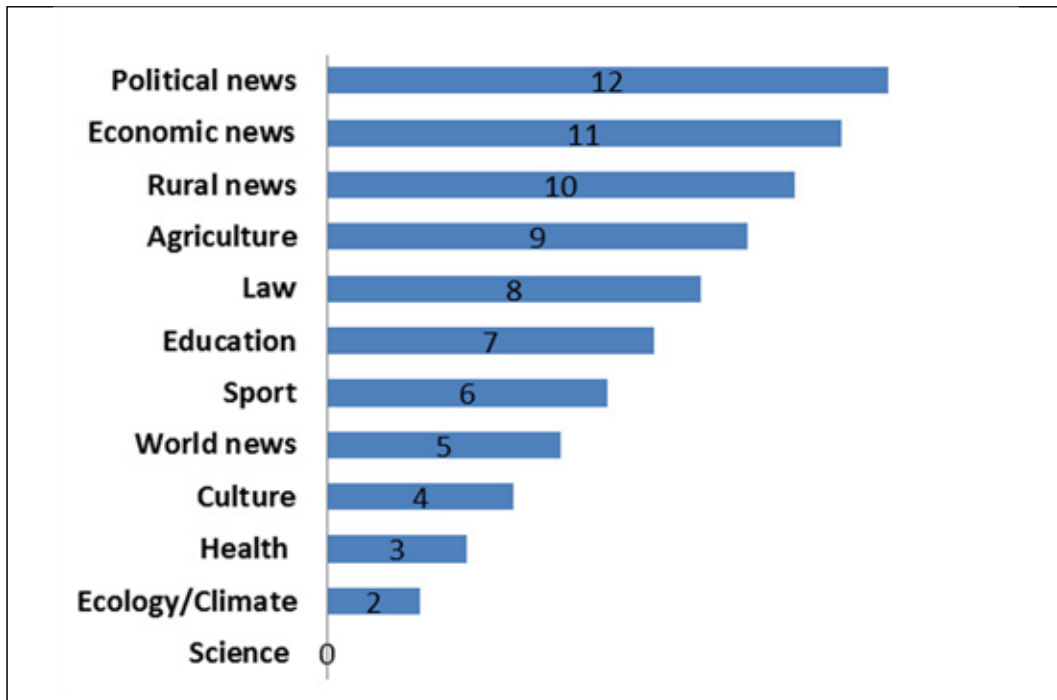


Figure 8. The average theme content in local newspapers

It is important to note that regional newspapers are far behind in the quantitative ratio of article on economic, agricultural and rural topic in comparison with economic, agricultural and popular public newspapers. Even it is far behind in using measurements of money (USD, KGS, and Euro), date (Nov 03, 1956), volume (kg, liter, tone) and length (km, meter, centimeter). It indicates that the more such measurements are used in the newspaper the more competent journalist prepares the articles and materials, the more he/she wants the reader to be informed and shows the real picture with facts. The presence or absence of measurements in the article tells about the way of thinking of the journalist, ability to work with numbers, skills to analyze the situation.

3.11 Advertising and feedback in agricultural newspapers

The unquestionable leader in the number of agricultural advertising is agricultural newspapers. 88% of respondents replied that the first things they prefer to read in the newspapers are agricultural advertisement, following brief news and articles describing economic, agricultural, political and social issues. All respondents made several marks due to the fact that they usually read almost all mentioned newspapers (agricultural, regional, economic and public).

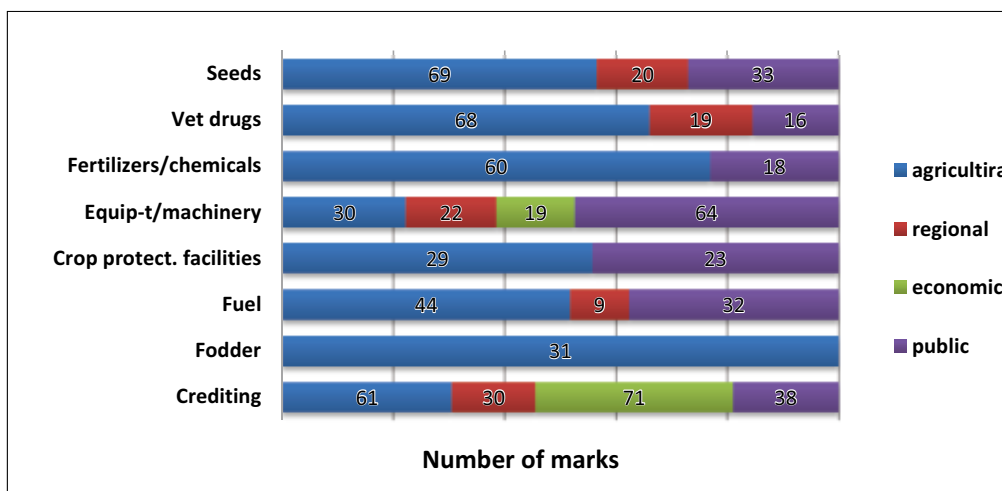


Figure 9. Indicators of provision of agricultural advertisement in local newspapers according to the marks of respondents

All four categories of newspapers provide advertisement about banks on crediting and supporting small and medium business in rural areas and used by 48% of the respondents. Additionally almost all respondents (74 farmers) search contact information of dealers and buyers of agricultural products in the newspapers, including the information on various services, fertilizers, veterinarian drugs, drugstores’ contacts, purchasing and selling agricultural machinery and equipment. The remaining 8% of respondents can get such information from TV, radio, friends and relatives.

3.12 Constraints in receiving the information

Local farmers have constraints in receiving agricultural information in the region they live: 29% of respondents replied that constant power interruptions in their region effect on receiving the information regularly and timely through TV and radio, including those 6% of respondents who cannot watch TV and listen to local radio programs dedicated to agricultural issues due to poor television and radio signal in the areas they live; as well most Kyrgyz TV and radio channels are not broadcasted in the southern part of the country due to their poor capacity to cover the whole country. No one has the difficulty with buying the newspapers and magazines; consequently they get the information from them. 18% of farmers replied that one of the problems in receiving the agricultural information is lack of extension workers.

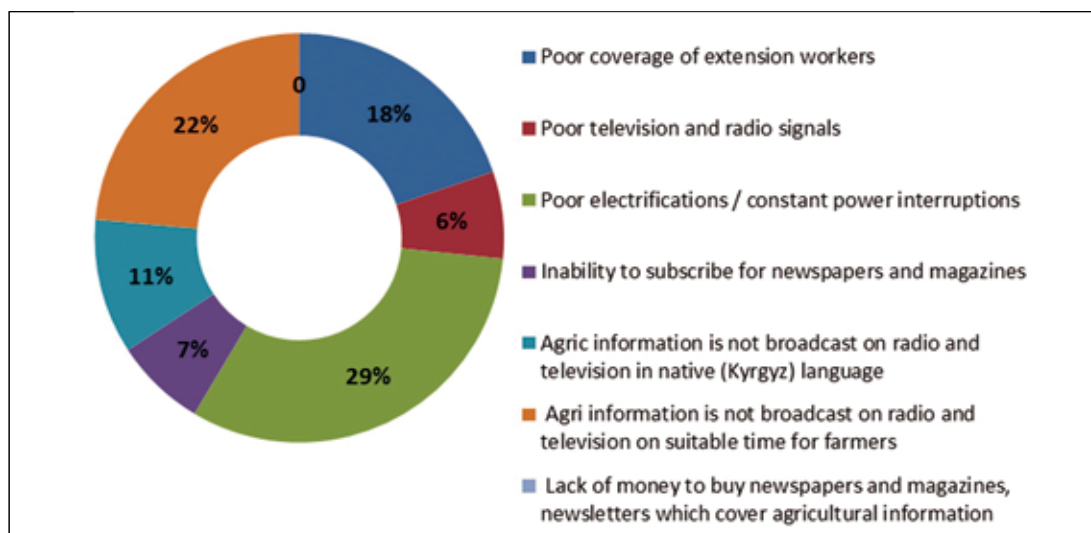


Figure 10. Respondents’ constraints in accessing the agricultural information

To the question “Indicate what kind of agricultural information do you need most?” Almost all of the respondents replied that all kind of agricultural information they need “always”. Some respondents selected the answer “seldom” as they rely on their experience and knowledge earned earlier.

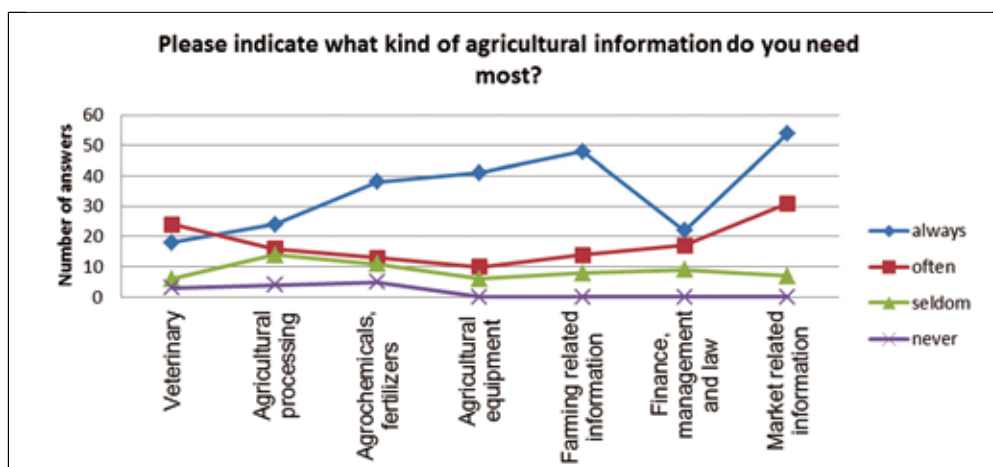


Figure 11. Frequency rate of necessity in agricultural information

3.13 Use of agricultural information by farmers

According to the study findings 64.8% of respondents use agricultural information received from various sources of information like TV and radio, internet and print materials including extension services and market traders and used it while farming. Farmers mainly use the information and knowledge on managing the finance (94%), using seeds and fertilizers (80.9%), watering (86.9%), market issues (84.5%) and farm management (77.3%) as shown in Table 3. Interview results showed that information on farm management and managing the finance (taking credits and accounting management) were the most adoptable for farmers. As well it is important to note that 60.7% of questioned farmers use the information related to legal issues especially when buying / renting / lending the land, making the agreement with dealers, paying taxes and in judicial proceedings; and 58.8% of which use this kind of information always.

Table 3. Use of information by farmers

Field of agricultural information used	Use of information				Frequent use of information of those who answered “yes”					
	Yes		No		Always		Often		Seldom	
	No.	%	No.	%	No.	%	No.	%	No.	%
Farm management / new techniques /	65	77.3	19	22.7	58	89.2	5	7.6	2	3.0
Market information	71	84.5	13	15.5	55	77.4	14	19.7	2	2.8
Veterinary / diseases / treatment/ prevention	23	27.3	61	72.7	18	78.2	5	21.8	-	-
Agricultural processing/ ways of processing	22	26.1	62	73.9	20	90.9	2	9.1	-	-
Agricultural machinery / keeping / fixing	38	45.2	46	54.8	27	71.0	10	26.4	1	2.6
Finance / income increasing / accounting management / credit	79	94	5	6	49	62.0	24	30.4	6	7.6
Use of seeds / fertilizers	68	80.9	16	19.1	65	95.5	4	4.5	-	-
Water supply	73	86.9	11	13.1	73	100	-	-	-	-
Legal issues	51	60.7	33	39.3	30	58.8	14	27.4	7	13.8

As well it is important to point that 80.4% of respondents use the received information and knowledge always, which means that the obtained information impacts on farmers’ decisions regarding their activities and fully adopted by them. Few farmers estimated the importance of information and knowledge on agricultural products processing (26.1%) and using agricultural

machinery (45.2%) according to their need in it. In the process of interviews the main reasons to use the knowledge and information on farm management and managing the finance, marketing and using high quality seeds and fertilizers mentioned by farmers were to improve the crop production, increase in livestock breeding, increase of family income. Other reasons were to be informed and skilled in controlling plant and animal diseases, improving the quality of products, reducing the crop losses, and assuring food security.

3.14 Satisfaction and expectations of farmers

Most of agricultural information is provided through print media. But despite these results most of the respondents (64%) marked that agricultural information provided through local newspapers is “raw”, lights only the “bare” numbers and figures without any analysis, prognoses and recommendations. According to the survey aimed to reveal the problems in economic journalism and conducted by DPI¹¹ only 2% of journalists believe that they are literate enough to write on economic topics. Almost all of surveyed journalists confessed that agricultural topics are not interesting for them; they more prefer to write on political topics. Only around 10% of journalists took part in specialized trainings to improve skills, and 40% of journalists believed that they need more knowledge and training on economic, especially agricultural issues. Journalists rarely pay attention to the laws, a large number of journalists do not know how to work with quantitative data and do not have the skills of analysis. Accordingly, they cover and light a very narrow range of topics and issues. Respondents also noted that national and local TV channels provide agricultural information in the form of short news based on official information without any experts’ comments. Very few TV programs are dedicated to rural and agricultural topics, and there’s no any specialized educational TV program for farmers.

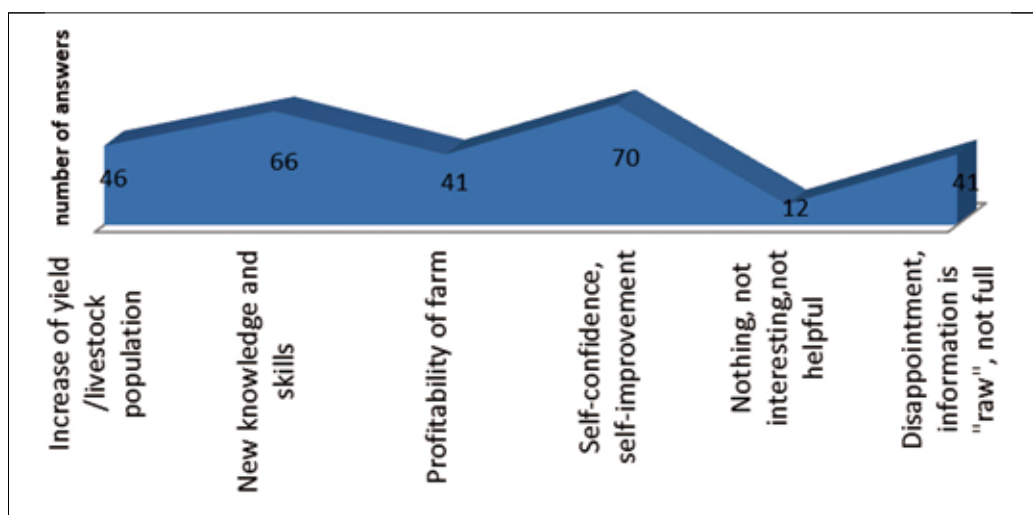


Figure 12. Benefits received by farmers after using agricultural information provided by mass media

Around 80% of respondents replied that they acquired self-confidence and self-improvement owing to new additional knowledge and skills, this in its turn can influence on increase of agricultural production and profitability of farm. Almost all respondents are satisfied with the quality of information considering its relevance and newness and in time publication of the material. It proves that rural people’s interest in agricultural information is high in Toloikon village. They confess that despite some facts when agricultural information is provided without any analytical opinion of experts and analysis, almost all materials are easy to understand. But they suggest local media outlets to cooperate with local self-governments which are familiar with each problem faced by rural people and farmers in covering and lighting necessary agricultural topics.

4. Conclusions and recommendations

It can be concluded that one way to improve the livelihood of rural people and decrease the poverty level in rural areas it is important to improve the information management in agricultural sector of Kyrgyzstan. This goal can be achieved if the government, farmers, mass media agencies and stakeholders will work in cooperation with each other and distribute the competent information at the proper time and in good quality.

The survey results revealed that almost no one of the respondents has a specialized agricultural education and additional knowledge in this field. Here a special role should be given to local media outlets, whose main task is to disseminate information about everything related to agriculture and rural development. But unfortunately the media does not often pay attention to this sector of the economy. As a result, farmers and villagers despite their willingness are unable to use the mass media as the main tool to gain additional knowledge and improve their skills in this area. Journalist is significant force that can guide society to address this or that issue in proper way. Rural development and agriculture will often depend on how accurate and quality information will receive a farmer from economic journalists. The same time they have many barriers in their work like access to information, time, management pressure and lack of knowledge and skills in making the proper analysis of the issue. Accordingly farmers are faced with information barriers like insufficient information on best practices of agricultural production, marketing, technical information about machinery and equipment, and of special publications, poor awareness of heads of AOs¹².

Additionally almost all respondents' level on climate change awareness is very low, which should be raised. Mass media should pay more attention to raising climate change awareness among rural population. It should cover not only climate change but also environmental protection and food security issues. It is suggested that special radio and TV programs on climate change should be run on regularly along with agricultural and rural related programs. As the main source of income in rural areas is farming, its development depends on climate conditions as well.

Analyzing the answers of respondents the researcher came to conclusion that almost all respondents realize the importance of obtaining additional knowledge and skills on farming, processing the agricultural products and they are open for changes. Despite some difficulties in accessing the agricultural information they try to search and learn more in order to increase their family income enlarge their farms and make it diversified.

Accordingly, the study findings showed that the main source of information for farmers was print media (newspapers, magazines), followed by TV programs, internet, agricultural courses, and extension services. Some farmers indicated NGO¹³s and market traders, neighbors and relatives as important sources of receiving agricultural information. The study could identify the problems of farmers and the necessity in additional agricultural information and knowledge; even constraints faced by farmers in receiving agricultural information, as well how often they use received information. And summarizing the work, the researcher came to the conclusion that mass media may impact on farmers in making decisions.

Based on the findings, the following recommendations are made:

- a) Regional journalists are to be trained on economic journalism; get more skills to better report economics and agriculture related topics.
- b) Improve the mechanisms for distributing the agricultural information; develop measures aimed at increasing the agricultural knowledge level among farmers. The government should pay more attention to development of state extension services to cover more number of farmers and close cooperate with local media agencies in disseminating agricultural information in rural areas.
- c) Radio and TV companies should introduce more educational and culturally cognitive programs and projects mostly in native language for rural people engaged in agriculture, including talk-shows to create the link between the government and a farmer to know rural people' opinion on this or that issue; to address important issues, mainly to raise mass media capacity to inform the public on agriculture related topics.
- d) Mass Media should be a key link between the state, which creates conditions for the development of agriculture and rural people, a farmer who faces many challenges and constraints in the field of agriculture. And here mass media is to play the important role to provide the assistance to a farmer.

Endnotes

¹ The newspaper Ayil Demi (Rural Breath) is distributed among farmers free of charge

² Sovhoz came from first three letters of "sovetskoye hozyaistvo" (soviet economy) - state agricultural enterprise in the USSR. Kolkhoz - cooperative association created by means of peasants

³ Union of Soviet Socialist Republics

⁴ Chui and Issyk-Kul oblasts are situated in the northern part of Kyrgyzstan.

⁵ RAS - Rural Advisory Services/Helvetas

AAK Jer-Azygy - Association of Agro Businesses of Kyrgyzstan provides agricultural consultation

TES-center is non-governmental organization aimed at increasing the income of rural population engaged in agriculture by conducting trainings and providing consultations

LARC - Legal Assistance to Rural Citizens, Public Association

⁶ AgroZooVetService - provision with agricultural and veterinary consultations; provision with veterinary drugs, agrochemicals and seeds

Agromet - provision with mineral fertilizers and chemicals in Osh and Jalalabad oblast

Agroelita - supply with agricultural inputs (seeds, fertilizers and protection means)

AAK Jer-Azygy - supply with agricultural inputs (seeds, fertilizers and protection means)

- Public Fund “Kalys Consult” - legal consultations, presentation and defense of rights in courts
- ⁷ KTRC - Kyrgyz TV and Radio Corporation
EITR - Public TV Channel
- ⁸ NBT - Independent Bishkek Television
NTS - New TV Network
- ⁹ Vecherny Bishkek is one of the most popular and widely spread newspapers in Kyrgyzstan.
- ¹⁰ DPI - Development Policy Institute, non-government organization experiencing in the fields of legislation, reforms of public and municipal management, local self-governance and community development; and mass communication
- ¹¹ AO - Ayil Okmot (Local Village Government) - Local Self Government
- ¹² Non-Governmental Organization

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