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Knowledge gaps and rural development in Tajikistan:
Agricultural advisory services as a panacea?



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Agricultural advisory services as a panacea?

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1 ABSTRACT

In this paper I look at knowledge systems and the channels of innovation diffusion in Tajikistan. In particular I look at the formation of the agricultural advisory services as a vital source of knowledge and innovation for farmers during the transition process. After the end of the Soviet Union and the civil war in Tajikistan, the knowledge available to farmers can be described as a mix of, on the one hand, traces and fragments originating from the Soviet agricultural and educational system represented by the universities, research institutes and academy of sciences; and on the other hand, western-style knowledge, mainly introduced by development agencies. The paper analyses the functioning of and interaction between the international donors, NGOs, Tajik government and academic institutions. Donors are relatively new actors in the field of knowledge dissemination, but important ones. In this paper I show how under the framework of 'development', i.e. the rhetoric, organization and infrastructure of development, different donors play their own games, some of them geo-political. At the same time they provide support for the functioning of local NGOs and help them to sustain; also donors are used by the Tajik political actors for their own purposes. From this discussion I derive suggestions on how agricultural advisory services could be organized in Tajikistan, working on some local weaknesses and building on existing assets, traditions and networks, reflecting the interplay of the main actors and local needs.

Keywords: agricultural advisory services, extension, knowledge, innovation, rural development, development cooperation, Tajikistan, Central Asia

2 INTRODUCTION

Swan, Pike And Crawfish

*When partners can't agree
Their dealings come to naught
And trouble is their labour's only fruit.*

*Once Crawfish, Swan and Pike
Set out to pull a loaded cart,
And all together settled in the traces;
They pulled with all their might, but still the cart refused to budge!
The load it seemed was not too much for them:
Yet Crawfish scrambled backwards,
Swan strained up skywards, Pike pulled toward the sea.
Who's guilty here and who is right is
not for us to say-
But anyway the cart's still there today.*

Ivan Andreevich Krylov (1769-1844 / Russia), English translation Victor Zinger

In this paper I aim to assess local epistemic cultures, actors and structures of agriculturally oriented knowledge and innovation development and the local channels of innovation diffusion¹. Agricultural knowledge systems in Tajikistan undergo changes as part of the transformation process (Boboyorov 2013). During the Soviet era, knowledge for agriculture was produced together with agricultural universities, colleges, research institutes, the Ministry of Agriculture, and other actors involved in agricultural production. Within the bigger network of education and research institutions of the former Soviet Union, these institutions were linked with each other (Morgounov and Zuidema 2001). The results were targeted at and transferred to *kolkhozes and sovkhazes* that used to be the main production units of collectivized agriculture.

After the breakdown of the Soviet Union and a number of reforms in agriculture, new agricultural producers in Tajikistan have emerged. The following farm types can be identified: (1) household plots, (2) individual and family *dekhan* farms, (3) collective *dekhan* farms and (4) agricultural enterprises (more details in Section 5). The system of knowledge production and sharing has changed through the transformation process as well. The earlier mentioned Soviet network of education and research in Tajikistan

¹ The author would like to acknowledge the Federal Ministry of Education and Research (BMBF) of Germany for the financial support provided to the the research proejct "Epistemic Cultures and Innovation Diffusion in post-Soviet Southern Caucasus and Central Asia. Pilot Study: Agricultural Knowledge Systems in Georgia and Tajikistan". This paper was written in frames of this project. Further information: <http://www.zef.de/1847.html>.

has partially been sustained, partly has been reorganised or dissolved due to the lack of state subsidies (Beniwal et al. 2010). The transformation period has negatively affected the quality of research and education. At present there is no mechanism to link and coordinate knowledge transfer/inflow to agricultural producers from the national agricultural research (done by different organizations) and education (Beniwal et. al 2010; Morgounov and Zuidema 2001). On the district and local levels there are still former *kolkhoz* experts, as in the Soviet period, like agronomists or water engineers who provide agricultural consultations to farmers. In addition, there is a new actor – international donor organisations - who provides agricultural knowledge and shapes the knowledge sharing landscape. After the end of the civil war in Tajikistan, numerous international donor organisations came to Tajikistan offering relief development help. International donors as well as NGOs funded by them through different development projects provide all kinds of agricultural inputs and knowledge to farmers. By implementing these projects, many dynamics and interactions emerge between the Tajik government, the international donor community and NGOs. Thus, international donor and development organizations, as well as NGOs (usually supported by donors) and the Tajik government are key players in agricultural knowledge systems (in contrast to the Soviet period), and hence in the rural transformation of Tajikistan.

Central Asia and Tajikistan as part of it have generated global interest due to its energy potential and geostrategic significance (Heathershawa 2011; Jonson 2006; Kreutzmann 2005; Subodh 2003). According to Lena Jonson “Central Asia has become the battleground for the major struggles of the 21st century: radical Islam versus secularism, authoritarianism versus identity politics, Eastern versus Western control of resources, and the American ‘War on Terror’” (2006). Tajikistan’s closeness to Afghanistan has made it an international drug trade route since the early 1990s (De Daniele 2011). Since the late 1990s onwards both the United States and the European Union have been providing assistance to the Tajik government in the field of counter-narcotics (idc). Since then the number of international development projects in different fields has grown in Tajikistan. Amongst other geopolitical projects, development of agricultural advisory services is one of many ‘development’ projects initiated in the region by the international donor community.

Regarding agricultural advisory services (AAS), many different models exist in the world, each with its pro's and con's. AAS is one of the components of the development projects implemented by international donors in Tajikistan. In order to understand how a national network of agricultural advisory services should be organised in Tajikistan, which is part of the on-going agricultural reform process, I will look at the earlier mentioned knowledge providers, i.e. NGOs and donors, as well as universities, research and former Soviet agricultural experts. However, in order to come up with an appropriate model for agricultural advisory services in Tajikistan, it is not enough to look at existing AAS models and search for 'best practices' that could be copied. What is important is that the model reflects the interplay of the main actors and the local needs. Therefore in this paper I analyse the functioning of and interaction between the international donors, NGOs and Tajik government (and universities, research and former Soviet agricultural experts). After the analysis of the different knowledge providers, I will summarise the main points for constructing an AAS model for Tajikistan.

The paper is organised as follows. In the first two sections I briefly present an overview of the rural economy of Tajikistan after the end of the Soviet Union and the problems farmers face while running agriculture. Section three provides an overview of agricultural advisory services and extension models. Section four outlines the research methodology, followed by Section five introducing the rural economy of Tajikistan. Section six presents the work done in the field of agricultural advisory services by different actors. The same section analyses the interplay of the different actors involved. Based on this analysis, Section seven outlines the features an agricultural advisory service should have in order to meet the needs of different types of farmers and thus to contribute to agricultural development in Tajikistan.

3 OVERVIEW OF AGRICULTURAL ADVISORY SERVICE MODELS

In this paper I study the role of external/global, agricultural knowledge in local knowledge production and further development, as well as the channels through which it reaches local innovators and subsistence farmers. Agricultural extension and agricultural research and education systems were identified as the most important researchable areas in Central Asia and the Caucasus region followed by crop production, water resources, marketing, processing and value addition of agricultural commodities and developing suitable agricultural development policies related to rural employment, land tenure property rights and others (Binewal et al. 2010; GCARD 2010). GCARD underlines the importance of creating knowledge systems and strengthening communication with smallholder farmers and others along the production-consumption chain for participating effectively and equitably in markets (GCARD 2010).

For this purpose I will look at different agricultural advisory service models available. Agricultural advisory service or extension have been organised in different ways in various parts of the world. AAS can be organised based on the University, on farmers' associations, by government agencies on the regional/local levels, or as a combination of these different approaches. In the USA, extension is provided by both, Universities and government. Based on the Smith Lever Act on cooperative extension service (1914), such extension was established linking research, education, land grant universities and county administrative departments (McDowell 2001; Kalna-Dubinyuk and Stanely 2005). The Japanese extension system works mainly through cooperatives (Agbamu 2000; Gereads 2009). Such cooperatives provide marketing, banking, insurance and health care for farmers. Commodity cooperatives are fully funded by the government and play an important role in Japanese agriculture (Agbamu 2000). In the Netherlands, it is a combination of government and professional farmers' associations, i.e. credit, input cooperatives and a mix of the above mentioned with sufficient government support. In Germany as in other industrialised countries, one observes that public extension has been under pressure to introduce cost sharing or altogether commercialize advisory work. An approach which combines commercial and public elements is at present being introduced in some of the eastern states of Germany (Nagel and von der Heiden 2004). For example, the Ministry of Agriculture in Brandenburg subsidizes consultations once they have actually taken place. Thus, the mixed model of extension continues to be one of the popular models under the circumstances of the rapidly changing world (Kalna-Dubinyuk and Stanely 2005).

The Soviet system of knowledge production and sharing differed from the earlier described models (Van Assche et al. 2013 forthcoming). This process was not called extension or AAS, but the knowledge transfer goal was similar. It was organised through a complex network of the Agricultural ministries, agricultural universities, academy of agricultural sciences, research centres, *kolkhozes* and *sovkhozes*. Here knowledge was generated based on the state production targets. Knowledge was generated in the specialised research institutes, which subordinated either to the Academy of Agricultural Sciences or the Ministry of Agriculture (with some variations in different Soviet republics and years) (Morgounov and Zuidema 2001). Later it was channelled to the *kolkhozes/sovkhozes* through the local and regional departments of the Ministry of Agriculture. Every *kolkhoz/sovkhoz* had a set of trained experts, i.e. an engineer, an agronomist, an accountant, etc. who regularly attended classes/courses to update their knowledge. Since the end of the Soviet Union, NGOs fill a big gap of knowledge supply in the agricultural sector of Tajikistan (it will be shown more in detail in the subsequent parts of the paper).

Last but not least, it is important to mention that every model in those countries mentioned was constructed for different farmers. For example, farmers in the USA were autonomous and entrepreneurial in the capitalist system, whereas in the Soviet Union farmers did not exist. *Kolkhoz* management was something that resembles farmers in the US. But with the end of the Soviet Union, *kolkhozes* and *sovkhozes* were dissolved into many different things, same as AAS, as will be presented in the following chapters (Kandiyoti 2003).

4 RESEARCH METHODOLOGY

The data for this paper was collected as part of the Project “Epistemic Cultures and Innovation Diffusion in post-Soviet Southern Caucasus and Central Asia. Pilot Study: Agricultural Knowledge Systems in Georgia and Tajikistan”. A literature review and 50 semi-structured expert interviews with different organisations were conducted in various parts of Tajikistan on different administrative levels during two months in 2012. The representatives of the following types of organisations were interviewed: donor and international organisations, Ministry of Agriculture, local and international NGOs, and local state government².

² The author would like to express her gratitude to all interviewees who spent their time and shared their experience in regard to agricultural advisory services in Tajikistan.

5 THE RURAL ECONOMY OF TAJIKISTAN

There are 7.8 million people in Tajikistan and 70% of them reside in rural areas (Agency of Statistics of Tajikistan 2013; Lerman 2012; Agrodonish 2010). Despite the small share of arable land in Tajikistan, which is estimated at 7% (around one million ha), agriculture is one of the most important sectors of the economy and it provides employment for two thirds of the population. The share of the agricultural sector in the GDP was estimated at 18,7% in 2010 (Tajstat 2011) and agricultural products make up 30% of official exports (FAO 2011). The main agricultural crops are cotton, cereals, grazing for cattle and small ruminants, horticultural crops, potatoes, vegetables, melons, orchards and vineyards (FAO 2011; Boboyorov 2012).

After the end of the Soviet Union, *kolkhozes* and *sovkhoses*, that used to be the main production units, were dissolved. The agricultural reform in Tajikistan is on-going since 1997, attempting to distribute land to farmers. According to the FAO, four types of agricultural producers can be distinguished nowadays in Tajikistan (Lerman 2012). These are (1) household plots, (2) individual and family *dekhan* farms, (3) collective *dekhan* farms and (4) agricultural enterprises (successors of former state farms). Only the first two groups are true family farms. Agricultural enterprises are in fact specialized state-owned farms. Official statistics make it impossible to differentiate between *dekhan* farms of different types. Recent estimates show, however, that collective *dekhan* farms – which constitute less than 5% of all *dekhan* farms in Tajikistan – control more than one-third of the arable land in the *dekhan* farm sector. Despite the significant presence of collective *dekhan* farms, the agricultural sector in Tajikistan is now largely individualized: nearly 65% of arable land is in family farming (household plots, individual *dekhan* farms, and family *dekhan* farms) (Lerman 2012). The farm sector today consists of some 750,000 rural households, each with a household plot of 0.3 hectares on average, and nearly 90,000 *dekhan* farms with 7 hectares of arable land or 30 hectares of agricultural land on average (Ibd).

The end of the Soviet Union and the following civil war had serious consequences for Tajikistan, for agriculture and rural development sectors in particular. Despite reforms in agriculture undertaken by the government, there is a number of obstacles farmers face:

- The mountainous location of most of the country and the poor road and market infrastructure make it difficult to transport agricultural products for sale to the bigger markets of Khujand and Dushanbe. Due to the same reason, there are only little and expensive fertiliser and inputs for agricultural production available (Interview with F. Kurbonov, German Agro Action, April 2012);
- No processing facilities; what used to be there during the Soviet times i.e. wine, tobacco, and juice processing factories is dismantled. Many processing facilities were destroyed during the civil war and little were reconstructed;
- Local governments with their bureaucratic approach to work prevent agribusiness development; As a result of water-related cross-border conflicts with Uzbekistan, the export of Tajik agricultural products to Russia via Uzbekistan is blocked (Juraev 2012; interview with Azamjon, manager of the Khatlon Livelihood support project, April 2012).

Thus farms are small, vulnerable, and under-financed as the following quotation suggests:

‘750,000 farms were created, but nothing for this was established. 70% of farm owners are random people, people do not know how to run a farm; no access to fertilizers, no access to markets and marketing facilities, no machinery, very high interest rate for loans in the banks, no insurance in agriculture; high salinity of soils. Nobody carries responsibility for the quality of imported pesticides, herbicides and seeds; low-productivity cattle, no veterinary,

there is no laboratory of quality control. There is nothing' (interview with the director of NGO "Makhbuba", April 2012).

The majority of small scale farmers is poor and they do not have experience in paying for agricultural advisory services. On the other hand, a farmer is not accustomed to pay for consultation, as in the past he used to receive it for free either through the Soviet *kolkhoz* system or in recent years from donor humanitarian help. Another obstacle for farmers is the lack of agricultural background. Many farmers used to be medical doctors, teachers, accountants and in professions unrelated to agriculture. Similar to the post-Soviet agriculture in Uzbekistan, not all farmers in Tajikistan have learnt how to work, how to make decisions independently without orders from above, how to be profitable, how to manage their own expenses (Shtaltovna 2013). In addition, many men went abroad to look for jobs during the transition period. Thus, left are old people, kids and women. As a consequence, there is a growing number of female farmers nowadays in rural Tajikistan. To be a farmer in Tajikistan today, one needs to become a multi-functional entrepreneur, having specific agricultural knowledge as well as financial and legal skills, marketing skills and being able to find all the needed inputs and machinery (Interview with I. Nematov, director of the NGO 'Bakht', 2012). Given the circumstances presented above, can a farmer reach those skills in some 15 years? Therefore, it is not that easy to become a farmer. A farmer still has to decide, if either he really wants to and can be one. Last but not least, it is not clear at all, if the land reform is completed or if there will be more changes. At the present stage farmers are too weak to boost agricultural production by themselves (Interview with N. Dadabaev, Ministry of Agriculture, May 2012).

6 SOURCES OF KNOWLEDGE FOR FARMERS IN TAJIKISTAN

In this section, I will look at available agricultural knowledge and innovation sources for farmers in Tajikistan. This is a mix of remains of the Soviet collectivised agricultural system, Soviet educational system, modern knowledge brought by development agencies and their agricultural projects, and the small scale commercial input suppliers. I will look at the main actors involved in the knowledge sharing sector - international donors, government actors, NGOs, Agricultural University of Tajikistan, and commercial input providers. The activities of these organisations and interactions amongst them are in focus.

As it was presented in the previous section, *farmers* have to overcome many challenges to run agriculture. First of all, many of the present day farmers never were farmers in the Soviet period. There are gaps in knowledge and experience, for example in running agricultural activities, how to be an entrepreneur, how to label a product, prepare a financial report, where to sell farmer's products, etc. Depending on the type of production, either animal husbandry, horticulture, tobacco or cotton production, *kolkhozes* and *sovkhoses* were equipped with a set of trained experts i.e. an engineer, an agronomist, an accountant, etc. Thus *kolkhozes/ sovkhoses* were independent and fully equipped production units. In addition, there used to be a state agricultural unit on the district and regional level called 'Agroprom' (a regional department of the Ministry of Agriculture). This organisation was responsible for the functioning of *kolkhozes/ sovkhoses*, thus it also provided agricultural consultations.

With the end of the Soviet Union, there are no more *kolkhozes*, instead there are thousands of farmers with land certificates, many of whom have not actually received land yet (see Section 5). Farmers' main source of knowledge are agronomists from *Agroprom* or former *kolkhoz* specialists, however their expertise is outdated and does not always meet the present day farmers' needs. Farmers do not expect help from the state, as there is hardly any available. For instance, the state agronomist has no opportunity to visit farmers' fields or call them because he receives no funds for this purpose. Therefore, farmers have to visit him in the district capital in case they need a consultation (Interview with the First Deputy Mayor in charge with agriculture of the Penjikent municipality office, April 2012). In addition to the underpaid state agronomist, the former *kolkhoz* agronomists and a few other former *kolkhoz* workers can provide knowledge to farmers in the rural areas. Very often these former *kolkhoz* agronomists are employed by international organisations or NGOs to work for agricultural projects implemented by donors in rural areas of Tajikistan.

Cooperation between NGOs, donors and the local government (*jamaat*) occurs on the issues of agricultural extension. Many of the government organisations remain thinking and working in the old Soviet style, meaning a top-down working approach, giving commands, controlling and reporting.

"Management in agriculture is destroyed. The government tries to solve new problems with the Soviet approaches and experience" (Interview with A. Sharipov, head of the National farmers' association, May 2012).

From years of cooperation with local governments, NGOs in the southern part of Tajikistan have had all kinds of experiences. The below citation represents the way how they usually work

"Due to the low state budget, *jamaat* [local state administration] representatives go around the village and collect money from the villagers to celebrate Navruz or May 9³. They collect it amongst the farmers. But where can the farmer get money? I tell them give me a receipt and I will pay you. After that, they do not come back to me again. Those who are afraid and

³ National holidays in Tajikistan

don't know, they keep on paying. I am fed up, I don't want to deal with government organisations any longer!' (Interview with A. Mamadshoev, agricultural expert at Mercy Corps, May 2012)

There are also cases when the activities of the NGOs financed by international donors are perceived as a source of financing for the local government and a power competitor in rural areas. As indicated by the following:

"There is just this (one) agro shop in the area. We asked the state administration to give us a room for a shop, it was refused. Later, that premise was sold. Moreover, the state officials always ask for a tractor and do not pay for it, threaten and do not support our activities at all" (Interview with the director of the NGOs' Union „Iftikhor“, May 2012).

However, there is a difference in how district/regional government works in the south and in the north of the country. In Khujand region I have seen more positive or neutral experiences of cooperation between the state and NGOs. Here NGOs reach higher goals in contrast to the south of the country in terms of cooperation with the state. Experienced NGOs like "SAS Consulting", "NAU Khujand", "Zarzamin" manage to successfully cooperate with the state on the issues of seeds import to Tajikistan and reduction of added value tax for the import of fertilisers and seeds. What one can expect from the cooperation with the local, district or regional government is non-disturbance of both sides, also the government is good at mobilizing the public and organizing a room if an event is to be conducted in some other area. Basically, government has not much to offer, it is the other way around, and they sometimes appeal for help to NGOs (Interview with the director of the agricultural advisory service NGO 'Zarzamin', May 2012).

In the past 10-15 years farmers received inputs and knowledge through *international projects* targeted at food security and agricultural development. International donors are relatively new actors in a traditional society like Tajikistan. They came to Tajikistan to provide relief help after the civil war in 1997. From 1998 till 2002, development agencies focused on providing and distributing inputs to farmers free of charge. Starting from the early 2000s, they have shifted from distributing inputs for free to distributing inputs for partial payment (interview with M. Nurmatov, extension expert at USAID, May 2012). And as part of their work in the region, these organisations provide inputs and knowledge to agricultural producers. Agricultural advisory systems or extension of the conventional type to support farmers did not exist during Soviet times. New forms of extension systems to support small holder farmers and producers, very different from the collective farms of the Soviet period, are still not developed; they take their time to emerge. In the past years development of agricultural advisory services often was an element of agricultural and rural development projects financed by international organisations. Having in mind the serious problems in rural areas and the importance of agriculture, the provision of agricultural advisory services is a significant contribution of the development projects and NGOs in the rural development sector of post-Soviet Tajikistan.

Presently there are approximately 200 different international donor organisations working in Tajikistan. They implement a big variety of agriculture-related projects, providing different services in different parts of Tajikistan with duration of 2-5 years. The international organisations where agricultural advisory service is one of the leading agricultural projects are the European Bank for Reconstruction and Development, USAID, The World Bank, Aga Khan Foundation, FAO, JIKA, British embassy, OSCE, Mercy Corps, Swiss Embassy for development and cooperation, GIZ, Oxfam, and others.

However the aid is uncoordinated and just few international organisations have a long-term strategy (International Crisis Group 2003). Usually donors neither cooperate amongst each other and with other present NGOs, nor coordinate their activities in case they work on a similar issue. This sometimes results

in an overlap of donors' and NGO's activities. There is also no clear picture of what has been implemented, by whom, when and what is left after the projects.

"A Swedish organization has set up 3 laboratories on seeds breeding, but we don't know where they are located. Neither state or farmer, nor the consultants know where it is" (Interview with Muhiddin Sharipov, Ministry of Agriculture, May 2012).

By means of development projects, international donors provide all kinds of knowledge, inputs and services to farmers. Sometimes the expertise and inputs provided by donor organisations do not meet the needs and reality of the Tajik farmers, as the following quotation suggests:

"If it is donors, they work for food security and tell farmers to grow other kind of crops. We don't know how to grow them, there is no market where to sell them or where to process them.....They say it is a commercial crop and you should grow crops for your own production. And people don't know how to preserve, to process and to store it" (Interview with A. Mamadshoev, agricultural expert at Mercy Corps, May 2012).

Thus there are situations when a farmer does not have knowledge on how to grow the new crops suggested by the development agency. Neither is there a market where farmers can sell the agricultural products, nor processing facilities.

Too much help from donors towards farmers has rendered farmers to be not eager to pay for consultations or find solutions for their problems on their own:

'For the past 15 years farmers are fed by donors' help. 90% of rural population live thanks to the donors help ('90% сельского населения сидят за счет донорской помощи'). And it is hard for a farmer to move from it. The first question the farmer gives, when he sees any organization is 'what will you give us?' (Interview with the representative of NGO 'Zar-zamin', May 2012).

It is also important to mention, that the knowledge and innovation component is not the main objective of many projects, it is rather a secondary goal. Some donors themselves pursue geo-political goals in the region after the end of the Soviet Union and agricultural development projects are just a small share of their activities in the region. Also, the origin of each donor often determines the approach chosen for project implementation. German, American and Japanese development cooperation have different approaches, ideologies and traditions, as indicated below:

"For instance, for Americans the situation in Tajikistan is democratic in contrast to what is going on in Iraq and Uzbekistan" (interview with G. Tolibzoda, director of the extension service 'MMK/ATAK', May 2012).

JICA, the Japanese development cooperation, has implemented their projects through the national farmers' association because the similar association in Japan is very strong. Thus, it is trying to reproduce successful examples from Japan in Tajikistan (Interview with S. Karimov, former JICA consultant, April 2012).

Many NGOs have occurred to implement donors' projects. At present, there are approximately 1500-2000 NGOs in Tajikistan (Agrodonish 2012). The Emergence of NGOs is a response to problems in the society caused by the civil war and dissolution of the Soviet Union, with no state institutions which would solve these problems. Most of them were established to fulfil donors' projects. International projects and donors play a big incentive for, and mobilise a lot of actors through, the established NGOs. Some NGOs became a platform for active and knowledgeable people, former socialist specialists in diverse fields of knowledge and expertise.

NGOs are filling a big gap in the rural economy of Tajikistan. They provide not just advisory services, but there are many initiatives implemented through the projects financed by donors. For example there are projects on improving the law on farms (financed by USAID), working with farmers and developing the land code (with OSCE) and a law on cooperatives and other issues in agriculture; community mobilization (Mercy Corps), preventive work and work with women; farmers, on the other hand, have a very low level of awareness about their rights in regard to the land reform. One of the important problems that agricultural advisory services help to solve is bridging farmers with processors and local markets. For this deal agricultural advisory service receives a small percentage of the benefits. By implementing development projects, NGOs and their actors are also trying to solve many other problems in the socio-economic transformation process rather than just providing agricultural advice. NGO's with their projects try to bring government representatives to solve farmers' problems (in relation to the land reform). Donors (with their money) play a big incentive and mobilise many active and knowledgeable people who unite in and act via NGOs in the rural areas. Also donors provide a strong backup for the NGO to start acting. Without donors they would not be so courageous and proactive.

Table 1: Selected examples of NGOs working on agricultural advisory services that are mainly financed by international donors

Organisation	Method & approach to knowledge transfer	Targeted agricultural produce
Agricultural information network (AIN)	The AIN network consists of 5 district centres in Sogd region (north) and 6 centres in Khatlon region; each has appr. 5 district centres, so around 30 small local consulting centers in Tajikistan. In each local centre there is a vet and an agronomist. In addition, every centre has one of the following innovative consulting products and packages: on bee-keeping, drying fruits and vegetables, how to grow rabbits, ostriches, sun-choke. And whenever his/her package/expertise is needed in one of the centres, they exchange their expertise, send their consultant to another part of Tajikistan	bee-keeping, drying fruits and vegetables, how to grow rabbits, ostriches, sun-choke
SAS Consulting	An sms consultation service on different crops: from choosing a crop to harvesting. Farmers are ready to pay for demonstrations on <ul style="list-style-type: none"> ▪ How to grow tomatoes, ▪ melons, ▪ to protect from apricot pests, ▪ how to construct and take care of a greenhouse, ▪ nursery/ seedlings Farmers are already paying for <ul style="list-style-type: none"> ▪ Tillage ▪ Sowing ▪ Harvesting and transportation of the agri products; ▪ Sowing grains 	All possible crops
MMK/ATAC	It plays a bridging role between farmers and processors and for that ATAC receives %. qualitative consultation, theoretical and practical trainings, introduction of innovations and other services in the field of agriculture <ul style="list-style-type: none"> ▪ Integrated Production Management (IPM) ▪ Farmers Field Schools (FFS) ▪ Village Advisor system (VA-system) 	Wheat, grapes, orchards, potato, sunflower, onion, pee, fodder, cattle, etc.
Agrodonish	Agrodonish is a national forum of advisory services. 6 Agricultural advisory networks are members of Agrodonish. www.aist.tj	
NGO 'Shifo'	Project financed by the World Bank: Dealing with the cotton debt. It encompasses trainings on 'the rights of <i>dekhan</i> farmers' and 'efficient management of the <i>dekhan</i> farm'. Another project 'Food security: seeds import'. We distributed seeds in two districts – Djaldy Rushi (58 farmers) and Shahrituz (50 farmers). October 2010 we started distributing eggs and forage to 108 groups. 15 chicken groups – 15 persons per group. When chicken are born, they are given to another 3 persons in the group and so on. We also distribute lucerne for 5 ha for 6 groups, in total for 30 ha.	chicken, lucerne, tomato seeds, potatoes, wheat.

The essential factor for every NGO to survive is financing. Donor organisations are so far the only source of money for NGOs. For any NGO or advisory service it is hard to survive alone, as farmers are not ready to pay for consultations yet (Interview with Dr. N. Mirzoev, director of the Agricultural Information Network, May 2012). Moreover, there is no state support for extension, thus hardly any money is allocated in that direction. Many NGOs do not see how they can survive as organisations when there is no donor money. As the following citation from the interviews suggests

'The donors' assistance is needed. Through donors our salaries are covered for 95% and 5% are covered through farmers' payments' (Interview with M. Otobekov, agronomist at SAS Consulting, May 2012).

In order to survive and to be self-sufficient, organisations that provide advisory services adopt different strategies. Thus, they provide a number of other functions and services like machinery, milling, linking to the market, linking to the agricultural inputs, with salesmen and processors, etc. In this way, it is requested to fill the gap left by all services which previously were provided by the government and through the system of *kolkhozes* and *sovkhozes*. For example, the agricultural advisory service 'MMK/ATAC' has, in order to sustain when the donors' funding is not there, started a guesthouse. Another organisation, 'SAS Consulting', that was earlier supported by the World Bank, also had to start up additional activities in order to sustain as an organisation. So "SAS Consulting" for example has established its own micro-financing organisations. Thus, some organisations have appealed to diversify their activities in order to maintain functioning as an organisation rather than giving up and thus losing the gained experience and established contacts with farmers, local communities, district and regional government.

There are also cases when NGOs change their activities, following the donors' calls, as indicated by the head of NGO 'Agrodonish':

'Today an NGO is involved in medical services, tomorrow in extension. Can one consider it to be an extension service and invite it to be a member of an advisory service network?' (Interview with U. Kasimov, director of NGO 'Agrodonish', April 2012).

Thus, all these organisations that emerged as implementers of donor-funded agricultural projects create strong competition (while receiving money from donors and providing service to farmers). Many donors continue to give funds just through their established NGO network, excluding sometimes more competitive organisations or consultants.

When talking about the establishment of a nation-wide agricultural advisory services network, some NGOs are cautious about participating in it. The reason is that smaller NGOs are afraid to share their ideas, as there are examples from the past when the ideas were collected and the stronger ones started ruling without involving the smaller ones or bringing them anything in return; moreover the Soviet ruling background is very fresh. They mean:

Maybe in 10 years we can try, but not now, not yet (Interview with S. Ghulomhaydarov, agricultural expert at NGO "Shifo", May 2012).

Thus, many smaller NGOs do not trust in cooperation with the present transition state.

Some NGOs become trapped and abused by other, bigger and more powerful NGOs or state organisations. A boss of a local rural NGO tells the following

"XYZ organizes people, a room and sometimes a small coffee break for the NGO "X", who is financed through CVB. Some people call her sometimes at night and ask to organize people and a room for tomorrow. She has been doing it for 3 months. She is not paid. She wouldn't do it, but she can't say 'no'. Sometimes she tries not to pick up the phone, but every time

they call from the new number. What they teach is public health, HIV/AIDS prevention, etc. people have attended already this kind of trainings and many of the participants express dissatisfaction. They do not organize any coffee breaks; do not provide any materials, paper or pens. They always bring a box of pencils and collect them after the seminar. They always bring this one box of pencils. Once XYZ could not help them, but they asked her 'oh, give us someone who could help us'. So she asked her friend to help. And later, this friend of hers, has reported that they asked her to put in the list extra fake names of participants, so instead of 15 participants, 30 were reported' (interview with XYZ, May 2012).

These events unfortunately take place in order to obtain donors' funding.

There are also successful examples of **cooperation amongst different NGOs and donors**. Donors and NGOs try to establish a space for exchange of innovations and achievements, for example, an **Agro-platform and study laboratory**. It was established by Helvetas for all interested parties to share their attainments and learn from each other. Each time, a topic is chosen and one organization presents its results. These are SAS - Consulting, CESVI, Zarzamin, Saodad, NAU. But this takes place on a small scale and does not involve all actors dealing with knowledge and innovation.

There is an example of the win-win relationship between the donors and NGOs. For example, between the Agricultural Information Network (AIN), the international NGO 'ACTED' and the national association of agricultural advisory services of Tajikistan "Agrodonish". ACTED is the only organization that supported the NGO 'Agrodonish' and 'AIN' (Interview with R. Mansurova, director of ACTED, May 2012). ACTED provided both NGOs an office space free of charge and advertising of their activities. On the other hand, AIN and Agrodonish usually play the role of partner organisations for ACTED in terms of their activities and application for funding.

Another potential knowledge source would be the **Academia** including agricultural universities, colleges and research centres where experts and special agricultural knowledge were produced and later disseminated to the production units (Morgounov and Zuidema 2001). Tajikistan inherited from the former Soviet Union high quality agricultural research and education systems with strong linkages between one another and a wealth of research experience from the Soviet era (Beniwal et. al 2010). Furthermore, there used to be an 'Association of Knowledge' (<http://www.znanie.org/OZR/history.htm>) that provided advice for agriculture upon request. Despite this provided fairly good foundation to build-on, collaborative agricultural research for development after independence and the agricultural research and education system has suffered due to insufficient support provided by the government and the exodus of the qualified people after 1991 (Beniwal et. al 2010, Morgounov and Zuidema 2001). As a result, many former scientists are ageing and their expertise is becoming outdated, or has left the country. And the young researchers are not motivated to work in academia because of the low salaries. The linkages through which agricultural research could contribute to innovation, the well-being of producers and the economy of the state have been lost.

Young people do not want to study at the Agricultural University (Interview with A. Ahmatov, agricultural expert at Welt Hunger Hilfe, May 2012). The main reasons for that are that knowledge is outdated and that it is hard to find a well-paid job afterwards. Students after graduation do not return to the countryside to run agriculture. Moreover, young men go to the Agricultural University not to obtain agricultural education, but to avoid army service (Interviews with A. Ahmatov, agricultural expert at Welt Hunger Hilfe, May 2012).

In order to provide agricultural advisory services NGOs, who are the main actors nowadays, appeal to the agricultural universities and research institutes. Many Universities cooperate with NGOs in frames of international projects. For them it is a way to share their knowledge as well as to sustain through the transition. The research institute offers its research facilities as well as expertise and the NGO bridges it

with farmers. In addition, NGOs show research institutes (Michurin institute in Sogd region) how to work with farmers, as before they didn't have to do this (interview with M. Safarova, director of the NGO 'EHIO Farhang va Tarakkiyot', May 2012). What farmers want to see is practice, but the University has limited resources and possibilities. Universities are not that proactive and do not contact NGOs to cooperate first. Partially because they do neither have such experience, nor money to initiate new research projects, nor new high-tech to offer.

As to the **commercial input and seeds suppliers**, there are not many, but they are available on the open-air markets in the district and regional centres. However, it was often mentioned, that input sellers on the local markets are usually not experts of their business, thus they hardly can guarantee the quality of the inputs and seeds they are selling (interview with A. Ahmatov, agricultural expert at Welt Hunger Hilfe, May 2012).

To summarise this part, there are different actors present and many things are happening in terms of knowledge production and sharing in agriculture. By observing agricultural development projects provided by the donor community, we see how these projects became a battle field for obtaining all kinds of interests, especially from the government and the newly emerged "NGOs". Donors are new actors in the knowledge and development field, but important ones. Under the framework of 'development', i.e. the rhetoric, organization and infrastructure of development, different donors play their own games, some of them geo-political, as it was illustrated in section two. At the same time donors provide a political backup for action and provide an opportunity to sustain for local NGOs. Last but not least, donors are used by Tajik political actors also to sustain organisationally and individually in the period of transition. As to the farmers, due to a lack of agricultural background and no big choice of knowledge sources and little governmental programs to support agriculture, they are very often ready to take what is there. Thus they are not critical about which kind of knowledge they receive from various sources.

7 DISCUSSION: HOW SHOULD AGRICULTURAL ADVISORY SERVICES LOOK LIKE IN TAJIKISTAN?

In this paper I looked at knowledge systems and channels of innovation in Tajikistan. Due to the end of the Soviet Union and the devastating civil war in the 1990s, agriculture, which is one of the main employers for the rural population, undergoes changes and difficulties. At the present day 750.000 farmers do not have farming experience and knowledge on how to run agriculture; neither is there an infrastructure for running agriculture including markets, roads, and input supply. Presently knowledge sources to farmers can be described as a mix of former Soviet traces and fragments originating from the Soviet agricultural and educational system represented by the universities, research institutes and the academy of sciences; and on the other hand, western-style knowledge, mainly introduced by development agencies. Thus, there are government, NGOs and international donors who are the major knowledge sources for the Tajik farmers.

Agricultural advisory services are one of the promising knowledge sources for farmers that occurred as a result of transition. However while looking back at the presented models of AAS in different countries, hardly any of them can fit Tajikistan. The government was an important actor in establishing AAS in the USA and the Netherlands. After the end of the civil war the situation in Tajikistan was destabilised and with the present economic problems it is even more undermined. It tells us something about the position of the government. In regard to the AAS, the Tajik government tries to develop AAS based on the Soviet principles and available structure. However, not many actors, especially NGOs and donors, agree with that approach, and there is no way back to Soviet times. The Tajik government showed little interest, i.e. allocation of resources to establish AAS. What we saw, was more the individual interests of the government representatives to maintain their positions at the expense of donors' money. Due to its poor situation, the government tries to stay alive by sometimes inventing new functions. Sustaining with government resources is sometimes more important for the governors than their primary goals.

The active actors of AAS in Tajikistan proved to be NGOs and donors. As we could see, many NGOs have emerged and somehow fill this gap of knowledge and many other public services which have dissolved after the end of the Soviet Union. But NGOs are not the government and cannot decide alone on how to organise AAS, also because they will not stay for ever. The government very often does not approve what is suggested by NGOs. Due to a big number of NGOs there is a coordination problem. Also due to the fact that financing for NGOs mainly comes from international donors, there is a competition for money amongst NGOs. Thus, there are conflicting ideologies and interests of the government, donors and NGOs who once talked about establishing a nation-wide agricultural advisory service. In addition there are donors with their own traditions, ideologies and agendas. For example, JIKA was trying to establish AAS through the farmers' association, as it works in Japan. Also a farmers' association played a crucial role in establishing AAS in the Netherlands or Belgium. But in Tajikistan, this association is very weak and has no political strength. Moreover, it was



An illustration from the Krylov's fable
"Swan, Pike And Crawfish".

Image source:
<http://www.slideshare.net/VictorZinger/van-andreyevich-krylov>

one of the examples when the NGO was hunting for donors' money. As it was mentioned, the dense presence of the international donor community who mainly support AAS in Tajikistan can be connected to the closeness of the Afghan border. If in 2014/2015 the army will leave Afghanistan, it can very likely happen that many donor organisations will stop their missions in Tajikistan as well. This will have a direct impact upon establishing AAS in Tajikistan. And this makes the situation for establishing AAS very unstable. Thus this approach does not seem to be applicable in Tajikistan. None of the suggested models of agricultural advisory services can fit Tajikistan. Moreover, AAS is a new structure in post-Soviet Tajikistan and its existence remains under a question mark.

To this end, AAS system development depends more on the actors involved in the decision making process, rather than choosing one or another extension model (Kalna-Dubinyuk and Stanely 2005). The actors currently involved in AAS in Tajikistan so far are reminiscent of Krylov's fable, where the individual interests and agendas of the actors involved are more important than a mutual goal - establishing an AAS in Tajikistan. Thus, a national-wide AAS is being discussed since the late 2000s and has not been established since then.

Against this background, I suggest the following to take into consideration once designing national AAS fitting Tajik realities. First of all, AAS should build on existing assets, traditions, networks and on the available capacities, i.e. human capital, expertise, and physical infrastructure, knowledge sources and experience of different NGOs and donors. Secondly, a favourable environment to run agricultural business is a necessary condition to first develop and then run agriculture. A broader picture should be taken into account that is legislation encouraging taxation of agricultural producers, laws on private entrepreneurship, access to land, corruption, security, access to credit, having certificates on land, machinery, and market infrastructure. If there is a market where farmers can sell their products, then farmers would be interested to produce and just then they might need AAS (Interview with W. Van Weperen, extension expert at Caritas, April 2012). Thirdly, the background and expertise of agricultural consultants are crucial. Farmers want to work with professionals and people holding the right qualifications. So far, all people who are involved in agricultural service provision through NGOs and international organisations, have a diverse background, varying from former kolkhoz agronomists and mechanical engineers to medical doctors and economists. Also, taking into consideration the poor situation at the Agricultural University and agricultural colleges, the agricultural experts need retraining, capacity building, they should be taught how to mobilise local administration for successful cooperation and others. To this end, an agricultural consultant should be motivated in what he is doing, stay in touch with farmers. The qualified and motivated staff of AAS will be an incentive for farmers to pay for agricultural consultations. Therefore, a permanent agronomist/agricultural consultant on the local level would be crucial for agricultural and rural development.

Fourth, cooperation between NGOs, donors and the state is important for AAS development. The government keeps a grip on everything that is taking place in Tajikistan, especially when there are international funds involved. Therefore AAS can build on existing state administrative structures stretching from national, through regional, district to mahalla (local) level and available experts (i.e. agronomists) who are already there. However, without applying old Soviet working methods, which proved to be outdated and undesired by other actors involved (i.e. NGOs, donors, and farmers). There are examples of cooperation between NGOs, donors and local government. They show how the local government becomes more active through this kind of cooperation. The local state administration should be encouraged to cooperate and contribute what it does well, i.e. organising and mobilising local people. Moreover, while working on the grass-root level, one gets a better picture of the local situation, conditions and actors. And here the local government can provide a useful support.

Fifth, AAS should be designed based on the needs of **different categories of farmers** presently existing in Tajikistan (see Section 3). **Big and strong** agricultural producers have enough resources to afford a pri-

vate consultant/agronomist or carry out market research. Wealthy farmers are involved in the cotton sector and animal farming. These two categories of farmers almost do not need any assistance from AAS, although they are probably the main category of farmers who are able to pay for advisory services. The **dekhan farmers** are probably the biggest group of the potential AAS clients. On the one hand, they need innovations for production and on the other hand, they have to be interested in paying for consultations. For that, AAS should properly study farmers' needs in order to offer them the right product. AAS should mediate and assist farmers in linking them to the markets, input providers, processors, marketing and other services. It should be demand-oriented and decentralised. Talking about the **family farmers**, the smallest and most vulnerable category, they need advice but they are not ready to pay for it. It is hard to provide them with any consultation as there are many and they are spread over the hardly accessible areas in Tajikistan. What they grow is mostly for self-consumption, they can hardly buy new seeds or fertilisers and they are not ready to pay for agricultural advisory services. There is an increasing demand from female farmers (*dekhan* and family farmers) to receive advisory services provided by female AAS staff. In this way they could be more open and have a better interaction with the consultant. Therefore, there is a need for a system where the *dekhan* farmers and family farmers can benefit and access AAS.

Sixth, a national AAS should provide other services apart from agricultural advice as well as combine different approaches in order to meet the needs of different farmers as well as to sustain without external financing. It should offer both, innovations and advice on the traditional crops. Both should fit well the given geo-climatic conditions of the locate (while suggesting crops to grow, the local natural conditions, available market for the product as well as available processing capacities have to be thoroughly considered). There is a vast experience from the past as well as from the international community in Tajikistan to learn from. In Soviet times, almost all services needed for the functioning of a *kolkhoz* were part of it, apart from bigger machinery and fertilisers (Shtaltovna 2013). There are successful cases of AAS models working in Tajikistan provided by GIZ (TAG), Helvetas (product chain), Oxfam Novib (agro-input shops), SAS Consulting (agricultural consultation via sms-service), and also examples of business incubators from the Ukrainian and Moldavian model (where farmers are members of AAS) (DAI 2011, Agrodonish 2010). Provision of the AAS can be combined with the processing company, with the consultation at the agro input shop, together with renting machinery services, bio-labs, info-consulting centres, and together with Water Users' Associations. AAS should link farmers with processors, purchasers, with agricultural businessmen and wholesalers while the service should be included into the price of the above mentioned services. While combing agricultural advisory with other services, AAS offers the missing services in Tajik countryside and it manages to sustain its organisation on the longer run without donor support. If the farmer gets a better harvest after he received a consultation, he is willing to pay for the advisory service next year (Interview with M. Suleymanova, director of SAS Consulting, May 2012).

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