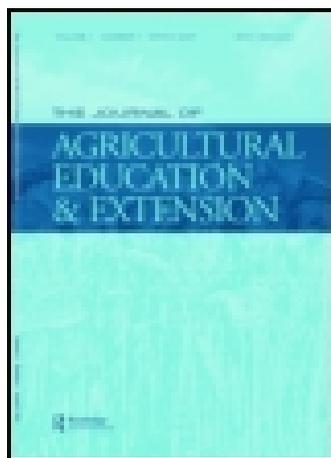


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Knowledge Gaps and Rural Development in Tajikistan: Agricultural Advisory Services as a Panacea?

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ABSTRACT Purpose: *The purpose of this paper is to analyse knowledge systems and channels of innovation diffusion in Tajikistan. In particular, I look at the formation of agricultural advisory services (AASs) and how these provide a vital source of knowledge and innovation for farmers during the transition process.*

Methodology: *Empirically, this paper draws on qualitative, ethnographic research in the agricultural sector of Tajikistan, that is, semi-structured and in-depth interviews with agricultural experts, and a ‘farm diary’ that provided data on farmers’ perspectives regarding access to knowledge and expertise.*

Findings: *Following the dissolution of the Soviet Union and the civil war in Tajikistan, knowledge available to farmers can be described as a mix of traces and fragments originating from the Soviet agricultural and educational system represented by universities, research institutes and academies of science, on the one hand, and Western-style knowledge, mainly introduced by development agencies, on the other. Donors are relatively new actors in the field of knowledge dissemination, but they are nevertheless very important ones. Under the ‘development’ framework, that is, rhetorical, organisational and infrastructural development, different donors play their own parts, some of them geo-political. At the same time they provide support for the functioning of local non-governmental organisations and help to maintain them accordingly, and they are also used by Tajik political actors for their own purposes.*

Practical implications: *From this discussion, practical suggestions are made on how AASs could be organised in Tajikistan, namely on existing assets, traditions and networks, thus reflecting the interplay between the main actors and local needs.*

KEY WORDS: Agricultural advisory services, Extension, Transformation, Tajikistan, Central Asia, Post-Soviet.

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Introduction

This paper aims at assessing actors and structures of agriculturally oriented knowledge, innovation development and local channels of innovation diffusion. There has been transformation process in the agricultural knowledge systems in Tajikistan (Boboyorov 2013). A process that may be propelled by the non-governmental organisations (NGOs), Tajik Government, agricultural-related actors as knowledge providers. This paper focuses on the functioning of and interaction between the international donors, NGOs and Tajik Government (and universities, research and former Soviet agricultural experts)—a pattern that sustains agricultural network services. Indeed, during the Soviet era, knowledge on agriculture was produced collectively by 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 establishments were linked with each other (Morgounov and Zuidema 2001). The results were targeted at and transferred to *kolkhozes* and *sovkhoses*, which used to be the main production units of a collectivised agricultural system.

After the breakdown of the Soviet Union and a number of reforms to the agriculture sector, new producers in Tajikistan emerged. The following farm types can be identified: household plots, individual and family *dekhan* farms, collective *dekhan* farms and agricultural enterprises (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 has partially been sustained and partly reorganised or dissolved, due to the lack of state subsidies (Beniwal et al. 2010). The transformation period has therefore negatively affected the quality of research and education in the country. At present there is no mechanism to link and coordinate knowledge transfer/inflow to or from agricultural producers from national agricultural research (done by different organisations) and education (Beniwal et al. 2010; Morgounov and Zuidema 2001). At the district and local levels there are still former *kolkhoz* experts, as in the Soviet period, such as agronomists or water engineers, who provide agricultural advice to farmers. In addition, there a new actor—international donor organisations—provides agricultural knowledge and shapes the knowledge-sharing landscape. After the end of the civil war in Tajikistan, numerous international donor organisations went to the country in order to offer relief development help. As well as the NGOs funded by donors through different development projects, they provide all kinds of agricultural 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 organisations, 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).

Central Asia and Tajikistan have generated global interest due to their 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 USA and the European Union have been providing assistance to the Tajik

Government in the field of counter-narcotics (De Daniele 2011). Since then, the number of international development projects in different fields has grown in Tajikistan. Amongst other geopolitical projects, the development of agricultural advisory services (AASs) is one of many ‘development’ initiatives funded by the international donor community.

Regarding AASs, many different models exist in the world, each with its own set of pros and cons (more details in Section 3). An AAS is a component of development projects implemented by international donors in Tajikistan. In order to understand how a national network of AASs should be organised in the country, which is part of the ongoing agricultural reform process, the idea is to look at the knowledge providers mentioned earlier, that is, NGOs and donors, as well as universities, researchers and former Soviet agricultural experts. However, in order to establish an appropriate model for AASs 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 between the main actors and local needs. Therefore, this paper focuses on the functioning of and interaction between international donors, NGOs and the Tajik Government (as well as universities, researchers and former Soviet agricultural experts). After analysing the different knowledge providers and their interaction with farmers, I will summarise the main points for constructing an AAS model for Tajikistan.

Overview of AAS Models

The idea is to 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 research areas in Central Asia and the Caucasus region, followed by crop production, water resources, marketing, processing and the value addition of agricultural commodities, as well as developing suitable agricultural development policies related to rural employment, land tenure property rights and other areas (Beniwal 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, in order to help them participate effectively and equitably in the markets (2010).

For this purpose I consider herein the different AAS models currently available. AASs or extensions have been organised in different ways and in various parts of the world. They can be organised based on the university, farmers’ associations and government agencies on the regional/local levels, or as a combination of these different approaches. What is important is that they are designed to meet the needs of different categories of farmers available in different countries. In the USA, extension is provided by both universities and the government. Based on the Smith Lever Act on cooperative extension service (1914), such an extension was established linking research, education, land grant universities and county administrative departments in the USA (Swanson 2008; McDowell 2001; Kalna-Dubinyuk and Stanley 2005). The Japanese extension system works mainly through cooperatives (Agbamu 2000; Gereads 2009), which provide marketing, banking, insurance and health care for farmers. Furthermore, commodity cooperatives are fully funded by the government and play an important role in Japanese agriculture (Agbamu 2000). The Netherlands system applies a combination of government and professional farmers’ associations, that is, credit, input cooperatives and a mix

of the above-mentioned, along with sufficient government support (Kidd, Lammer, and Hoffman 1998). In Germany, as in other industrialised countries, one observes that public extension has been under pressure to introduce cost sharing or to commercialise advisory work altogether. An approach which combines commercial and public elements is at present being introduced in some eastern states of Germany (Nagel and von der Heiden 2004; Kidd, Lammer, and Hoffman 1998). For example, the Ministry of Agriculture in Brandenburg subsidises consultations once they have actually taken place. Thus, the mixed extension model continues to be one of the most popular of its kind in a rapidly changing world (Kalna-Dubinyuk and Stanley 2005).

The Soviet system of knowledge production and sharing differed from the earlier described models (Van Assche et al. 2013), and although the process was not referred to as an extension or an AAS, the knowledge transfer goal was similar, in that it was a well-functioning agricultural knowledge and information system organised through a complex network of agricultural ministries, agricultural universities, academies of agricultural sciences, research centres, *kolkhozes* and *sovkhozes* (Kazbekov and Qureshi 2011; GIZ/ZEF 2011; Hornidge, Shtaltovna, and Schetter, forthcoming). Here, knowledge was generated based on state production targets and in 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, knowledge generation 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, for example an engineer, an agronomist or an accountant, who regularly attended courses to update their knowledge.

Despite a shared history and agricultural system, every former Soviet republic works on establishing unique agricultural knowledge dissemination systems. In Ukraine, for instance, 63 extension centres are organised through NGOs, state enterprises, foundations, public organisations, subdivisions of credit unions, private enterprise and university subdivisions, which are very similar to the USA Land Grant system (Kalna-Dubinyuk and Stanley 2005; GIZ/ZEF 2011). In Georgia, a national advisory service system does not exist (Jordjadze, M. as quoted in: Shtaltovna and Van Assche 2013; Van Assche et al. 2013), and so it is mainly provided by international organisations and projects working in the field of agriculture and rural development. Recently, government has supported the establishment of regional service centres, but most of these have not yet established their work. In Uzbekistan no organisation is able to fulfil the functions of an agricultural extension system, but there are some which do provide elements thereof (Kan, E. as quoted in: GIZ/ZEF 2011). For agricultural producers, knowledge is mainly available through former Soviet agronomists, input providers, machinery suppliers and former *kolkhoz/sovkhoz* workers under state supervision (Shtaltovna 2013; Van Assche et al. 2013). In Kazakhstan, the government has made an effort to establish a national network of AASs, 'KazAgroInnovation', which is present in most of the country (Yussupbayev, J. as quoted in: GIZ/ZEF 2011; Toledubayev 2010). These extension services are free of charge but rather low in effectiveness, potentially due to the top-down approach in dealing with agricultural challenges; nonetheless, there are a number of private advisory service providers (Akimbekova, G. as quoted in: Hornidge et al. 2013). To summarise, AAS is a new phenomenon in the former Soviet countries. In none of the countries agricultural advisory system has been fully stabilised and functions properly yet (Kazbekov and Qureshi 2011). What one observes a predominantly mixed model of

AASs has emerged in former Soviet republics that is, organised and financed by public and private actors as well as by the international development community acting through NGOs (Goldberg et al. 2011).

Research Methodology

This paper is based on primary data collected between 2012 and 2013 as part of the ‘Epistemic Cultures and Innovation Diffusion in post-Soviet Southern Caucasus and Central Asia. Pilot Study: Agricultural Knowledge Systems in Georgia and Tajikistan’ project and comprises substantial qualitative field research, including ethnographic research on AAS development throughout Tajikistan. In order to achieve this goal, a literature review and 50 semi-structured and in-depth interviews with the representatives of the following entities were conducted: leading and small agricultural advisory organisations, members and officials from international development projects and national organisations, Ministry of Agriculture of Tajikistan, researchers and private entrepreneurs, local state government officials and farmers. Some of these organisations are U.S. Agency of International Development (USAID), German Agency for International Cooperation (GIZ), German Agro Action, Japan International Cooperation Agency, Agency for Technical Cooperation and Development, Agricultural Information Network, AgroDonish, Mercy Corps, Food and Agriculture Organisation (FAO), National Association of Dekhan Farmers, Association of Agro-businesses of Tajikistan, Association of Science and Technical Intelligence of Tajikistan, SugdAgro Consulting (SAS Consulting), Agricultural Training and Advisory Centre (ATAC), a union of NGOs ‘Ifikhor’, agro-shops and others.

In addition, data were collected through a ‘farm diary’. This farm diary documented altogether 16 households in two villages in Tajikistan—one in the southern Shartus region and another in Garibak village in the northern Zarafshan Valley—were selected, based on their interest in contributing to the project, social situation, farm size, and educational background. The selected households filled in a four-page questionnaire seeking information on their agricultural activities on a weekly basis and over a one-year period (Farm Diary 2013), in order to capture the full agricultural cycle. One section of the farm diary was devoted to the issues of access to knowledge and expertise in agriculture, which provided substantial input into this paper. Last but not least, the author conducted semi-structured interviews with practitioners in the field of AASs in Tajikistan, Ukraine, Kyrgyzstan, Kazakhstan, Azerbaijan and Georgia.

The Rural Economy of Tajikistan

There are 7.8 million people in Tajikistan, and 70% of them reside in rural areas (Tajstat 2013; Lerman 2012; Agrodonish 2010). Despite the small amount of arable land available in the country, which is estimated at 7% (around one million ha), agriculture is one of the most important sectors of the economy and provides employment for two-thirds of the population. The share of the agricultural sector in Gross Domestic Product (GDP) terms was estimated at 18.7% in 2010, and agricultural products make up 30% of official exports (FAO and Ministry of Agriculture 2011). The main agricultural crops are cotton, cereals, fodder for cattle and small ruminants, horticultural crops, potatoes, vegetables,

melons, orchards and vineyards (FAO and Ministry of Agriculture 2011; Boboyorov 2012).

After the downfall of the Soviet Union, *kolkhozes* and *sovkhozes*, which used to be the main production units, were dissolved. Agricultural reform in Tajikistan has been ongoing since 1997, in an attempt to distribute land to farmers. According to the FAO, four types of agricultural producers can be distinguished nowadays in Tajikistan (Lerman 2012), namely (1) household plots, (2) individual and family *dekhan* farms, (3) collective *dekhan* farms and (4) agricultural enterprises (successors to former state farms). Despite the significant presence of collective *dekhan* farms, the agricultural sector in Tajikistan is now largely individualised, in that nearly 65% of arable land relates to 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 an average household plot of 0.3 hectares, and nearly 90,000 *dekhan* farms with 7 hectares of arable land or 30 hectares of agricultural land on average (Lerman 2012).

The end of the Soviet Union and the ensuing civil war had serious consequences for Tajikistan—and for the agricultural and rural development sectors in particular. Despite reforms in agriculture undertaken by the government, farmers still face a number of obstacles, including poor road and market infrastructure, the dismantling of processing facilities for products such as wine, tobacco and fruits and cross-border conflicts related to water with Uzbekistan preventing the export of Tajik agricultural products to Russia (Mandler 2013; Juraev 2012; interview with Azamjon, the manager of the Khatlon Livelihood Support project, April 2012). Another obstacle for farmers is the lack of agricultural background, in that many of them used to be medical doctors, teachers and accountants and in professions wholly unrelated to agriculture. In addition, many men went abroad to look for jobs during the transition period, thus leaving behind only old people, children and women. As a consequence, there is a growing number of female farmers nowadays in rural Tajikistan (Kandiyoti 2007). To be a farmer in Tajikistan today, one needs to be a multifunctional entrepreneur with specific agricultural knowledge as well as financial and legal skills, marketing skills and the ability to source all the required inputs and machinery (interview with I. Nematov, director of the NGO ‘Bakht’, 2012).

As mentioned previously, an autonomous entity appeared during the transition period, called ‘the farmer’. This figure usually does not have the means and expertise, agricultural- or management-wise, to play the role ascribed to and desired from him by Western agricultural economists and development practitioners (Van Assche et al. 2013; Bliss 2012; Djanibekov et al. 2013; Beniwal et al. 2010; Lerman 2008). Often, he does not have autonomy, either. In Tajikistan, privatisation is incomplete, land tenure insecure and access to inputs and expertise partly controlled by surviving fragments of the old networks of expertise (Boboyorov 2013; Eichholz et al. 2013). Thus, one can speak of either powerless autonomy or autonomy bounded by networks (Van Assche et al. 2013). Furthermore, these networks are not merely exploitative but can also consist of individuals and organisations that see themselves as providing essential services to farms and to the community at large. The majority of small-scale farmers are poor and do not have experience of paying for AASs, as in the past s/he used to receive them for free either through the Soviet *kolkhoz* system or, in more recent years, through humanitarian assistance. For Western extension models, the farmer as a funnel for Western expertise, or as a central learning point for the modification and later implementation of such expertise, in general does not yet exist in Tajikistan (Van Assche et al. 2013).

Knowledge Landscape in Rural Tajikistan

In this section, I analyse agricultural knowledge sources available to farmers as well as the challenges these teaching organisations face while providing services to farmers. As earlier described, currently there are different categories of farmers in Tajikistan who appear to lack expertise and thus require new models of agricultural knowledge management. The main actors involved in the knowledge-sharing sector are international donors, government actors, NGOs, the Agricultural University of Tajikistan and commercial input providers (Goldberg et al. 2011; Kazbekov and Qureshi 2011).

In the Soviet period, depending on the type of production, such as animal husbandry, horticulture, tobacco or cotton production, *kolkhozes* and *sovkhoses* were equipped with a set of trained experts, that is, an engineer, an agronomist, an accountant, etc. Thus, *kolkhozes* were independent and fully equipped production units. In addition, there used to be a state agricultural unit at both the district and regional levels called ‘Agroprom’ (a regional department of the Ministry of Agriculture). This organisation was responsible for the functioning of *kolkhozes* and *sovkhoses* and also provided agricultural consultations (Kazbekov and Qureshi 2011; Shaumarov and Birner, forthcoming). Following the demise of the Soviet Union, there are now no more *kolkhozes*; instead, however, there are thousands of powerless farmers whose main sources of knowledge are agronomists from Agroprom, former *kolkhoz* specialists and old, experienced farmers (Farm Diary 2013). However, their expertise is outdated and does not always meet present-day farmers’ needs. Moreover, farmers do not expect help from the state, as there is hardly any available due to the poor status of regional state organisations, and 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, as will be illustrated later.

While cooperating with NGOs and donor organisations, local government organisations still think and work in the old Soviet style, meaning a top-down working approach involving giving commands, controlling and reporting, which impacts on cooperation (interview with A. Sharipov, head of the National Farmers’ Association, May 2012). For example, after many years of cooperation with local governments, NGOs in the southern part of Tajikistan have had all kinds of experiences. The citation below represents the way in which they usually work:

Due to low state budgets, jamuat representatives go around the village and collect money from the villagers to celebrate Navruz or May 9 (National holidays in Tajikistan). They collect from the farmers. But where can the farmer get money? (Interview with A. Mamadshoev, agricultural expert at Mercy Corps, May 2012)

There are also cases when the activities of NGOs financed by international donors are perceived as a source of funding for local government. Based on the experience of cooperation between leading agricultural service providers in the north of the country (e.g. ‘SAS Consulting’, ‘NAU Khujand’ and ‘Zarzamin’), state organisations can be helpful in mobilising the public and organising a room, if an event is to be conducted in another area. In addition, one can also expect non-disturbance when cooperating with the government. Thus, government does not have a great deal to offer; rather, it sometimes appeals to NGOs and donors for help (interview with the director of the AAS NGO ‘Zarzamin’, May 2012). Hence, the government has little interest in either a general

development strategy for rural areas or the reinvention of the agricultural expertise system. A general absence of government policies applying to AASs, aligned with a strong Western interest in the region, has created a large playing field for international donors and a significant amount of freedom in writing the rules of the game (Van Assche et al. 2013).

In the past 10–15 years, farmers have received inputs and knowledge through the *international donor community* targeted at food security and agricultural development. International donors are relatively new actors in a traditional society like Tajikistan, only providing relief 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, though, they shifted from distributing inputs for free to distributing them for partial payment. AASs were introduced and financed by donors as a part of agricultural and rural development projects in Tajikistan. In comparison to other themes that donors work on, AASs are not the most popular one in contrast to environment, gender, human rights, etc.

Presently, approximately 200 different international donor organisations work in Tajikistan. They implement a large variety of agriculture-related projects, providing different services in different parts of the country, each with durations of between two and five years. Major international organisations pushing AASs include the European Bank for Reconstruction and Development, USAID, the World Bank, Aga Khan Foundation, FAO, JIKA, British Embassy, Organization for Security and Co-operation in Europe (OSCE), Mercy Corps, Swiss Embassy for Development and Cooperation, GIZ, Oxfam and others. Through development projects international donors provide all kinds of knowledge, inputs and services for farmers. According to the farm diary, farmers have learnt about bee-keeping, growing cotton, gardening, livestock maintenance, the application of fertilisers and farm management from the training sessions sponsored by donors (2013). Bearing in mind a number of serious problems in rural areas, and the importance of agriculture, the provision of AASs is a significant contribution of development projects to the rural development of Tajikistan. Thus, donors are new actors in the knowledge and development field, but important ones.

Despite a lot of work implemented by the donor community for rural development in the country, a number of problems hinder their activities. First of all, only a handful of international organisations have a long-term strategy (International Crisis Group 2003), and usually they neither cooperate with each other nor coordinate their activities when working on a similar issue. This sometimes results in an overlap of donor and NGO activities. Furthermore, there is also no clear picture to illustrate what has been implemented, by whom, when and what is left after the projects (interview with M. Sharipov, Ministry of Agriculture, May 2012). Thus, the coverage of projects is little, unsystematic and short-term duration. Additionally, the expertise and inputs provided by donor organisations do not meet the needs and reality of Tajik farmers, and there is no market where farmers can sell the agricultural products, or processing facilities (Farm Diary 2013). Moreover, too much help from donors has rendered farmers unwilling to pay for consultations or to solve problems on their own:

For the past 15 years, farmers have been fed by donors' help. Ninety per cent of the rural population live thanks to the donors' help. And it is hard for a farmer to move away from it.

The first question the farmer asks, when he sees any organisation, is 'What will you give us?' (Interview with the representative of NGO 'Zarzamin', May 2012)

The origin of each donor often determines the approach chosen for project implementation. German, American and Japanese development corporations have different approaches, ideologies and traditions. JIKA, the Japanese development cooperation, for instance, implements its projects through the National Farmers' Association because the counterpart association in Japan is very strong. Thus, it tries to reproduce successful examples from Japan in Tajikistan (interview with S. Karimov, former JIKA consultant, April 2012). To this end, it is also important to mention that the knowledge and innovation component is not the main objective of many projects; rather, it is a secondary goal. Some donors themselves pursued geo-political goals in the region after the end of the Soviet Union, and agricultural development projects make up just a small part of their activities in the region (De Danieli and Shtaltovna, [forthcoming](#)). Thus, the sustainability of AASs in Tajikistan is questioned. *Many NGOs Emerged 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 society caused by the civil war and the dissolution of the Soviet Union, as no state institutions have been able to solve these problems. International projects and donors play a big incentive for, and mobilise a lot of actors through, established NGOs. Some NGOs have become a platform for active and knowledgeable people, that is, former socialist specialists in diverse fields of knowledge and expertise. Additionally, NGOs fill a big gap in the rural economy of Tajikistan. By implementing development projects, NGOs and their actors also try to solve many other problems in the socio-economic transformation process rather than just providing agricultural advice. They often provide services which were earlier provided by kolkhoz. For instance, they mobilise government representatives to solve farmers' problems (in relation to land reform), implement projects on improving the law on farms (USAID), work with farmers to develop land code and a law on cooperatives (OSCE), initiate community mobilisation (Mercy Corps) and preventive work and work with women. One of the most important problems that AASs help to solve is bridging the gap between farmers, processors and local markets. In southern Tajikistan, NGOs were mentioned by farmers as being the most important knowledge sources (Farm Diary 2013). The essential factor in the survival of every NGO is financing, as farmers are not yet ready to pay for consultations, mainly due to the small amount of readily available money (Farm Diary 2013). Donor organisations, so far, have been the only source of money for NGOs. Moreover, there is no state support for an AAS. As the following citation from the interviews suggests:

Donors' assistance is needed. Through donors our salaries are covered 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 fully self-sufficient, organisations that provide AASs adopt different strategies. Thus, they provide a number of functions and services such as machinery, milling, links to the market, links to agricultural inputs, links to salesmen and processors, etc. For example, the AAS MMK training and advisory centre (MMK/ATAC) has started a guesthouse and 'SAS Consulting' has established its own micro-financing organisations. They diversify their activities in order to continue functioning as an

organisation rather than giving up and thus losing acquired experience and established contacts with farmers, local communities and district- and regional-level government. To stay financially feasible, some NGOs change their activities, in answer to donors' calls, regardless of whether or not they have experience in the new field (Interview with U. Kasimov, director of NGO 'Agrodonish', April 2012). Thus there is a competition for donors' money amongst NGOs.

Attempts have been made to establish a space for the exchange of innovations and achievements by donors and NGOs. For example, an agro-platform and a study laboratory were established by Helvetas for all interested parties to share their attainments and to learn from each other, but this takes place on a small scale and does not involve all actors dealing with knowledge and innovation. There are more examples available of the win-win relationship between the donors and NGOs (Shtaltovna 2013; De Daniele and Shtaltovna, *forthcoming*). In conclusion, by providing a range of services in rural areas, sponsored by international donors, NGOs fill the gap relating to missing services which were previously provided by the government and through the system of *kolkhozes* and *sovkhoses*. Donors (with their money) play a big part and mobilise many active and knowledgeable people who unite in and act via NGOs in rural areas. Furthermore, they provide strong backup for NGOs' activities, and thus NGOs contribute to the rural economy. Nonetheless, NGOs cannot replace the state, and neither can they create an environment of stable institutions and predictable law enforcement needed to create anything resembling a capitalist democracy (allegedly the overarching aim of the NGO community; Van Assche et al. 2013).

Formerly, one of the main sources of knowledge in agriculture was *academia*, including agricultural universities, colleges and research centres where experts promulgated special agricultural knowledge which was later disseminated to production units (Morgounov and Zuidema 2001; Nikonov 1995). Tajikistan inherited from the former Soviet Union high-quality agricultural research and education facilities with strong linkages between one another and the benefit of a wealth of research experience from the Soviet era (Beniwal et al. 2010). Although this system provided a fairly good foundation on which to build, 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 qualified people after 1991 (Beniwal et al. 2010, Morgounov and Zuidema 2001). Investment in science and education has dropped dramatically, and complementarities and specialisation within the scientific system have fallen significantly (Fortescue 1985; Interviews 2012; Van Assche et al. 2013). As a result, universities still exist, but their knowledge base has been eroded so dramatically, their links with applied research (that is Soviet institutes) severed so greatly and their means cut so much (hence corruption) that they can do very little (UNESCO 2010; Van Assche et al. 2013). In addition, many former scientists are ageing and their expertise is becoming outdated or has left the country. Ultimately, the linkages through which agricultural research could contribute to innovation, the well-being of producers and the economy of the state have been lost, while young people do not want to enter into academia, for example by studying at the Agricultural University (Interview with A. Ahmatov, agricultural expert at Welt Hunger Hilfe, May 2012), the main reasons for which are that knowledge is outdated and that it is hard to find a well-paid job afterwards.

In order to provide AASs, NGOs, which are the main actors nowadays, appeal to agricultural universities and research institutes. Many universities cooperate with NGOs through the auspices of international projects, as these offer a way of sharing their knowledge and help to sustain them through the transition due to poor state support. Research institutes offer their facilities as well as expertise, while the NGO acts as a go-between with farmers. Universities are not that proactive and do not contact NGOs in the first instance, partially because they do not have the experience or the money to initiate new research projects, or because they feel their facilities are too low-tech.

As for *commercial input and seed suppliers*, the very few that are available can be found at district-level open-air markets and regional centres. However, the farmers interviewed for this study mentioned that input sellers at these local markets are usually not experts in their particular line of business, and so they can hardly 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, knowledge and innovation to farmers are available from different sources with a central role of former *kolkhoz* (management) and former Soviet experts, the Soviet educational system, modern knowledge provided by development agencies and their agricultural projects and small-scale commercial input suppliers.

The government has little interest in a general development strategy for rural areas or in some form of reinvention of the agricultural expertise system. A general absence of government policies emanating from higher levels for AASs, and strong Western interest in the region, has created a large playing field for international donors and a good deal of freedom in writing the rules of the game (Van Assche et al. 2013). Donors are new actors in the knowledge and development field, albeit important ones. Under the framework of 'development', that is, the rhetoric, organisation and infrastructure of development, different donors play their own games, some of which are geo-political. By observing agricultural development projects provided by the donor community, we see how these projects have become a battleground for satisfying all kinds of interests, especially from the government and the newly emerged 'NGOs'. Donors are also used by Tajik political actors and NGOs to sustain them organisationally and individually through periods of transition. At the same time, donors provide political backup and provide an opportunity to sustain local NGOs, which in turn fill the gap for services which were previously provided by the government and through the system of *kolkhozes* and *sovkhozes*. NGO activities are highly controlled; yet, in projects, cooperation with foreign partners can be appreciated, and a contribution to the rural economy can be perceived. Nonetheless, NGOs cannot replace the state, and they cannot create an environment of stability and predictable law enforcement needed to create anything resembling a capitalist democracy (allegedly the overarching aim of the NGO community; Van Assche et al. 2013). Thus it is about reconfiguration of scattered knowledge and about various interests of all the actors involved.

Given that the dense presence of the international donor community who mainly support AAS in Tajikistan is bound 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. Thus, there are conflicting ideologies and of the government, donors and NGOs and no guarantee of funding from donors to AAS. Thus all of it puts establishing of a nationwide AAS under a big question mark.

As we can see, 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 Stanley 2005). The actors currently involved in AAS in Tajikistan care more about individual interests and agendas than a mutual goal—establishing an AAS in Tajikistan. This explains why a national-wide AAS is being discussed since the late 2000s and due to the conflicts amongst its main actors has not been established since then.

Conclusions: What Should Agricultural Advisory Services Look Like in Tajikistan?

Knowledge sources and channels of innovation for farmers in Tajikistan were analysed in this paper. Currently, there are around 750,000 farmers in the country who are the main actors in the post-Soviet, post-conflict Tajik agricultural system. The ‘farmer’—an autonomous entity that appeared during the transition—does not usually have the means and expertise, agriculturally and in management terms, to play the role ascribed to him/her and desired from him by Western agricultural economists and development practitioners. Moreover, after 23 years of independence, there is not one overriding extension system has been established by the Tajik Government despite the important role agriculture plays in employment and GDP. Instead, knowledge sources for farmers are a mix of fragments originating from the Soviet agricultural production and educational systems and, on the other hand, Western-style knowledge, mainly introduced by development agencies. The government has little interest in a general development strategy for rural areas or in reinventing the agricultural expertise system, thus allowing international donors a great deal of autonomy in this respect. NGOs are the active AAS providers in Tajikistan. They emerged and somehow filled this gap of knowledge and many other public services which dissolved after the demise of the Soviet Union, but NGOs are not governments and cannot decide alone on how to organise an AAS, while it also has to be acknowledged that they will not stay forever. Governments very often do not approve of what is suggested by NGOs, and due to the large number of NGOs there is a coordination problem. Likewise, due to the fact that funding for NGOs mainly comes from international donors, there is a competition for money amongst NGOs and the government, especially given that the dense presence of the international donor community, which mainly supports the AAS in Tajikistan, is bound by the country’s closeness of the Afghan border. If, in 2014/2015, allied forces leave Afghanistan, it will be very likely that many donor organisations will stop their missions in Tajikistan as well. Thus, there are conflicting ideologies between the Tajik Government, donors and NGOs and no guarantee of funding AASs by donors—all of which places a very big question mark against establishing a nationwide AAS.

Finally, AAS development depends more on actors involved in the decision-making process than on choosing one or another extension model (Kalna-Dubinyuk and Stanley 2005), and these actors currently involved in the AAS in Tajikistan care more about individual interests and agendas than the mutual goal of establishing one in the country. Thus, although a nationwide AAS has been discussed since the late 2000s, internal conflicts among the main actors have held back its advancement.

Based on the findings of this paper, I would like to make recommendations on establishing a nationwide AASs network in Tajikistan, regardless of whether or not it is implemented by the government, an NGO or a donor. First of all, the AAS should build on and thus strengthen existing assets, traditions, networks and available capacities, that

is, human capital, expertise, physical infrastructure and the experience of different NGOs and donors. Second, a favourable environment should be nurtured, in order to help develop and then run an agricultural business. A broader picture should be taken into account, for example legislation encouraging the taxation of agricultural producers, laws on private entrepreneurship, access to land, corruption, security, access to credit, machinery and market infrastructure. If there is a market where farmers can sell their products, then they would be interested in producing and then might actually need an AAS (interview with W. Van Weperen, extension expert at Caritas, April 2012). Third, the backgrounds and expertise of agricultural consultants are crucial, because farmers want to work with professionals and people holding the right qualifications. So far, all the people involved in agricultural service provision through NGOs and international organisations have come from diverse backgrounds, varying from former *kolkhoz* agronomists and mechanical engineers to medical doctors. Also, taking into consideration the poor situation at the Agricultural University and agricultural colleges, agricultural experts need retraining and capacity building. They should be taught how to mobilise local administration for successful cooperation with other actors involved in AAS. To this end, an agricultural consultant should be motivated in what he is doing. The qualified and motivated staff of the AAS will incentivise farmers to pay for agricultural consultations. Therefore, a permanent agricultural consultant at the local level would be crucial for rural development. Fourth, a joint effort of the actors involved—NGOs, donors, research institutes and the state—is crucial for AAS development. The government keeps a grip on everything that is taking place in Tajikistan, especially when there are international funds involved. Therefore, the AAS could build on existing state administrative structures stretching from national and regional through to district and *mahalla* (local) level and the available experts (e.g. agronomists) that are already there, albeit without applying old Soviet working methods, which proved to be outdated and undesired by other actors (that is NGOs, donors and farmers). There are a few examples of cooperation between NGOs, donors and local government which show how local government becomes more active through this kind of cooperation. Thus, a combination of the interests and resources of the aforementioned actors would be desirable. Fifth, the AAS should be designed based on the needs of different categories of farmers presently existing in Tajikistan. Large and powerful agricultural producers (mainly involved in the cotton sector and animal farming) have enough resources to afford a private agronomist or to carry out market research. These two categories of farmers do not need any assistance from an AAS, although they are probably only farmers who would be able to pay for advisory services. The dekhan farmers are probably the largest group of potential AAS clients. They need information on production innovations but also have to be interested in paying for consultations. In order for this to transpire, the AAS should properly address farmers' needs, in order to offer them the right product, and it should mediate and assist farmers in linking them to markets, input providers, processors, marketing services and other facilities. Furthermore, it should be demand-oriented and decentralised. In relation to family farmers—the smallest and most vulnerable category—they need advice but they are financially weak and it is hard to provide them with any consultation as they are many in number and are spread over barely accessible areas in Tajikistan. What they grow is mostly for self-consumption, they are virtually unable to buy new seeds or fertilisers and they are not ready to pay for AASs. 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 better interactions with the consultant. Therefore, there is a need for a system where dekhan farmers and family farmers can benefit from and access an AAS which provides services that meet the needs of this category of farmers. Moreover, if the farmer is interested, then (s)he will find the money to pay for it (Lamers, Dürr, and Feil 2000).

Sixth, a national AAS should provide other services apart from agricultural advice and combine different approaches in order to meet the needs of different farmers as well as to sustain them without the need for external finance. In addition, it should offer both innovation and advice on traditional crops in relation to the geo-climatic conditions of the location (in suggesting how to grow crops, local natural conditions, an available market for the product and processing capacities have to be thoroughly considered). There is a vast experience available from the past as well as from the international community in Tajikistan from which to learn. 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) and SAS Consulting (agricultural consultation via an SMS service), as well as other examples of business incubators from the Ukrainian and Moldavian models (where farmers are members of the AAS; DAI/Petra Geraedts 2011, Agrodonish 2010). The provision of the AAS could be combined with the processing company, with consultation at the agro-input shop, together with renting machinery services, bio-labs and info-consulting centres and collaborating with water users' associations. Additionally, the AAS should link farmers with processors, purchasers, agricultural businessmen and wholesalers, while the service should be included in the price of the abovementioned services. While combining agricultural advice with other services, the AAS offers the missing services in Tajik countryside. Moreover, AAS manages to sustain its organisation on the longer run without donor support. If the farmer were to enjoy a better harvest after a consultation, he would be willing to pay for the advisory service next year (interview with M. Suleymanova, director of SAS Consulting, May 2012). While trying to learn lessons from the West in designing national AASs, one should not forget two important factors. First, every model in Western countries was constructed for different categories of farmers and was tightly coupled with the development of nation states, their bureaucracies, education systems and notions of development and openness (that is donors). Where the nation state is fragmented or is the facade of regional clan rule, state extension or its substitutes under the state umbrella (university, professional, cooperative) cannot flourish. Governance, in other words, is crucial, and the knowledge culture that made the epistemic cultures of extension possible in many Western countries has to be seen in that light. For example, farmers in the USA were autonomous and entrepreneurial in the capitalist system, whereas in the Soviet Union such farmers did not exist. *Kolkhozes* and *sovkhoses* were dissolved into many different entities. Thus, the establishment of an AAS depends strongly on localised power games (Van Assche et al. 2013). Second, global experience has shown that blank recommendations in such transfer-of-technology models often do not fit the complex reality of a particular farm. Local conditions must be properly studied and the use of participatory methodologies must be taken into consideration while designing an extension service; for example, an innovation system approach and follow-the-innovation, or offering a pluralistic model that builds on public-

private partnership and can be provided by public, private and civil society organisations, have proven to be valuable lines of attack (Röling 2009; Hornidge, Ul Hassan, and Mollinga 2011; Ul Hassan et al. 2011; Swanson 2012).

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