

Collective action as a way to develop organic farming in Armenia

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Abstract

Armenia is a landlocked country which has gained its independence about 24 years ago. A big portion of population (44.2%) is still involved in agriculture and mostly consists of smallholder farmers. More than 20% of Armenia's GDP comes from agriculture. The government considers organic agriculture as a priority area in the country's agro-food policy as well as part of sustainable development. However, organic farming is still on its early stages of development just like in other Eastern European, Caucasian and Central Asian countries. Yet, the country already has an organic certification body which is recognized both in the US and the EU, organic supermarket in the capital city and a growing demand for organic products.

Those smallholder farmers and especially the organic producers face difficulties accessing markets, gathering necessary information, meeting quality control and food safety requirements, certifying their production as organic or fair trade, accessing credits and so on. Researchers believe that smallholder agriculture can play an important role in reducing global poverty as a vast number of world's poor are rural households that are involved in agriculture. Armenian smallholders are not exception and they face most of the same challenges and problems that peasants from other parts of the world do. This paper studies one of the ways that these challenges can be overcome, that is, collective action which has proved to be successful in many cases.

Although collective action can be very useful and helpful for smallholder farmers and there is even a small successful example from the organic sector in Armenia, it is not a panacea. Organizing a collective action is not an easy task and its success depends on many factors such as small group size, clearly defined boundaries, shared norms, past successful experiences and others.

1. Introduction

In the beginning of 1990s Armenia was experiencing a gradual decline in productivity which was followed by the collapse of Soviet Union (EconomyWatch Content, 2010). In addition to this, in 1992 the border between Armenia and Azerbaijan was closed with the start of conflict over Nagorno-Karabakh. This war prompted Turkey to keep back normal diplomatic relations with Armenia and thus seal its border with the neighbor county. Consequently, there are only two land access options for Armenia—via Georgia and Iran. In early 1990's after the collapse of the USSR Armenia had to start many things from the scratch—including the agricultural policies and laws, with all the reforms and development still taking place nowadays.

One of the big moves was the transition from collective farms of Soviet times to land and property privatization. As a result of that transition, about 340.000 private family-owned farms were created (Grigoryan & Urutyanyan, 2006). World Bank country study conducted in 2007 reports that 97% of agricultural output in Armenia comes from family farms whose average farm size was 1.4 ha. Urutyanyan, Yeritsyan and Mnatsakanyan (2015) suggest that since Armenia experiences high immigration rates of farmers who have low profitability, the average farm size has probably increased to 3 ha as many of those farmers either sell or allow their neighbors to cultivate their lands. This has also resulted in having fewer farmers reducing the number from 340,000 to 200,000. Only 6% of those farms have more than 10 ha of land (Urutyanyan, et al., 2015). Below is a table showing the agricultural holding by the type of ownership in the country.

Agricultural holdings by	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013

type of ownership										
TOTAL (thous. ha)	325.2	331.8	310.2	306	304.5	300	283.6	286.7	304.2	318.1
Private (peasant farms) (thous. ha)	322.3	329.7	308.6	304.2	302	298	281.1	285.3	302.9	316.8
Commercial (thous. ha)	2.9	2.1	1.6	1.8	2.5	2	1.5	1.4	1.3	1.3

Table 1: Agricultural holdings by type of ownership

Source: (Urutyanyan, et al., 2015)

As Grigoryan & Urutyanyan (2006) mention, agriculture plays an important role for the country, particularly for the purposes of unemployment and poverty reduction, as well as rural development. About 21.9% of the country's GDP composites of agriculture while approximately 44.2% of its population is involved in agriculture (CIA, 2014).

With an increasing demand for organic produce and growing environmental concerns both in the local and international markets, the government of Armenia considers organic agriculture as a priority area in the country's agro-food policy as well as part of sustainable development (Darbinyan, 2011). Taking into account the current developments in the region, particularly the fact that Russia has banned imports from the EU, USA, Australia, Canada and Norway, it creates a big gap that needs to be filled and Armenia can use that opportunity and expand its export of high-value food items (i.e. organics) to Russia. According to Urutyanyan, Yeritsyan and Mnatsakanyan (2015) the prices of organic products in Russian and EU supermarkets are about 2-3 times higher from those in the local market.

Considering the small farm sizes in Armenia and the early stage of organic sector development in the country this paper will study one of the ways to boost the sector—that is, through promoting collective action. The rest of the paper is structured in the following way: Part 2 presents the historical development and the current status of organic farming in Armenia. Part 3 shows the challenges faced by peasant household. Part 4 introduces the ways in which collective action can help peasant households and what makes collective action successful. Finally, Part 5 discusses the limitations of collective action.

2. Organic Farming in Armenia

2.1. Historical Overview

As of 2011 United Nations Environment Programme (UNEP) reported that Armenia just like other Eastern European and Caucasus countries are in the early stage of organic agriculture development. In early 2000s several NGOs initiated the first steps in organic agriculture and so far most of the initiatives are driven by NGOs with very little government involvement and usually sponsored by foreign donors. The marketing of organic products, however, didn't start until 2008 (United Nations Environment Programme, 2011). One of the pioneers in introducing the organic agriculture practices in the country is SHEN NGO which started operating in 1998 (Grigoryan & Urutyanyan, 2006).

From 2000 till 2012 as part of EPER regional program in the South Caucasus countries SHEN had been educating farmer groups as well as individual farmers by spreading the knowledge on organic agriculture cultivation methods. It has not only offered free advisory services to the farmers but also increased the awareness on organic products among the consumers (SHEN NGO, 2012). Another important step in the development of organic agriculture was the establishment of a certification body. In 2002 the first certification body—Ecoglobe was founded which offers both Control and Certification services to its clients (Grigoryan & Urutyanyan, 2006). Its certificates accepted

both in the US and EU which makes Ecoglobe one of the two certification bodies in the EECCA region that have international recognition (United Nations Environment Programme, 2011)

As it is stated on the website of the Ministry of Agriculture of the Republic of Armenia: "It should be mentioned that legislative environment in this regard is fully regulated. The RA Government adopted the law on Organic Agriculture approved by the RA National Assembly on May 5, 2008 and enacted on May 14, 2009." EU organic regulation and Codex Alimentarius have served as basis for the organic law in Armenia, which has a large scope and thus requires further by-laws. The stakeholders have also requested a National Organic Agriculture Plan to be prepared (Darbinyan, 2011). The same research notes that recently the investment into agriculture in the country has increased both from local and foreign private investors, who are mostly the Armenian diaspora from Russia, US and Europe.

Since the country is relatively small (around 29,000 square km) it can't compete with other regional countries on the quantity of produced ag products, however one way to compete with them and develop the agriculture in the country in the long run is concentrating on a competitive advantage which can potentially be the organic farming. One of the reasons it can become a competitive advantage is the abundance of cheap labor in the country, and since organic farming is labor-intensive in nature, this can in turn reduce the unemployment rate (Grigoryan & Urutyan, 2006). In 2009 the Armenian government provided 1 million US dollars to a processor which was supposed to further develop the sector in the country by planting organic berry plantations throughout the country.

2.2. Current Market Situation and Trends

The Armenian government doesn't directly support farmers to start growing organically by direct payments which Ms. Darbinyan thinks can be one of the reasons why organic farming is developing slower on a farm level than it is preferred by the other stakeholders, such as the processors. Certification, which requires big investments initially, is one of the obstacles for the farmers, especially the small ones. However, SHEN Organic Service has initiated supporting the small farmers by bringing them together, so that they can share the costs. As a result several dozens of small holders have been put into two groups with the aim to share the certification fee (SHEN NGO, 2012).

According to Ecoglobe's (the only organic certification body in Armenia) official report dated on April 10th, 2015 there were 25 certified farmers who are involved in growing plant products, processing, wild collection as well as honey making. In addition to that, there are six organically certified beekeeping enterprises and one producer of biological fertilizers. The processors are usually the ones who are also involved in the export and import of the products and the main players in the market are: Tamara Fruit, Beer of Yerevan, SIS Natural, HAM, Biouniversal and some others (Darbinyan, 2011).

According to the 2014 and 2015 reports titled *The World of Organic Agriculture: Statistics and Emerging Trends* by FiBL and IFOAM the development of organic agricultural land in the country shows an increasing trend. Particularly, in 2009 there was only 600 ha of organically certified land, in 2010 and 2011—750, in 2012 it reached 810 and finally 1000 hectares in 2013. Thus, organic agricultural land occupies only 0.1% of the total agricultural land. In addition, there were 11,050 and 11,250 hectares of organic wild collection areas in 2012 and 2013 respectively. It is also worth mentioning that the organic products' prices are about 20-25% higher than those of non-organic products (Global SPC, 2014).

Below is a table showing the same data from the FiBL and IFOAM reports for the regional countries to be able to compare the current situation:

Country	Organic ag. land 2009 (ha)	Organic ag. land 2010 (ha)	Organic ag. land 2011 (ha)	Organic ag. land 2012 (ha)	Organic ag. land 2013 (ha)	Total org. area, including wild coll.

						2013 (ha)
Armenia	600	750	750	810	1,000	12,250
Azerbaijan	20,339	21,347	21,959	23,740	23,331	24,268
Georgia	1,208	1,401	1,999	1,999	1,999	3,405
Turkey	325,831	383,782	442,582	523,627	461,396	1,418,657
Iran	8,853	7,256	43,332	42,634	12,156	39,708

Table 2: Organic agricultural lands in the region

The table clearly shows in all three South Caucasus countries (Armenia, Azerbaijan, Georgia) the picture is pretty much the same and Armenia can compete with those countries in the export markets. However, when it comes to Turkey and Iran, seems like organic agriculture in Armenia is far less developed than in those countries and will probably be hard to compete in terms of scales of production.

There is over 30 main organic product types grown in Armenia – that is: fruits and berries, such as apricots, cherries, plum, grape, peach, pomegranate, peach, apples, and others; vegetables and cereals like tomato, potato, cucumber eggplant, zucchini, carrots, etc. and wild collection crops: mint, peppermint, rosehip and some others (SHEN NGO, 2012). Besides, organic processed foodstuff sector is getting somewhat competitive by attracting more and more companies to the market. There are about 40 processed foodstuff currently produced in the country and that includes, organic juice, juices with honey, teas, essential oils, breads and cereals. As of 2012 the annual total export of organic products was about 151 tons, most of which is juice and dried fruits (SHEN NGO, 2012).

A research titled *Market Assessment and Development for Organically Grown Produce in Armenia* carried out by Dr. Urutyanyan gives some interesting insights into the purchasing behavior of the Armenian households. The research shows that while mothers in the households usually (54%) purchase fruits and vegetables, and father purchasing them in 30% of the cases, 73% of the respondents had mentioned that mothers are the ones who decide what fruits and vegetables to buy. At the same time, as the research suggests 59% of the respondents have agreed that advertising does impact their purchasing decisions, only 31% of the information about food is received through advertising, while slightly bigger percent of information on food is spread through word of mouth. Having this information will allow the marketers to target the right audience for raising awareness on organic produce and promote it.

According to the same research which was conducted in 2007, 33.3% of the surveyed people think that the main advantage of organic products is that it is healthy, while 32.1% thinks that the main advantage is the taste. Interestingly enough, 11% of the respondents have mentioned that they don't know of any advantage the organic products have. Another interesting aspect is that 55.5% of them didn't know about the availability of organic products in Armenia and 67% had never tried any organic produce. Nevertheless, 48% of the respondents have answered that they would prefer to buy organic products from specialized stores, which was followed by 25% people who would prefer to acquire from supermarkets and 23% from farmers markets.

One of the most important finding of the research is consumers' willingness to pay (WTP) for organic produce. It states that only 12% of the surveyed people have answered that they are not willing to pay extra for organically grown produce, while about 60% has agreed to pay a price premium of 10-30% (45% of people: 10-20%, 15% of respondents: 20-30%). Also, 16% has shown willingness to pay 30-50% more for organic produce. Last but not least, the author says that 90% of the respondents who had non-complete and complete higher education (including MS and PhD) were willing to pay price premiums, as well as most of the respondents who had a child aged 17 and below.

3. Peasant Households and Challenges Faced by Them

Smallholder agriculture can play an important role in reducing global poverty as a vast number of world's poor are rural households that are involved in agriculture (Markelova, et al., 2009). At the same time, as Barham and Chitemi (2009) suggest since smallholder farmers are the largest group involved in agriculture, the sector's development will not occur without engaging those smallholder farmers.

It is being widely recognized that the opportunity to partake in markets plays an important role in raising smallholders income associated with agricultural production and other related rural activities (Markelova, et al., 2009). Although there are more market opportunities, there is also a fear that smallholders will be totally left out of markets by large producers as they face high transaction costs in nearly all non-labor transactions while having a competitive advantage over large producers in a way that they have access to tacit knowledge and cheaper family labor (Poulton, et al., 2010).

Smallholder farmers face many challenges due to their small scales, such as difficulty in accessing market information, meeting quality control and food safety requirements (Gulati, et al., 2007), and the already high transaction costs that they incur increase even further especially in attempts to access organic, fair trade and other high-quality and niche markets (Poulton, et al., 2010). The reason is that those markets usually require special certification provided by third parties which can become a major barrier for peasant households to enter those markets (Markelova, et al., 2009). In addition, as Gulati et al (2007) suggest smallholder farmers are not always able to supply standardized products on constant basis.

Talking about Armenian smallholder farmers, in order for them to access the organic markets (supermarkets) in Russia and EU which offer 2-3 times higher prices than the local supermarkets, those farmers should be able to provide higher volumes to be competitive in foreign markets (Urutyán, et al., 2015).

In general, there is a growing demand for higher value and processed food all around the world as more and more people have higher purchasing power (Markelova, et al., 2009). Along with that, food safety standards have also increased and the costs associated with meeting those standards can squeeze small farmers out of markets as they need to learn how to produce safe food by utilizing cost-effective technologies and be recognized as producers of safe food, and most importantly they need to find ways to compete with bigger producers (Narrod, et al., 2009).

Narrod et al (2009) write about three main constraints that result in smallholder farmers being excluded from high-value markets. Those constraints are scale, information and reputation. According to them, meeting the standards posed by those markets requires high fixed costs in production and marketing as well as acquiring and processing information, while peasant households don't usually have easy access to credit. Last but not least, Markelova et al (2009) also claim that for many farmers it is hard to access inputs, extension and training as a result of a reduction in state-funded agricultural support.

4. Collective Action as a Solution

One of the ways for smallholder farmers to overcome the challenges they face is to act collectively by participating in farmer organizations (Stockbridge, et al., 2003). Farmer organizations are one of the collective action types which have more formal organizational structure and can provide a wide variety of services to smallholder farmers (Hellin, et al., 2009). Farmer organizations can help them reduce the transaction costs related to accessing markets, inputs and outputs, obtain required information, get access to new technologies which will in turn enable them to participate in markets (even in high value markets) and compete with larger producers (Stockbridge, et al., 2003). The way collective action makes it easier for smallholders to enter markets is that it strengthens their bargaining power with other stakeholders such as buyers and middle-men (Markelova, et al., 2009). There are too many cases that prove this but just for illustration purposes here are three examples from three different countries that show how collective action can help smallholder farmers

overcome their challenges. Narrod et al (2009) show an example where smallholder farmers in India were also enabled to collectively obtain food safety certifications and participate in high value markets which would have been impossible to achieve had they acted individually. As shown earlier, farmers in Armenia who grow organically were able to receive organic certification by getting together and splitting the costs of certification and this process was initiated by one of the local NGOs (SHEN NGO, 2012). Through collective marketing action Nyabyumba Farmer Group in Uganda found innovative ways to respond to changes in market. They started using group saving mechanism after borrowing their initial capital, also they jointly bought a truck when they realized that the transportation costs are much higher than what they had expected (Kaganzi, et al., 2009). In addition to having access to new markets, bringing innovation to existing value chains and having more marketing opportunities, by participating in collective action particularly in producer groups farmers can also access other services, successfully cover transportation costs and generally meet their financial needs (Markelova, et al., 2009).

Weatherspoon and Reardon (2003) suggest that supermarkets are generally attractive markets for farmers as they offer good profits on continuous basis and sometimes they are not as strict about food safety requirements as the export markets. And since these markets (supermarkets, export markets) usually require large volumes of supply, one of the ways for smallholders to access those markets is by supplying and coordinating their activities collectively (Markelova, et al., 2009). Especially for perishables that require more care for maintaining quality and thus more knowledge on how to do it, collective action can help smallholders to acquire transport, equipment, technical expertise and knowledge that otherwise wouldn't have been accessible to them individually (Markelova, et al., 2009)

Barham and Chitemi (2009) mention that another reason why collective action has received more attention is that as market access proponents claim in order for those farmers to survive in the global economy they need to learn entrepreneurial skills which means moving from production-oriented paradigm to market-oriented behavior. An important attribute of collective action is social capital which is developed in the process of social learning; that is, the process when people collectively define the problems they face, find solutions and evaluate the results, which moves those individuals from being separate agents with different outlooks to a group with shared perspectives and values (Koelen & Das, 2002). Kruijssen et al (2009) show graphically how social learning boosts social capital which make collective action even more successful which in turn brings more social learning and so on.

The traditional co-operatives mostly aim at creating economies of scale to access markets while the new models of co-operatives want to enter specific markets and offer high-quality products (Knickel, et al., 2008). Involving specialists other than farmers in collective action can be a successful tool to create more innovation and new products that could bring a higher value for all the actors in the collective (Markelova, et al., 2009). The new types of cooperative try to achieve customer loyalty and/or price premium by offering high-quality products that are different from what market already offers (using market or product differentiation strategy) and marketing of organic products, the entire process of production and certification is a great example (Knickel, et al., 2008). In Europe only where the demand for organic products grows at a rate of 10% yearly collective action for organic farmers not only can increase their incomes but also serve as a path for sustainable development of food systems, rural areas etc (Knickel, et al., 2008).

4.1. Success Factors and Challenges for Collective Action

Agrawal (2001) suggests the following list of factors that make collective actions successful:

1. Small group size
2. Clearly defined boundaries
3. Shared norms
4. Past successful experiences

5. Appropriate leadership
6. Interdependence among group members
7. Heterogeneity of endowments, homogeneity of identities and interests, and
8. Low level of poverty.

Markelova et al (2009) mention that even though it's easier for small groups to self-monitor it is easier with larger groups to achieve economies of scale which is very important for smallholder farmers. In addition, Braham and Chitemi's (2009) research on Tanzania doesn't find any evidence for the idea that small groups can be marketed better over larger groups and in general they find that group size doesn't have any impact on the collective marketing performance. Usually, producers of undifferentiated products don't benefit much from joining farmer groups and in other cases the transaction costs of organizing into groups can be so high that it doesn't make economic sense for farmers to establish farmer organizations. (Hellin, et al., 2009). A research conducted in Kenya shows that ownership of communication devices, such as phones, TV and radio decreases the probability that farmers will participate in collective marketing explained by the fact that those tools can serve as a substitute to getting information about the market. Same research shows that education level has a positive impact on participation in producer marketing initiatives (Shiferaw, et al., 2008).

Although collective action can have a positive impact on farmers by enabling them to access markets, usually there is a need for a third/external party to initiate and facilitate the collective action, teach them how to engage in marketing activities and support them by providing technical assistance, as farmers usually don't self-organize on formal basis (Markelova, et al., 2009). This has a crucial importance because poor farmers usually don't have the necessary knowledge, financial means, education, management and entrepreneurial skills. Armenian farmers are not exception. Grigoryan et al (2008) show a list of reasons why farmer organizations in Armenia have failed:

1. Lack of understanding of the three main principles of cooperative
2. Poor management
3. Irrigation (in Lukashin cooperative)
4. Rural finance and access to credit
5. Agricultural inputs and technology
6. Marketing of agricultural produce

Thus, it is necessary to understand the roles of public and private sectors especially questions such as how farmer organizations should be established and who should fund the establishment (Hellin, et al., 2009). Public and private sectors are especially needed for disseminating information, providing financial means, building capacity in auditing, certification and business, training group members and improving governance and democratization of farmer organizations (Shiferaw, Obare, & Muricho, 2008 and Narrod, et al., 2009).

Markelova et al (2009) think that private sector can be best in helping farmer organizations to meet the market requirements such as certification, safety and quality standards. Hellin et al (2009) suggest that while development agencies play an important role in the initial stages of farmer organizations, private sector's role increases as those organizations become more mature. Meanwhile, governments are the major actors in creating environments that enables collective action to take place and operate especially considering that the poor have many constraints such as access to input markets and credit (Markelova, et al., 2009)

However, this doesn't guarantee that collective action will be successful even after the group members receive financial support and are willing to work collaboratively as the success depends also on the social-demographic characteristics of the group members (e.g. age, race, gender, education, etc), product types, previous experience with collective action and the market that they are trying to enter (McCarthy, 2004). Central and Eastern Europe is a good example: in the socialist past farmers and rural households were forced to be part of collective action, the type of which had

many disadvantages and this led to having very low levels of trust in cooperatives and generally in the idea of collectivity even in our days (Knickel, et al., 2008).

Devaux et al (2009) also show that collective action results in better teamwork and innovation. At the same time, in order to have successful collective action that is both sustainable and effective it is important to make sure that all the stakeholders are actively involved in the decision making process and they understand the common and problems (Kruijssen, et al., 2009) However, Kaganzi et al (2009) show that for collectively supplying graded produce farmers in Uganda were incentivized to produce individually but sell collectively by being paid and rewarded according to the quality and quantity of their individual production.

Another challenge is that even many organizations who work on fostering collective action don't know how much the services they provide will cost to them and therefore they don't incorporate in their costs. Hellin et al (2009) bring two examples: first they refer to a research in Spanish conducted by Agropyme who shows that on the example of Honduras where those costs can be outrageously large, that is, peasants cover up to 84% of the required incorporation costs, such as "technical and organizational assistance, infrastructure and working capital" and that money comes from donor funding. Knickel et al (2008) suggest that although public support is important there is a risk of depending too much on that support and this needs to be taken in account.

Last but not least, as research shows collective action can and does help smallholders to solve many of the marketing challenges that they face but it is not a panacea because problems such as "free riding by group members and reduced flexibility to respond to market changes" can still take place even in collective organizations (Kruijssen, et al., 2009).

5. Conclusion and Recommendations

Armenia is a landlocked country which has gained its independence about 24 years ago. A big portion of population (44.2%) is still involved in agriculture and mostly consists of smallholder farmers. More than 20% of Armenia's GDP comes from agriculture. The government considers organic agriculture as a priority area in the country's agro-food policy as well as part of sustainable development. However, organic farming is still on its early stages of development just like in other Eastern European, Caucasian and Central Asian countries. Yet, the country already has an organic certification body which is recognized both in the US and the EU, organic supermarket in the capital city and a growing demand for organic products.

Researchers believe that smallholder agriculture can play an important role in reducing global poverty as a vast number of world's poor are rural households that are involved in agriculture. Armenian smallholders are not exception and they face most of the same challenges and problems that peasants from other parts of the world do. Particularly, they have difficulty in accessing markets, gathering necessary information, meeting quality control and food safety requirements, certifying their production as organic or fair trade, accessing credits and so on. One of the ways that this challenges can be overcome is collective action which has proved to be successful in many cases.

Although collective action can be very useful and helpful for smallholder farmers it is not a panacea. Organizing a collective action is not an easy task and its success depends on many factors such as small group size, clearly defined boundaries, shared norms, past successful experiences and others.

For further research in this field I would recommend to survey both the farmers using conventional practices and those producing organically in Armenia and conduct interviews with them to have a better understanding of the local picture, experience and expectations. Also, it would be very useful for policy purposes to study whether or not Armenian farmers are familiar with organic practices and if so can Armenia produce organic food products at competitive prices. Last but not least, considering the country's bad experience with collective action during the Soviet times and farmers' negative attitude towards it I would recommend to study the potential areas for public

private partnership, such as educating farmers, changing their perceptions and maybe even establishing successful role-model cases.

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