

**From Kolchoz systems to fee-based private agricultural extension:
Achievements with a client-oriented training and advisory concept as support
for private farming in Azerbaijan**

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Abstract

State initiated land reform and privatization processes in the Caucasian Republic of Azerbaijan aimed at boosting the agricultural sector, but concurrently created farmers without farming tradition and with insufficient skills for private farming. Since 1999, the private Agro Information Centre (AIM) tries to bridge this gap by implementing a situation-specific, client-oriented training and advisory concept. AIM has trained 210 private, village-based agricultural advisors (AAs), to allow fee-based extension and meet farmers' demands. Between 2000 and 2004, various training and educational programs were conducted that combined lectures, field visits, on-the-job-training, and tailor-made coaching. Within this period the 210 AAs served 13,185 farmer/clients and concluded 3,247 verbal and written contracts with a total value of 213 Mio. Azeri Manat (ca 43,500 USD). This amounted to an annual average income of ca 215 USD. After four years, reference farmers (without access to extension) had less farm capital, less knowledge of production technologies, and were more dependent on off-farm income than contact farmers (with extension). It is argued that the implemented fee-based privatization concept may be a *panacea* for countries with similar transitional economic backgrounds.

Keywords: AIM, privatization, participatory agricultural extension, demand-side funding, former Soviet Union, economic transition countries

1 Introduction

Following independence in 1991, the Republic of Azerbaijan underwent sweeping changes in its social and economic foundation. The transition from one socio-economic development pattern to another led to new, unprecedented political, institutional, juridical, economic, social and psychological challenges. The resulting problems, including the Armenian occupation, which led to a million refugees and Internally Displaced People (IDP)s, the economic and information blockade, and an unstable political situation, prompted a sharp decline in the living standards of the population (Republic of Azerbaijan, 2003). Moreover, current economic development in Azerbaijan is backwards; the oil- and gas-based economic growth is concentrated around the capital, Baku, and is in sharp contrast to a slowly growing non-oil sector. Almost half the population still lives in poverty due to the lack of income-generating opportunities. The closure of state factories and dissolution of *Kolchoz* and *Sowchoz* have resulted in loss of employment, especially in rural areas (Republic of Azerbaijan, 2003).

Development of the agricultural sector is key for the development of the non-oil sector. The number of people employed in agricultural activities has grown from 1,144,000 in 1990 to 1,515,000 in 2001, which represents over 40% of the economically active population, of which approximately 21% are female (Republic of Azerbaijan, 2003). The growth in agricultural employment was triggered by the land reforms, which provided 846,600 families with land titles (Sampath 1998). However, the reforms did not directly lead to higher living standards of the farming population, which is evidenced by the wages in the agricultural sector; in 2000 the most farmers earned only 30% of the national average. Although 40% of the workforce is employed in agriculture, this sector accounts for only 16% of the GDP (Republic of Azerbaijan, 2003).

The majority of the new landowners were badly prepared for private farming and unable to cope with the challenges of new farming operations within a “free” market system (Sampath and Janakiram 1996). Moreover, the new class of private farmers often inherited saline, polluted, and impoverished soils, constraining the returns from their use (Sampath 1998). A recent national analysis indicated the small size of the land plots, the need to develop a land market, the pressure on common grazing lands, the shortage of agricultural inputs (seeds, water, equipment), the lack of market outlets, poor transport, poor efficiency of the irrigation and drainage network as well as a lack of access to credit, and a lack of collateral to secure credit as important obstacles for higher farmer revenues (Republic of Azerbaijan, 2003). International analysis of shortcomings in agriculture in Caucasian countries confirmed numerous technical issues (Pagoda et al. 2004). However, conclusions of both Pagoda et al. (2004) and national experts (Republic of Azerbaijan, 2003) paid little attention to training and information needs of the producers. This disregard for

farmers' professional education was fuelled by traditional opinions on farming best practices. Although developed during the *Kolchoz*-system era, these practices still dominate the mindset of "agricultural specialists." This is typical of situations in which previous bureaucratic structures caused poor economic and environmental performance of agriculture, had historically low levels of farm decision-making autonomy, and a history of collective ownership (Adams et al., 1997, p.707). To the contrary, Lamers et al. (2000) showed that Azerbaijani farmers rapidly diversified into different groups, characterized by different knowledge levels, land acreage, access to labor force, as well as with different needs for training and information on private farming.

The rural sector policy of Azerbaijan provided no clear strategy for coping with the challenges faced by the poorly trained farmers. Little efforts were launched to provide services mandatory for modern farming such as laboratories, research stations, food safety, and phyto-sanitary controls. Despite some efforts from international development agencies such as GTZ (Kessler, 2001) and Worldbank⁴ (2002) to develop extension-type services, impacts on farmers remained very low due to corruption, low motivation, or insufficient competencies. Access to competent extension services is rare in rural Azerbaijan and the lack thereof presents a hindrance to farm development.

The Agro Information Centre (AIM), an Azerbaijani nongovernmental organization (NGO), established a private advisory service system in 1999, recognizing that appropriate advice and information will upgrade farmers' agricultural knowledge and skills and subsequently improve the returns to farm investments, as well as enable farmers to participate in rural development. AIM based its concept on experiences with private, fee-based systems implemented worldwide since the 1990s. Since then, international development agencies have advocated approaches of extension with a focus on strengthening the demand-site for services, including a larger role for the private sector, NGOs, and producer organizations, and a more inclusive approach regarding women and the poor (Cleaver 1993; Ameer 1994; Antholt 1994, Kidd et al. 1997; Katz 2002).

Providing the farming population access to agricultural information was the prime objective of AIM. Key activities focused on training and upgrading of village-based Agricultural Advisors (AAs) and assisting them in establishing advisory offices in the rural areas (Lamers et al. 2000). From the onset, AIM's concept foresaw payments by farmers for service delivery and the exclusion of a central system (Lamers et al 2000), the construction of which is usually affiliated with large expenses (Kidd et al, 2000).

This paper is a companion to the previously documented concept of AIM's client-oriented extension approach (Lamers et al. 2000). Here, key impacts at the farm level are reported after comparing the

⁴ Worldbank channeled funding through the Agency for Support to the Development of Agricultural Private Sector in 2002.

performance and situation of farmers with and without access to extension, and following an evaluation of the private advisory service development represented by the AAs.

2 Procedures and methodologies

Description of the intervention sites

The intervention regions of AIM in Central and Southern Azerbaijan are rural areas with high emigration. Cultivation of cotton, wheat, alfalfa, and vegetables is complemented by animal husbandry. Recently, the number of livestock has increased substantially. A feeling of land ownership has rapidly emerged since farmers gained the right to choose which crops to cultivate and to lease or sell their land. However, agriculture depends on irrigation, which is organized through surface irrigation and deep wells. Secondary land salinization is prominent due to the run-down of secondary and tertiary irrigation channels; a dysfunctional drainage system, which causes elevated groundwater tables, unsustainable agricultural practices, and water mismanagement.

AIM works with farmers, as well as IDPs and refugees (both victims of the conflict between Armenia and Azerbaijan) who originated from mountainous and cooler regions. These people have experience with varying agro-ecological conditions and crops, and consequently need support to cope with the hot, lowland climate and the often degraded soils they received by presidential decree. In addition, IDPs and refugees often worked in non-agricultural professions before their forced migration, and IDPs generally have very little working capital and no assets.

Monitoring and assessing knowledge, income, and well-fare of extension clients

Information passed on to farmers is only effective when put to use by farmers. The farmer is thus the best judge of the quality of the service delivered. Consequently, 70 farm/households (hereafter called “contact farmers”) were selected from nine villages in the Agjabedy and five villages in the Beylagan for continuous monitoring. In each of the 14 villages, 5 contact farmers regularly served by the AAs provided in-depth information on the farm labor force, physical assets, machinery, land use, plant and livestock production, off-farm and total family income. The surveys, conducted since 2002 in the local language by the AAs, combined structured (questionnaires) and semi-structured interviews (guidelines). For comparison, a total of 55 farm/households without access to extension (hereafter called “reference farmers”) were randomly selected from six villages in the Agjabedy and from five villages in the Beylagan regions. The five reference farmers in each of the eleven villages were subjected to the same survey methods.

After a preliminary data check for possible blanks, revisits occurred when necessary. Next, data were subjected to descriptive statistics and the functional relationships between the different parameters were tested using correlation analysis. The factors affecting the income and productivity

of the farmers were analyzed using *t*-tests at a $p < 0.05$ significance level. Net income was estimated as gross income minus costs. Revenues were projected from commodity sales (in monetary terms) and benefits, which a farm/household obtains from product consumption. All costs were converted to cash, and included expenses on own labor, seeds, organic fertilizer, etc. For a more detailed income analysis, contact farmers were divided into three classes based on their total net income: farmers with a total net income below 5,500,000 Azeri Manat (AZM) (ca 1,120 USD), farmers with a total net income superior to 5,500,000 AZM but smaller than 10,000,000 AZM (ca 2,040 USD), and farmers with a total net income above 10,000,000 AZM. Reported results are for the years 2002 and 2003 (Tables 1,2,3 and figure 2).

Monitoring and assessment of paid extension supply

To monitor and evaluate the development of the private advisory sector, 75 selected AAs were monitored during four years in the Agjabedi and Beylagan regions. The AAs consisted of agronomists (52%), veterinarians (41%), economists (6%), and mechanics (1%). The number of farmer/clients served, the number and type of contracts concluded between AAs and their farmer/clients, and the fees paid by farmers for the services rendered were monitored and evaluated through permanent observations, field visits, and auditorium and field tests. In-kind payments were valued with the market price of the day of payment. Data were analyzed using *t*-tests and regression, and correlation analyses were performed with the software SPSS 11.1.

3. Monitoring and assessing knowledge, income, and welfare of extension clients

3.1 Monitoring knowledge, income, and welfare of farmer/households

Key indicators of the contact and reference farm/households show that the average farm size of about 3.2 ha (Table 1) does not form a sustainable basis for the development of a farm sector. Hence, farmers rented additional land when possible; usually from absentee landowners. The average size of a farm family was about six people, including ca three working members (Table 1).

In 2003, the yield of winter wheat with contact farmers was significantly higher ($p = 0.013$) than with reference farmers, although the production costs were also significantly higher. In 2003, contact farmers earned 400,000 AZM (ca 80 USD) more net income per ha of land cultivated with wheat than reference farmers. This difference was highly significant ($p = 0.005$). The increase in cropped alfalfa area and yield varied significantly between years for contact farmers, and between contact and reference farmers in 2003. The same was true for cotton. In-depth monitoring showed that the production increase of the different crops was accredited to a greater knowledge of, and

skills in, production technology and an increased efficiency in inputs including new and different seeds, varieties, and mineral fertilizers.

Although contact farmers expressed their intention to increase the areas of cash crops such as cotton and vegetables, labor costs were considered as the most limiting factor as underlined by the positive correlation between the number of working family members and cotton area ($r= 0.33$), cotton harvest ($r=0.34$), and cotton net income ($r=0.35$). Similarly, for increasing vegetable production potentially higher incomes were restricted by high initial investments caused by the costs of potatoes, onions seeds, and transportation, which many farmers could not afford.

In 2003, the average number of employees on farms increased significantly from 1 to 4 people (with the extreme of 28 people). Total labor costs of contact farmers increased from 365,000 AZM (ca 75 USD) in 2002 to 559,000 AZM (ca 115 USD) in 2003, indicating that contact farmers invested more funds into plant and livestock production than reference farmers. Total costs of plant production per household increased from 1,600,000 AZM (ca 325 USD) in 2002 to 2,400,000 AZM (ca 490 USD) in 2003.

Net income of contact farmers increased from 2002 USD to 2100 USD in 2003, whereas the net income of reference farmers did not even reach the level of contact farmers in 2002. Total net income was positively correlated with the number of employees ($r = 0.31$ in 2003), family labor force ($r = 0.4$), area of own land size ($r = 0.39$ in 2002; $r = 0.42$ in 2003), alfalfa area cultivated ($r = 0.763$), and total costs of production ($r=0.46$).

Reference farmers had on average 1,700,000 AZM (ca 347 USD) less net income from livestock and poultry production compared to contact farmers, which was affiliated not only with fewer numbers of animals, but also with a lower productivity per head of animal. Contact farmers made more funds available for investments in livestock production, had a higher interest in animal production, and more knowledge on production technology and better ways of reducing diseases in livestock thanks to recommendations from the AA.

The share of total net income from plant production was superior to that from livestock production, which was in turn superior to off-farm income, in both years and with both contact and reference farmers. Yet, among crops grown, farmers maintained larger areas of alfalfa, confirming the increasing interest in livestock husbandry. In contrast, the income structure between reference and contact farmers differed; the first group depended more on additional off-farm income, which is understandable since their on-farm income by crop and livestock activities was significantly lower. Although the total net income appears substantial, farmers nevertheless repeatedly mentioned a lack of cash as a major constraint. This is mirrored in the important role of additional cash to the total farm family budget of both contact and reference farmers, although the share of additional income

in total net income was significantly higher in the group of reference farmers. As reference farmers depended more on additional income sources, they spent more time on these additional activities, which in turn distracted them from their farm and hindered a better understanding and development of production objectives. Sources of additional income included retirement pensions, salaries, businesses, rent income, child support paid by government, and remittances from abroad.

About 40% of all contact farmers had a total income between 5,500,000 (ca 1,122 USD) and 10,000,000 AZM (ca 2,040 USD). The share of low-income farmers (below 5,500,000 AZM) was 30% in 2002, but decreased to 21% in 2003. Concurrently, the share of high-income farmers (superior to 10,000,000 AZM per year) increased from 26% in 2002 to 40% in 2003. About 4% of the contact farmers had a net income of more than 20,000,000 AZM (4,080 USD) in 2002, whereas in 2003 this share increased to 9%. The average area of cultivated land for the high-income group of farmers was 7.8 ha (4.7 ha own land and 3 ha of leased land).

3.2 Assessment of knowledge, income, and welfare of farmer/households

The services rendered by AAs increased the productivity of the contact farmers via better farming practices and thereby raised their income. The income of contact farmers was significantly superior compared to that of reference farmers, who had lesser production, lower productivity and use efficiency of farm inputs resulting in lower family income with agricultural activities. The re-organization and improvement in farming know-how not only substantially increased net income, but created additional job opportunities and stimulated the local and regional trade and transport. With higher income, farmers expanded vegetable production and livestock rearing, as was the case in 2002 and 2003. Contact farmers cared more about their land and production results than reference farmers as was substantiated by the facts that they had expanded farm activities, invested funds and labor into plant and livestock production, and an increased awareness of agricultural land value (Table 1).

The findings confirmed that qualified agricultural extension delivery contributed to improved productivity and thus to the benefit of the farmer family, although not to lowering the costs of production. These results are in line with findings worldwide and underscored by the high rates of return to extension investments (Birkhaeuser et al. 1991), or farmer education (Jamison and Lau 1982; Lockheed et al. 1980). In Thailand (Nanta 1996) and Sri Lanka (Ekneligoda 1996) pesticide applications by trained farmers decreased due to increased knowledge and participatory training, while rice yields increased by 25%. Farmers in Bangladesh who participated in farmer field schools had 8-13% higher rice yields than a control group (Ramaswamy et al. 1992). High impacts on farm profits from schooling and training farmers were reported in Sri Lanka (an increase in profits of

40%), Thailand (30%) and China (10-25%) (FAO 2000, p.18), as well as in Ghana, the Ivory Coast, and Burkina Faso (cited in Kenmore, 1997). Extension in the Ivory Coast was accredited for the 33% yield increase of food crops, while coffee and cocoa outputs decreased due to the overall decline of markets (Romani 2002). An overview of 289 studies of economic returns to agricultural research and extension estimated a 58% rate of return for investments in extension (Alston et al. 2000).

The core function of agricultural extension is improving farm income through the provision of information to farmers and helping to solve their problems (Albrecht et al., 1989). In Azerbaijan this was a challenge which should not be underestimated, given the levels of rural poverty. The State Program on Poverty Reduction and Economic Development (SPPRED) on Azerbaijan reported for 2002 that about 45 % of the population in the rural area lived beyond the poverty line of 309.6 USD (1.4 Mio AZM) per capita (Republic of Azerbaijan 2003). For the average family of contact farmers, this amounts to a total family income of 1,857.6 USD (8.64 Mio AZM) as poverty line. Thus, even the class of high-income contact farmers was still close to poverty and hence not in a position to experiment much. Most farmers could not afford risking poor production in the pursuit of higher yields, nor could they afford (short-term) dips in profitability, when advice would recommend avenues towards obtaining long-term economic benefits and sustainability. From this point of view, the obtained increase in farm income is substantial and the willingness to pay for extension despite the poverty levels is extraordinary.

4 Monitoring and assessment of paid extension supply

4.1 Monitoring of paid extension supply and ways to deliver advice

During 2000-2004, AIM trained 210 AAs, of which 120 lived in the regions Agjabedi (60) and Beylagan (60) (Figure 1), whereas the remainder lived in the other intervention regions. The unbalanced distribution of locations was caused by an initial focus on these two regions, in which the original concept was tested and fine-tuned. The concept was extended to other regions beginning in 2003. Successful graduates were provided with some agricultural equipment, received support in soil analysis and seed testing, and obtained office stationary to start their advisory business. Although the degree of involvement in extension delivery varied, only one person dropped out after graduation and migrated to Russia.

INSERT Figure 1

Until June 2004, the 210 AAs served a total of 13,185 farmer/clients in 182 settlements (Table 2). Although the majority of clients were local farmers, about 30% were IDPs (Table 2), who had only limited access to land. The 210 AAs concluded a total of 3,247 contracts of which 48% were verbal

and 52% in a written form (Table 2). The ratio of verbal to written contracts changed from 9:1 in 2000 to roughly 1:1 in 2004. Irrespective of their professional background and gender, AAs concluded contracts for training, provided assistance in problem solving and information on various subjects, but mainly on crop cultivation, animal and poultry husbandry, and later on farm economics.

INSERT TABLE 2.

Over time the number and value of written contracts, and thus the willingness to remunerate the AAs for services rendered, increased. About 70% of all contracts were conducted for a full agricultural season (12 months), while the duration of the remaining 30% varied between 6 and 9 months. The total value of all contracts amounted to about 213 Mio AZM (ca 43,500 USD when using the exchange rate of 4,900 AZM to the USD in 2004). The mean value of all written contracts was about 82,660 AZM (ca 17 USD), in contrast to the mean value of about 50,000 AZM (ca 10 USD) for all verbal contracts. The total value of the written contracts exceeded the total value of the verbal contracts by 51% (Table 2).

The total number of contracts of the in-depth monitored 75 AAs amounted to 1,217 and ranged from 4 to 40 contracts for an individual AA (Table 3). The total value, estimated as verbal plus written contracts and confounded over cash and in-kind payments, ranged from a minimum of 60,000 AZM (ca 12 USD) to a maximum of up to 3,939,000 AZM (ca 800 USD).

INSERT TABLE 3

The average value of the contracts was highly correlated with the former profession of the AA. Whereas the agronomists had an average contract value of about 62,300 AZM (ca 13 USD), which was statistically not different from the average contract value of veterinarians (73,500 AZM or ca 15 USD) or mechanics (68,300 AZM or ca 14 USD), the group of economists had a significantly lower average contract value of 39,700 AZM (ca 8 USD).

Verbal contracts that involved cash payments were almost twice as common as written contracts involving cash payments. This was due to a larger number of contracts involving payments of less than 50,000 AZM (ca 10 USD), whereas agreements that involved larger cash amounts were concluded mainly in written form (Table 3). The number of written and verbal contracts involving in-kind payments was more or less equal.

In-kind payments (accumulating both written and verbal contracts) were in particular conducted with wheat (in 70% of the cases) and bails of alfalfa hay (in 14% of the cases). In few cases in-kind payments occurred with chickens (about 6%) and turkeys (2%), and with vegetables such as onions, potatoes, tomatoes, and peas (all about 1.5%). Sporadic individual payments included fruits such as

grapes and pomegranates, cotton stalks for fuel, and dairy products such as butter and cheese, mainly depending on the time of the season.

4.2 Assessment of paid extension supply

Although our conclusion of the extension impact are in line with studies reporting high rates of return to investments in extension (Birkhaeuser et al. 1991) or farmer education (Jamison and Lau 1982; Lockheed et al. 1980), two key points are extraordinary in this case study. First, in all the formerly reported studies, farmers paid neither for the extension service delivery nor for the education. Secondly, previous efforts included the set up of a public extension provision service that in hindsight was affiliated with large public expenses (Kidd et al, 2000), thus making a cost recovery of the extension efforts potentially expensive. Since experiences (e.g. Hoffmann et al. 2000) confirmed the immense challenges involved in setting up a larger administrative body, which also needed to be financed by private contributions, the concept of AIM aimed at developing a lean structure with independently working AAs, each of whom could act as a consultant (thus eliminated the need for an administrative body), and hence remuneration fees could be kept low (Lamers et al 2000). AIM's strategic decision to set up a fee-base system was driven by the challenge to have a functional advice delivery system in place that would continue once the training phase was over, the external funding ceased, and no public extension system was in place with whom the private advisors could collaborate.

Following this strategic choice, the next challenge was to conceptualize an advisory service that fitted local characteristics, and thus to develop a situation-specific, client-oriented training and advisory concept, while solving the key points “who is financing” and “who is delivering”? Introducing paid extension is a major challenge as experienced worldwide (Dinar 1996). But, since this challenge was considered from the onset, AIM systematically implemented an intensive and thorough selection, recruitment, mobilization, training and coaching of the future advisors (Lamers et al. 2000). Additional factors promoting the success of the AIM project were the joint promotion with the trainees in their respective villages during the training phase, as well as assistance after graduation with start-up and establishment of offices in the villages.

Over time, the contact farmers of AIM learned to appreciate that AAs not only delivered relevant advice, but were also the appropriate contact points of professional advice and information exchange regarding new developments in the agriculture sector. The long-term relationships between extension advisors delivering quality and targeted information according to the needs of clients provided a sound basis for contracting.

While AIM's concept of independent AAs who could each act as a consultant (Lamers et al. 2000) has produced a success story, Kessler (2001) reports a negative experience with a similar set-up of a subsidized, but privately organized agricultural delivery system in the mountainous regions of Azerbaijan. Her analysis showed that this failure was due on the one hand to the lack of a systematic approach to regular agricultural advice delivery and on the other by the attitude of the former agricultural specialists selected as extension staff who were hardly accepted by private farmers.

The remunerations paid by farmers to AAs over a period of four years showed that contact farmers affirmed the value added through extension provision by the AA. Service provision contracts typically focused on practical training of clients in farming, assistance in problem-solving, and providing information on a variety of topics including client-based and own field trials. At the onset, farmers had a particular need for technical advice and to overcome existing technical problems of private farming. This may explain differing remunerations of AA according to the branches of services delivered. However, credit applications and farm economics emerged as additional topics and hence it is to be expected that AAs with an economic background may become more solicited than previously.

In Azerbaijan, previously observed reluctance towards paying for non-material services seems to have been broken down and the positive results of the AIM project showed that such services are worth the initial investments. Yet, although farmers remunerated the AAs, the payment and fee were most often debated, understandable when looking at the poverty indicators of farmers. However, there are also psychological aspects involved. For example, farmers initially accused AAs of asking for bribes when raising the issue of fees and payment. Direct payments, considered as "hot money", have been problematic in other former Soviet Union (SU) countries as well (Katz 2002, p. 41 ff). Although various efforts were introduced to gradually improve farmer understanding of "hot money", the experience indicates the need for frequent discussions of this topic at an early stage.

5. Outlook: A road to progress for others?

The centerpiece of AIM's approach is that farmer education must precede attempts toward technology transfer. This gap was closed by education and training while addressing the farm and its management as a whole rather than as a set of single components. AIM's strategic decision to refrain from any initial involvement in credit and classical input delivery support while investing in empowering farmers during the technology transfer process seems to be justified. AAs assist farmers in developing skills in problem analysis, problem solving, and management, and tailor their

information provision to the concrete problems of farmers (Lamers et al. 2000). There was also much work to do to break the taboo against getting paid for successful performance of AA.

One option for circumnavigating the problem of reluctance to pay an appropriate fee for services rendered, and for concurrently increasing the number of farmers benefiting from the extension service, is the establishment of farmer groups or extension clubs (Hoffmann et al. 2000, Katz 2002). This idea started in Western Europe in ecological farming and was spread to other types of associations, such as pig or cattle rearing associations, which employed their own advisors for shorter or longer periods (Hoffmann et al., 2002). However, extension is highly subsidized by the state in Europe as well, and only the delivery is fully privatized. Also, experience has shown that such an approach is more adapted to well educated, highly specialized and better-off farmers who have a clear vision and ability to pay their share.

Although group-extension is an option, the problems of grouping farmers together should not be underestimated in former SU countries, since farmers are reluctant to relinquish their independence and are suspicious of collaborating with non-family members. During the training course, AAs were encouraged to form extension groups to gain experience with group-based extension methods and to become familiar with small-scale farming patterns. Following the training, the AA was able to restructure or dissolve the groups. Initial results showed that for better-off and more income-oriented farmers, individual contracts were more suitable. Field monitoring showed that after graduation, AAs continued to render services to groups, mostly smaller and more subsistence-oriented farmers, often without payment. It was difficult to exclude resource-poorer villagers not only for social reasons, but also because they were considered as potential clients.

In Azerbaijan, farmer groups currently recruit members in the wider family circle or in the immediate neighbourhood, and rarely choose members based on common economic interest. Trust is still the dominant basis for most economic relationships or collaborations because farmers have a long-standing experience of being cheated or denied their rights. Further, the relationship with AAs is first built on trust, and only secondarily on professional expertise. The AAs are conscious of this and are very cautious to widen their services. There have been several offers from other development organizations to include services such as the sale of inputs or the role of credit officer in order to increase the income of the advisors. However, most AAs refrain from entering this type of business since the quality of inputs is often doubtful and credit delivery is seen as a delicate issue that can easily cause division and conflicts amongst the different groups of farmers.

Evaluating the quality and effectiveness of extension services is difficult but essential for improving operations and maintaining funding. Using intensive monitoring of farmers not only to constantly adjust performances, but also for early detection of new challenges, confirmed that institutional

development with regard to training and establishment of AA-offices is an appropriate formula. The clear impact of the privately organized agricultural advisory system was enhanced by the institutional learning process of an NGO with the mission of bridging the information gap between the newly-emerged landowners and agricultural best practices. In light of experiences gained in former Soviet republics such as Kyrgyzstan or Estonia, where there is a nation-wide, decentralised system (Katz 2002, p. 108 ff), and in other former socialistic countries (Beeler 1999, Katz 2002, Loolaid 2001), the structure adopted by AIM seems to suit the situations found in many former SU countries. However, the adaptation needed for any public-private mix of extension must be thoroughly monitored to allow institutional learning and development, and advisors should not be left alone to negotiate fees with farmers.

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Acronyms

AA	Agricultural Advisor
AIM	Agro Information Centre (Agro Informasiya Merkezi-AIM, in local language)
AZM	Azeri Manat (Currency in the republic of Azerbaijan)
IDP	Internally Displaced Persons
Kolkhoz	Formerly collective farm
NGO	Non Governmental Organisation
Sovkhoz	Formerly state farm

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Tables and table captions

Table 1: Key indicators of farm welfare in Agjabedi and Beylegan regions in 2002-2003 with and without service by extension providers.

Indicator ⁵	2002 (with extension)	2003 (with extension)	2003 (without extension)
Family members (numbers)	6	6	5
Working members (numbers)	3	3	2
Employees (numbers)	1	4	1
Own land (ha)	3.1	3.3	3.6
Cultivated land (ha)	3.7	3.9	3.4
Wheat – share of farm (%) ⁶	96	88	66
Wheat area (ha)	2.0	1.8	2.3
Wheat yield (t ha ⁻¹)	2.25	2.78	2.30
Wheat net income (mln. AZM)	1.3 (16%)	1.6 (16%)	1.1 (16%)
Wheat income (mln. AZM ha ⁻¹)	0.7	0.9	0.5
Alfalfa – share of farm (%)	73	83	64
Alfalfa area (ha)	1.5	1.8	2.1
Alfalfa yield (bails ha ⁻¹)	466	551	366
Alfalfa net income (mln. AZM)	1.2 (15%)	1.7 (16%)	1.3 (19%)
Alfalfa income (mln. AZM ha ⁻¹)	0.8	1.0	0.6
Cotton – share of farm (%)	29	31	20
Cotton area (ha)	1.5	1.8	1.8
Cotton yield (t ha ⁻¹)	2.0	2.28	2.04
Cotton net income (mln. AZM)	2.4 (30%)	3.5 (34%)	2.7 (40%)
Cotton income (mln. AZM ha ⁻¹)	1.6	1.9	1.5
Vegetables (mix) – share of farm (%)	4	13	2
Vegetables area (ha)	0.9	0.7	0.2
Vegetables yield (t ha ⁻¹)	17.8	16.0	10.0
Vegetables net income (mln. AZM)	2.4	2.2	0.6
Vegetables income (mln. AZM ha ⁻¹)	2.7	3.1	4.0
Plant prod. net income (mln. AZM)	3.4 (42%) ⁷	4.8 (47%)	2.7 (40%)
Cattle – share of farm (%)	87	89	84
Cattle (Number per farm)	4.4	5.6	4.3
Lactating cows (number)	2.0	2.4	2.2
Milk (kg per cow)	1040	997	755
Cattle net income (mln. AZM)	1.5 (19%)	2.1 (20%)	1.1 (16%)
Sheep – share of farms (%)	41	59	20
Sheep/goats per household (number)	22 (17/5)	25 (21/4)	24 (24/0)
Sheep/goat net income (mln. AZM)	0.5 (6%)	0.8 (8%)	0.6 (10%)
Buffaloes – share of farm (%)	13	21	8
Buffaloes per household (number)	2.5	2.5	1.5
Buffalo net income. mln. AZM	0.7 (9%)	0.6 (6%)	0.2 (3%)
Poultry – share of farm (%)	80	96	88
Poultry per household (number)	80	84	33
Poultry net income (mln. AZM)	0.5 (6%)	0.6 (6%)	0.5 (8%)
Livest. prod. net income (mln. AZM)	2.2 (27%)	3.1 (30%)	1.4 (21%)
Additional income (mln. AZM)	2.4 (30%)	2.4 (23%)	2.7 (40%)
Total family net income (mln. AZM (\$))	8.0 (1630) ⁸	10.3 (2100)	6.8 (1390)

⁵ All indicators are means per farm/household

⁶ Percentage of farmers who planted wheat among the 70 farmers surveyed

⁷ In brackets: the percentage of the share in total family income.

⁸ In brackets: The equivalent in \$US.

Table 2: Number and value (in Azeri Manat) of written and verbal contracts concluded by 210 private agricultural advisors during 2000 and June 2004 according to the type of clients.

No. of AAs	No. of served farmers		No. of written contracts	Value of written contracts (Manat)	No. of verbal contracts	Value of verbal contracts (Manat)	Total no. of contracts	Total value of contracts (in Manat)
	IDP	Local						
24	600	1,480	24	2,247,000	226	4,147,000	250	6,394,000
26	800	1,477	160	12,174,000	314	13,166,000	474	25,340,000
25	400	1,594	395	33,575,000	156	10,878,000	551	44,453,000
37	346	254	n.a.*	n.a.	n.a.	n.a.	n.a.	n.a.
23	1,041	414	259	25,270,500	246	22,224,500	505	47,495,000
23	515	824	291	18,330,000	172	8,388,000	463	26,718,000
25	150	1,795	371	31,890,000	396	13,666,500	767	45,556,500
27	40	1,455	50	4,639,500	187	12,302,500	237	16,942,000
210	3,892	9,293	1,550	128,126,000	1,697	84,772,500	3,247	212,898,500

During the time of writing the exchange rate was 1 USD = 4900 Manat. However, during the observation period, the exchange rate ranged from 1 USD = 3700 Manat in 1999 to 1 USD = 4900 Manat in 2004.

n.a = not available during the time of writing

Table 3: Number of verbal and written contracts of 75 AAs in two intervention regions Agjabedi and Beylagan according to the training period (round (=Rd) 1, 2 and 3), the value of the contract and the type of payment.

Groups		Verbal contracts								Written contracts							
		Agjabedi				Beylagan				Agjabedi				Beylagan			
		Rd1	Rd2	Rd3	Total	Rd1	Rd2	Rd3	Total	Rd1	Rd2	Rd3	Total	Rd1	Rd2	Rd3	Total
Cash payment	0-9 999	161	58	36	255	29	101	67	197	9	62	81	152	0	66	150	216
	10 000-24 999	18	63	3	84	9	67	4	80	3	2	0	5	0	0	4	4
	25 000-49999	12	8	14	34	1	13	8	22	2	4	6	12	0	3	17	20
	50 000-99 999	0	10	4	14	0	1	4	5	7	6	36	49	0	3	28	31
	100 000-499 999	0	0	0	0	0	1	0	1	4	4	7	15	0	7	17	24
	500 000-999 999	0	4	0	4	0	1	0	1	0	1	1	2	0	0	0	0
Total		191	143	57	391	39	184	83	306	25	79	131	235	0	79	216	295
In-kind payment	0-9 999	137	101	28	266	23	133	29	185	16	30	48	94	0	14	68	82
	10 000-24 999	52	28	20	100	14	30	30	74	0	7	2	9	0	10	5	15
	25 000-49999	1	10	3	14	0	14	14	28	1	16	22	39	0	12	58	70
	50 000-99 999	1	4	6	11	2	5	9	16	5	20	28	53	0	38	45	83
	100 000-499 999	0	0	0	0	0	1	0	1	3	2	29	34	0	4	32	36
	500 000-999 999	0	0	0	0	0	1	1	2	0	1	2	3	0	0	0	0
Total		191	143	57	391	39	184	83	306	25	76	131	232	0	78	208	286
Total payment	0-9 999	107	22	3	132	13	50	13	76	0	14	1	15	0	1	1	2
	10 000-24 999	70	87	22	179	23	97	33	153	3	9	1	13	0	10	8	18
	25 000-49999	13	18	21	52	1	27	23	51	3	20	29	52	0	13	79	92
	50 000-99 999	1	12	10	23	2	6	14	22	12	26	62	100	0	42	73	115
	100 000-499 999	0	0	1	1	0	2	0	2	7	6	37	50	0	12	46	58
	500 000-999 999	0	4	0	4	0	2	0	2	0	2	1	3	0	0	0	0
Total		191	143	57	391	39	184	83	306	25	77	131	233	0	78	207	285

Figures and figure captions

Figure 1: Geographical location of AIMs intervention regions as well as the total number of trained AAs and farmer clients per administrative region.

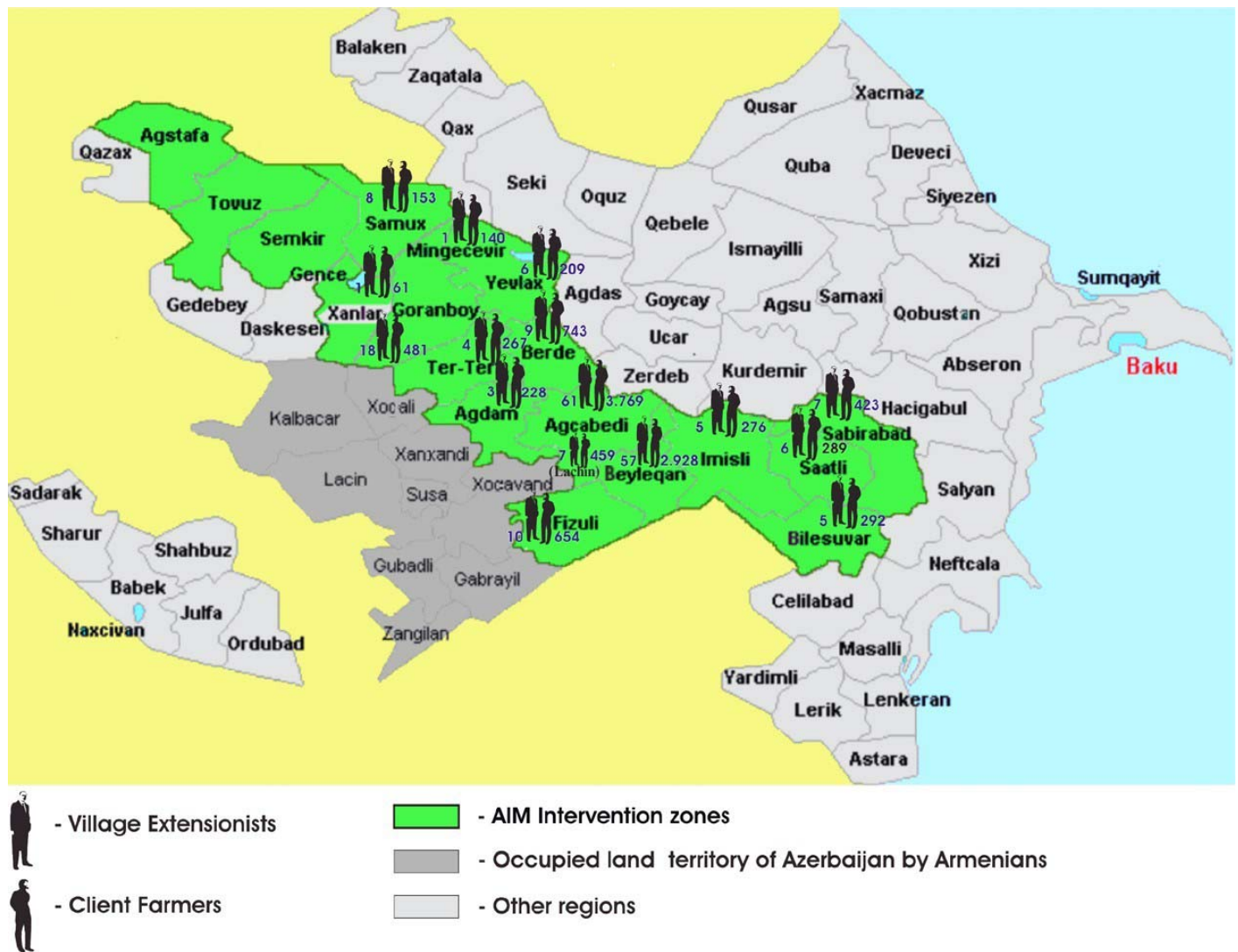


Figure 2: Farm income groups in Agjabedi and Beylagan regions in 2002-2003

