

The Kyrgyz Agro-Input Enterprise Development Project

**A Survey of the Members of the Association of
Agribusinessmen of Kyrgyzstan:
Change and Development 2003-2005**



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Acknowledgments

The baseline survey of the members of the Association of Agribusinessmen of Kyrgyzstan was conducted between October 31, 2003 and December 26, 2003. A follow-up impact survey was conducted from November 21, 2005 to March 10, 2006. The purpose of the KAED Input Dealer Survey was to assess the change and development of the private input business sector in Kyrgyzstan through 2005. This report compares the data and findings of the two surveys conducted in 2003 and 2005. The dedicated work of the interviewers is noted with appreciation. Mansur Baratov, Roza Jusubalieva, Ubaidulla Abdullaev, Zafar Halibaev, Jahongir Jumabaev, and Alisher Kasymov were a pleasure to work with and did excellent interviewing during fieldwork. Thomas P. Thompson, IFDC Senior Scientist—Sociology and Consultant, designed a methodology, questionnaire, and trained the interviewers in 2003. Dilshod Abdulhamidov entered and analyzed the data.

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Acronyms

AAK	Association of Agribusinessmen of Kyrgyzstan
CPP	Crop protection product
KAED	Kyrgyz Agro-Input Enterprise Development project
SD	Standard Deviation

A Survey of the Members of the Association of Agribusinessmen of Kyrgyzstan: Change and Development 2003-2005

Summary of Salient Findings

- The proportion of women among AAK members increased significantly from 10.9% in 2003 to 25.8% in 2005.
- The proportion of cooperative and joint-stock businesses increased significantly by 5.6% and 4.5% respectively, from 2003 to 2005. Consequently, the proportion of state companies and businesses owned by individuals decreased significantly by 4.4% (state enterprises) and by 5.7% (individual owners).
- The survey in 2005 shows a significant decrease in the proportion of full-time (-16.2%) and part-time employment (-13.7%) including employment of women (-7.6%). However, this decrease was offset by a significant increase in seasonal employment (including women).
- There is a significant increase of 10.6% in the percentage of AAK members that made an investment in 2005 compared with 2003. From 2003 to 2005, the aggregate investment increased by \$943,803.
- Total agri-input sales substantially increased by 156.2% (\$2,111,578 in 2003 to \$5,409,535 in 2005). There was an increase in fertilizer sales by 72.5% (\$1,313,242 in 2003 to \$3,919,627 in 2005), seed sales by 17.4% (\$718,807 in 2003 to \$844,237 in 2005), and CPP sales by 711.9% (\$79,528 in 2003 to \$645,671 in 2005).
- There is evidence that farmers are becoming more interested in phosphatic and complex fertilizers. Although the price for ammonium phosphate and superphosphate increased by 112.6% and 105.7%, respectively, sales increased 2 and 3 times, respectively. Also, the sales of complex fertilizer increased by 6.3% even with a price increase of 15.2% from 2003 to 2005.
- Total seed sales increased by 17.4% and reached \$844,237. With the exception of non-hybrid vegetables, seed sales increased for all categories of agricultural crops—main crops by 1.5% and hybrid vegetables by more than 38 times.
- The data show that the largest group of members sells only seed; however, a dramatic shift is taking place as members diversify their product base (32.6% sold only seed in 2005 compared with 52% in 2003). There was an increase of 8% (from 9.1% to 17.1%) among

members who sold all agri-inputs; 32.6% of the AAK membership sold no agri-inputs at all during 2005.

- The proportion of members, who extended loans to customers in kind until the harvest, increased by 4.9% (30% in 2003 and 33.1% in 2005). This demonstrates that market-oriented customer service is beginning to develop among AAK members.
- The average fixed business assets of AAK members insignificantly increased by \$2,841 (\$25,377 in 2005 versus \$22,536 in 2003). Fixed assets including buildings and warehouses increased by \$3,816 (\$12,660 in 2003 to \$16,476 in 2005).
- Changes in frequency and type of advertisement are excellent indicators of agri-input business development to be monitored over time. The data show strong evidence of a dramatic increase in advertising initiatives among AAK members and there were significant increases in advertising through all other means available in southern Kyrgyzstan: radio—2.7% increase (3.6% in 2003 and 6.3% in 2005), newspaper—16.9% increase (10.9% in 2003 and 27.8% in 2005), seminars and meetings—14.7% (3.6% in 2003 and 18.3% in 2005), the local community—41.3% increase, publications (brochures, etc.)—2.4% increase, and agricultural expositions—16.7% increase.
- AAK members who did not sell seeds significantly decreased in 2005 (by 16.0%), while the increase of businesses with larger seed sales grew. Although insignificant decreases in income from seed sales were reported in the range of US \$1-\$1,000, the proportion of seed business significantly increased by 16% in the range of \$5,001–\$25,000.
- Agri-input businesses involved in the CPP business in 2005 increased significantly by 7.8% (20.9 in 2003 and 28.7 in 2005). In 2005 three members (8.1%) reported CPP sales of more than \$100,000 while in 2003 the ranges of sales were not larger than \$25,000.
- In 2005, 28% of AAK members had agri-input sales with revenue more than \$10,000 compared with 19.1% in 2003. In 2003 only one member realized revenue of more than \$200,000 while in 2005 the sales of three agri-input businesses exceeded this amount.
- In 2005 the number of AAK customers increased by more than six times compared with the baseline year (13,847 customers in 2003 and 90,895 in 2005). The average number of farmer customers that purchased products (and received advice) from AAK members was 704 in 2005, which is 460% higher when compared with the baseline year (126 customers in 2003).

A Survey of the Members of the Association of Agribusinessmen of Kyrgyzstan: An Impact Survey 2003-2005

Introduction

The Kyrgyz Agro-Input Enterprise Development (KAED) project aims to improve the productivity and profitability of agriculture in southern Kyrgyzstan by developing and strengthening the agri-input sub-sector. The purpose of the KAED Input Dealer Survey is to build a data set and compare with the baseline data that describes the agricultural input enterprises of members of the Association of Agribusinessmen of Kyrgyzstan (AAK) “Jer Azygy.” This report presents the second year data that are used to document change and development of the private input business sector in Kyrgyzstan from 2003 through 2006.

Objective

The objective of this report is to compare the baseline data from 2003 with the recently acquired 2005 data to analyze the impact of the KAED project activities among AAK members. The analysis provides both quantitative analyses and qualitative data to explain change as well as areas where increased focus is needed. The specific components of this report include the following information compared with 2003:

- Socio-demographic characteristics.
- AAK membership distribution in the three southern oblasts.
- Nature of agri-input businesses.
- Employment created by AAK members.
- Sales of agri-inputs.
- Evaluating benchmarks for the end of the second year of the project extension.

Analytical Procedure

The differences between 2003 and 2005 are presented as percentages and means. The differences are analyzed by the use of a one-tailed t-test and assume unequal variances. A

difference on any particular variable is evaluated by the value of $P(T \leq t)$. The value of 0.20 or less is used here to indicate the level of statistical significance associated with the observed differences between the baseline and impact surveys, that is the probability of rejecting the hypothesis that difference = 0 with the alternative hypothesis difference > 0. The lower this number, the greater the probability that there is an actual difference between the two time periods. For example, a value of 0.21 or greater indicates that a difference may actually exist but with less probability of being certain and a greater probability of being wrong. This criterion and the 0.20 “cut-off” point are used here to describe and discuss differences throughout this report and are shown in bold font in the tables. Differences between variable values are absolute.

Methodology and Sample

The questionnaire was prepared to conduct a survey among AAK dealers and consists of 30 questions. The survey data are based on interviews with 129 members in 2005 compared with 110 members in 2003. To avoid duplication, those AAK members who were employed by or had a joint business with another member were excluded from the survey.

Socio-Demographic Characteristics

Age

The average age of the AAK members in 2005 was 47.9 years with a range of 16-75 years compared with 48.3 years in 2003 (Table 1). The 25th and 75th percentile boundaries in 2005 were 44 and 54 years, respectively, compared with 43 and 54 years in 2003. Neither of these figures shows a significant difference.

Agri-Input Business Experience

As for experience in agri-input business, Table 1 shows that there was a significant difference between the mean of 14.2 years in 2005 compared with 9.8 years in 2003. The 25th and 75th percentile boundaries in 2005 are 2 and 15 years, respectively, compared with 3 and 11 years in 2003.

Table 1. Age and Agri-Input Experience Distribution of AAK Members by Field of Education in 2003 and 2005

Characteristic	2003		2005		Difference	P(T<=1)
	Mean	SD ^a	Mean	SD		
Age	48.2	8.9	47.9	9.7	(0.30)	0.49
Agri-Input Business Experience	9.8	10.3	14.2	11.6	0.40	0.14

a. Standard deviation.

Gender

The proportion of women among AAK members increased significantly from 10.9% in 2003 to 25.8% in 2005. Clearly, the project has involved women input dealers in a reasonably equitable manner.

Table 2. Proportion of Women among AAK Members in 2003 and 2005

Women AAK Members	2003		2005		Difference	P(T<=1)
	Frequency	Percent	Frequency	Percent		
	12	10.9	32	25.8		

Education

Table 3 indicates that there was a significant increase in members with secondary education from 10% in 2003 to 15.3% in 2005. Although the percentage of AAK customers reporting higher and secondary-special education changed, that percentage shows there was no statistically significant change between the baseline survey of 2003 and the impact survey of 2005.

Also, in 2005 the percentage of AAK customers who reported education in the fields of crop production (30% in 2003 to 33.9% in 2005) and finance (13.6% in 2003 and 14.5% in 2005) increased. However, there was no statistically significant change between the baseline survey of 2003 and the impact survey of 2005. Nevertheless, the percentage of members with agri-processing (3.7% in 2003 to 1.6% in 2005) and livestock education (10% in 2003 to 3.6% in

2005) has decreased significantly, and there was no significant change of members with no formal education.

Table 3. Distribution of AAK Members by Field of Education in 2003 and 2005

Characteristics	2003		2005		Difference	P(T<=1)
	Frequency	Percent	Frequency	Percent		
Education of Members						
Secondary (8-10 years) %	11	10.0	19	15.30	5.30	0.14
Secondary-Special (12-14 years) %	29	26.4	34	27.40	1.00	0.50
High (15 years) %	70	63.6	76	61.30	(2.30)	0.23
Field of Education						
Crop production	33	30.0	42	33.90	3.90	0.34
Finance	15	13.6	18	14.50	0.90	0.47
Agri-processing	4	3.7	2	1.60	(2.10)	0.15
Livestock	11	10.0	8	6.40	(3.60)	0.14
Other	36	32.7	44	35.50	2.80	0.41
None	11	10.0	15	12.10	2.10	0.34
Total	110	100.0	129	104.0		

Occupation

The data in Table 4 show a decrease in the proportion of members who considered themselves agri-input dealers by 0.7% (10% in 2003 and 9.3% in 2005) and fertilizer dealers by 0.4% (2.7% in 2003 and 2.3% in 2005). However, none of the above-mentioned decreases were statistically significant. Four members considered themselves seed dealers in 2005 compared with zero in 2003, which was a significant increase. As for CPP dealers and seed producers, the proportion significantly decreased by 2.9% and 24.7%, respectively. However, the proportion of members with other diverse occupations has increased by 13%—from 4.5% in 2003 to 19.4% in 2005. The decrease in the number of seed producers that were AAK members is primarily related to the agricultural environment in the Kyrgyz Republic and the transformation of the seed farm industry.

Table 4. Distribution of AAK Members by Self-Reported Occupations in 2003 and 2005

Occupation	2003		2005		Difference	P(T<=1)
	Frequency	Percent	Frequency	Percent		
Agro-Input Dealer	11	10.0	12	9.3	(0.7)	0.43
Fertilizer Dealer	3	2.7	3	2.3	(0.4)	0.42
CPP Dealer	10	9.1	8	6.2	(2.9)	0.20
Seed Dealer	-	-	4	3.1	3.1	0.03
Seed Producer	51	46.4	28	21.7	(24.7)	< 0.01
Agricultural Producer	30	27.3	49	38.0	10.7	0.04
Other	5	4.5	25	19.4	14.9	< 0.01
Total	110	100.0	129	100.0		

As Table 5 indicates, significant changes were observed in the geographical distribution of AAK membership in 2005. The proportion of AAK members in the Osh and Batken Oblasts decreased insignificantly by 2.7% (Osh) and 2.0% (Batken). Also, insignificant increase occurred in Jalal-Abad Oblast by 3.6%. The primary reason for this is that the KAED project has focused additional efforts in the Jalal-Abad Oblast because this area was not receiving the same level of support. Additionally, the proportion of members from the north has increased by 1.1% (3.6% in 2003 and 4.7% in 2005). However, this increase was not statistically significant.

Table 5. Geographical Distribution of AAK Membership in 2003 and 2005

Oblast	2003		2005		Difference	P(T<=1)
	Frequency	Percent	Frequency	Percent		
Osh	72	65.5	81	62.8	(2.7)	0.33
Jalal-Abad	19	17.3	27	20.9	3.6	0.24
Batken	15	13.6	15	11.6	(2.0)	0.32
Other	4	3.6	6	4.7	1.1	0.35
Total	110		129			

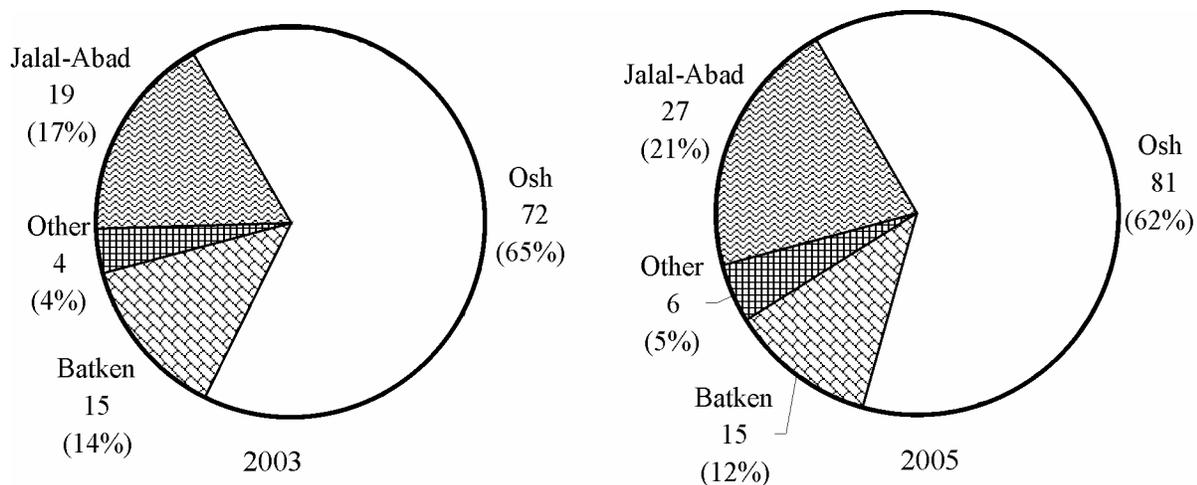


Figure 1. Distribution of AAK Members by Oblast in 2003 and 2005

Types of Agribusiness Ownership

Table 6 shows that the proportion of cooperative and joint-stock businesses increased significantly by 5.6% and 4.5% from 2003 to 2005, respectively. Consequently, the proportion of state companies and businesses owned by individuals decreased significantly by 4.4% (state enterprises) and by 5.7% (individual owners).

Table 6. Distribution of AAK Members by Type of Agri-Input Business in 2005

Type of Business	2003		2005		Difference	P(T<=1)
	Frequency	Percent	Frequency	Percent		
Individual owner	89	80.9	97	75.2	(5.7)	0.14
Cooperative	10	9.1	19	14.7	5.6	0.09
Joint-stock	1	0.9	7	5.4	4.5	0.03
State enterprise	10	9.1	6	4.7	(4.4)	0.09
Total	110		129			

Types of Agri-Inputs Sold by AAK Members

Table 7 shows the distribution of the types of inputs sold by AAK members in 2003 and 2005. The members are divided into those who sell only one type of agri-input and those who sell multiple inputs. The table shows a significant increase in the proportion of members that sell both seed and CPPs (2.9% increase) and all agri-inputs (8% increase). In addition, the proportion of members who sell no agri-inputs increased significantly by 22.6%. This is attributable to the

increase in agricultural producers who joined AAK in 2005. The proportion of members who sell only fertilizer decreased significantly by 6.7%. Additionally, significant decreases were observed for members who sell only seed (19.2% decrease) and for members who sell fertilizers and CPPs (4.7% decrease). Taking into consideration the significant increase of members involved in all agri-inputs, a conclusion can be made that members who are actually involved in the sale of inputs appear to be diversifying their product line. Consequently, product diversification among AAK dealers is significant as indicated by the significant increase in those selling all inputs.

Table 7. Involvement of Dealers in Types of Agri-Input Businesses in 2003 and 2005

Type of Input	2003		2005		Difference	P(T<=1)
	Frequency	Percent	Frequency	Percent		
Fertilizer	9	8.2	2	1.6	(6.7)	0.01
Seed	57	51.8	42	32.6	(19.2)	0.001
CPP	9	8.2	8	6.2	(2.0)	0.28
Fertilizer and seed	6	5.5	6	4.7	(0.9)	0.39
Fertilizer and CPP	6	5.5	1	0.8	(4.7)	0.02
Seed and CPP	2	1.8	6	4.7	2.9	0.11
All agri-inputs	10	9.1	22	17.1	8.0	0.04
None	11	10.0	42	32.6	22.6	< 0.001
Total	110	100.0	129	100.0		

As Table 8 indicates, the proportion of members engaged in agri-input production and wholesale increased significantly compared with 2003. Agri-input producers increased by 25.8% (43.6% in 2003 and 69.4% in 2005) and wholesalers by 6.0% (18.2% in 2003 and 24.2% in 2005). No significant changes were observed in the proportion of members engaged in import of agri-inputs retail sales. Because there is no production of fertilizer and CPPs in Kyrgyzstan, all agricultural producers are involved in either seed production or are agricultural producers (not involved in input sales). Most notable and important is that there were significant increases in all areas of input business.

Table 8. Involvement of Dealers in Agri-Input Businesses in 2003 and 2005

Type of Business	2003		2005		Difference	P(T<=1)
	Frequency	Percent	Frequency	Percent		
Production	48	43.6	86	69.4	25.8	< 0.001
Import	5	4.5	5	4.0	(0.5)	0.40
Wholesale	20	18.2	30	24.2	6.0	0.17
Retail Sale	36	32.7	48	38.7	6.0	0.23

Characteristics of AAK Agribusiness Employees

As shown in Table 9, members mainly employ seasonal labor rather than using full-time and part-time labor. Women are most often hired for seasonal work such as hand-weeding and harvesting on member seed farms.

As Table 9 indicates, the survey in 2005 shows a significant decrease in the proportion of full-time and part-time employment (including employment of women) and a significant increase in seasonal employment (including women). Full-time employment decreased by 16.2% with full-time employment of women decreasing by 7.6%. Part-time employment decreased by 13.7% with part-time employment of women decreasing by 6.1%. The proportion of seasonal employment increased by 29.9%, and seasonal employment of women increased by 16.8% in 2005. The total employment decreased significantly from 115.3 to 44.8.

The decrease in full-time and part-time employment may be explained by a few reasons. The first factor is the reduction in the number of seed farms (as explained under *Occupation*). Seed farms historically have been large employers of both full-time and part-time workers. These farms (either state-owned or privatized) were carry-overs from the collective farms of the former Soviet Union. The second reason may be due to the increase in the division of labor and the breakdown of labor into specific tasks in order that AAK members can maximize their revenue potential. The increase in the division of labor is usually accompanied by wage increases, which provide alternative income opportunities to the workers. The third reason may be due to the low inflation in Kyrgyzstan over the last few years. In 2003, the exchange rate of the Kyrgyz som averaged 46 soms to the dollar while in 2005 the rate averaged 41.5 soms to the dollar.

According to macroeconomic theory, there is always a trade-off between inflation and employment with low inflation potentially causing unemployment levels to persist or increase.

Table 9. Proportion of Employment in Agri-Input Businesses Among AAK Members in 2003 and 2005

Type of Employment	2003		2005		Difference	P(T<=1)
	Mean	Percent	Mean	Percent		
Full-time employment	33.3	28.9	5.7	12.7	(16.2)	0.02
Full-time employment of women	13.9	12.1	2.0	4.5	(7.6)	0.07
Part-time employment	16.6	14.4	0.3	0.7	(13.7)	0.001
Part-time employment of women	7.1	6.2	0.05	0.1	(6.1)	0.05
Seasonal employment	65.4	56.7	38.8	86.6	29.9	< 0.001
Seasonal employment of women	35.4	30.7	21.3	47.5	16.8	0.02
Total employment	115.3	100.0	44.8	100.0	-	-
Total employment of women	56.4	49.0	23.4	52.1	3.1	0.36

Table 10 shows a comparison of employment of men and women in agri-input businesses among AAK members in 2003 and 2005. There was a significant increase in the proportion of full-time employment and part-time employment, 3.3% and 0.8%, respectively, and total employment of men significantly decreased by 6.6% and 42.8%, respectively. The proportion of women employed in 2005 decreased significantly in all categories. Although the total employment of men decreased, the continuing ability of AAK members to generate employment opportunities in agribusiness is evident from these data.

Table 10. Characteristics of Employment in Agri-Input Businesses Among AAK Members in 2003 and 2005

Type of Employment	2003		2005		Difference	P(T<=1)
	Frequency	Percent	Frequency	Percent		
Full-time employment						
Men	19.4	58.3	3.7	64.9	6.6	< 0.001
Women	13.9	41.7	2.0	35.1	(6.6)	< 0.001
Total	33.3	100.0	5.7	100.0		
Part-time employment						
Men	9.5	57.2	0.3	100.0	42.8	< 0.001
Women	7.1	42.8	-	-	(42.8)	0.02
Total	16.6	100.0	0.3	100.0		
Seasonal employment						
Men	30.0	45.9	17.5	45.1	(0.8)	0.004
Women	35.4	54.1	21.3	54.9	0.8	0.002
Total	65.4	100.0	38.8	100.0		
Total employment						
Men	59.0	51.2	21.4	47.9	(3.3)	< 0.001
Women	56.3	48.8	23.3	52.1	3.3	< 0.001
Total	115.3	100.0	44.7	100.0		

Loans Received and Credit Disbursed

Table 11 shows the comparison of agri-input companies that received loans from financial institutions and other sources in 2003 and 2005. The percentage of members that received a loan in 2005 increased by 2% and comprises 27.4% of AAK members. The total value of all loans received by AAK members also increased by \$30,866 when compared with 2003. The average value of the loans received by 34 AAK members decreased from \$10,471 in 2003 to \$9,531 in 2005. None of these changes are statistically significant or indicate stability in the ability of members to receive loans.

Table 11. Loans Received by AAK Members in 2003 and 2005

Loans	2003	2005	Difference	P(T<=1)
Members receiving loan	28	34	6	0.37
Members receiving loan (%)	25.5	27.4	2.0	0.37
Average	10,471	9,531	(940)	0.42
Total	293,194	324,060	30,866	

Table 12 represents the distribution of loans received by AAK members in 2003 and 2005. There is an insignificant increase of 0.9% in the percentage of members who did not

receive loans in 2005. There was also an insignificant change in the proportion of members who received loans up to \$1,000 (0.9%), \$1,001-\$5,000 (3.0%), \$5,001-\$25,000 (0.8%), and greater than \$100,000 (0.1%). There was a significant increase in the percentage of members who received loans in the range of \$25,001-\$100,000 (2.2% increase).

Table 12. Distribution of Loan Amounts Received by AAK Members in 2003 and 2005

Amount of Loan (US \$)	2003		2005		Difference	P(T<=1)
	Number	Percent	Number	Percent		
No loan	82	74.5	95	73.6	(0.9)	0.44
1-1,000	5	4.5	7	5.4	0.9	0.38
1,001-5,000	16	14.6	15	11.6	(3.0)	0.25
5,001-25,000	5	4.6	7	5.4	0.8	0.38
25,001-100,000	1	0.9	4	3.1	2.2	0.12
>100,000	1	0.9	1	0.8	(0.1)	0.45
Total	110	100.0	129	100.0		

As Table 13 shows, the proportion of members, who extended loans to customers in kind until the harvest, increased by 3.1% (30% in 2003 and 33.1% in 2005). Although that increase is not significant, it further shows the continual development of business relationships between dealers and customers.

Table 13. Loan to Customers by AAK Members in 2003 and 2005

Loans	2003		2005		Difference	P(T<=1)
	Number	Percent	Number	Percent		
Customers receiving a loan	33	30.0	41	33.1	3.1	0.38

Business Assets of AAK Members

As Table 14 shows, the average fixed business assets of AAK members insignificantly increased by \$2,841 (\$25,377 in 2005 and \$22,536 in 2003). Fixed assets including buildings and warehouses increased by \$3,816 (\$12,660 in 2003 and \$16,476 in 2005). These data demonstrate that AAK members are financially committed to the growth and development of agribusiness in Kyrgyzstan and are using their private financial resources for that purpose.

Table 14. Average Fixed Assets of AAK Members in 2003 and 2005

Asset	2003		2005		Difference	P(T<=1)
	Mean	SD	Mean	SD		
Fixed Assets	22,536	61,888.70	25,377	67,872.69	9,247.00	0.27

Table 15 shows a comparison of investment by AAK members in 2003 and 2005. There is a significant increase of 10.6% in the percentage of AAK members that made an investment in 2005 compared with 2003. From 2003 to 2005, the aggregate investment increased by \$943,803.

Table 15. Agribusiness Investments among AAK Members in 2003 and 2005

Investments	2003	2005	Difference	P(T<=1)
Number of members making investment	37	57	20	0.05
Members making investment (%)	33.6	44.2	10.6	0.05
Average investment (US \$)	9,588.1	22,781.8	13,193.7	0.12
Total investment by members (US \$)	354,761	1,298,564	943,803.1	

Table 16 compares the distribution of AAK members by the amount of investment made in 2003 and 2005. The proportion of members who made no investment in 2005 decreased significantly by 10.6% (66.4% in 2003 and 55.8% in 2005) but still comprises the largest portion of the membership. There were significant increases in the proportion of members who made investments in the range of \$1,001-\$5,000 by 7.3%, \$100,001-\$250,000 by 0.8%, and more than \$700,001 by 0.8%. Additionally, there were significant decreases in the proportion of members who made investments of \$50,001-\$100,000 by 1.9% and more. Overall, these data clearly demonstrate a vibrant investment climate of agribusiness entrepreneurship among AAK members.

Table 16. Distribution of AAK Members by Investment in Business Fixed Assets in 2003 and 2005^a

Investment	2003		2005		Difference	P(T<=1)
	Number	Percent	Number	Percent		
No investment	73	66.4	72	55.8	(10.6)	0.05
\$1 - \$1,000	9	8.2	11	8.5	0.3	0.46
\$1,001 - \$5,000	15	13.6	27	20.9	7.3	0.07
\$5,001 - \$25,000	9	8.2	14	10.9	2.7	0.24
\$25,001 - \$50,000	1	0.9	2	1.6	0.7	0.33
\$50,001 - \$100,000	3	2.7	1	0.8	(1.9)	0.12
\$100,001 - \$250,000	-	-	1	0.8	0.8	0.18
\$250,001 - \$700,000	-	-	-	-	-	-
\$700,001 and more	-	-	1	0.8	0.8	0.18
Total	110	100.0	129	100.0		

a. Average investment in business assets in 2003 by AAK members was US \$3,225 and in 2005 it equaled US \$10,472.

Table 17 shows that the proportion of members who owned their business buildings increased by 3.2% (46.4% in 2003 and 49.6% in 2005) and comprises the majority of AAK members. A decrease of 0.2% is observed in the proportion of members who do not have a building. However, none of the above-mentioned increases were statistically significant. The proportion of members who rented their buildings decreased significantly by 3.0% (10.0% in 2003 and 7.0% in 2005).

Table 17. Distribution of AAK Dealers by Ownership of Business Building in 2003 and 2005

Status of Building	2003		2005		Difference	P(T<=1)
	Number	Percent	Number	Percent		
Owned	51	46.4	64	49.6	3.2	0.31
Rented	11	10.0	9	7.0	(3.0)	0.20
No Building	48	43.6	56	43.4	(0.2)	0.49
Total	110	100.0	129	100.0		

It is apparent from Table 18 that there was an insignificant increase in the proportion of members who do not have an office (2.1% increase) as well as significant increases in the

proportion of members who have an office area in the range 101-250 m² (4.6% increase) and more than 500 m² (10.2% increase). There was an insignificant increase observed in the proportion of members who have office space in the range of 251-500 m² (by 0.5%). However, the proportion of members who have office space in categories of 1-25 m² and 26-100 m² decreased significantly by 3.8% and 7.7%, respectively.

Table 18. Distribution of AAK Dealers by Office Area in 2003 and 2005

Office Area (Square Meters)	2003		2005		Difference	P(T<=1)
	Number	Percent	Number	Percent		
No office	60	54.5	73	56.6	2.1	0.38
1 - 25	13	11.8	5	8.0	(3.8)	0.01
26 - 100	17	15.5	10	7.8	(7.7)	0.03
101 - 250	6	5.5	13	10.1	4.6	0.09
251 - 500	9	8.2	9	7.0	(1.2)	0.36
501 and more	5	4.5	19	14.7	10.2	0.01
Total	110	100.0	129	104.2		

Data on input storage capacity among AAK members in 2003 and 2005 are shown in Table 19. There was a significant increase in the proportion of members who have no storage capacity (by 20.1%). Significant decreases are observed in the percentage of members who have storage capacity of 1-10 mt (by 4.4%), 11-50 mt (by 5.9%), 51-250 mt (by 6.3%), and 251-1,000 mt.

Table 19. Distribution of AAK Dealers by Input Storage Capacity in 2003 and 2005^a

Storage Capacity (mt)	2003		2005		Difference	P(T<=1)
	Number	Percent	Number	Percent		
None	35	31.8	67	51.9	20.1	< 0.001
1 - 10	10	9.1	3	4.7	(4.4)	0.09
11 - 50	21	19.1	13	13.2	(5.9)	0.11
51 - 250	24	21.8	21	15.5	(6.3)	0.10
251 - 1,000	12	10.9	11	7.8	(3.1)	0.20
1001 and more	8	7.3	11	7.0	(0.3)	0.46
Total	110	100.0	129	100.1		

a. The mean storage capacity was 377 mt in 2003 and 449 mt in 2005.

Agri-Input Sales

Table 20 compares agri-input sales data among AAK dealers in 2003 and 2005. Total agri-input sales substantially increased by 156.2% (\$2,111,578 in 2003 to \$5,409,535 in 2005). There was also an increase in fertilizer sales by 72.5% (\$1,313,242 in 2003 to \$3,919,627 in 2005), seed sales by 15.6% (\$718,807 in 2003 to \$844,237 in 2005), and CPP sales by 711.9% (\$79,528 in 2003 to \$645,671 in 2005).

Table 20. Agri-Inputs Sold by AAK Members in 2003 and 2005

Agri-Input	2003		2005		Difference (Increase or decrease by percentage)
	Sales, US \$	Percent of All Sales	Sales, US \$	Percent of All Sales	
Fertilizer	1,313,242	62.2	3,919,627	72.5	198.5
Seed	718,807	34.0	844,237	15.6	17.4
CPP	79,528	3.8	645,671	11.9	711.9
Total agri-input sales	2,111,577	100.0	5,409,535	100.0	156.2

These figures again support the view that agribusiness development through the KAED project is vibrant and commendable. These data are shown graphically in Figure 2.

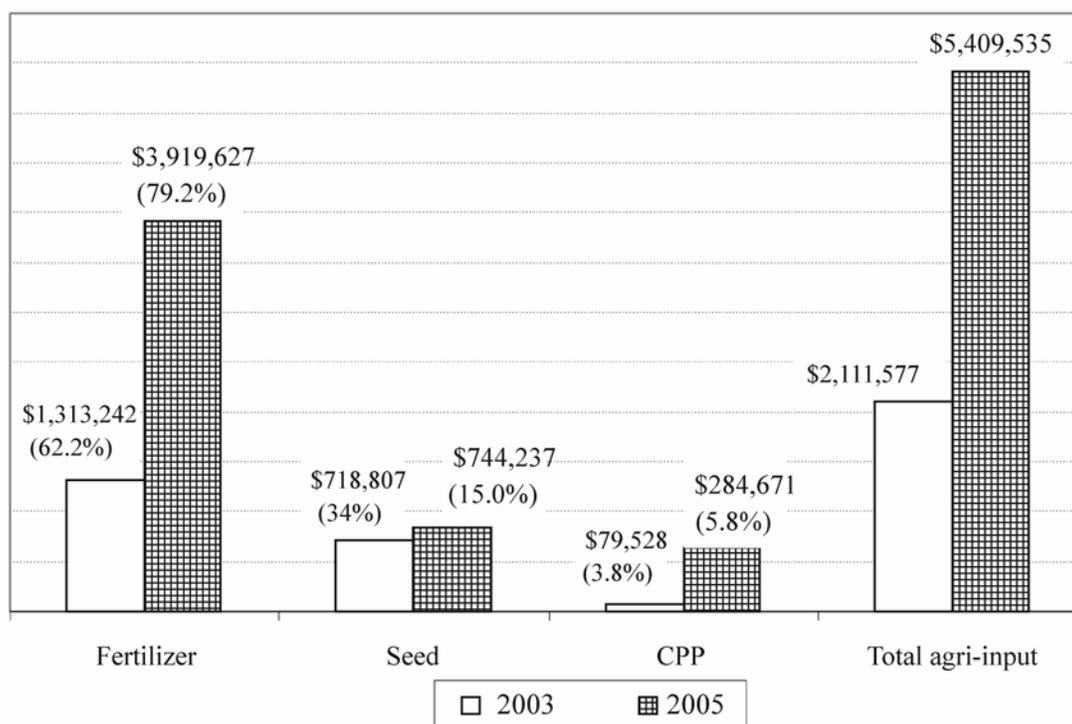


Figure 2. Agri-Inputs Sold by AAK Members in 2003 and 2005

Among all variables included in the survey, input sales are a prime indicator of agribusiness development. As shown in Table 21, average fertilizer sales among members tripled (\$42,363 in 2003 and \$126,358 in 2005). However, this increase is not statistically significant since average fertilizer sales are highly skewed to the right by a small portion of large agribusiness companies. There was insignificant increase in average seed sales by 15.9% (\$9,584 in 2003 and \$11,108 in 2005). Average CPP sales increased significantly by 476.9% (\$2,945 in 2003 and \$16,991 in 2005). These data are shown in Table 21 as well as graphically in Figure 3.

Table 21. Agri-Inputs Sold (Mean US \$) by AAK Members in 2003 and 2005

Agri-Input	2003		2005		Difference	P(T<=1)
	Mean	SD	Mean	SD		
Fertilizer	42,363	188,689.6	126,358	555,965.3	198.3%	0.21
Seed	9,584	22,916.1	11,108	20,335.0	15.9%	0.33
CPP	2,945	5,029.5	16,991	38,184.4	476.9%	0.06
Total agri-inputs	19,196	92,803.1	41,934	263,930.1	118.5%	0.22

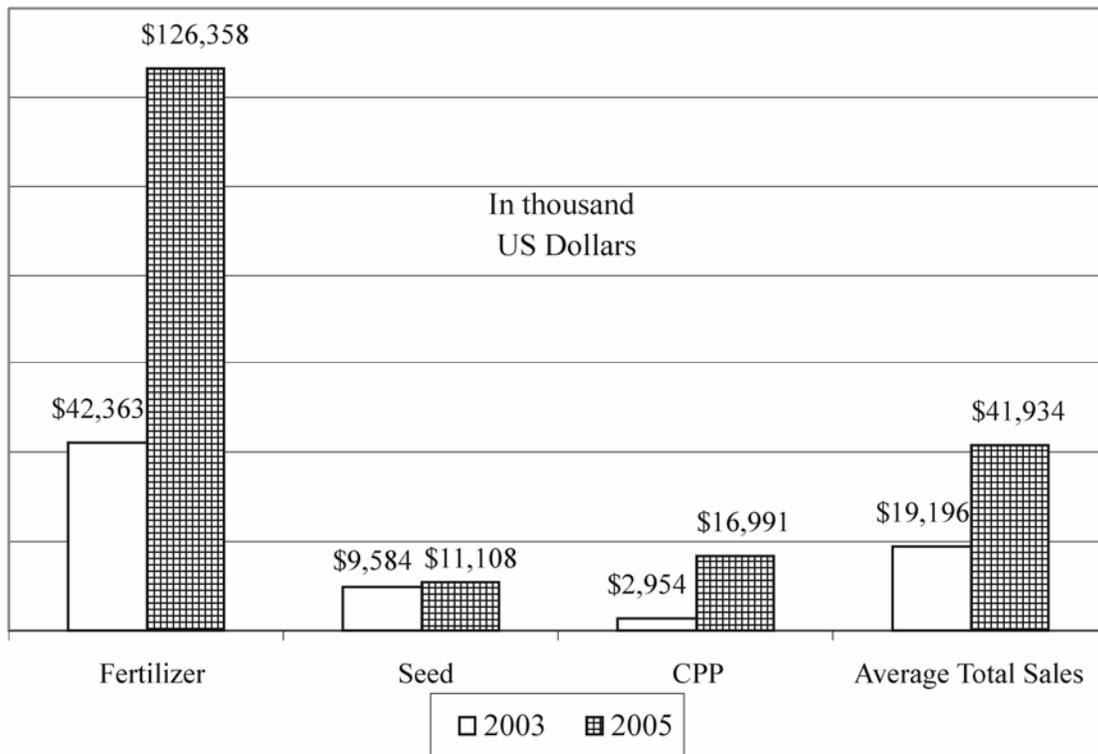


Figure 3. Average Agri-Input Sales Among AAK Members by Type and Agri-Input Business in 2003 and 2005

Fertilizer Sales Among AAK Members

The data in Table 22 show fertilizer product sales by AAK members in 2003 and 2005 comparing the price, quantity, and percentage of sales. The price increased in 2005 compared with 2003 for all fertilizer products except for potassium chloride (which is old stock from previous years). For ammonium nitrate, there was an increase in both the sales volume and the sales price (93.9% and 155.3%, respectively). The increase in sales of urea was quite high (329.0%). Ammonium sulphate was not sold in 2005. This is most probably due to the fact that ammonium sulfate has only a 13% nitrogen (N) content while ammonium nitrate has a 34% N content although there was little difference in price. There was also an increase in sales of NPK by 6.3% and an increase in monetary terms by 22.4%.

There is evidence that farmers are becoming more interested in phosphatic and complex fertilizers. In regard to phosphatic fertilizers, the price for ammonium phosphate and superphosphate increased by 112.6% and 105.7%, respectively, while sales saw an increase (2 and 3 times, respectively). Ammonium sulfate phosphate—nitrogenous-phosphatic fertilizer—was a new product introduced during 2004. All phosphatic types of fertilizers—ammonium sulfate phosphate, ammonium phosphate, superphosphate—increased in sales by 199% and an increase in monetary terms by 475% were reported by AAK members. NPK sales increased by 6.3% even with a price increase of 15.2% from 2003 to 2005. NPK was imported only once in 2003 through the support of the KAED project. Consequently, the sales would most likely have been much greater for NPK if there were larger quantities available in the market. In general, due to fertilizer price increases, aggregate sales by AAK members of fertilizer in quantity increased by 120.9% and sales in monetary value terms by 198.5%.

Table 22. Fertilizer Products Sold by AAK Members in 2003 and 2005

Fertilizer Product	2003			2005			Difference (Percentage)		
	Tons	Price (\$)	Total Sale (\$)	Tons	Price (\$)	Total Sale (\$)	Price	Quantity	Sale
Ammonium nitrate	9,514.5	118	1,122,490	18,446.5	155	2,865,641	31.4	93.9	155.3
Urea	1,305.6	126	164,293	5,601.2	174	973,899	38.1	329.0	492.8
NPK	16.0	282	4,518	17.0	325	5,530	15.2	6.3	22.4
Ammonium sulfate phosphate	-	-	-	120.0	157	18,795	-	-	-
Ammonium phosphate	116.7	103	11,987	228.9	219	50,072	112.6	96.1	317.7
Superphosphate	3.0	35	104	9.0	72	651	105.7	200.0	526.0
Nitrophosphate	12.0	145	1,735	20.0	160	3,205	10.3	66.7	84.7
Potassium chloride	3.0	120	359	11.3	120	1,352	-	276.7	276.6
Ammonium sulfate	100.0	76	7,609	-	-	-	-	(100.0)	(100.0)
Potassium sulfate	-	-	-	5.0	96	482	-	-	-
Other	0.0	9,800	147	-	-	-	-	(100.0)	(100.0)
Total	11,070.8		1,313,242	24,458.9		3,919,627		120.9	198.5

Table 23 compares the distribution details of fertilizer products sold in 2003 and 2005. Nitrogenous fertilizers (ammonium nitrate, urea, nitrophosphate, and ammonium sulfate) accounts for the greatest proportion of sales. One reason is that nitrogenous fertilizer, especially ammonium nitrate, has a more rapid effect on crop growth, which can easily be observed by farmers without soil tests. The importance of phosphate, potash, and complex fertilizers is still undervalued in Kyrgyzstan because of the less visible (but equally important) effects. Nevertheless, the sales of phosphatic fertilizers—ammonium sulphate phosphate, ammonium phosphate and superphosphate—increased by almost three times. However, this increase when compared with other fertilizer products was statistically insignificant due to the large increase in fertilizer sales (1.1% in 2003 and 1.44% in 2005). Potassic fertilizer (potassium chloride and potassium sulfate) sales increased by 0.04% (0.03% in 2003 and 0.07% in 2005).

Table 23. Distribution of Fertilizer Products Sold by AAK Members in 2003 and 2005

Fertilizer Product	2003		2005		Difference (Increase or decrease by percentage)
	Tons	Percent of all Sales	Tons	Percent of all Sales	
Ammonium nitrate	9,514.5	85.9	18,446.5	75.4	93.9%
Urea	1,305.6	11.8	5,601.2	22.9	329.0%
NPK	16.0	0.14	17.0	0.07	6.3%
Ammonium sulfate phosphate	-	-	120.0	0.5	-
Ammonium phosphate	116.7	1.1	228.9	0.9	96.1%
Superphosphate	3.0	0.03	9.0	0.04	200.0%
Nitrophosphate	12.0	0.11	20.0	0.10	66.7%
Potassium chloride	3.0	0.03	11.3	0.05	276.7%
Ammonium sulfate	100.0	0.9	-	-	-
Potassium sulfate	-	-	5.0	0.02	
Total	11,070.8	100.0	24,458.9	100.0	120.9%

As Table 24 shows, the proportion of fertilizer sold by N nutrient increased by 0.05% and accounts for 98.18% of all sales in 2005. The proportion of nitrogen sales compared with phosphatic and potassic nutrients is still high and additional emphasis needs to be made to increase use of P and K. Nevertheless, there was an increase in the fertilizer products with P nutrient by more than three times and K nutrient by more than two times. However, when looking at total volumes, the percentage decrease in the sales of fertilizers with phosphatic nutrient was 0.05%. There were no proportional changes in sales of fertilizers with potassic nutrients.

Table 24. Fertilizer Sold by AAK Members by Nutrient in 2003 and 2005^a

Nutrient	2003		2005		Difference (Percentage)
	Tons	Percent	Tons	Percent	
N	3,741.9	98.13	8,812.0	98.18	0.05
P	65.5	1.72	149.5	1.67	(0.05)
K	6.0	0.15	13.8	0.15	-
Total	3,813.4	100.0	8,975	104.5	-

a. P as P₂O₅, K as K₂O.

Seed Sales Among AAK Members

A comparison of total seed sales by AAK members in 2003 and 2005 is shown in Table 25; total seed sales increased by 17.4% and reached \$844,237. With the exception of non-hybrid vegetables, seed sales increased for all categories of agricultural crops—main crops by 1.5% and hybrid vegetables by more than 38 times. The large increase in hybrid vegetable seed sales can be explained by the activities of a few seed dealers from northern Kyrgyzstan. Also, it can be explained by the efforts of the KAED project in creating linkages between international seed companies and AAK members as well as demonstrating new vegetable varieties that provide an increased yield, increased disease resistance, and improved quality compared with traditional and local varieties. Nevertheless, as the data in the table show, 69.19% of all seed sales by AAK members are for main crops including cotton, wheat, rice, maize, sunflower, safflower, sainfoin, mustard, alfalfa, and barley. Non-hybrid vegetable seeds account for about 14.46% of all seed sales and hybrid vegetable seed accounts for 16.35% (compared with 0.49% in the baseline year).

Table 25. Total Seed Sales by AAK Members in 2003 and 2005

Seed	2003	2005	Difference (Percentage)
	US \$		
Main crops ^a	575,392	584,115	(10.81)
Vegetables	139,860	122,059	(5.0)
Hybrid Vegetable	3,555	138,063	15.86
Total	718,807	844,237	17.4

a. Main crops include cotton, wheat, rice, maize, sunflower, safflower, sainfoin, mustard, alfalfa, and barley.

The data in Table 26 show main crop seed sales by AAK members in 2003 and 2005 and compare the price, quantity, and sales in percentage. Except for barley, the price increased for all main crop seeds from 2003 to 2005. Consequently, in 2005 the total main crop seed sales by quantity decreased by 32.6% and slightly increased in dollar value by 1.5% (due to increased prices). There were also increases in the quantity of seed sales of sunflower by 366.3%, sainfoin by 1,400%, and barley by 223.1%.

In regard to oats, sugar beets, and clover, seeds of these crops were not sold in the baseline year. However, in 2005 several AAK members expanded their product line by selling seeds of these crops. The decrease of sales (by quantity) for wheat was 37.5%, cotton by 13.5%, rice by 97.3%, maize by 84.5%, and safflower by 65%. The decrease in cotton seed sales in 2005 can primarily be explained by the following reasons: (1) the price for raw cotton and cotton fiber in 2004 was so low that several cotton farmers went into bankruptcy and many farmers shifted to other crops and (2) the cotton price forecast for 2005 was expected to be lower and AAK members were informed of this during KAED seminars prior to planting season. Many AAK members as well as farmers considered the predicted price would be too low and consequently shifted to other crops. No AAK members sold mustard seeds in 2005.

As for sales by dollar value, there was an increase in seed sales of the following four crops: cotton by 16.5%, sunflower by 657.1%, sainfoin by 1,939%, and barley by 151.7%. As for three crops—oats, sugar beets, and clover—seeds of these crops were not sold in the baseline year. There was a decrease in dollar value in seed sales of wheat by 9.6%, rice by 96.6%, maize by 6%, safflower by 59%, alfalfa by 22.8%, and mustard (since it was not sold in 2005). In general, a large percentage of the increase in main crop seed sales is due to the increase in cotton seed sales by more than US \$32,000.

Table 26. Seed Sales for Main Crops Among AAK Members in 2003 and 2005

Crop	2003			2005			Difference (Percentage)		
	kg	Price (Mean), US \$	Sales, US \$	kg	Price (Mean), US \$	Sales, US \$	Quantity	Price	Sales
Wheat	2,077,800	0.17	354,182	1,299,400	0.25	320,053	(37.5)	44.5	(9.6)
Cotton	809,000	0.24	195,217	699,860	0.32	227,334	(13.5)	34.6	16.5
Rice	3,700	0.43	1,609	100	0.55	55	(97.3)	26.5	(96.6)
Maize	199,000	0.06	12,855	30,785	0.39	12,089	(84.5)	507.9	(6.0)
Sunflower	5,200	0.20	1,044	24,250	0.33	7,904	366.3	62.3	657.1
Safflower	10,000	0.16	1,587	3,500	0.19	651	(65.0)	17.2	(59.0)
Sainfoin	200	0.65	130	3,000	0.88	2,651	1,400.0	35.9	1,939.2
Oats	-	-	-	500	0.36	181	-	-	-
Sugar beet	-	-	-	20	0.25	5	-	-	-
Mustard	700	0.62	435	-	-	-	(100.0)	-	(100.0)
Alfalfa	3,320	1.59	5,290	1,360	3.00	4,086	(59.0)	88.6	(22.8)
Barley	13,000	0.23	3,043	42,000	0.18	7,660	223.1	(22.1)	151.7
Clover	-	-	-	500	2.89	1,446	-	-	-
Total	3,121,920	-	575,392	2,105,275	-	584,115	(32.6)	-	1.5

Table 27 compares the percentage of sales for main crops in 2003 and 2005. Similar to the baseline year, wheat seed accounts for the largest proportion among all main crop seeds—54.79% (61.55% in 2003). However, the percentage of dollar sales of wheat has the largest proportional decrease in value terms—6.76%. The percentage of sales also decreased in 2005 compared with 2003 in rice, maize, safflower, mustard, and alfalfa seeds. Cotton seed sales account for the second largest percentage of dollar sales for 2005 (38.92%) despite lower quantities of seed being sold. Also, a 9.98% increase in percent of all sales was also realized in 2005 compared with 2003. The percentage of sales also increased in 2005 compared with 2003 in sunflower, sainfoin, oats, sugar beets, barley, and clover seeds.

Table 27. Comparison of Seed Sales Distribution for Main Crops Among AAK Members in 2003 and 2005

Crop	2003		2005		Difference
	Sales, US \$	Percent of All Sales	Sales, US \$	Percent of All Sales	
Wheat	354,182	61.55	320,053	54.79	(6.76)
Cotton	195,217	33.93	227,334	38.92	4.99
Rice	1,609	0.28	55	0.01	(0.27)
Maize	12,855	2.23	12,089	2.07	(0.16)
Sunflower	1,044	0.18	7,904	1.35	1.17
Safflower	1,587	0.28	651	0.11	(0.17)
Sainfoin	130	0.02	2,651	0.45	0.43
Oats	-	0.00	181	0.03	0.03
Sugar beet	-	0.00	5	0.00	-
Mustard	435	0.08	-	0.00	(0.08)
Alfalfa	5,290	0.92	4,086	0.70	(0.22)
Barley	3,043	0.53	7,660	1.31	0.78
Clover	-	0.00	1,446	0.25	0.25
Total	575,392	100	584,115	100	

The data in Table 28 show vegetable crop seed sales by AAK members in 2003 and 2005 and compare the price, quantity, and sales in percentage. Vegetable seed sales increased in quantity by 23.0% and in U.S. dollars decreased by 12.7%.

Table 28. Seed Sales for Vegetable Crops Among AAK Members in 2003 and 2005

Crop	Unit	2003			2005			Difference (Percentage)		
		Quantity	Price, US \$ (mean)	Sales, US \$	Quantity	Price, US \$ (mean)	Sales, US \$	Price	Quantity	Sales
Potato	kg	531,220	0.23	122,482	650,500	0.12	80,651	(46.20)	22.5	(34.2)
Onion	kg	1,023	4.60	4,702	1,976	6.13	12,113	33.40	93.2	157.6
Tomato	kg	60	75.25	4,515	55	124.35	6,839	65.20	(8.3)	51.5
Tomato	pack	-	-	-	600	1.21	723	-	-	-
Total Tomato				4,515			7,562			67.5
Cucumber	kg				103	7.18	740	-	-	-
Cucumber	can		-	-	4	144.50	578	-	-	-
Cucumber	pack	-	-	-	400	0.84	337	-	-	-
Cucumber	1,000	-	-	-	2	7.00	14	-	-	-
Total Cucumber				-			1,669			-
Cabbage	kg	-	-	-	21	44.83	919	-	-	-
Cabbage	pack	-	-	-	400	2.41	964	-	-	-
Total Cabbage				-			1,883			-
Carrot	kg	143	6.76	967	130	5.85	762	(13.50)	(9.0)	(21.2)
Pepper	kg	1,500	0.76	1,141	0.7	17.14	12	2,153.70	(100.0)	(98.9)
Pepper	pack	-	-	-	600	0.72	434	-	-	-
Total Pepper				1,141			446			(60.9)
Radish	kg	25	8.67	217	118	3.08	364	(64.40)	372.0	67.7
Melon	kg	20	3.25	65	30	5.23	157	61.00	50.0	141.5
Watermelon	kg	75	21.74	1,630	-	-	-	-	(100.0)	(100.0)
Watermelon	can	100	39.13	3,913	465	30.84	14,342	(21.20)	365.0	266.5
Total Watermelon				5,543			14,342			158.7
Turnip	kg	15	8.67	130	10	7.20	72	(16.90)	(33.3)	(44.6)
Red beet	kg	15	6.52	98		-	-	-	(100.0)	(100.0)
Marrow	kg	-	-	-	0.3	20.00	6	-	-	-
Eggplant	kg	-	-	-	5	12.22	55	-	-	-
Eggplant	pack	-	-	-	100	0.48	48	-	-	-
Total Eggplant				-			103			-
Pumpkin	pack	-	-	-	20	4.80	96	-	-	-
Green	pack	-	-	-	1,285	0.49	628	-	-	-
Flowers	1,000	-	-	-	10	120.50	1,205	-	-	-
Total		534,196		139,860	656,834		122,059		23.0	(12.7)

AAK members were involved in the sales of 17 vegetable crops for both 2003 and 2005. From these 17 crops, the seeds of 16 crops were sold in the baseline year and 10 in 2005. Only seeds from nine vegetable crops were sold in both years—potato, onion, tomato, carrot, pepper, radish, melon, watermelon, and turnip—with the seeds of the other vegetable crops being sold in only one of the two years. Unlike the main crops, seed prices increased for four vegetables—onion (33.4%), tomato (65.2%), pepper (2,153.7%) and melon (61%). Regardless of the higher price for onion and melon, there was increase in the sales of these crops in both U.S. dollars and in quantity (onion seeds by 93.2% and melon by 50%). For the other vegetable crops—potato, carrot, radish, watermelon, and turnip—prices decreased. In monetary terms, there was also an increase in the sales of tomato (67.5%), radish (67.7%), and watermelon (158.7%).

Table 29 compares the percentage of all vegetable seed sales for 2003 and 2005. Similar to the baseline year, potato seed accounts for the largest percentage of sales among all vegetable seeds (66.08% in 2005 and 87.57% in 2003). For five vegetable crops, there was a decline in sales—potato, carrot, pepper, turnip, and red beet. For the other twelve vegetable crops—onion, tomato, cucumber, cabbage, radish, melon, sunflower, watermelon, marrow, eggplant, pumpkin, green vegetables, and flowers—there was an increase from 2003 to 2005.

The data in Table 30 show the seed sales for hybrid vegetable crops by AAK members in 2003 and 2005 and compare the price, quantity, and sales in percentage. Sales of hybrid vegetable seeds increased by almost forty times. AAK members were involved in the sales of nine hybrid vegetable seed crops during this 2-year time period.

With the exception of pepper, seed sales increased for nine other hybrid vegetable crops. From these nine crops, six crops were sold in the baseline year and nine in 2005. The number of hybrid vegetable seeds sold by AAK dealers increased in seed sales by 50%. Only seeds from six hybrid vegetable crops were sold in both 2003 and 2005 (tomato, cabbage, cucumber, pepper, melon, and watermelon), and the seeds of the other hybrid vegetable crops were sold only in 2005 (eggplant, onion, and marrow seeds). The seed sales of hybrid tomato increased by more than 18 times, cabbage by more than 16 times, cucumber by 126 times, watermelon by 111 times, and melon by more than 67 times.

Table 29. Comparison of Seed Sales Distribution for Various Crops Among AAK Members in 2003 and 2005

Crop	2003		2005		Difference
	Sales, US \$	Percent of All Sales	Sales, US \$	Percent of All Sales	
Potato	122,482	87.57	80,651	66.08	(21.50)
Onion	4,702	3.36	12,113	9.92	6.56
Tomato	4,515	3.23	7,562	6.20	2.97
Cucumber	-	-	1,669	1.37	1.37
Cabbage	-	-	1,883	1.54	1.54
Carrot	967	0.69	762	0.62	(0.07)
Pepper	1,141	0.82	446	0.37	(0.45)
Radish	217	0.16	364	0.30	0.14
Melon	65	0.05	157	0.13	0.08
Watermelon	5,543	3.96	14,342	11.75	7.79
Turnip	130	0.09	72	0.06	(0.03)
Red beet	98	0.07	-	-	(0.07)
Marrow	-	-	6	0.00	0.005
Eggplant	-	-	103	0.08	0.08
Pumpkin	-	-	96	0.08	0.08
Green	-	-	628	0.51	0.51
Flowers	-	-	1,205	0.99	0.99
Total	139,860	100.0	122,059	100.0	

In addition to the information from the survey, there is evidence that a competitive seed market has been rapidly growing since the last half of 2004. Several AAK members have developed distributor relationships with international seed companies such as May Seed Group (Turkey), Nazilli Cotton Research Institute (Turkey), Nickerson-Zwaan (Netherlands), Bejo Zaden (Netherlands), Seminis (Netherlands), and Syngenta (Netherlands). There is still a major constraint in developing a competitive seed market in Kyrgyzstan, which is the compulsory variety registration system that prohibits selling and growing unregistered varieties. Registering a variety takes at least 2 years assuming it meets the required standards determined by the government and not by the market. Many vegetable varieties have a short life span, which means that by the time the variety is legally allowed to be sold and grown in Kyrgyzstan the variety is no longer available in the market. The AAK membership has been proposing a revised variety registration system as part of their advocacy efforts for about two years. It should be noted that the Kyrgyz seed law is under modifications and there is a promising chance that these modifications will reduce the barriers to entry for the country's seed sector.

Table 30. Seed Sales for Hybrid Vegetable Crops Among AAK Members in 2003 and 2005

Crop	Unit	2003			2005			Difference (Percentage)		
		Quantity	Price, US \$ (Mean)	Sales, US \$	Quantity	Price, US \$ (Mean)	Sales, US \$	Price	Quantity	Sale
Tomato	kg	1.20	1,470.83	1,765	-	-	-	-	(100.0)	(100.0)
Tomato	pack	0.00	-	-	4,866.00	8.03	39,092	-	-	-
Tomato (seed)	1,000	20.00	14.35	287	-	-	-	-	(100.0)	(100.0)
Tomato (seedling)	1,000	10.00	2.20	22	-	-	-	-	(100.0)	(100.0)
Total Tomato				2,074			39,092	-		1,784.9
Cabbage	kg	0.00	-	-	0.40	25.00	10	-	-	-
Cabbage	pack	0.00	-	-	684.00	7.40	5,060	-	-	-
Cabbage (seed)	1,000	62.50	4.78	299	-	-	-	-	(100.0)	(100.0)
Total Cabbage				299			5,070	-		1,595.7
Cucumber	kg	0.25	104.00	26	-	-	-	-	(100.0)	(100.0)
Cucumber	pack	10.00	14.40	144	1,443.00	14.85	21,428	3.10	14,330.0	14,780.6
Total Cucumber				170			21,428			12,504.7
Eggplant	pack	0.00	-	-	20.00	4.35	87	-	-	-
Onion					370.00		28,263			-
Pepper	pack	0.00	-	-	20.00	4.35	87	-	-	-
Pepper (seed)	1000	18.00	35.44	638	-	-	-	-	(100.0)	(100.0)
Total Pepper				638			87	-		(86.4)
Watermelon	can	2.00	131.50	263	81.00	36.17	2,930	(72.50)	3,950.0	1,014.1
Watermelon	pack				978.00	38.93	38,077	-	-	-
Watermelon (seed)	1,000	5.00	21.80	109	15.00	24.07	361	10.40	200.0	231.2
Total Watermelon				372			41,368			11,020.4
Melon	kg	0.10	20.00	2	-	-		-	(100.0)	(100.0)
Melon	pack	0.00	-	-	20.00	6.75	135	-	-	-
Total Melon				2			135			6,650.0
Marrow	pack	0.00	-	-	429.00	5.90	2,533	-	-	-
Total				3,555		175.81	138,063			3,783.6

Table 31 compares the percentage of all sales of hybrid vegetable seeds for 2003 and 2005. Unlike the baseline year, hybrid watermelon seed accounts for the largest proportion among all vegetable seeds (29.96% in 2005 and 10.46% in 2003). There was an increase in the sales of six seeds of vegetable crops from 2003 to 2005—cucumber, eggplant, onion, watermelon, melon, and marrow. For the other three vegetable crops (tomato, cabbage, and pepper), a decrease in the percentage of sales was observed. However, the percentage decrease in sales is more related to AAK members who have diversified their product base. For instance, sales of hybrid tomato seed increased by almost more than 18 times and cabbage by 17 times, although there is still a decrease in the percent of all hybrid vegetable sales. That is mainly due to other hybrid seed sales that include cucumber, onion, watermelon, and marrow, which were sold in greater quantities in 2005.

Table 31. Comparison of Hybrid Seed Sales Among AAK Members in 2003 and 2005

Crop	2003		2005		Difference
	Sales, US \$	Percent of All Sales	Sales, US \$	Percent of All Sales	
Tomato	2,074	58.34	39,092	28.31	(30.03)
Cabbage	299	8.41	5,070	3.67	(4.74)
Cucumber	170	4.78	21,428	15.52	10.74
Eggplant	-	-	87	0.06	0.06
Onion	-	-	28,263	20.47	20.47
Pepper	638	17.95	87	0.06	(17.88)
Watermelon	372	10.46	41,368	29.96	19.50
Melon	2	0.06	135	0.10	0.04
Marrow	-	0.00	2,533	1.83	1.83
Total	3,555	-	138,063		

Advertising

Changes in the frequency and type of advertisement are excellent indicators of agri-input business development to be monitored over time. Table 32 compares the use of various means of advertising by AAK Members in 2003 and 2005. The results show strong evidence of a dramatic increase in advertising initiatives among AAK members. Except for television, there were significant increases in advertising through all other means available in southern Kyrgyzstan: radio—a 2.7% increase (3.6% in 2003 and 6.3% in 2005), newspaper—a 16.9% increase (10.9% in 2003 and 27.8% in 2005), seminars and meetings—a 14.7% (3.6% in 2003 and 18.3% in

2005), the local community—a 41.3% increase, publications (brochures, etc.)—a 2.4% increase, and agricultural expositions—a 16.7% increase. Among those who reported advertising initiatives, the most frequent means were through local communities, newspaper, agricultural expositions, and seminars and meetings. There was an insignificant decrease (by 5.3%) of members who did not advertise their agri-input business in 2005 (60.9% in 2003 and 55.6% in 2005).

Table 32. Use of Various Means of Advertising by AAK Members in 2003 and 2005

Type of Advertising	2003		2005		Difference	P(T<=1)
	Number	Percent	Number	Percent		
Television	10	9.1	16	12.7	3.6	0.21
Radio	4	3.6	8	6.3	2.7	0.18
Newspaper	12	10.9	35	27.8	16.9	0.001
Seminars and meetings	4	3.6	23	18.3	14.7	0.001
Communities	-	-	52	41.3	41.3	< 0.001
Publications	-	-	3	2.4	2.4	0.05
Agri-Expo			21	16.7	16.7	< 0.001
No advertising initiative	67	60.9	74	55.6	(5.3)	0.29

Summary of Agri-Input Sales Revenue in 2003-2005

Nitrogenous Fertilizer Sales

As mentioned in previous sections, there was an increase in AAK members who were involved in fertilizer sales. Table 33 compares the distribution of members who were involved in different scales of nitrogenous fertilizer sales. Most likely, many members who sold nitrogenous fertilizer on a smaller scale in 2003 increased their sales in 2005. Members who sold between \$2,001 and \$5,000 of nitrogenous fertilizer in 2005 account for the largest portion, while in the baseline year, the largest portion of members did not sell nitrogenous fertilizer or sold between \$101 and \$1,000. In addition, no member sold fertilizer for the amount greater than \$100,000 in 2003 compared with three members in 2005. Again, similar to the baseline year, only one member realized nitrogenous fertilizer sales greater than \$1 million in 2005, although total nitrogenous fertilizer sales increased by about three times. The percentage decrease in members who sold in the range of \$1-\$1,000 explains a less skewed distribution to the right. This information combined with a greater number of medium and larger scale fertilizer businesses

clearly shows that a more competitive fertilizer market is being created. The percentage of agri-input businesses selling nitrogenous fertilizer proportionally increased insignificantly by 1.5% in 2005 (21.8% in 2003 and 23.3% in 2005).

Table 33. Distribution of AAK Members by Nitrogenous Fertilizer Sales in 2003 and 2005

Income From Nitrogenous Fertilizer Sales	2003		2005		Difference	P(T<=1)
	Number	Percent	Number	Percent		
Members not selling	7	22.6	1	3.2	(19.4)	0.01
\$1 - \$100	-	-	1	3.2	3.2	-
\$101 - \$500	6	19.4	-	-	(19.4)	0.01
\$501 - \$1,000	5	16.1	3	9.7	(6.4)	0.22
\$1,001 - \$2,000	2	6.5	2	6.5	-	0.50
\$2,001 - \$5,000	2	6.5	8	25.8	19.3	0.02
\$5,001 - \$10,000	1	3.2	5	16.1	12.9	0.04
\$10,001 - \$25,000	5	16.1	4	12.9	(3.2)	0.36
\$25,001 - \$50,000	1	3.2	1	3.2	-	0.50
\$50,001 - \$100,000	1	3.2	3	9.7	6.5	0.15
\$100,001 - \$200,000	-	-	1	3.2	3.2	-
\$200,001 - \$500,000	-	-	1	3.2	3.2	0.16
\$500,001 - \$1 million	-	-	-	-	-	-
More than \$1 million	1	3.2	1	3.2	-	0.50
Total	31	100	31	100		
Members Involved in Nitrogenous Fertilizer Sales	24	21.8	30	23.3	1.5	0.40

Phosphatic Fertilizer Sales

As shown in Table 34, similar to the baseline year, the largest portion of AAK members involved in fertilizer business were not involved in the sale of phosphatic fertilizer—79% (77.5% in 2003). Nevertheless, in 2003 no members sold phosphatic fertilizer in the range of more than \$10,000 compared with 2005 when there were agri-input businesses that reached the range of \$100,000-\$500,000 for this product. The proportion of agri-input businesses selling phosphatic fertilizer insignificantly increased by 1.4% (6.4% in 2003 and 7.8% in 2005).

Table 34. Distribution of AAK Members by Phosphatic Fertilizer Sales in 2003 and 2005

Income From Phosphatic Fertilizer Sales	2003		2005		Difference	P(T<=1)
	Number	Percent	Number	Percent		
Members not selling	24	77.5	21	79.0	1.5	0.20
\$1 - \$100	1	3.2	1	3.2	-	0.50
\$101 - \$500	2	6.5	5	16.1	9.6	0.11
\$501 - \$1,000	1	3.2	1	3.2	-	0.50
\$1,001 - \$2,000	1	3.2	1	3.2	-	0.50
\$2,001 - \$5,000	1	3.2	-	-	(3.2)	0.16
\$5,001 - \$10,000	1	3.2	-	-	(3.2)	0.16
\$10,001 - \$25,000	-	-	1	3.2	3.2	0.16
\$25,001 - \$50,000	-	-	1	3.2	3.2	-
More than \$50,000	-	-	-	-	-	-
Total	31	100	31	100		
Members Involved in Phosphatic Fertilizer Sales	7	6.4	10	7.8	1.4	0.34

Potassic Fertilizer Sales

In 2003, Table 35 shows that potassic fertilizer sales were attributable to only one member whose sales did not exceed \$500. In 2005 the number of members selling this type of fertilizer increased to five dealers with one of them realizing sales in the range of \$1,000-\$2,000. The proportion of AAK members involved in the fertilizer business but not involved in the sale of potassic fertilizer significantly decreased from 96.8% in 2003 to 83.9% in 2005. However, similar to the baseline year, these businesses account for the largest portion of AAK members who were not involved in the sale of potassic fertilizer.

Even though the potassic fertilizer market is quite immature, the percentage of agri-input businesses selling this type of fertilizer increased significantly by 3.0% (0.9% in 2003 and 3.9% in 2005).

Table 35. Distribution of AAK Members by Potassic Fertilizer Sales in 2003 and 2005

Income From Potassic Fertilizer Sales	2003		2005		Difference	P(T<=1)
	Number	Percent	Number	Percent		
Members not selling	30	96.8	26	83.9	(12.9)	0.04
\$1 - \$100	-	-	3	9.7	9.7	0.04
\$101 - \$500	1	3.2	1	3.2	-	0.50
\$501 - \$1,000	-	-	-	-	-	-
\$1,001 - \$2,000	-	-	1	3.2	3.2	0.16
More than \$2,000	-	-	-	-	-	-
Total	31	100.0	31	100.0		
Members Involved in Potassic Fertilizer Sales	1	0.9	5	3.9	3.0	0.07

Complex Fertilizer Sales

As shown in Table 36, prior to 2003 complex fertilizer was not available in the local market for more than 10 years. Complex fertilizers contain at least two out of three major nutrients needed by plants—N, phosphorus (P), and potassium (K). Prior to 2003, many farmers were not aware of this type of fertilizer nor the advantages of phosphatic and potassic fertilizer products. In 2003 eight agri-input businesses were involved in complex fertilizer sales. However, none of these members sold more than \$1,000 worth of this product. In 2005, the number of members selling this product decreased since the price for NPK increased by 15.2%. Nevertheless, the total amount of sales increased by almost 22.4% times, and a member had sales of complex fertilizer in the range of \$5,000-\$25,000.

Table 36. Distribution of AAK Members by Complex Fertilizer (NPK) Sales in 2003 and 2005

Income From Complex (NPK) Fertilizer Sales	2003		2005		Difference	P(T<=1)
	Number	Percent	Number	Percent		
Members not selling	23	74.2	30	96.8	22.6	0.01
\$1 - \$100	-	-	-	-	-	-
\$101 - \$500	3	9.7	-	-	(9.7)	0.04
\$501 - \$1,000	5	16.1	-	-	(16.1)	0.010
\$1,001 - \$2,000	-	-	-	-	-	-
\$2,001 - \$5,000	-	-	-	-	-	-
\$5,001 - \$10,000	-	-	1	3.2	3.2	0.16
More than \$10,000	-	-	-	-	-	-
Total	31	100.0	31	100		
Members Involved in Complex Fertilizer Sales	8	7.3	1	0.8	(6.5)	0.004

Total Fertilizer Product Sales

Table 37 summarizes Tables 32 through 36 and compares the distribution of AAK members by all types of fertilizer sales—nitrogenous, phosphatic, potassic, and complex—in 2003 and 2005. In 2005 two members realized more than \$200,000 in fertilizer sales compared with one member in the baseline year. With that said, there were only two members that conducted sales of fertilizer products of more than \$50,000 in the baseline year, while in 2005 this number comprised six agri-input businesses. As discussed above, the largest proportion of companies had sales of less than \$1,000 in the baseline year. As the information from the 2005 year survey shows, agri-input businesses that realized from \$2,000 to \$25,000 account for the largest portion. Also, about 20% of fertilizer dealers had sales from \$50,000 to more than \$1,000,000. This is a clear sign of a competitive fertilizer market that is moving from small-scale activities to medium and larger sales with a greater number of market participants.

Table 37. Distribution of AAK Members by All Types of Fertilizer Sales in 2003 and 2005

Income From All Types of Fertilizer Sales	2003		2005		Difference	P(T<=1)
	Number	Percent	Number	Percent		
Members not selling	4	12.9	-	-	(12.9)	0.02
\$1 - \$100	-	-	2	6.5	6.5	0.08
\$101 - \$500	6	19.4	-	-	(19.4)	0.01
\$501 - \$1,000	6	19.4	-	-	(19.4)	0.01
\$1,001 - \$2,000	3	9.6	4	12.9	3.3	0.34
\$2,001 - \$5,000	2	6.5	8	25.8	19.3	0.02
\$5,001 - \$10,000	2	6.5	6	19.4	12.9	0.06
\$10,001 - \$25,000	5	16.1	4	12.9	(3.2)	0.36
\$25,001 - \$50,000	-	-	1	3.2	3.2	0.16
\$50,001 - \$100,000	2	6.4	3	9.7	3.3	0.32
\$100,001 - \$200,000	-	-	1	3.2	3.2	0.16
\$200,001 - \$500,000	-	-	1	3.2	3.2	0.16
\$500,001 - \$1 million	-	-	-	-	-	-
More than \$1 million	1	3.2	1	3.2	-	0.50
Total	31	100	31	100		-
Members Involved in All Types of Fertilizer Sales	27	24.5	31	24.0	0.5	0.46

Seed Sales Distribution

Main Crop Seed Sales

The main crop seed industry in southern Kyrgyzstan, similar to the fertilizer market, is transforming into a market economy. As Table 38 indicates, there was a significant decrease among agri-input businesses that conducted sales valued at \$500 and less and a significant increase among businesses that had sales of more than \$1,000 and less than \$25,000. Additionally, the proportion of seed businesses that did not sell seeds decreased significantly compared with the baseline year (32% in 2003) and comprised 16% of all members involved in seed business. Furthermore, compared with one member in the baseline year, there were two members in 2005 who sold seed for main crops and realized revenue of more than \$200,000.

Table 38. Distribution of AAK Members by Main Crops Seed Sales in 2003 and 2005

Income From Main Crop Seed Sales	2003		2005		Difference	P(T<=1)
	Number	Percent	Number	Percent		
Members not selling	24	32.0	12	16.0	(16.0)	0.01
\$1 - \$100	2	2.7	2	2.7	-	0.50
\$101 - \$500	13	17.3	6	8.0	(9.3)	0.04
\$501 - \$1,000	6	8.0	5	3.7	(4.3)	0.38
\$1,001 - \$2,000	8	10.7	14	18.7	8.0	0.08
\$2,001 - \$5,000	7	9.3	13	16.2	6.9	0.07
\$5,001 - \$10,000	4	5.3	8	11.2	5.9	0.11
\$10,001 - \$25,000	5	6.7	11	11.2	4.5	0.06
\$25,001 - \$50,000	2	2.7	2	2.7	-	0.50
\$50,001 - \$100,000	3	4.0	-	6.2	2.2	0.04
\$100,001 - \$200,000	1	1.3	2	2.7	1.4	0.28
\$200,001 - \$500,000	-	-	-	-	-	-
\$500,001 - \$1 million	-	-	0	0	0	-
More than \$1 million	-	-	-	-	-	-
Total	75	100.0	75	99.3		
Members Involved in Main Crop Seed Sales	51	46.4	63	48.8	2.4	0.35

Vegetable Seed Sales

As shown in Table 39, the percentage of members who sold no vegetable seed increased significantly from 64.0% in 2003 to 74.7% in 2005. Likewise, the percentage of members who were involved in seed sales decreased significantly from 24.5% in 2003 to 14.7% in 2005; again, that change is without statistical significance. Significant increases in income from vegetable seed sales were reported in the range of US \$10,001-\$25,000 and US \$50,001-\$100,000. Significant decreases were reported in the ranges of US \$1-\$100 and US \$1,001-\$5,000.

Table 39. Distribution of AAK Members by Vegetable Seed Sales in 2003 and 2005

Income From Vegetable Seed Sales	2003		2005		Difference	P(T<=1)
	Number	Percent	Number	Percent		
Members not selling	48	64.0	56	74.7	10.7	0.08
\$1 - \$100	4	5.3	2	2.7	(2.6)	0.20
\$101 - \$500	6	8.0	5	6.7	(1.3)	0.38
\$501 - \$1,000	3	4.0	2	2.7	(1.3)	0.32
\$1,001 - \$2,000	7	9.3	4	5.3	(4.0)	0.17
\$2,001 - \$5,000	4	5.3	2	2.7	(2.6)	0.20
\$5,001 - \$10,000	2	2.8	1	1.3	(1.5)	0.28
\$10,001 - \$25,000	-	-	2	2.7	2.7	0.08
\$25,001 - \$50,000	-	-	-	-	-	-
\$50,001 - \$100,000	-	-	1	1.3	1.3	0.16
\$100,001 - \$200,000	1	1.3	-	-	(1.3)	0.16
Total	75	100.0	75	100.0		
Members Involved in Vegetable Seed Sales	27	24.5	19	14.7	(9.8)	0.03

Hybrid Vegetable Seed Sales

Hybrid seeds are usually better performing, have stronger resistance to specific diseases, and produce plants with greater vigor and higher yield. The increase of hybrid seeds in the market is one of the best indicators of a developing seed market. As Table 40 shows, the increase of hybrid vegetable seed sales in southern Kyrgyzstan is evident. Of the 75 members involved in seed sales, only four AAK members sold hybrid vegetable seed in the baseline year with all of these businesses realizing revenue of \$2,000 or less. In 2005, of the 75 involved in seed sales, five AAK members sold hybrid vegetable seed and one of them realized revenue in the range of \$50,001-\$100,000.

Table 40. Distribution of AAK Members by Hybrid Vegetable Seed Sales in 2003 and 2005

Income From Hybrid Vegetable Seed Sales	2003		2005		Difference	P(T<=1)
	Number	Percent	Number	Percent		
Members not selling	71	94.7	70	93.3	(1.4)	0.37
\$1 - \$100	1	1.3	1	1.3	0.0	0.50
\$101 - \$500	1	1.3	1	1.3	0.0	0.50
\$501 - \$1,000	-	-	-	-	-	-
\$1,001 - \$2,000	2	2.7	1	1.3	(1.4)	0.28
\$2,001 - \$5,000	-	-	1	1.3	1.3	0.16
\$5,001 - \$10,000	-	-	-	-	-	-
\$10,001 - \$25,000	-	-	-	-	-	-
\$25,001 - \$50,000	-	-	-	-	-	-
\$50,001 - \$100,000	-	-	1	1.3	1.3	0.16
Total	75	100	75	100		
Members Involved in Hybrid Vegetable Seed Sales	4	3.6	5	3.9	0.3	0.46

Total Seed Sales

Several years ago, seed production was the predominant economic activity in the Kyrgyz Republic and the current government vision is to revive a profitable, competitive seed industry in the world market. The business environment should be designed in a way that the majority of the smallholder farmers have access to yield-enhancing technologies. AAK allows members to participate and promote policy proposals that promote private sector growth and create opportunities for the import, production, and distribution of seed in the country.

As Table 41 indicates, all members involved in seed business had sales. That is the members who had no seed sales significantly decreased to zero. Although insignificant decreases in income from seed sales were reported in the range of US \$1-\$1,000, the proportion of seed business significantly increased in the range of \$5,001-\$25,000 by 16%.

In 2005, 100% of the 75 AAK members who sold seed reported selling those of main crops, vegetables, and hybrid vegetables compared with 84% of the 75 members in the baseline year. Another sign of the maturing seed market is the increasing number of seed businesses among AAK members.

Table 41. Distribution of AAK Members by Total Seed Sales in 2003 and 2005

Income From All Types of Seed Sales	2003		2005		Difference	P(T<=1)
	Number	Percent	Number	Percent		
Members not selling	12	16.0	-	-	(16.0)	< 0.01
\$1 - \$100	3	4.0	2	2.7	(1.3)	0.32
\$101 - \$500	9	12.0	7	9.3	(2.7)	0.30
\$501 - \$1,000	6	8.0	5	6.7	(1.3)	0.38
\$1,001 - \$2,000	13	17.3	13	17.3	0.0	0.50
\$2,001 - \$5,000	14	18.7	18	24.0	5.3	0.21
\$5,001 - \$10,000	6	8.0	10	13.3	5.3	0.15
\$10,001 - \$25,000	5	6.6	13	17.3	10.7	0.02
\$25,001 - \$50,000	2	2.7	3	4.0	1.3	0.32
\$50,001 - \$100,000	3	4.0	1	1.3	(2.7)	0.16
\$100,001 - \$200,000	2	2.7	3	4.0	1.3	0.32
\$200,001 - \$500,000	-	-	-	-	-	-
\$500,001 - \$1 million	-	-	-	-	-	-
More than \$1 million	-	-	-	-	-	-
Total	75	100.0	75	100.0		-
Members Involved in All Seed Sales	63	57.3	75	58.1	0.8	0.45

Crop Protection Product Sales

Separate analysis conducted in previous years indicated that approximately 95% of the CPPs used by farmers were contraband or outdated stock in 2003 and previous years. Over the past few years, there has been a considerable shift in demand from farmers who are now beginning to move away from illegally imported low-quality products to high-quality CPPs that are legally imported.

Agri-input businesses involved in the CPP business in 2005 increased significantly by 7.8% (20.9 in 2003 and 28.7 in 2005). As Table 42 shows, in 2003, 13 AAK members or 48.1% had sales with revenue equaling more than \$1,000. In 2005, 16 members or 43.2% sold CPPs valued at more than \$1,000. Although the CPP market is still in its infancy, in 2005 three members (8.1%) reported CPP sales of more than \$100,000 while in 2003 the range of sales was not larger than \$25,000.

Table 42. Distribution of AAK Members by CPP Sales in 2003 and 2005

Income From CPP Sales	2003		2005		Difference	P(T<=1)
	Number	Percent	Number	Percent		
Members not selling	4	14.8	-	-	(14.8)	0.01
\$1 - \$100	-	-	3	8.1	8.1	-
\$101 - \$500	5	18.5	10	27.0	8.5	0.21
\$501 - \$1,000	5	18.5	8	21.6	3.1	0.38
\$1,001 - \$2,000	6	22.2	4	10.8	1.2	0.11
\$2,001 - \$5,000	2	7.4	6	16.2	8.8	0.15
\$5,001 - \$10,000	3	11.1	3	8.1	(3.0)	0.34
\$10,001 - \$25,000	2	7.4	-	-	(7.4)	0.05
\$25,001 - \$50,000	-	-	-	-	-	-
\$50,001 - \$100,000	-	-	-	-	-	-
\$100,001 - \$200,000	-	-	2	5.4	5.4	0.11
\$200,001 - \$500,000	-	-	1	2.7	2.7	0.19
Total	27	87.3	37	100		-
Members Involved in CPP Sales	23	20.9	37	28.7	7.8	0.08

Total Agri-Input Sales

Table 43 describes AAK members by total agri-input sales in 2003 and 2005. The transformation of small businesses into larger operations is apparent. In 2005, 28% of AAK members had agri-input sales with revenue of more than \$10,000 compared with 19.1% in 2003. Conversely, agri-input businesses that had sales of more than \$1 and less than \$10,000 decreased in 2005 and account for 31% of all AAK members (compared with 54.5% in 2003). In the sales range of \$100,000-\$200,000, 6.5% of members fit this category in 2005 compared with 2.8% in 2003. In 2003 only one member realized revenue of more than \$200,000 while in 2005 the sales of three agri-input businesses exceeded this amount.

Note that in 2005 the number of AAK customers increased by more than six times compared with the baseline year (13,847 customers in 2003 and 90,895 in 2005). The average number of farmer customers that purchased products (and received advice) from AAK members was 704 in 2005, which is 460% higher when compared with the baseline year (126 customers in 2003).

Table 43. Distribution of AAK Members by Total Agri-Input Sales^a in 2003 and 2005

Income From Total Agri-Input Sales	2003		2005		Difference	P(T<=1)
	Number	Percent	Number	Percent		
Members not selling	20	18.2	43	33.3	15.1	< 0.01
\$1 - \$100	3	2.7	3	2.3	(0.4)	0.42
\$101 - \$500	14	12.7	5	3.9	(8.8)	0.01
\$501 - \$1,000	8	7.3	4	3.1	(4.2)	0.07
\$1,001 - \$2,000	16	14.5	11	8.5	(6.0)	0.07
\$2,001 - \$5,000	19	17.3	17	13.2	(4.1)	0.19
\$5,001 - \$10,000	9	8.2	10	7.8	(0.4)	0.45
\$10,001 - \$25,000	9	8.2	19	14.7	6.5	0.06
\$25,001 - \$50,000	4	3.6	4	3.1	(0.5)	0.41
\$50,001 - \$100,000	5	4.5	5	3.9	(0.6)	0.40
\$100,001 - \$200,000	2	1.8	5	3.9	2.1	0.17
\$200,001 - \$500,000	-	-	2	1.6	1.6	0.09
\$500,001 - \$1 million	-	-	-	-	-	-
More than \$1 million	1	1.0	1	0.8	(0.2)	0.45
Total	110	100.0	129	100.0		-
Members Involved in Agri-Input Sales	90	81.8	86	66.7	(15.1)	0.01

a. Total agri-input sales include fertilizer, seed, and CPPs.