



ARDAHAN-KARS-ARTVIN DEVELOPMENT PROJECT (AKAKP)

Impact Assessment Report

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GAME CHANGERS



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ABOUT RESEARCH

BACKGROUND

Ardahan Kars Artvin Development Project (AKAKP) was implemented by the R.T. Ministry of Food, Agriculture and Livestock to be completed by 30 September 2015 pursuant to the financing agreement signed on April 10, 2010. On December 10, 2014, the project closing date was extended to March 31, 2018. The project was funded jointly by IFAD and the Government of the Republic of Turkey. General responsibility for the management and implementation of AKAKP has been left to the Ministry of Food, Agriculture and Livestock with the support of UNDP as per the service agreement. A Project Management Unit (PMU) responsible for the implementation and follow-up of the project in three provinces has been established in Kars.

The project targets one of Turkey's least developed and the poorest regions of Turkey. In the region, which is the subject of the project, the population is heavily engaged in agricultural activities in the low input / low product group. Accordingly, the project target group focuses on family businesses that have limited access to capital in agricultural and livestock practices; use traditional methods, therefore have no plans to grow, modernize their businesses and systematically increase their income level.

The project is being implemented in the following districts of Kars, Ardahan and Artvin provinces

- i. **Ardahan:** Ardahan Centre, Çıldır, Damal, Göle, Hanak, and Posof;
- ii. **Kars:** Arpaçay, Kağızman, Sarıkamış, and Selim;
- iii. **Artvin:** Artvin Centre, Ardanuç, Şavşat, and Yusufeli;

Project target group is economically active livestock and agriculture producers who want to move towards more commercialized business models.

Target group is defined as livestock producers with less than 20 registered cattle, and horticultural crop producers with 0.3-0.5 ha of vegetable plot or small greenhouse.

The objective of the Impact Assessment Study is to understand the extent to which the project has achieved its intended objectives, the extent to which it has triggered a change and development on target group. Within this context, impact assessment study includes pre-project and post project comparison of the a) socio-economic situation of beneficiaries and non-beneficiaries (control group), b) the effects of the applied technologies and investments on their works, c) satisfaction with the project in various fields.

Impact assessment was conducted by a pollster team provided by the R.T. Ministry of Food, Agriculture and Livestock. Independent research institution Ipsos Institute for Social Research was responsible for the ensuring the coordination of the project in the field, and control of the data collected. Accordingly, field managers were appointed for each project district and data collection process was carried out in close dialogue and coordination with Kars Project Management Office and project consultants. Data collected in Ipsos coordination was analyzed by Ipsos experts and the said report was prepared.

RESEARCH APPROACH

The main source for sampling has been the list of AKAKP beneficiaries shared by the Project Management Office. The target group eligible for the impact assessment was accepted as the businesses and villages who have benefited at least half a year prior to the assessment (reference date 31.12.2016). As the project provides support through various means such as beneficiary financing, training, and infrastructure, and the basic reference work also includes strategies specific to these types of support, the total beneficiary population is divided into the following groups: a) livestock co-financing and demonstration activities, b) vegetable production co-financing and demonstration activities, c) fruit production co-financing and demonstration activities; d) village infrastructure support, e) training activities. The questionnaire forms together with common questions for all activities (household status, income and assets, etc.) included questions specific to the field of activity and intervention.

For each of the above mentioned groups, the sample was selected by stratified random sampling method. Population of beneficiaries was divided into proportional groups according to their respective characteristics (district, gender, type of activity), and sample target size was determined in proportion to the population of each group.

Face-to-face questionnaires with beneficiaries related to co-financing, demonstration and infrastructure activities were conducted in the field at individual's households. The questionnaires with beneficiaries related to the training activities were conducted through the telephone call center established in Kars Project Management Office. Since the activities related to the infrastructure component are of the public type, it was deemed appropriate to collect information on this issue through the village mukhtars, accordingly the questionnaires were conducted with the village mukhtars.

The data collection process of the research was carried out within a very limited time frame. Face-to-face and via telephone data collection in the field was completed in a total of 2 weeks through all the points determined by the pollster appointed by the Ministry. In line with the intensive follow-up and coordination work of the field managers assigned by Ipsos and the collaborative efforts of the project team and the pollsters, the field was successfully completed and the target numbers were generally reached. Only in the training module the number remained below the target, and this was mainly due to the fact that the acceptance to participate to the questionnaires was low for this group, and that these beneficiaries mostly changed their phone numbers.

Furthermore, a control group was identified and interviews were conducted to evaluate the effect of the project on the target group objectively. Accordingly, in the field, the beneficiary profiles that is similar in terms of area of activity, sex and district, which is the sampling criterion basis for the beneficiary profile, and not benefited from the project were chosen.

In this framework, the test and control group sample of the study is presented in Table 1.

Table 1. Sample

Component	Unit	Total Beneficiaries End of 2016	Sample Size	Control Group
Component 1: Smallholder and non-farm investment		1 720	433	195
Investments and co-financing		1 162	337	159
1.1 Improvement of Livestock Husbandry Practices (co-financing and demonstration)	Household	835	194	92
1.2 Improvement of Horticultural Production (co-financing and demonstration)	Household	327	143	67
Trainings		558	96	36
1.4 Trainings (production trainings)	Household	558	96	36
Component 2: Village Infrastructure		116	77	38
2.2 Livestock water facilities	Mukhtars	66	53	
2.3 Road construction	Mukhtars	49	24	
Total				

The table below is the sample distribution of the project beneficiaries and the control group involved in the impact assessment study. Accordingly, 433 people who are the total project beneficiaries and 195 people who are in the control group participated in the Impact Assessment study.

Beneficiaries in the province of Kars constitute approximately half (46%) of the province basis beneficiaries of Ardahan Kars Artvin Development Project. 31% of AKAKP beneficiaries are from Ardahan, and 23% are from Artvin. As in AKAKP, Kars takes the top place in the sample of the impact assessment study (40%). Beneficiaries from the Artvin province constitute the 37%, and beneficiaries from the Ardahan province constitute the 23% of the sample. There is a similar sample distribution in the control group.

When the sample size of the interviewed beneficiaries according to different types of support is checked, it can be said that the highest number of interviews is in the Livestock (n = 194) and Fruit Growing (n = 98). Those who receives Training support constitute the smallest group. This distribution shows similarity to the AKAKP.

Table 2. Sample - Project Beneficiaries On Province Basis

Frequency	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
KARS	174	9	30	98	6	8	23
ARTVIN	159	25	66	40	6	20	2
Ardahan	100	11	2	56	7	1	23
TOTAL	433	45	98	194	19	29	48
%	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
	433	45	98	194	19	29	48
KARS	40	20	31	51	32	28	48
ARTVIN	37	56	67	21	32	69	4
Ardahan	23	24	2	29	37	3	48
TOTAL	100	100	100	100	100	100	100

Table 3. Sample - Control Group On Province Basis

Frequency	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
KARS	75	3	15.	43	1	6	7
ARTVIN	79	11	37	22	0	8	1
Ardahan	41	0	1	27	3	5	5
TOTAL	195	14	53	92	4	19	13
%	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
	195	14	53	92	4	19	13
KARS	38	21	79	28	47	25	54
ARTVIN	41	79	0	70	24	0	8
Ardahan	21	0	21	2	29	75	38
TOTAL	100	100	100	100	100	100	100

Note: Since in the control group the number of samples for support types other than Fruit Growing and Livestock is low, it is recommended to be analyzed over the total number of samples.

Since the activities related to the infrastructure component under the Ardahan-Kars-Artvin Development Project Impact Assessment are of the public type, it was deemed appropriate to collect information on this issue through the village mukhtars, accordingly the questionnaires were conducted with the village mukhtars.

In the research, interviews were conducted with 77 village mukhtars who benefited from the infrastructure support, and with 38 village mukhtars as the control group. The sample detail is shown in Table 4.

Table 4. Infrastructure Component Sample

	TOTAL	INFRASTRUCTURE BENEFICIARY	INFRASTRUCTURE CONTROL
Base	115	77	38
ARTVIN	18	11	7
KARS	29	18	11
ARDAHAN	68	48	20

SURVEY RESULTS

1. PROJECT BENEFICIARY AND CONTROL GROUP PROFILE

88% of the project beneficiaries interviewed were male and 12% were female. When the figures realized in AKAKP is checked, likewise it is seen that beneficiaries are a male dominant group (male: 86%, female: 14%). There is a similar gender distribution in the control group.

All the mukhtars interviewed both in project beneficiary villages (beneficiary group) and in the control group were male.

Table 5. Project Beneficiary by Gender (%)

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
Base	433	45	98	194	19	29	48
FEMALE	12	31	16.	5	50	0	0
MALE	88	69	84	95	50	100	100
TOTAL	100	100	100	100	100	100	100

Note: Calculated by subtracting no answer rate in the table

Table 6. Control Group by Sex (%)

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
Base	195	14	53	92	4	19	13
FEMALE	6	7	11	4	0	0	0,0
MALE	94	93	89	96	100	100	100
TOTAL	100	100	100	100	100	100	100

A Baseline Study was conducted in 2012 before the commencement of the AKAKP. The average age at this Baseline Study shows similarity to the average age of the interviewees in this study. The average age of project beneficiaries interviewed at 3 provinces is 52, and the average age of the males was determined to be 51 in the baseline study.

There is no significant differentiation between beneficiaries' ages according to different types of support, only the average age of beneficiaries receiving support for fruit growing is higher (58).

In the control group, the average age of interviewees is 48.

The average age of the village mukhtars in the interviewed project beneficiary villages is 50. The average age of the mukhtars in the control group is 50.

Table 7. Median Age

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
Project beneficiary	52	52	58	50	40	50	49
Control Group	48	52	53	45	46	48	45

Note: Calculated by excluding no answer rate

Project beneficiaries consist mainly of persons aged 41-65 years. It is seen that 25 years and younger people do not participate in the project.

Table 8. Project Beneficiary by Age (%)

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
Base	433	45	98	194	19	29	48
18-25 years	1	0	1	1	0	0	0
26-40 years	19	13	12	21	33	21	26
41-65 years	65	67	56	68	67	64	70
66 years old and above	16.	20	31	10	0	14	5
Total	100	100	100	100	100	100	100

Note: Calculated by excluding no answer rate

The age distribution of the control group also shows similarity to the project beneficiaries. This table shows that the age distribution of project beneficiaries reflects the age distribution of the region.

Table 9. Control Group by Age (%)

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
Base	195	14	53	92	4	19	13
18-25 years	2	14	4	0	0	0	0
26-40 years	28	14	15.	36	50	16.	46
41-65 years	61	57	62	58	50	84	54
66 years old and above	9	14	19	7	0	0	0
Total	100	100	100	100	100	100	100

Both beneficiary mukhtars and the mukhtars in the control group consist mainly of persons between the ages of 41-65.

Table 10. Age Distribution of Mukhtars (%)

	TOTAL	INFRASTRUCTURE BENEFICIARY	INFRASTRUCTURE CONTROL
Base	115	77	38
18-25 years	0	0	0
26-40 years	12	13	11
41-65 years	87	86	89
66 years old and above	1	1	0
Total	100	100	100

Educational status of the interviewed project beneficiaries has been inquired. Accordingly, almost all of the project beneficiaries are literate. Only 2% is illiterate. This rate is similar in the control group.

Table 11. Project Beneficiary by Literacy Status (%)

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
Base	433	45	98	194	19	29	48
Illiterate	12	31	16.	5	50	0	0
Literate	88	69	84	95	50	100	100
TOTAL	100	100	100	100	100	100	100

Note: Calculated by excluding no answer rate

Table 12. Control Group by Literacy Status (%)

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
Base	195	14	53	92	4	19	13
Illiterate	2	0	4	1	0	0	0
Literate	98	100	96	99	100	100	100
TOTAL	100	100	100	100	100	100	100

Half of the project beneficiaries interviewed are primary school graduates (49%) and one quarter (24%) are high school graduates.

The rate of higher education graduates is 7%. Education level of the control group was also determined to be similar. Starting from this, it can be said that the level of education reflects the target group in the region.

Table 13. Project Beneficiary by Educational Status (%)

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
Base	433	45	98	194	19	29	48
Illiterate	2	7	4	1	0	0	2
He/she knows how to read and write, but he/she has not finished any school	2	4	4	1	0	0	0
Primary school graduate	49	40	58	47	34	15.	51
Secondary school graduate	16.	20	9	21	0	21	14
High school graduate	24	20	15.	27	50	29	26
Higher education graduate	7	9	9	3	16.	35	7
TOTAL	100	100	100	100	100	100	100

Note: Calculated by excluding no answer rate

Table 14. Control Group by Educational Status (%)

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
Base	195	14	53	92	4	19	13
Illiterate	2	0	4	1	0	0	0
He/she knows how to read and write, but he/she has not finished any school	2	0	2	3	0	0	0
Primary school graduate	45	43	47	45	25	42	54
Secondary school graduate	16.	14	9	21	25	16.	8
High school graduate	28	36	26	26	50	32	31
Yükseköğretim mezunu	7	7	11	4	0	11	8
TOTAL	100	100	100	100	100	100	100

Educational status of the interviewed mukhtars also has been inquired. Accordingly, the mukhtars both in the target and control group are literate, and are at least primary school graduate. Nearly half of the mukhtars in the interviewed beneficiary group are primary school graduates (44%), one quarter (25%) are secondary school and the other one quarter (25%) are high school graduates. The rate of higher education graduates is 7%. In the control group, the proportion of primary school graduates is slightly higher than the beneficiary group (39%). Again in the control group, the high school graduates are slightly higher (37%), and there is no higher education graduate.

Table 15. Educational Status of Mukhtars (%)

	TOTAL	INFRASTRUCTURE BENEFICIARY	INFRASTRUCTURE CONTROL
Base	115	77	38
Primary school graduate	43	44	39
Secondary school graduate	24	25	24
High school graduate	29	25	37
Higher education graduate	5	7	0
TOTAL	100	100	100

The average size of households in Turkey is 3.5. The household size of the project beneficiaries interviewed was determined as 5.1 In the control group the number of people living in the household is 4.6.

Table 16. Household Size - Project Beneficiary and Control Group (%)

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
Base	433	45	98	194	19	29	48
Average	5.1	4.7	4.8	5.3	5.3	4.4	5.9
Base	195	14	53	92	4	19	13
Average	4.6	3.8	3.8	4.8	5.3	5.4	5.8

2. ARDAHAN KARS ARTVIN DEVELOPMENT PROJECT GENERAL ASSESSMENT

2.1. Information Sources

The vast majority (74%) of interviewed beneficiaries received the project information for the first time from the Ministry of Food, Agriculture and Livestock. Other information sources are more limited. The Ministry is followed by mukhtars with a rate of 13%. Furthermore, 6% of beneficiaries were informed for the first time by the other farmers. There is also a similar tendency among different beneficiary groups. In all groups, the Ministry is in the first place as the first source of information.

Table 17. Ardahan Kars Artvin Development Project Primary Information Channel (%)

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
BASE	433	45	98	194	19	29	48
Ministry of Food, Agriculture and Livestock	74	82	78	70	79	86	65
Mukhtars	13	11	8	14	21	7	19
Other farmers	6	0	10	7	0	0	6
Other people in the village	2	0	1	3	0	0	2
Other public institutions	1	0	0	1	0	7	0
Posters, brochures, etc. promotional material	1	0	1	1	0	0	2
Provincial Special Administration	0	0	1	1	0	0	0
Municipality	0	2	0	1	0	0	0
Printed media such as newspapers and magazines	0	0	1	1	0	0	0
Others	2	2	0	2	0	0	8
TOTAL	100	100	100	100	100	100	100

"Where did you hear for the first time this support given within the scope of Ardahan Kars Artvin Development Project?" (SINGLE ANSWER)

The vast majority (69%) of mukhtars interviewed in the beneficiary group received the project information for the first time from the Ministry of Food, Agriculture and Livestock. Other information sources are more limited. The Ministry is followed by Provincial Special Administrations with a rate of 19%.

Table 18. Ardahan Kars Artvin Development Project Primary Information Channel - Infrastructure Component (%)

	INFRASTRUCTURE BENEFICIARY
BASE	77
Ministry of Food, Agriculture and Livestock	69
Provincial Special Administration	19
Mukhtars	5
Printed media such as newspapers and magazines	3
Other farmers	1

Other public institutions	1
Other people in the village	0
Posters, brochures, etc. promotional material	0
Municipality	0
Others	1
TOTAL	100

"Where did you hear for the first time this support given within the scope of Ardahan Kars Artvin Development Project?" (SINGLE ANSWER)

When all sources of information about the project are assessed together, it is seen that the Ministry of Food, Agriculture and Livestock is the most prominent institution (87%). This ranking does not differ according to the support types. One third (29%) of the interviewed beneficiaries received information from the mukhtars, and one-five (20%) from other farmers. It is understood that other institutions and organizations do not have a fundamental role in this regard.

Table 19. Ardahan Kars Artvin Development Project Information Channels

TOTAL INFORMATION SOURCES	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
	510	45	98	194	19	29	48
Ministry of Food, Agriculture and Livestock	87	96	92	85	84	86	75
Mukhtars	29	22	37	32	21	14	23
Other farmers	20	29	40	16.	5	0	8
Other people in the village	12	13	23	9	0	7	2
Posters, brochures, etc. promotional material	6	18	11	3	0	3	2
Other public institutions	5	7	12	2	0	10	2
Printed media such as newspapers and magazines	3	13	3	1	0	0	0
District Governorship	1	4	4	0	0	0	0
Municipality	1	4	1	1	0	0	0
Provincial Special Administration	1	0	2	1	0	0	0
Others	5	9	3	5	0	0	8

"Where did you hear for the first time this support given within the scope of Ardahan Kars Artvin Development Project?" (MULTIPLE ANSWERS)

Table 20. Ardahan Kars Artvin Development Project Information Channels - Infrastructure Component (%)

	INFRASTRUCTURE BENEFICIARY
BASE	77
Ministry of Food, Agriculture and Livestock	78

Provincial Special Administration	27
Mukhtars	16.
Other people in the village	6
Other farmers	4
Printed media such as newspapers and magazines	3
Other public institutions	3
Posters, brochures, etc. promotional material	1
Municipality	0
Others	1

"Where did you hear for the first time this support given within the scope of Ardahan Kars Artvin Development Project?" (MULTIPLE ANSWERS)

2.2. Level of Satisfaction With Respect To Ardahan Kars Artvin Development Project

The overall satisfaction level of the interviewed project beneficiaries was found to be high. 88% say they are satisfied or very satisfied with the support given in this project. This tendency is similar in all groups, and the level of satisfaction of those who receive vegetable growing support and those who participate in education is above 90%.

Table 21. Level of Satisfaction for Ardahan Kars Artvin Development Project

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
I'm not satisfied at all	3	2	6	1	5	3	2
Not satisfied	4	2	3	7	0	0	4
Neither satisfied nor not satisfied	4	2	3	7	0	3	2
I am satisfied.	48	33	47	49	42	62	50
I'm very satisfied	40	58	39	36	53	31	40
No Answer	1	2	2	0	0	0	2
TOTAL	100	100	100	100	100	100	100

"If you think generally, would you indicate your level of satisfaction with this support given under Ardahan Kars Artvin Development Project?"

The mukhtars interviewed about the infrastructure support were also asked about their satisfaction with AKAKP support, in this context, it is observed that satisfaction with the infrastructure component is high. Since those who said I am very satisfied (30%), and those who said I am satisfied (45%) are evaluated together, overall satisfaction is found to be 75%. When those who said I am not satisfied (9%), and those who said I am not satisfied at all (8%) are evaluated together, the rate of those who are not satisfied is (17%).

Table 22. Satisfaction With AKAKP Infrastructure Support (%)

	TOTAL
Base	77
I'm very satisfied	30
I am satisfied.	45
Neither satisfied nor not satisfied	5
Not satisfied	9
I'm not satisfied at all	8
No answer / No idea	3
TOTAL	100

When the reason for this asked to those who are not satisfied, among the leading reasons are: technical mistakes were made(47%); Company's experience was not enough (18%); and it was not visually beautiful (%18).

Table 23 Reasons For Not Satisfied With AKAKP Infrastructure Support (%)

	TOTAL
Base	17
Technical mistakes were made	47
Company's experience was not enough	18
It was not visually beautiful	18
Construction took too long	12
Timing was not appropriate	12
No warranty or limited	12
Location selection was not appropriate	6
Others	29
TOTAL	153

Note: Since many options can be checked, the total is greater than 100.

The satisfaction of project beneficiaries regarding various topics was also questioned. In this context, it can be said that satisfaction is high in all the subjects questioned. The subject with the highest satisfaction level is to be informed about the application process (satisfaction: 92%). The coverage of the support given follows this subject with a rate of 83%.

Among all subject topics the amount of support given is the matter where the satisfaction is lowest (62%). The proportion of those who are not satisfied with the amount of support among all beneficiaries is 18%. 17% of the respondents stated that they are neither satisfied nor dissatisfied with this issue. Another area where satisfaction is relatively low is the duration of support given under the project (69%).

Table 24 Ardahan Kars Artvin Development Project Satisfaction Level on Various Issues - Project Beneficiary (%)

n=433	I'm not satisfied at all	Not satisfied	Neither satisfied nor not satisfied	I am satisfied.	I'm very satisfied	No answer / No idea
Informing about the support application process.	2	3	3	53	39	1
Scope/content of the Support given	2	5	8	54	29	2
Feature/quality of the Support given	2	7	9	52	27	3
Duration of the support given	2	8	13	47	22	8
Amount of support given	3	15.	17	42	20	3

In all subject topics, it is seen that the dissatisfaction of the beneficiaries receiving fruit growing support is relatively higher.

Although the level of satisfaction with being informed about the support application process is high in all types of support, it has been observed that all those who received vegetable growing support felt satisfied in this regard.

Table 25 Ardahan Kars Artvin Development Project Satisfaction Level - Informing about the support application process

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
	433	45	98	194	19	29	48
I am not satisfied (B2)	4	2	3	4	5	7	6
Neither satisfied nor not satisfied	3	0	4	3	0	3	0
I am satisfied (T2)	92	96	92	93	95	86	90
No Answer	1	2	1	0	0	3	4
TOTAL	100	100	100	100	100	100	100

"Would you indicate your level of satisfaction with this support given under the Ardahan Kars Artvin Development Project in terms of the factors I will read?" Informing about the support application process.

Considering the satisfaction regarding the scope of the support given, it is seen that the level of satisfaction who received fruit growing and vegetable growing support and vegetable growing training is very high (90%). It is relatively low with who received only livestock support, and training in this subject (79%, 75% respectively).

Table 26 Ardahan Kars Artvin Development Project Satisfaction Level - Scope/content of the support given

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
	433	45	98	194	19	29	48
I am not satisfied (B2)	7	7	5	8	5	3	8
Neither satisfied nor not satisfied	8	2	4	12	0	3	10
I am satisfied (T2)	83	89	90	79	84	90	75
No Answer	2	2	1	0	11	3	6
TOTAL	100	100	100	100	100	100	100

"Would you indicate your level of satisfaction with this support given under the Ardahan Kars Artvin Development Project in terms of the factors I will read?" Scope/content of the Support given

When the quality of the support given under the AKAKP is examined, although there is a high satisfaction among those who benefit from different types of support, partial differentiation is observed. Whereas the satisfaction of those who received vegetable growing training is very high (%95), it is relatively low with those who received fruit growing training, and those who participate in the livestock training (71% and 74%).

Table 27 Ardahan Kars Artvin Development Project Satisfaction Level - Feature/quality of the Support given

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
	433	45	98	194	19	29	48
I am not satisfied (B2)	9	16.	12	8	0	10	6
Neither satisfied nor not satisfied	9	7	12	7	0	14	10
I am satisfied (T2)	79	76	74	84	95	69	71

No Answer	3	2	1	1	5	7	13
TOTAL	100	100	100	100	100	100	100

"Would you indicate your level of satisfaction with this support given under the Ardahan Kars Artvin Development Project in terms of the factors I will read?" Feature/quality of the Support given

Satisfaction scores for the duration of support given under the AKAKP range between 67% and 76% for all support types. Only those who participated in the vegetable growing training seem to be satisfied with the duration of the training.

Table 28 Ardahan Kars Artvin Development Project Satisfaction Level - Duration of the support given

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
	433	45	98	194	19	29	48
I am not satisfied (B2)	10	7	16.	10	0	7	6
Neither satisfied nor not satisfied	13	18	12	16.	0	7	8
I am satisfied (T2)	69	71	70	64	95	76	67
No Answer	8	4	1	9	5	10	19
TOTAL	100	100	100	100	100	100	100

"Would you indicate your level of satisfaction with this support given under the Ardahan Kars Artvin Development Project in terms of the factors I will read?" Duration of the Support given

In assessment regarding the amount of support, where the level satisfaction is relatively low, the score falls to 55% with those who received livestock support. Approximately one-quarter (23%) of this group expressed dissatisfaction with the amount of support.

Table 29 Ardahan Kars Artvin Development Project Satisfaction Level - Amount of Support given

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
	433	45	98	194	19	29	48
I am not satisfied (B2)	18	13	16.	23	0	10	19
Neither satisfied nor not satisfied	17	11	17	21	11	7	10
I am satisfied (T2)	63	73	65	55	89	72	60
No Answer	3	2	1	1	0	10	10
TOTAL	100	100	100	100	100	100	100

"Would you indicate your level of satisfaction with this support given under the Ardahan Kars Artvin Development Project in terms of the factors I will read?" Amount of the Support given

Satisfaction with the training given under the AKAKP has also been questioned. Accordingly, farmers and livestock farmers have a high level of overall satisfaction with the training (96%). Satisfaction levels among beneficiaries who received training in the area of vegetable growing, fruit growing and livestock are similar.

Table 30. Satisfaction with Trainings Received (%) - PROJECT BENEFICIARIES

TOTAL	VEGETABLE GROWING	FRUIT GROWING	LIVESTOCK TRAINING
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n:	TRAINING		TRAINING	
	96	19	29	48
Not satisfied at all	1	5	0	0
Not satisfied	1	0	3	0
Neither satisfied nor not satisfied	0	0	0	0
Satisfied	55	68	55	50
Very satisfied	41	26	41	46
No answer	2	0	0	4
Total	100	100	100	100

"Would you indicate your level of satisfaction with the training you received"

Note: The level of satisfaction was also asked to the control group, but this question was not reported because the rate of no answer was too high.

Furthermore, the satisfaction of the mukhtars regarding the infrastructure topic regarding various subject topics was also questioned. In this context, it can be said that satisfaction is high in all the subjects questioned. The subject with the highest satisfaction level is to be informed about the application process (satisfaction: 81%). The coverage of the support given follows this subject with a rate of 77%.

Among all subject topics the duration and the amount of support given is the matter where the satisfaction is lowest (15%).

Table 31. Ardahan Kars Artvin Development Project Satisfaction Level on Various Issues - Mukhtars (%)

n=77	I'm not satisfied at all	Not satisfied	Neither satisfied nor not satisfied	I am satisfied.	I'm very satisfied	No answer / No idea
Informing about the support application process.	1	5	10	56	25	3
Scope/content of the Support given	1	8	10	56	21	4
Duration of the support given	5	10	17	40	19	8
Feature/quality of the Support given	5	9	16.	49	18	3
Amount of support given	5	10	22	40	17	5

When mukhtars are asked in which matters improvement can be achieved, the main issues are identified as increase in the amount of support and its coverage (30%); development / support of dripping and irrigation systems (11%); road/asphalt support/correction(11%); cutting 18% VAT (10%).

Table 32. Issues that can be improved (%)

	INFRASTRUCTURE BENEFICIARY
Base	77
Support amount and coverage can be increased	30
Development / support of dripping and irrigation systems	11
Road/asphalt support/correction	11
Cutting 18% VAT	10
To grant	3

Technical support / tool-equipment support	3
There should not be a timing error/planting timing was wrong	3
Infrastructure study should be carried out	3
Technical faults/problems should not be experienced	3
Drinking water systems are inadequate/defective	3
Fencing should be done	3
Building a marketplace/cold store/chain in the region	2
The stables should have been built / the existing stables have to be renovated	2
Livestock importation should not be done	2
Asphalt/concrete problems must be resolved	2
There must be meadow study/support	2
Document collection process is troublesome	2
Coordination should be ensured with village mukhtars	2
No answer	19
Total	114

Note: Since many options can be checked, the total is greater than 100.

3. ARDAHAN-KARS-ARTVIN DEVELOPMENT PROJECT IMPACT ASSESSMENT

The interviewed beneficiaries in general think that the support given under this project contributes to their business (85%). Especially the percentage of those who say that the contribution of the project to their works is very high (42%). There is a similar perception in different target groups. It can be said that the project is successful in creating value and contribution to work, which is one of its main objectives.

Table 33. Contribution of Ardahan Kars Artvin Development Project to the Work

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
	433	45	98	194	19	29	48
No contribution	5	7	3	5	5	7	4
Not much contribution	8	2	12	8	0	10	4
Partially contributed	43	44	50	44	42	38	31
Contributed a lot	42	44	31	42	53	41	58
No answer / No idea	2	2	4	1	0	3	2
TOTAL	100	100	100	100	100	100	100

"If you think generally, would you indicate the extent to which this support given under Ardahan Kars Artvin Development Project contributed to your work?"

The beneficiaries interviewed were asked whether there were any changes in their status in various topics after the support. Accordingly, the most developed area after the support was the increase in the self-confidence of beneficiaries (72%) and personal development (66%). Half of the beneficiaries also stated that the standard of living in general is increased by virtue of the project.

There is a group of 68% that states that their technical information has improved. Half of the beneficiaries interviewed stated that the product quality, product range and their income improved after the support.

In general, the rate of those who say that their post-support situation has gotten worse is very low. There have also been some who have expressed no change in their situation after the project support received in the questioned areas. In particular, at least half of the project beneficiaries interviewed stated that the situation after the support was the same regarding the places/persons where the sales were made, marketing information, relations with buyers and sales.

Table 34. The Impact of Ardahan Kars Artvin Development Project on Various Issues on Current Situation

n=433	GONE BETTER	REMAINED THE SAME, NOT CHANGED	GONE WORSE	No answer / No idea	TOTAL
Your confidence in yourself	72	24	1	3	100
Your technical knowledge	68	25	1	6	100
Your personal development	66	27	0	7	100
Product quality	52	36	2	10	100
Your quality of life/standard of living in general	52	38	3	7	100
Your income	50	42	5	3	100
Product range	48	42	1	8	100
Your relationships with other manufacturers	45	44	1	10	100
Your information about how to promote the product / Marketing information	33	53	1	13	100
Your sales	33	51	5	12	100
Your relationship with buyers	32	53	1	14	
Persons/ places you sell	21	63	1	15	100

"After this support given under the Ardahan Kars Artvin Development Project, did your situation get better, get worse or remain the same, with respect to the subjects I will read you?"

When assessments of the beneficiaries examined according to the types of support received, it was found that the positive scores of those who received vegetable growing support, and training in this area are higher. Among the beneficiaries of these two types of support, especially in self-reliance, personal development and technical knowledge, development is common after the support. This group, compared to those who received support in fruit growing and livestock, has assessed more favorably the effect of support on their current situation such as product quality, variety, sales.

Most of the beneficiaries who received fruit growing support, even though they have felt an improvement in personal areas, have not observed improvements in product quality, variety, income, sales, etc.

It is expected that there will be an increase in technical knowledge of beneficiaries participating in trainings, but only half of beneficiaries participating in livestock training have stated that their technical knowledge have increased.

Table 35. The Impact of Ardahan Kars Artvin Development Project on Various Issues on Current Situation – "GONE BETTER"

	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
	433	45	98	194	19	29	48
Your confidence in yourself	72	80	84	61	84	79	77
Your technical knowledge	68	76	81	60	84	76	58
Your personal development	66	82	82	55	84	72	52
Product quality	52	80	35	54	74	59	44
Your quality of life/standard of living in general	52	69	41	53	68	59	44
Your income	50	69	22	58	74	38	56
Product range	48	73	43	46	63	62	29
Your relationships with other manufacturers	45	64	55	32	53	59	46
Your information about how to promote the product / Marketing information	33	40	36	24	53	52	42
Your sales	33	51	16.	32	58	31	42
Your relationship with buyers	32	44	29	25	53	48	40
Persons/ places you sell	21	42	19	12	47	28	25

"After this support given under the Ardahan Kars Artvin Development Project, did your situation get better, get worse or remain the same, with respect to the subjects I will read you?"

People who were trained under AKAKP were asked whether they applied the things they had learned in their training, and whether they had shared this knowledge with others.

It can be said that the farmers and the livestock farmers who were trained tend to apply what they learned in training in their work. 69% of them stated that they applied what they learned in training to a large extent /to a very large extent, while 23% of them stated that they partially applied. Among the individuals who have received training in vegetable growing, fruit growing and livestock, the tendency to apply what they learned in training in the work is very similar.

Table 36. State of the Use What Learned at Training at Work (%)

PROJECT BENEFICIARIES				
	TOTAL	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
n:	96	19	29	48
Never applied	6	11	3	6
Applied a little	2	0	3	2
Partially applied	23	26	21	23
Applied to a great extent	49	47	62	42
Applied to a very great extent	20	16	10	27
Total	100	100	100	100

"At what extent did you apply what you have learned from the trainings to your work"

Note: The state of the application what learned to the work was also asked to the control group, but this question was not reported because the rate of no answer was too high.

The majority (91%) of farmers and livestock farmers those received training under AKAKP say that they partially or wholly share what they learned in the trainings with others. In this respect, it can be considered that the multiplier effect potential of the trainings given is high. When examining the differentiation between training categories, it is seen that 33% of the beneficiaries who received livestock training stated that they shared the information they obtained "to a very large extent" with others, the tendency of this group to share information is a little higher in this respect.

Table 37. State of the Share What Learned in Training with Others (%)

PROJECT BENEFICIARIES				
	TOTAL	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
n:	96	19	29	48
None	5	0	0	10
Small extent	3	11	0	2
Some	9	11	10	8
Great extent	60	63	83	46
Very great extent	22	16	7	33
Total	100	100	100	100

"Have you shared what you learned from the trainings with others?"

4. THE EFFECT OF THE ARDHAN KARS ARTVIN DEVELOPMENT PROJECT ON WELFARE

4.1 Household Income

Half of the project beneficiaries interviewed (48%) have stated that their gross household income increased after they received the support. Especially the increase in household incomes of beneficiaries who have received support for vegetable growing and livestock is higher than others.

However, the rate of no answer is very high especially in the enterprises that have received Vegetable Growing and Fruit Growing training. But in general, the training support received in these areas have no negative impact on the household income. Those who received support in these areas indicate that their incomes remain the same.

Table 38. Impact of AKAKP on Household Income (%) - Project Beneficiaries

	PROJECT BENEFICIARIES						
	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
n	433	45	98	194	19	29	48
Gross household income increased	41	67	21	56	11	0	35
Gross household income remained same	46	31	73	39	21	38	48
Gross household income decreased	5	2	5	5	0	10	6
No Answer	8	0	0	0	68	52	10

"You stated that the date you started to receive support under Ardahan Kars Artvin Development Project is I will kindly ask you to consider a year before the date in which you started receiving the support. Is there any increase or decrease in your gross household income you earned one year before the date in which you started receiving the support, or is it the same, compared to today's income?"

When the increase in household income is examined according to the support type, an overall increase in the range of 10% -25% is observed for all project beneficiaries. A striking issue is that the 25% and above increase in fruit and vegetable growing is higher than in the livestock sector.

Table 39. Increase in Household Income - Project Beneficiaries

	PROJECT BENEFICIARIES					
	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
1 - Less Than 10%	13	29	34	Baseline small	Baseline small	6
2 - 10%-25%	40	38	45			71
3 - 26%-50%	27	24	17			6
4 - 51%-75%	10	10	3			6
5 - 76%-100%	0	0	1			0
6 - More than 100%	10	0	0			12

"You stated that there have been an increase in your household income you earned one year before the date in which you started receiving the support. Could you indicate at what percentage there have been an increase compared to today?"

Table 40. Before and After Project Support Comparison - GROSS INCOME

	2017	Before support	
VEGETABLE GROWING			
Gross Income TL	26365	19995	Support received in the vegetable growing sector has had a positive impact on income. This impact is clearer, especially in large-scale enterprises with a gross income of over 20 thousand
10 thousand and below %	31	38	
10,001-20000 %	27	29	
20,001-50000 %	29	22	
50,001 and above %	11	4	
No Answer %	2	7	
FRUIT GROWING			
Gross Income TL	48485	31037	The impact of the support is very clear in fruit growing sector. While the proportion of lower income farmers is falling, the share of the farmers with income of 20,000 or more is increasing.
10 thousand and below %	15.	24	
10,001-20000 %	35	39	
20,001-50000 %	40	31	
50,001 and above %	7	3	
No Answer %	3	3	
LIVESTOCK			
Gross Income TL	52191	31561	In the livestock sector, too, Gross income has increased after the support receipt.
10 thousand and below %	15.	24	
10,001-20000 %	35	39	
20,001-50000 %	40	31	
50,001 and above %	7	3	
No Answer %	23	29	
VEGETABLE GROWING TRAINING			
NO SUFFICIENT BASELINE (In total 19 people were interviewed)			
	5 people have responded	3 people have responded	
FRUIT GROWING TRAINING			
NO SUFFICIENT BASELINE (In total 29 people were interviewed)			
	13 people have responded	9 people have responded	
LIVESTOCK TRAINING			
Gross Income TL	52221	27932	The impact of livestock training is clearly seen in the average of gross income.
10 thousand and below %	19	19	
10,001-20000 %	15.	10	
20,001-50000 %	4	8	
50,001 and above %	10	8	
No Answer	52	44	

4.2.Land Owned

Table 41. Before and After Project Support Comparison - AGRICULTURAL (da)




Land Owned (agricultural) da	2017	Before support	
VEGETABLE GROWING	596	584	No change in the size of land owned in agriculture has been observed.
FRUIT GROWING	3762	3663	
LIVESTOCK	1110	1127	
VEGETABLE GROWING TRAINING	BASELINE IS NOT SUFFICIENT		
FRUIT GROWING TRAINING	BASELINE IS NOT SUFFICIENT		
LIVESTOCK TRAINING	119	88	
Land owned (non-agricultural) ownership % and average decare	2017	Before support	
VEGETABLE GROWING	24,4 % - 5,27 decare	24,4 % - 5,27 decare	4% did not answer this question
FRUIT GROWING	13,3 %- 231 decare	14,3%- 226 decare	41% did not answer this question
LIVESTOCK	10,3 % - 282 decare	10,8%- 259 decare	69% did not answer this question
VEGETABLE GROWING TRAINING	INSUFFICIENT BASELINE		90% did not answer this question
FRUIT GROWING TRAINING	INSUFFICIENT BASELINE		86% did not answer this question
LIVESTOCK TRAINING	16,7%-230 decare	6,3%-24 decare	52% did not answer this question
Non-agricultural land ownership were observed only with the farmers who received support in Livestock Training after the support.			
Land rented (agriculture) da	2017	Before support	
VEGETABLE GROWING ownership % and average decare	22% -40 decare	27%- 40 decare	Although there is no change in the rented area, more farmers rent the land after the support
FRUIT GROWING ownership % and average decare	%30-1434 decare %31 NA	%14-40 decare %34 NA	In the field of fruit growing area, a significant increase has been observed both in the lease rate and in the rented area decare
LIVESTOCK ownership % and average decare	%53- 964 decare %36 NA	%47-1051 decare %40 NA	In the field of livestock, a significant increase has been observed in the rented land
VEGETABLE GROWING TRAINING ownership % and average decare	%84 NA	%85 NA	There is no sufficient baseline for calculation since the no answer rate in vegetable growing training is very high
FRUIT GROWING TRAINING ownership % and average decare	%86 NA	%86 NA	There is no sufficient baseline for calculation since the no answer rate in fruit growing training is very high
LIVESTOCK TRAINING ownership % and average decare	%38-96 decare %40 NA	%31- 66 decare %42 NA	In this area both the rented land rate and the rented land are higher after the support.
Land rented (non-agriculture Land rented (agriculture) da) da	2017	Before support	
VEGETABLE GROWING ownership % and average decare	96% of them do not have non-agriculture rented land	96% of them do not have non-agriculture rented land	Non-agricultural land renting has not been observed as a common behavior. Also the rate of non-response is also very high.
FRUIT GROWING ownership % and average decare	54% of them do not have non-agriculture rented land, 44% of them did not answer.	54% of them do not have non-agriculture rented land, 44% of them did not answer.	
LIVESTOCK ownership % and average decare	24% of them do not have non-agriculture rented land, 77% of them did not answer.	24% of them do not have non-agriculture rented land, 77% of them did not answer.	
VEGETABLE GROWING TRAINING ownership % and average decare	5% of them do not have non-agriculture rented land, 95% of them did not answer.	5% of them do not have non-agriculture rented land, 95% of them did not answer.	
FRUIT GROWING TRAINING ownership % and average decare	10% of them do not have non-agriculture rented land, 90% of them did not answer.	10% of them do not have non-agriculture rented land, 90% of them did not answer.	
LIVESTOCK TRAINING ownership % and average decare	38% of them do not have non-agriculture rented land, 56% of them did not answer.	40% of them do not have non-agriculture rented land, 56% of them did not answer.	

Table 42. Before and After Project Support Comparison - PRICE OF LAND OWNED (%)










The price of one decare of land (agriculture) TL	2017	Before support	
VEGETABLE GROWING	32136	26666	Price per decare of land in 2017 has increased compared to pre-support.
FRUIT GROWING	19291	12617	
LIVESTOCK	8769	6710	
VEGETABLE GROWING TRAINING	%84 NA	%90 NA	
FRUIT GROWING TRAINING	5 people have responded - 19600	4 people have responded - 15500	
LIVESTOCK TRAINING	1904	2190	
The price of one decare of land (non-agriculture) TL	2017	Pre-support	
VEGETABLE GROWING	22 people have responded 29273	22 people have responded 24805	Non-agricultural land prices increased in 2017 compared to pre-support prices
FRUIT GROWING	45 people have responded 13769	45 people have responded 11998	
LIVESTOCK	39 people have responded 11274	39 people have responded 7086	
VEGETABLE GROWING TRAINING	%84 NA	%90 NA	
FRUIT GROWING TRAINING	%90 NA	%90 NA	
LIVESTOCK TRAINING	8 people have responded 4573	5 people have responded 5906	
Annual price for rented one decare land TL	2017	Before support	
VEGETABLE GROWING	20 people have responded 406	19 people have responded. 236	
FRUIT GROWING	51 people have responded 625	42 people have responded 404	
LIVESTOCK	120 people have responded 310	112 people have responded 199	
VEGETABLE GROWING TRAINING	%90 NA	%95 NA	
FRUIT GROWING TRAINING	NO BASELINE	NO BASELINE	
LIVESTOCK TRAINING	13 people have responded 133	9 people have responded 111	



4.3. Employment

Table 43. Pre and post Project Support Comparison - EMPLOYMENT

Employment #	2017	Pre-support	Post-support change	
VEGETABLE GROWING	87% of them do not employ 11% of them employ %2 NA	91% of them do not employ 7% of them employ %2 NA		The rate of hiring worker is higher at people who received support in the field of vegetable growing, fruit growing and livestock. The rate of non-response in the field of training is very high. Here the impact of the support could not be measured.
FRUIT GROWING	41% of them do not employ 24% of them employ %35 NA	50% of them do not employ 14% of them employ %36 NA		
LIVESTOCK	16% of them do not employ 27% of them employ %57 NA	18% of them do not employ 23% of them employ %59 NA		
VEGETABLE GROWING TRAINING	5% of them do not employ %95 NA	5% of them do not employ %95 NA		
FRUIT GROWING	%90 NA	%90 NA		

TRAINING				
LIVESTOCK TRAINING	7% of them do not employ 3% of them employ %90 NA	10% of them do not employ %90 NA		

Number of persons employed outside the household (in one year)	2017	Pre-support		
VEGETABLE GROWING	84% of them do not employ	87% of them do not employ		Hiring people outside the household is not very common in the field of vegetable growing
FRUIT GROWING	17% of them employ On average, 5 persons	13% of them employ On average, 5 persons		In the field of the fruit growing compared to the pre-support, the rate of farmers employed in 2017 is higher.
LIVESTOCK	%72 NA 5% of them employ On average, 6 persons	%72 NA 5% of them employ On average, 2 persons		The rate of non-response is also very high. An increase was observed in the number of persons employed while the ratio of renter enterprises remained the same (<i>small baseline</i>)
VEGETABLE GROWING TRAINING	%95 NA	%95 NA		The rate of no answer is very high in these two areas.
FRUIT GROWING TRAINING	10% of them did not employ %90 NA	10% of them did not employ %90 NA		
LIVESTOCK TRAINING	73% of them do not employ 16% of them employ On average, 1,5 persons	77% of them do not employ 13% of them employ On average, 1,6 persons		The general tendency in this field is not to hire anyone outside the households.
Women #	2017	Pre-support		
VEGETABLE GROWING	93% of them did not employ	96% of them did not employ		
FRUIT GROWING	49% of them did not employ %49 NA	50% of them did not employ %49 NA		
LIVESTOCK	19% of them did not employ %80 NA	19% of them did not employ %80 NA		
VEGETABLE GROWING TRAINING	%95 NA	%95 NA		
FRUIT GROWING TRAINING	10% of them did not employ %90 NA	10% of them did not employ %90 NA		
LIVESTOCK TRAINING	40% of them did not employ %56 NA	42% of them did not employ %56 NA		
Men #	2017	Pre-support		
VEGETABLE GROWING	90% of them did not employ	90% of them did not employ		No employment in vegetable growing field
FRUIT GROWING	38% of them did not employ 20% of them employed On average, 4,5 persons	41% of them did not employ 14% of them employed On average, 5 persons		Although the employment rate in the field of fruit growing is low, compared to the pre-support in 2017 the enterprises made more employment.
LIVESTOCK	17% of them did not employ 6% of them employed	17% of them did not employ 6% of them employed		The rate of employment in livestock is very low.

	On average, 2,6 persons	On average, 2,5 persons		
VEGETABLE GROWING TRAINING	%90 NA	%90 NA		The rate of non response is very high in these two areas.
FRUIT GROWING TRAINING	%90 NA	%90 NA		
LIVESTOCK TRAINING	31% of them did not employ %58 NA	27% of them did not employ %65 NA		The number of enterprises indicating that they employ in the field of livestock training is very low.
Permanent #	2017	Pre-support		
VEGETABLE GROWING	93% of them did not employ	93% of them did not employ		No employment in this field
FRUIT GROWING	49% of them did not employ 48% NA	50% of them did not employ 49% NA		Employment No employment in half of the enterprises
LIVESTOCK	19% of them did not employ 80% NA	19% of them did not employ 80% NA		Non response rate is very high
VEGETABLE GROWING TRAINING	95% NA	95% NA		
FRUIT GROWING TRAINING	90% NA	90% NA		
LIVESTOCK TRAINING	23% of them did not employ 71% NA	25% of them did not employ 73% NA		

Seasonal #	2017	Pre-support	
VEGETABLE GROWING	90% of them did not employ	91% of them did not employ	No employment in this field
FRUIT GROWING	40% of them did not employ 18% of them employed	43% of them did not employ 13% of them employed	Seasonal farmer employment is higher in 2017.
LIVESTOCK	17% of them did not employ 78% NA	17% of them did not employ 78% NA	Although non response rate is high, it is similar in and before 2017.
VEGETABLE GROWING TRAINING	95% NA	95% NA	Non response rate is very high
FRUIT GROWING TRAINING	90% NA	90% NA	
LIVESTOCK TRAINING	19% of them did not employ 73% NA	21% of them did not employ 73% NA	Although non response rate is high, it is similar in and before 2017.
Employed young farmers (under 40 years)#	2017	Pre-support	
VEGETABLE GROWING	91% of them did not employ	91% of them did not employ	No employment in this field
FRUIT GROWING	40% of them did not employ 17% of them employed	44% of them did not employ 11% of them employed	Young farmer employment is higher in 2017.
LIVESTOCK	17% of them did not employ 78% NA	17% of them did not employ 78% NA	Although non response rate is high, it is similar in and before 2017.
VEGETABLE GROWING TRAINING	95% NA	95% NA	Non response rate is very high
FRUIT GROWING TRAINING	90% NA	90% NA	
LIVESTOCK TRAINING	18% of them did not employ 15% of them employed 67% NA	29% of them did not employ 6% of them employed 65% NA	Young farmer employment is higher in 2017 compared to the pre-support.
On average the number of days a worker is employed (in one year), seasonal workers#	2017	Pre-support	
VEGETABLE GROWING	90% no employment	91% no employment	
FRUIT GROWING	20% employment On average 70 days	13% employment On average 53 days	
LIVESTOCK	5% employment On average 56 days	5% employment On average 28 days	
VEGETABLE GROWING TRAINING	90% NA	90% NA	
FRUIT GROWING TRAINING	86% NA	86% NA	
LIVESTOCK TRAINING	13% employment On average 38 days	9% employment On average 27 days	
Monthly wage paid for a permanent worker TL	2017	Pre-support	
VEGETABLE GROWING	91% no employment	91% no employment	Could not be analyzed since the non response rates were high
FRUIT GROWING	49% no employment	50% no employment	

	50% NA	49% NA	
LIVESTOCK	19% no employment 80% NA	19% no employment 80% NA	
VEGETABLE GROWING TRAINING	95% NA	95% NA	
FRUIT GROWING TRAINING	86% NA	86% NA	
LIVESTOCK TRAINING	21% no employment 69% NA	29% no employment 71% NA	
Daily fee paid for seasonal workers TL	2017	Pre-support	
VEGETABLE GROWING	91% no employment	91% no employment	
FRUIT GROWING	38% no employment 42% NA	41% no employment 44% NA	
LIVESTOCK	17% no employment 80% NA	17% no employment 80% NA	
VEGETABLE GROWING TRAINING	95% NA	95% NA	
FRUIT GROWING TRAINING	86% NA	86% NA	
LIVESTOCK TRAINING	13% no employment 73% NA	17% no employment 75% NA	

4.4.Sources of Income

Vegetable, fruit and animal sales are the main source of income in the group that received support in the field of vegetable growing. In addition, the pension is an important source of income.

In 2016 compared to the pre project, 53% of them stated that the income they received from vegetable sales increased. In livestock, which is the other source of income, their income remained the same (42%)

Table 44. Change in Income Sources by Pre-Project Year – VEGETABLE GROWING

n=45	PROJECT BENEFICIARY			
	Decreased	It remained constant	Increased	No answer
Livestock	7	42	2	49
Dairy	7	31	0	62
Hay sales	0	18	2	80
Wheat	0	9	2	89
Vegetable	2	9	53	36
Fruit	16.	16.	4	64
Seasonal work	2	11	0	87
Seasonal work outside the village	2	4	0	93
Rent	0	7	2	91
Cash support from family	0	4	0	96
Retirement Pension	16	9	4	71
Tinker	0	6	0	94
Social aids	0	9	0	91
Heritage	0	4	0	96
tinker work to others	2	9	0	89
Others	11	11	0	78

The main income sources of fruit producers are fruit sales, animal sales and retirement pension.

While the income of beneficiaries who received support in fruit growing have increased by 15% in this field, 16% have remained the same. In livestock, which is another important source of income, while 10% of them stated that their incomes decreased, only 6% of them said that their income increased.

Table 45. Change in Income Sources by Pre-Project Year – FRUIT GROWING

n=98	PROJECT BENEFICIARY			
	Decreased	It remained constant	It increased	No answer
Animal husbandry	10	16.	6	67
Dairy	2	1	2	95
Hay sales	1	11	2	86
Wheat	2	8	2	88
Vegetable	1	5	7	87
Fruit	3	16	15	65
Seasonal work	2	1	1	96
Seasonal work outside the village	1	2	1	96
Like rent	4	2	6	88
Cash support from family	1	5	3	91
Retirement Pension	9	44	8	39
Tinker	0	1	0	99
Social aids	0	0	1	99
Heritage	1	0	0	99
tinker work to others	1	1	1	97
Others	6	23	1	69

The main source of income for those who have received support in the field of livestock is livestock, milk sales, and retirement pension at small proportion. However, there was no increase in livestock and dairy revenues in this group, which received support for animal husbandry, and their income remained the same.

Table 46. Change in Income Sources by Pre-Project Year – LIVESTOCK

n=194	PROJECT BENEFICIARY			
	Decreased	Remained constant	Increased	No answer
Livestock	11	73	9	7
Milk sales	5	47	7	42
Hay sales	1	3	1	95
Wheat	1	3	0	96
Vegetable	2	1	1	96
Fruit	1	1	1	98
Seasonal work	0	2	1	97
Seasonal work outside the village	1	1	1	97
Like rent	0	3	2	96

Cash support from family	1	3	0	97
Retirement Pension	3	18	7	73
Tinker	1	1	0	99
Social aids	0	1	1	98
Heritage	0	1	1	99
tinker work to others	1	1	0	99
Others	1	1	0	99

19 farmers who had been trained in vegetable growing were interviewed, but it would be wrong to make any comment since the no answer rate is very high.

Table 47. Change in Income Sources by Pre-Project Year – VEGETABLE GROWING TRAINING

n=19	PROJECT BENEFICIARY			
	Decreased	Remained constant	Increased	No answer
Livestock	0	16	0	84
Dairy	0	0	5	95
Hay sales	0	5	5	89
Wheat	0	0	0	100
Vegetable	5	0	0	95
Fruit	0	5	5	89
Seasonal work	0	0	0	100
Seasonal work outside the village	0	0	0	100
Like rent	0	0	0	100
Cash support from family	0	11	0	89
Retirement Pension	0	0	0	100
Tinker	0	0	0	100
Social aids	5	0	0	95
Inheritance increase	0	0	0	100
tinker work to others	0	0	0	100
Others	0	11	0	89

Due to high no answer rate of fruit growing mass no comments made on the increase in income sources

Table 48. Change in Income Sources by Pre-Project Year – FRUIT GROWING TRAINING

n=29	PROJECT BENEFICIARY			
	Decreased	It remained constant	It increased	No answer
Animal husbandry	7	7	3	83
Dairy	0	3	0	97
Hay sales	0	7	0	93
Wheat	0	0	0	100

Vegetable	0	3	0	97
Fruit	3	7	0	90
Seasonal work	0	0	0	100
Seasonal work outside the village	0	0	0	100
Like rent	0	0	0	100
Cash support from family	0	0	0	100
Retirement Pension	0	17	3	79
Tinker	0	0	0	100
Social aids	0	0	0	100
Heritage	0	0	3	97
tinker work to others	0	0	0	100
Others	0	3	7	90

The main income sources of project beneficiaries receiving livestock training are livestock and milk sales.

On the other hand, only 8% of project beneficiaries in this group indicated an increase in their income in livestock and 2% in dairy.

Table 49. Change in Income Sources by Pre-Project Year – LIVESTOCK TRAINING

n=48	PROJECT BENEFICIARY			
	Decreased	It remained constant	Increased	No answer
Livestock	10	60	8	21
Dairy	2	40	2	56
Hay sales	0	17	0	83
Wheat	0	6	2	92
Vegetable	2	0	0	98
Fruit	0	0	0	100
Seasonal work	0	2	0	98
Seasonal work outside the village	0	0	0	100
Like rent	0	0	0	100
Cash support from family	0	0	0	100
Retirement Pension	0	13	0	88
Tinker	0	0	0	100
Social aids	0	0	0	100
Heritage	0	0	0	100
tinker work to others	0	0	0	100
Others	0	13	2	85

4.5.Assets

Beneficiaries receiving different types of support were asked to compare their assets in 2017 with the pre-project period.

In the field of vegetable training it was seen that assets remained at similar level in most topics. However, there is a significant increase in greenhouse ownership. 78% of beneficiaries stated that greenhouse ownership increased compared to pre-project support year.

Table 50. Change in Assets by Pre-Project Support Year – VEGETABLE GROWING

n=45	PROJECT BENEFICIARY			
	Decreased	Remained constant	Increased	No answer
house in the village	0	91	0	9
house in the district	0	22	7	71
barn	2	71	0	27
cattle	16	31	18	36
Sheep and goat	2	4	2	91
Orchard	2	47	2	49
Vegetable garden	2	22	16	60
Greenhouse	2	11	78	9
Vineyard	0	20	0	80
Crop field	2	18	0	80
Meadow	0	27	7	67
Rangeland	0	4	0	96
Tractor	0	33	7	60
TV	2	84	11	2
Refrigerator	2	93	4	0
Washing machine	0	96	4	0
Mobile phone connected to internet	0	36	27	38
Mobile phone not connected to the Internet	16	53	9	22

It was seen that the asset ownership of the people who received fruit growing support increased in 3 areas. The most increase is in orchard ownership. Half of the beneficiaries in this group declared that their orchards had increased compared to the pre-project period. Another increase is in the number of houses owned in the district; 1/3 of them stated that the number of houses they owned in the district had increased after the project support. There is an increase in the smartphone ownership of the beneficiaries.

Table 51. Change in Assets by Pre-Project Support Year – FRUIT GROWING

n=98	PROJECT BENEFICIARY			
	Decreased	Remained constant	Increased	No answer
house in the village	1	84	8	7
house in the district	27	1	28	45
barn	0	67	2	31
cattle	20	17	12	50
Sheep and goat	6	2	8	84

Orchard	4	37	51	8
Vegetable garden	1	36	3	60
Greenhouse	2	2	5	91
Vineyard	1	14	10	74
Crop field	6	28	1	65
Meadow	0	52	1	47
Rangeland	1	7	0	92
Tractor	2	20	10	67
TV	0	94	4	2
Refrigerator	0	96	3	1
Washing machine	0	96	1	3
Mobile phone connected to internet	40	11	51	-2
Mobile phone not connected to the Internet	3	62	4	31

For livestock beneficiaries, there is a substantial increase in the cattle ownership (45%). Otherwise, it was determined that the other assets remained the same.

Table 52. Change in Assets by Pre-Project Support Year – LIVESTOCK

n=194	PROJECT BENEFICIARIES			
	Decreased	It remained constant	It increased	No answer
house increase in the village	1	84	4	11
house in the district	1	10	4	86
barn	1	84	6	9
cattle	20	26	45	9
Sheep and goat	4	2	4	91
Orchard	1	10	3	87
Vegetable garden	0	8	0	92
Greenhouse	0	1	2	98
Vineyard	0	1	0	99
Crop field	2	37	4	58
Meadow	0	37	4	60
Rangeland	0	2	0	98
Tractor	2	68	5	25
TV	1	88	5	6
Refrigerator	2	88	4	6
Washing machine	2	88	4	6
Mobile phone connected to internet	3	34	24	39
Mobile phone not connected to the Internet	17	43	3	37

The rate of no answer is very high for the questions about the assets of the beneficiaries participating in the training. The following assessments should be read considering this situation

There is no significant increase in ownership in beneficiaries receiving training in vegetable growing.

Table 53. Change in Assets by Pre-Project Support Year – VEGETABLE GROWING TRAINING

n=19	PROJECT BENEFICIARIES			
	Decreased	Remained constant	Increased	No answer
house increase in the village	11	5	16.	68
house in the district	11	5	16.	68
barn	0	26	5	68
cattle	5	5	5	84
Sheep and goat	0	0	0	100
Orchard	5	5	5	84
Vegetable garden	0	0	0	100
Greenhouse	5	5	0	89
Vineyard	0	0	0	100
Crop field	0	5	0	95
Meadow	0	5	0	95
Rangeland	0	0	0	100
Tractor	0	0	5	95
TV	0	26	0	74
Refrigerator	0	26	0	74
Washing machine	0	26	0	74
Mobile phone connected to internet	0	21	0	79
Mobile phone not connected to the Internet	0	11	5	84

In fruit growing training groups a partially increase in orchard ownership was observed (17%).

Table 54. Change in Assets by Pre-Project Support Year – FRUIT GROWING TRAINING

n=29	PROJECT BENEFICIARY			
	Decreased	It remained constant	It increased	No answer
house in the village	0	38	3	59
house in the district	0	21	0	79
barn	0	17	7	76
cattle	0	17	10	72
Sheep and goat	0	0	3	97
Orchard	0	17	17	66
Vegetable garden	0	14	0	86
Greenhouse	0	3	0	97
Vineyard	0	0	0	100
Crop field	0	0	0	100
Meadow	0	7	0	93
Rangeland	0	7	0	93
Tractor	0	14	3	83
TV	0	34	7	59
Refrigerator	0	38	3	59
Washing machine	0	38	0	62
Mobile phone connected to internet	0	21	7	72
Mobile phone not connected to the Internet	7	28	0	66

In beneficiaries receiving training in livestock an increase in cattle, barn and tractor ownership was observed.

Table 55. Change in Assets by Pre-Project Support Year – LIVESTOCK TRAINING

n=48	PROJECT BENEFICIARY			
	Decreased	Remained constant	Increased	No answer
house in the village	0	52	13	35
house in the district	0	6	2	92
barn	2	46	15.	38
cattle	10	25	23	42
Sheep and goat	0	2	0	98
Orchard	0	8	0	92
Vegetable garden	0	2	0	98
Greenhouse	0	0	0	100
Vineyard	0	0	0	100
Crop field	0	10	2	88
Meadow	0	23	0	77
Rangeland	0	4	0	96
Tractor	6	27	17	50
TV	0	54	2	44
Refrigerator	0	48	4	48
Washing machine	0	50	0	50
Mobile phone connected to internet	0	27	4	69
Mobile phone not connected to the Internet	6	40	0	54

4.6.Factors That Have Negative Impact on Income.

The interviewed project beneficiaries and control groups were asked about the factors that have negative impact on household income. Here, a weighted index is prepared according to the order of importance of each element.

Climate conditions have the most negative effect on the household income of beneficiaries from three type of support. In the 2nd ranking factor there are differences depending on the area of support received. While plant diseases are the second most important factor in vegetable and fruit growing, agricultural input prices is the second most important factor in livestock.

Table 56 Factors Affecting Income Negatively (%) - BENEFICIARIES AND CONTROL GROUPS

	VEGETABLES		FRUIT		LIVESTOCK	
	Beneficiary	Control	Beneficiary	Control	Beneficiary	Control
Climate conditions	34	20	37	37	40	38
Lack of technical knowledge	8	10	8	3	5	6
Health problems	3	6	10	5	3	4
Lack of skilled labor	1	0	0	0	1	0
Plant diseases	18	29	14	12	3	3
Weak private sector	3	8	8	8	1	2
National economic condition	7	16.	6	12	10	10
Remote location	1	0	2	1	2	1
Agricultural input prices	13	0	9	11	25	24
Taxes	8	0	2	8	6	6
Inadequate public policies for farmers	4	12	4	4	5	6

While climate conditions stated as the first ranking negative impact in every group that does or does not receive fruit growing and livestock training, agricultural input prices stated as the second ranking negative impact.

Table 57. Factors Affecting Income Negatively (%) - TRAINEE BENEFICIARIES AND CONTROL GROUPS

	VEGETABLE GROWING TRAINING		FRUIT GROWING TRAINING		LIVESTOCK TRAINING	
	Beneficiary	Control	Beneficiary	Control	Beneficiary	Control
Climate conditions	NOT REPORTED DUE TO NO ANSWER IN THE BENEFICIARY GROUP AND BASELINE INSUFFICIENCY IN CONTROL GROUP		34	49	57	54
Lack of technical knowledge			0	3	4	4
Health problems			0	2	4	0
Lack of skilled labor			2	0	0	0
Plant diseases			11	6	6	4
Weak private sector			5	4	2	0
National economic condition			5	4	7	3
Remote location			0	0	0	0
Agricultural input prices			14	15.	13	25
Taxes			5	9	2	6
Inadequate public policies for farmers			2	9	3	4

5. THE IMPACT OF ARDAHAN KARS ARTVIN DEVELOPMENT PROJECT ON PRODUCT, BUSINESS AND SALE PROCESS

5.1. Sources of Information on Production

The most used information source for production both for project beneficiaries and for groups that do not benefit from the project is the Provincial and District Directorates of the Ministry of Food, Agriculture and Livestock. The informative role of the ministry in terms of production is similar both for the pre-project period and for the year 2017, on the other hand an increase in the role is observed. The primary source of information for the control group is the Ministry. In the pre- and post-project period and in all groups, Producers' self research is the second-ranked source of information at a much lower rate. In this context, it can be said that the Ministry continues to be the main institution playing a role in informing producers.

Table 58 Most Used Information Sources on Production (%)

n:	PROJECT BENEFICIARIES		CONTROL GROUP
	2017	Pre-project	2017
	433	433	195
FAL Provincial Directorate / FAL District Directorate	71	54	62
Self-research	14	15.	17
Veterinary	8	8	10
Other farmers	1	2	4
Peers	1	1	2
Mukhtars	1	3	1
Pesticide sellers	0	1	1
Agro credit cooperative	0	0	1
Other (please specify)	3	15.	1
NA / No idea	0	1	2

When examined according to different types of support, the Ministry is the leading source of information for all beneficiaries. This score is relatively lower for those who receives training in livestock (46%). In addition to their self research, the impact of veterinarians are also observed. On the other hand, it can be said that the role of the Ministry in this beneficiary group is increased too compared to the pre-project period.

Table 59. Most Used Information Sources on Production Project Beneficiaries, 2017 (%)

n:	PROJECT BENEFICIARIES				VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
	TOTAL	VEGETABLES	FRUIT	LIVESTOCK			
	433	45	98	194	19	29	48
FAL Provincial Directorate / FAL District Directorate	71	71	78	73	74	76	46
Self-research	14	24	15.	8	16	17	21
Veterinary	8	0	0	14	0	0	15.
Mukhtars	1	0	2	2	0	0	2

Peers	1	2	1	1	0	3	0
Other farmers	1	2	1	0	5	3	4
Pesticide sellers	0	0	1	0	5	0	0
Agro credit cooperative	0	0	0	0	0	0	2
Other (please specify)	3	0	2	3	0	0	10
Total	100	100	100	100	100	100	100

"From who do you get the most information about production?"

Table 60. Most Used Information Sources on Production Project Beneficiaries, Pre-Project Support Year (%)

	PROJECT BENEFICIARIES						
	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
n:	433	45	98	194	19	29	48
FAL Provincial Directorate / FAL District Directorate	54	47	73	58	42	45	27
Self-research	15.	40	17	6	37	21	15.
Veterinary	8	0	0	14	0	0	13
Mukhtars	3	0	0	6	0	0	0
Other farmers	2	2	1	2	5	3	2
Pesticide sellers	1	2	1	0	5	0	0
Peers	1	0	0	1	0	3	0
Other (please specify)	15.	9	5	13	11	28	44
No answer	1	0	2	1	0	0	0
Total	100	100	100	100	100	100	100

"From who do you get the most information about at pre-project support year/ 5 years ago?"

Table 61. Most Used Information Sources on Production - Control Group, 2017 (%)

	CONTROL GROUP						
	TOTAL	VEGETABLES	FRUIT	LIVESTOCK	VEGETABLE GROWING TRAINING	FRUIT GROWING TRAINING	LIVESTOCK TRAINING
n:	195	14	53	92	4	19	13
FAL Provincial Directorate / FAL District Directorate	62	43	66	52	75	89	92
Self-research	17	21	21	17	25	11	8
Veterinary	10	0	0	22	0	0	0
Other farmers	4	21	6	2	0	0	0
Peers	2	7	2	2	0	0	0
Mukhtars	1	0	2	0	0	0	0
Pesticide sellers	1	0	2	0	0	0	0
Agro credit cooperative	1	0	0	1	0	0	0
Other (please specify)	1	7	2	0	0	0	0
NA / No idea	2	0	0	3	0	0	0
Total	100	100	100	100	100	100	100

"From who do you get the most information about production?"

5.2. Fruit and Vegetable Production and Sales Process

Various questions were asked to the beneficiaries receiving vegetable and fruit growing support about the production processes. Under this topic, issues such as seeds, irrigation, greenhouse expansion plans were questioned.

Accordingly, when we look at the general seed procurement tendency of the project beneficiaries, it is seen that the most commonly used source for seed procurement is private companies (61%). On the other hand, it is seen that the control group is more likely to produce their seeds (67%).

The procurement of the seed from the government is very limited for the control group, 22% of the vegetable producers and 8% of the fruit producers, who are beneficiaries of the project, receive the seeds from the government.

Table 62. Sources of seeds/seedlings (%)

	PROJECT BENEFICIARIES			CONTROL GROUP		
	TOTAL	VEGETABLES	FRUIT	TOTAL	VEGETABLES	FRUIT
n:	143	45	98	67	14	53
Private Company	61	38	71	15.	21	13
Own-Production	17	36	8	67	71	66
State	13	22	8	4	0	6
Another Farmer	6	4	6	10	7	11
No answer	4	0	6	3	0	4
Total	100	100	100	100	100	100

"Which source do you use to find (or buy) seeds?"

65% of vegetable and fruit producers, who are beneficiaries of the project, declare that they are satisfied with the quality of the seeds and seedling. This percentage is somewhat lower in producers who do not benefit from the project (51%).

When a comparison between the different beneficiary groups is made, it is seen that the level of satisfaction of vegetable producers with respect to seed and seedling quality is somewhat higher than that of fruit producers (73%, 61%, respectively). On the other hand, this is not the case in the case of control. Starting from this, it can be said that the support provided has a positive effect on the seed quality satisfaction of the vegetable producers.

Table 63. Level of Satisfaction from Seeds / Seedlings Quality (%)

	PROJECT BENEFICIARIES			CONTROL GROUP		
	TOTAL	VEGETABLES	FRUIT	TOTAL	VEGETABLES	FRUIT
n:	143	45	98	67	14	53
Not satisfied	17	20	16.	18	14	19
Neither satisfied nor not satisfied	9	7	10	22	50	15.
I am satisfied.	65	73	61	51	36	55
No answer	4	0	12	9	0	11
Total	100	100	100	100	100	100

"What is your level of satisfaction with seed / seedling quality?"

One of the another topics examined is irrigation in the area of production. Water transported by pipes in production areas of project beneficiaries (76%) is higher than in the control group (10%). In vegetables and fruit producers neither the beneficiary group nor the control group show a significant differentiation in this issue.

Table 64. Existence of Water Transported by Pipes in Production Areas (%)

n:	PROJECT BENEFICIARIES			CONTROL GROUP		
	TOTAL	VEGETABLES	FRUIT	TOTAL	VEGETABLES	FRUIT
	143	45	98	67	14	53
Yes	76	76	77	10	7	11
No	24	24	23	90	93	89
Total	100	100	100	100	100	100

"Is there water transported by pipe in your production area? "

One of the most distinct changes in the production processes of the farmers receiving support is the use of drip irrigation. In parallel with the availability of water transported by pipe, for 2017, the availability of drip irrigation is also higher among project beneficiaries (87%) compared to the control group (6%). In addition, given that the use of drip irrigation among project beneficiaries is at 10% level before the project, it can be said that AKAKP has triggered an important transformation in the life of farmers in irrigation.

Table 65. Drip and Irrigation Status in Production Area (%)

n:	PROJECT BENEFICIARIES -2017			PROJECT BENEFICIARIES- Pre project			CONTROL GROUP		
	TOTAL	VEGETABLES	FRUIT	TOTAL	VEGETABLES	FRUIT	TOTAL	VEGETABLES	FRUIT
	143	45	98	143	45	98	67	14	53
Yes	87	82	90	10	20	5	6	0	8
No	13	18	10	90	80	95	94	100	92
Total	100	100	100	10	100	100	100	100	100

"Do you have drip irrigation in your production area?"

It can be said that AKAKP has motivated the beneficiaries to expand the greenhouse area. While half of the project beneficiaries (51%) said they had plans to expand the greenhouse area before the project, the proportion of beneficiaries who declared that they have a plan in this respect for 2017 was 64%. The control group's plan to expand the greenhouse area today is lower than the beneficiary group.

It can be said that the farmers in both groups receiving fruit and vegetable growing support have a general tendency to expand their production area.

Table 66 Greenhouse Area Expansion Plan - 2017 (%)

	PROJECT BENEFICIARIES -2017			PROJECT BENEFICIARIES- Pre project			CONTROL GROUP		
	TOTAL	VEGETABLES	FRUIT	TOTAL	VEGETABLES	FRUIT	TOTAL	VEGETABLES	FRUIT
n:	143	45	98	143	45	98	67	14	53
Yes	64	64	64	51	44	54	37	36	38
No	27	31	24	38	42	36	36	29	38
Undecided / Was Undecided	5	4	5	7	13	4	16.	7	19
No answer	4	0	6	4	0	6	0	0	0
No greenhouse	0	0	0	0	0	0	10	29	6
Total	100	100	100	100	100	100	100	100	100

"Do you have plans to expand the greenhouse area?"

In addition to the production, questions regarding the farmers' sales practices were asked.

Vegetable and fruit producers, who are project beneficiaries, sell their products mostly in local bazaars (34%) in 2017. Local bazaars are followed by neighbors in village (12%), intermediaries (outside province) (10%), intermediaries (within province) (8%) and wholesale markets (6%) among the sales points. While the share of local bazaars for beneficiaries in the pre-project period does not change between total sales points, it is observed that the share of wholesale markets (17%) are greater compared to 2017.

For the control group, neighbors in the village (25%) are the most prominent points in sales. When considered from this point of view, it can be said that the project has a positive impact on the beneficiaries in diversifying sales points and increasing formal sales channels.

Table 67 Top Product Buyer Persons and Institutions-2017 (%)

	PROJECT BENEFICIARIES			CONTROL GROUP		
	TOTAL	VEGETABLES	FRUIT	TOTAL	VEGETABLES	FRUIT
n:	143	45	98	67	14	53
Local bazaar	34	44	30	19	7	23
Neighbors in my village	12	16	10	25	29	25
Intermediaries (outside province)	10	2	13	1	0	2
Intermediaries (within province)	8	0	11	7	14	6
Wholesale market (directly)	6	4	6	12	7	13
Vegetables association	1	2	1	0	0	0
Others	29	31	29	30	43	26
NA / No idea	0	0	0	5	0	6
Total	100	100	100	100	100	100

"To whom do you sell your products most?"

Table 68 Top Product Buyer Persons and Institutions- Pre-Project Year (%)

n:	PROJECT BENEFICIARIES		
	TOTAL	VEGETABLES	FRUIT
	143	45	98
Local bazaar	29	38	24
Wholesale market (directly)	17	9	20
Neighbors in my village	11	11	11
Intermediaries (within province)	8	0	11
Intermediaries (within province)	6	0	8
Vegetables associations	1	2	0
Others	13	40	0
There is no other	17	0	24
Total	100	100	100

"To whom did you sell your products most at pre-project support year/ 5 years ago?"

It is observed that neither the project beneficiaries nor the control group have a clear view of the market prices of the products sold, and the producers are confused about the selling price. While a quarter (23%) of the beneficiaries said that the price of the products sold was not worthy of the money paid, one third (33%) said the products were worthy of the money paid. These ratios are similar for the control group.

Table 69. Opinions Regarding the Market Prices of the Products Sold (%)

n:	PROJECT BENEFICIARIES			CONTROL GROUP		
	TOTAL	VEGETABLES	FRUIT	TOTAL	VEGETABLES	FRUIT
	143	45	98	67	14	53
Not worthy of the money paid at all	13	11	14	18	29	15
Not worthy of the money paid	10	7	12	6	7	6
Partially worthy of money paid	20	27	16.	16.	21	15.
Definitely worthy of the money paid	13	20	10	18	0	23
No answer / No idea	43	36	47	42	43	42
Total	100	100	100	100	100	100

"What are your opinions regarding the market prices of the products you sell?"

Difficulties experienced by vegetables and fruit producers regarding the sales do not differ between beneficiaries and control groups. In 2017, one third of both beneficiaries and control group (34%, 37%) have experienced difficulty in selling. This difficulty seems to continue despite project support. The sales issue is one of the areas where the project needs to be improved.

Table 70. Difficulties Experienced Regarding the Sales - 2017 (%)

	PROJECT BENEFICIARIES			CONTROL GROUP		
	TOTAL	VEGETABLES	FRUIT	TOTAL	VEGETABLES	FRUIT
n:	143	45	98	67	14	53
Yes	34	40	31	37	43	36
No	66	60	69	58	57	58
No answer	0	0	0	4	0	6
Total	100	100	100	100	100	100

"Do you experience difficulty in selling?"

Table 71. Difficulties Experienced Regarding the Sales - Pre-Project Year (%)

	PROJECT BENEFICIARIES		
	TOTAL	VEGETABLES	FRUIT
n:	143	45	98
Yes	34	42	30
No	66	58	70
No sales	0	0	0
Total	100	100	100

"Did you experience difficulty in selling in pre-project support year / 5 years ago?"

After the training, beneficiaries' productivity per square meter and the number of harvests have increased, similarly, it is seen that the dairy farmers' milk yield per has animal increased, and an average increase of 2 kilograms per animal is observed after the project. While for the cucumber product, the average number of harvests before the project was 3, after this project it has increased to 9, the harvest kg per square meter has increased from 6 to 9. While the average number of harvests for tomatoes and peppers does not change much, product kilogram productivity per square meter has increased significantly (average 5 kg before the project, 9 kg after the project).

In this respect, it can be concluded the project has affected beneficiaries' production potential positively.

Table 72. Average yield increase in post-training production - Vegetables

	Vegetable Growing Training			
	2016 Average kg per square meter	Average number of harvests in 2016	Pre-Project average kg per square meter	Pre-Project average number of harvests
Cucumber	9	9	6	3
Tomato	9	3	5	3
Pepper	9	5	5	N/A
Bean	4	5	N/A	N/A

"Was there an increase in your vegetable production after training, if so, how much?"

5.3. LIVESTOCK PRODUCTION AND SALES PROCESS

After the training, beneficiaries' productivity per square meter and the number of harvests have increased, similarly, it is seen that the dairy farmers' milk yield per animal has increased, and an average increase of 2 kilograms per animal is observed after the project. While for the cucumber product, the average number of harvests before the project was 3, after this project it has increased to 9, the harvest kg per square meter has increased from 6 to 9. While the average number of harvests for tomatoes and peppers does not change much, product kilogram productivity per square meter has increased significantly (average 5 kg before the project, 9 kg after the project).

In this respect, it can be concluded the project has affected beneficiaries' production potential positively.

Table 73. Average yield increase in post-training production - Milk

Livestock Training Average		
	2017 kg	Pre-project kg
Milk yield per animal	10	8

"Was there an increase in milk yield per animal after training, if so, how much?"

Among all the topics questioned regarding livestock training, among beneficiaries, the percentage of those who say their situation is improving is higher. On the other hand, the control group has stated that their conditions have improved in only one topic (health conditions of the calves) among all others.

In the beneficiary group, the condition of the animals infected with breast disease is the most improving area (77%) compared to other areas. In the areas that are improving, the breast disease is followed by health conditions of the calves (69%) and milk quality (63%).

In the control group, health conditions of the calves is the most improving area with 46%. In the groups that do not benefit from the project a tendency to remain stable in the various headings attracts attention.

Table 74. The Impact of Livestock Training on Farmers on Various Topics (%)

	PROJECT BENEFICIARIES (n=48)				CONTROL GROUP (n=13)			
	Gone better	Remained same, not changed	Gone worse	NA	Gone better	Remained same, not changed	Gone worse	NA
Animals infected with breast disease	77	8	6	8	38	46	15.	0
Health conditions of calves	69	4	2	25	46	38	15.	0
Quality of milk	63	13	2	23	31	54	8	8
Milk yield per animal	54	23	0	23	38	54	8	0
Storage of feeds without degradation	52	17	2	29	23	62	8	8
The amount of feed I produce with my own means	50	17	0	33	38	38	15	8

Parasites	50	15.	4	31	31	54	15.	0
Amount or quality of farm manure	44	27	0	29	31	54	8	8
Need for work force due to new techniques	40	19	13	29	23	54	15.	8
Silage production or quality	38	25	4	33	31	54	15.	0
Product yield per decare	38	25	4	33	31	38	23	8
The amount of crops by the transition to the planting for autumn	38	25	6	31	23	62	8	8

"In the last 5 years has your situation got better or worse, or remained the same, with respect to the subjects I will read to you? In your opinion, what kind of benefits it provided to you?"

66% of the project beneficiary livestock breeders are members of the Breeding Cattle Breeders' Association, this rate is 50% for the control group.

Table 75. Membership to Breeding Cattle Breeders Association (%)

	PROJECT BENEFICIARY LIVESTOCK BREEDERS	CONTROL GROUP
n:	194	92
YES	66	50
NO	34	50
Total	100	100

Are you a member of "Breeding Cattle Breeders Association"?

It is seen that most of the animals in the herd are hybrids For the beneficiary group, hybrid breed ownership is 77% and for control group hybrid breed ownership is 66%.

Table 76. Breed of the Animals in the Flock (%)

	PROJECT BENEFICIARY LIVESTOCK BREEDERS	CONTROL GROUP
n:	194	92
Pure breed	18	13
Hybrid	77	66
Local breed	14	24

"What is the breed of the animals in your herd?"

Artificial insemination is more common among the project beneficiary livestock breeders (56%) compared to the control group (40%).

Table 77 Application of Artificial Insemination (%)

	PROJECT BENEFICIARY LIVESTOCK BREEDERS	CONTROL GROUP
n:	194	92
YES	56	40
NO	43	57
NA	1	3
Total	100	100

"Do you apply artificial insemination?"

Silage production is quite limited both in beneficiaries and control groups. While the percentage of beneficiaries producing silage is 13%, this rate decreases to 2% for the control group.

Table 78. Silage Production (%)

	PROJECT BENEFICIARY LIVESTOCK BREEDERS	CONTROL GROUP
n:	194	92
YES	13	2
NO	86	95
NA	1	3
Total	100	100

"Do you produce silage?"

For both beneficiaries and control groups, milk production is the main reason for livestock breeding (76% and 75%, respectively). 46% of the beneficiaries and 39% of the control group reported that they were breeding livestock for fattening.

Table 79. Reason for Livestock Breeding (%)

	PROJECT BENEFICIARY LIVESTOCK BREEDERS	CONTROL GROUP
n:	194	92
Milk Production	76	75
Fattening	46	39

"What is your reason for livestock breeding?"

It is seen that the producers dealing with livestock breeding sell their animals mostly to the traders from the province. Traders outside the province, local butchers and villagers are following this group in sales. From this point of view, there are no significant differences between the project beneficiaries and the control group. In general, people and institutions to which sales are made are limited, and this area continues to be a development point. Similarly, it is observed that livestock breeders prefer the more passive interaction methods in the contact channels with the buyers. A vast majority of the both the beneficiary and the control group (62% and 59%, respectively) are waiting for the buyers to come to their villages. On the other hand, the percentage of those who transport to the market by their own vehicle is 40% for beneficiaries and 33% for control groups. In this regard, it can not be said that the project has triggered a great change in terms of sales channels in the life of the livestock breeder.

Table 80. Persons and Institutions to which Animals are Sold (%)

	PROJECT BENEFICIARY LIVESTOCK BREEDERS	CONTROL GROUP
n:	194	92
Traders from the province	63	68
Traders outside the province	35	28
Local butchers	24	11
Villagers	14	16

Municipality slaughterhouse	0	2
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"To whom do you sell your animals?"

Table 81. Contact Channels with Buyers (%)

	PROJECT BENEFICIARY LIVESTOCK BREEDERS	CONTROL GROUP
n:	194	92
Buyers coming to the farm	62	59
Transport to the market by own vehicle	40	33
Transport to the market by rented vehicle	11	13
Share the cost with other villagers	2	4
Others	3	1

"How do you contact the buyers?"

The level of satisfaction of livestock breeders is not very high. Only one third of the beneficiaries, and 15% of the control group declared that they are satisfied. The basic reason for the dissatisfaction of those who say that they are not satisfied with the dairies is the low prices. It is understood that the livestock breeders have a higher price expectation from dairies.

Table 82. Level of Satisfaction with Dairies (%)

	PROJECT BENEFICIARY LIVESTOCK BREEDERS	CONTROL GROUP
n:	194	92
Not satisfied	23	25
Neither satisfied nor not satisfied	13	13
I am satisfied.	27	15.
NA	38	47
Total	100	100

"What is your level of satisfaction with current milk processors (dairy)?"

Table 83. Basic Reasons of Dissatisfaction from Dairies (%)

	PROJECT BENEFICIARY LIVESTOCK BREEDERS	CONTROL GROUP
n:	69	35
Low price	78	83
No timely payment	9	9
No organized regular collecting service	1	3
Others	12	6
Total	100	100

"What is the main reason you are not satisfied with milk processors?"

Milking machine ownership is higher among beneficiaries (57%) compared to control group (35%). The main reason for not having a dairy milking machine is that their herd size is small and in addition, their lack of financial strength, and being in the fattening business are the other main reasons.

Table 84. Milking Machine Ownership (%)

	PROJECT BENEFICIARY LIVESTOCK BREEDERS	CONTROL GROUP
n:	194	92
YES	57	35
NO	42	62
NA	1	3
Total	100	100

"Do you have a milking machine?"

Table 85. Reasons for Not Having a Milking Machine (%)

	PROJECT BENEFICIARY LIVESTOCK BREEDERS	CONTROL GROUP
n:	82	57
Small herd size - no need	56	51
Cannot afford	20	32
In fattening business	20	12
No electricity in upland	2	0
Barns are not suitable	1	2
Does not have a cow	0	2
No one to milk	0	2
NA	4	9

"Why do not you buy a milking machine?"

There are no significant differences between the project beneficiaries and the control group in terms of fattening time. Feeding times of 120 to 220 days are common in most of the producers. Fattening period less than 120 days is 4% in livestock breeders and 2% in control group. Livestock breeders mostly feed their herds 2 or 3 times a day. In this respect, there is no difference between beneficiary and control groups.

Table 86 Fattening period (%)

	PROJECT BENEFICIARY LIVESTOCK BREEDERS	CONTROL GROUP
n:	194	92
Less than 120 days	4	2
120-220 days	62	71
More than 220 days	15.	13
NA / No idea	19	14
Total	100	100

"What is your fattening period?"

Table 87. Frequency of daily feeding

	PROJECT BENEFICIARY LIVESTOCK BREEDERS	CONTROL GROUP
n:	194	92
Once a day	1	2
Twice a day	48	51
Three times a day	39	35
More than three times a day	12	9
NA / No idea	1	3
Total	100	100

"What is your daily feeding frequency?"

Drinking water availability in the barns is high for both the beneficiaries and the control group (76% and 71%, respectively).

Table 88. Drinking Water Availability in the Barn (%)

	PROJECT BENEFICIARY LIVESTOCK BREEDERS	CONTROL GROUP
n:	194	92
YES	76	71
NO	23	26
NA	1	3
Total	100	100

"Do you have drinking water in the barns?"

Three-fifths of the livestock breeders produce the feeds they need with their own means. This is similar for beneficiary and control groups.

Table 89. The Ratio of Feed Produced by Own Means to the Need (%)

	PROJECT BENEFICIARY LIVESTOCK BREEDERS	CONTROL GROUP
n:	194	92
Below 25%	18	13
Approximately 50%	30	40
Over 50%	32	29
Almost 100%	19	14
NA / No idea	1	3
Total	100	100

"What is the ratio of the feed you produced with your own means to your needs?"



The frequency of going to the vet of the project beneficiary livestock breeders during the year is higher than the control group. The ratio of those going to the veterinarian more than twice a year is 65% among the beneficiaries, whereas it is 52% among those who are not project beneficiaries.

Table 90. Request of Veterinary Services During the Year (%)

	PROJECT BENEFICIARY LIVESTOCK BREEDERS	CONTROL GROUP
n:	194	92
None	3	5
Once	9	12
Twice	22	27
More than twice	65	52
NA / No idea	1	3
Total	100	100

"How often do you get service from a veterinarian within a year?"

5.4. INFRASTRUCTURE SUPPORT

General Situation of Village

When the general situation of the villagers in the beneficiary group and the control group is questioned, the following findings arise: While the average number of households in the villages is 101 in the beneficiary group and it is 83 in the control group. While the average population in the villages is 535 in the beneficiary group, it is 388 in the control group. While the seasonal population average is 554 in the beneficiary group, it is 388 in the control group. While the permanent population is 443 in the beneficiary group, it is 362 in the control group.

All of the households both in the beneficiary group and in the control group engage in livestock. The average number of households engaged in livestock and the average number of households are the same.

While the average number of cattles is 1306 in the villages in the beneficiary group, it is 1017 in the control group. On the other hand, while the average number of sheep and goats is 1344 in the villages in the beneficiary group, it is 224 in the control group.

While the average number of households moving to uplands or grasslands is 94 in the beneficiary group, it is 49 in the control group.

While the average number of cattle going uplands and grasslands is 1174 in the beneficiary group, it is 703 in the control group. While the average number of sheep and goats going uplands and grasslands is 1344 in the beneficiary group, it is 224 in the control group.

While the average length of stay in uplands and grasslands is 78 days in the beneficiary group, it is 68 days in the control group.

There is no significant difference between the beneficiary and control groups in terms of the ratio of elderly and children population.

When we look at the ratio of the number of households moving to the uplands and grasslands to the number of households in the village, while this ratio 93% in the beneficiary group (94/101), it is 59% (49/83) in the control group. This differentiation is remarkable in showing the impacts of AKAKP.

Table 91. General Village Condition (Average)

	TOTAL	INFRASTRUCTURE BENEFICIARY	INFRASTRUCTURE CONTROL
	115	77	38
HH Size	95	101	83
Total Population	486	535	388
Seasonal Population	473	554	311
Permanent population	416	443	362
Population engaged in livestock (HH)	95	101	82
Number of cattle	1210	1306	1017
Number of sheep and goats	964	1344	224
HH moving to uplands	79	94	49
Cattle going uplands	1017	1174	703
Sheep & goats going uplands	945	1305	224
Days staying in the uplands or grasslands (day)	75	78	68
Ratio of elderly population (over 65 years) (%)	27	27	25
Ratio of child population (under 15 years) (%)	20	21	18
The number of villages jointly using the uplands	1	2	1
Distance Uplands - Village (km)	15	16	15.
Distance Grassland – Village (km)	19	13	31
Distance between meadow and water spring on the upland (km)	51	69	16
Distance between meadow and water source on grasslands (km)	46	61	17

Received Support Types

When the types of infrastructure support given under the AKAKP is examined, it is seen that mostly received support type is animal drinking water constructions (64%). It is followed by upland roads construction (31%). The rate of other support types is lower.

Table 92. Types of Support under AKAKP (%)

	SUPPORT TYPE
Base	77
Animal drinking water constructions	64
Upland road construction	31
Clustering fences in uplands	5
Watering hole distributions	5
Irrigation systems	4
TOTAL	109

Note: Since many options can be checked, the total is greater than 100.

The mukhtars interviewed were asked whether they received support from other institutions or organizations other than AKAKP and if they received it, they were also asked what type support they received. When considered in general, it is observed that there is not a big difference between beneficiary and control group as to whether support has been received from other institutions and organizations, if received, in terms of types. In this regard, the impact of the support under the AKAKP on the villagers in the beneficiary group will be more obvious.

If we look in detail, while 71% of the mukhtars in the beneficiary group stated that they did not receive any support from the provincial special administrations, this rate is 76% in the control group.

On the other hand, 16% of the beneficiary group and 11% of the control group said that they received road construction support from the provincial special administrations for their villages. Yet, another type of support that stands out is the bringing drinking water to the village. In the beneficiary group this rate is 9% whereas in the control group it is 16%.

Table 93. Types of Support Received from Provincial Special Administrations (%)

	TOTAL	INFRASTRUCTURE BENEFICIARY	INFRASTRUCTURE CONTROL
Base	115	77	38
No support	73	71	76
Road Constructions	14	16	11
Village drinking water	11	9	16
Animal drinking water facilities	3	1	5
Irrigation projects	2	3	0
Social structure (like school)	1	1	0
Paving stone pavement	1	0	3
Coal	1	1	0
TOTAL	105	103	111

Note: Since many options can be checked, the total is greater than 100.

When the mukhtars interviewed were asked whether they had received any support from the development agencies, 88% of the beneficiary group and 97% of the control group stated that they did not receive support. Animal drinking water facilities stands out in the supports received. This is also similar in the beneficiary and control groups.

Table 94. Types of Support Received from Development Agencies (%)

	TOTAL	INFRASTRUCTURE BENEFICIARY	INFRASTRUCTURE CONTROL
Base	115	77	38
No support	91	88	97
Animal drinking water facilities	3	4	3
Animal drinking water facilities	1	1	0
Solar Energy Panels	1	1	0
District Governorship	1	1	0
No Answer	3	4	0
TOTAL	100	100	100

When asked if they received support from other public institutions, 83% of the beneficiary group and 87% of the control group stated that they did not receive support. In supports received, village drinking water projects and the construction of social facilities such as schools come to the forefront. These are also similar in the beneficiary and control groups.

Table 95. Types of Support Received from Other Public Institutions (%)

	TOTAL	INFRASTRUCTURE BENEFICIARY	INFRASTRUCTURE CONTROL
Base	115	77	38
No support	84	83	87
Animal drinking water facilities	6	6	5
Social structure (like school)	3	3	5
Road Constructions	2	1	3
Paving stone pavement	1	0	3
Breeding animal provision	1	0	3
Animal barn	1	1	0
Stream improvement	1	1	0
Rosehip xx	1	1	0
No Answer	2	3	0
TOTAL	102	100	105

Note: Since many options can be checked, the total is greater than 100.

Population and Migration Expectation

The mukhtars were asked if there was a decrease in the village population in the last 5 years, if so, what are causes. It is stated that there was not a decline in population in 48% of the villages in the target group, and 39% of the villages in the control group. The expression of no decrease in the population in the target group is higher than the control group can also be considered as the effect of the AKAKP.

Immigration in order to find other employment opportunities stands out as the main reason for the decline of the population. This reason is at a similar rate in both groups. While the population aging is stated as 12% in the target group, this rate is 24% in the control group.

Table 96 Decrease in Population in the Last 5 Years and its Causes (%)

	TOTAL	INFRASTRUCTURE BENEFICIARY	INFRASTRUCTURE CONTROL
	115	77	38
No reduction in population	45	48	39
They are migrating to find other employment opportunities	35	34	37
Population is getting old	16.	12	24
They are migrating because of insufficient training facilities	10	9	11
They are migrating because of lack of social opportunities	12	13	11
They are migrating due to environmental reasons	7	5	11
They are migrating because of the inadequacies in infrastructure	7	6	8
They are migrating due to the worsening market and prices	4	5	3

Other	6	5	8
TOTAL	142	138	150

When the mukhtars in the beneficiary group were asked how AKAKP supports would affect migration in the villages, while 69% of them said it would not affect, the rest think it will reduce migration. Those who said would reduce the migration to a great extent (10%) and to a very great extent (9%) are about one five.

Table 97. The Impact of the AKAKP Support on Migration (%)

	TOTAL
Base	77
Reduces immigration to a very great extent	10
Reduces immigration to a great extent	9
Partially reduces migration	6
Reduces, even if just a bit	5
No effect	69
TOTAL	153

6. THE EFFECT OF THE ARDHAN KARS ARTVIN DEVELOPMENT PROJECT ON INVESTMENTS AND INFRASTRUCTURE

To determine the possible effects of AKAKP support, the mukhtars in the beneficiary group were asked about the extent of the some changes after the AKAKP support But to those in the control group, the same questions were asked as at what extent those changes were occurred in the last 5 years (since 2012). Thus, it was aimed to objectively reveal AKAKP effects.

According to this, while in the beneficiary group there is an average increase of 3 household in the number of households moving to the uplands after AKAKP, in the control group the increase in the last 5 years is only 1.

While in the beneficiary group there is an average increase of 38 in number of cattles going uplands after AKAKP, in the control group the increase in the last 5 years is only 21. Similarly, while in the beneficiary group there is an average increase of 24 in number of sheep and goats going uplands after AKAKP, in the control group the increase in the last 5 years is only 8.

There is no significant difference between the two groups in terms of increase in length of uplands/grassland stay.

On the other hand, there is no decrease in the control group when the distance between the grassland and the water source is reduced by 19 km in the beneficiary group after AKAKP. Again, the distance between the village and the uplands/grassland is decreased by 2 km in the beneficiary group after AKAKP, but there is no decrease in the control group.

These findings clearly demonstrate the positive effects of AKAKP support.

Table 98. Effects of AKAKP Supports (%)

	TOTAL	INFRASTRUCTURE BENEFICIARY (Post AKAKP)	INFRASTRUCTURE CONTROL (According to 2012)
Base	115	77	38
Increase in the number of households moving to uplands (average households)	2	3	1
Increase in number of cattles going uplands	33	38	21
Increase in number of sheep and goats going uplands	18	24	8

Increase in the length of stay in uplands and grasslands (days)	3	3	2
Decrease in the distance between pasture and water source (km)	19	19	0
Decrease in the distance between uplands/grasslands (km)	2	2	0

When the mukhtars in the beneficiary group were asked whether the households have benefited from the roads, animal drinking water, irrigation projects made by AKAKP, the ratio of those who said benefited is determined as 65%. While this is a significant rate, 31% of the respondents answered that they did not benefit.

Table 99. Whether or not the Households Have Benefited From the Roads, Animal Drinking Water, Irrigation Projects Made by AKAKP

	TOTAL
Base	77
Yes, benefited	65
No, not benefited	31
Others	4
TOTAL	100

The main factors among the reasons for not being benefited are the elderly population (27%), and there are not enough animals to take to the uplands (15%). Another issue is that there are other infrastructure facilities in the village (12%).

Table 100. Reasons for Not Benefiting (%)

	TOTAL
Base	26
Elderly population	27
There are not enough animals to take to the uplands	15.
They stay in the village because they have other infrastructure facilities	12
There are enough feeding areas or pastures in the village	8
They can provide feed with their own means	0
Others	19
There is no other	96
TOTAL	177

The mukhtars in the beneficiary group were asked whether other investments were made in the village after the AKAKP infrastructure investment. Those in the control group were asked which investments were made in village in the past 5 years (since 2012).

In 10% of the villages in the beneficiary group road construction, in 5% of the villages new animal drinking water constructions and in the 4% of the villages social infrastructure investments (like school) were made after AKAKP. In 26% of the villages in the beneficiary group new road construction in the last 5 years, and in 21% of them new animal drinking water constructions were made.

Table 101. Investments Made in the Villages (%)

	TOTAL	INFRASTRUCTURE BENEFICIARY (Post AKAKP)	INFRASTRUCTURE CONTROL (Since 2012)
Base	115	77	38
New road constructions	16.	10	26
New animal drinking water constructions	10	5	21
Social top / infrastructure investments (like school)	5	4	8
Other agricultural infrastructure projects	2	3	0
New irrigation systems	2	1	3
Marketing oriented investments (such as cooling storage, processing plant)	1	1	0
Others	23	22	24
No Answer	54	60	42
TOTAL	112	106	124

Note: Since many options can be checked, the total is greater than 100.

When asked what are the maintenance and repair mechanisms for infrastructure investments made in villages, 53% of mukhtars stated that there is no maintenance-repair mechanism. This stands out as a major shortcoming. Existing maintenance-repair mechanisms are primarily identified as the mukhtarship's own facilities, and then as special administration support (13%).

It is seen that the maintenance-repair mechanisms should be developed in terms of efficiency of the project.

Table 102. Maintenance-Repair Mechanisms for Infrastructure Investments (%)

	TOTAL
Base	77
None	53
Mukhtarship's own facilities	34
Special Administration	13
Villager solidarity groups	4
TOTAL	104

Note: Since many options can be checked, the total is greater than 100.

When asked whether the existing mechanisms meet the needs, 63% of the mukhtars said that they did not meet. Here again, it becomes evident that the maintenance-repair mechanism needs to be improved.

Table 103. Whether Maintenance-Repair Mechanisms Meet the Need (%)

	TOTAL
Base	77
Yes	37
No	63
TOTAL	100

When asked about the last time maintenance-repair needed for infrastructure investments made under AKAKP, while 64% of the mukhtars said not needed yet, 19% stated that they needed maintenance-repair within the last 3 months. This finding suggests that at least a part of the investments needed maintenance-repair in a short time. It can be said that better supervision is needed.

Table 104. When the Maintenance-Repair Was Needed (%)

	TOTAL
Base	77
In the last 3 months	19
Within 3-6 months	6
Within 6-12 months	4
A year before	6
Not needed yet	64
TOTAL	100

When asked about when the maintenance-repair problem is solved, while 39% of the mukhtars stated that the problems are still unresolved, 21% of them said it took rather a long time, and 7% of them said it took a long time. Those who said immediately resolved (14%) and resolved within a reasonable time (18%) are less than half.

It can once again be stated that a more efficient maintenance-repair system must be established.

Table 105. When the Maintenance-Repair Problem Was Solved (%)

	TOTAL
Base	28
Immediately resolved	14
It was solved within a reasonable time	18
It took rather a long time	21
It took a long time	7
Still unresolved	39
TOTAL	100

When the mukhtars of the villages in the beneficiary group were asked what kind of change the AKAKP support lead up to in the stated areas, the main issues among those stated are access to feed and water resources. It is followed by the weight of the animals (34%), diseases caused by animal waters (30%), milk yield (27%), labor force requirement (26%), fight against other diseases (23%) and upland season milk sales (21%).

These findings are important since they show the positive results of AKAKP support.

Table 106. Positive-Negative Change AKAKP Supports Provided on Specific Issues (%)

	GONE BETTER	REMAINED THE SAME, NOT CHANGED	GONE WORSE	NO ANSWER/NO IDEA	TOTAL
Access to feed and water resources	50	42	1	7	100

Upland season milk sales	21	65	3	12	100
Costs in product sales	14	69	5	12	100
Feed costs	6	74	6	13	100
Diseases caused by animal waters	30	55	3	13	100
Fight against other diseases	23	65	0	12	100
Milk yield	27	60	3	10	100
Weight of animals	34	56	1	9	100
Animal care services (finding a shepherd)	16.	71	4	9	100
Labor force requirement	26	64	1	9	100

When the mukhtars of the villages in the control group were asked what kind of change occurred in the stated subjects in the last 5 years, the rate of positive change is lower than in the beneficiary groups in all cases; on the contrary, there are a number of issues that the majority have stated as getting worse.

This clearly shows that the AKAKP supports lead to positive changes in certain subjects compared to the control group.

Table 107. Positive-Negative Change in Specific Subjects in the Control Group over the Last 5 Years (%)

	GONE BETTER	REMAINED THE SAME, NOT CHANGED	GONE WORSE	NO ANSWER/NO IDEA	TOTAL
Access to feed and water resources	16.	58	26	0	100
Upland season milk sales	3	74	24	0	100
Costs in product sales	11	34	47	8	100
Feed costs	3	26	71	0	100
Diseases caused by animal waters	3	74	21	3	100
Fight against other diseases	18	55	21	5	100
Milk yield	13	63	24	0	100
Weight of animals	29	50	21	0	100
Animal care services (finding a shepherd)	5	61	34	0	100
Labor requirement	5	71	24	0	100

7. CONCLUSION AND RECOMMENDATIONS

Ardahan Kars Artvin Development Project (AKAKP) focuses on family businesses that have limited access to capital in agricultural and livestock practices; use traditional methods, therefore have no plans to grow, modernize their businesses and systematically increase their income level. The goal of the project is to evolve this group's existing business into high potential business models, and to support them in economically active livestock and agricultural production.

The objective of the Impact Assessment Study is to understand the extent to which the project has achieved its intended objectives, and the extent to which it has triggered a change and development on target group.

In this context, the impact assessment study includes the pre and post project comparison of the project beneficiaries and non-beneficiary groups (control group) with regards to;

- socio-economic situation,
- the impacts of applied technologies and investments on their businesses,
- satisfaction with the project in various areas.

The research was carried out with paper pen questionnaire technique, face to face, in the target populations houses or at their agricultural land. During the data collection process, R.T. Ministry of FAL experts have worked in the field.

Ipsos was responsible for the field coordination and data analysis process.

433 beneficiaries and 195 control groups were interviewed within the scope of the first component of the project, "Smallholder and Non-Farm Enterprises". Within the scope of the infrastructure component, which is the second component of the project, 77 beneficiaries and 38 control groups interviews were conducted with mukhtars.

The results and key suggestions in the light of the research findings can be arranged as follows:

- Among the sources of information for AKAKP the mukhtars take the 2nd place. When the potential of the mukhtars to reach to the project target population is taken into account, their active roles in such development programs can be increased.
- Overall satisfaction towards AKAKP is very high. For the development projects in other regions, AKAKP beneficiaries can assume the role of spokesperson in order to increase the motivation of the producers and their participation in the project.
- Satisfaction with the infrastructure component is also high in general. 75% of the mukhtars in the beneficiary village are satisfied with the project. When asked to those who are not satisfied, the "technical faults" factor stands out. Improving the technical implementation of the infrastructure component may be an important development area for future processes.

- Beneficiaries are highly satisfied with the application process, scope and quality of the support. But the duration and the amount of the support stand out as improvement areas. A similar situation applies to the infrastructure component.
- For the development of the infrastructure component, can be utilized from increase in amount and scope of the support, extension of drip irrigation systems, road constructions and VAT incentives.
- It has been seen that AKAKP contributes to the works of the beneficiaries. Especially, the impact in the field of personal development is widespread. In this respect, both their technical equipment and the self-confidence have increased.
- Most of the project beneficiaries seem to have a high tendency to apply what they learn in training to their work, in this respect, the continuation of the training module and utilization of practical training alternatives can be considered.
- The farmers and the livestock farmers, who received training under the AKAKP, share what they have learned in training with others. Given the potential for such information sharing, platforms can be created where beneficiaries can transfer what they have learned to other farmers and livestock farmers. Training of the trainers can be added to the project by setting up a system in which the beneficiaries will be trainer for the regions where the project will continue.
- Given that the project beneficiaries mostly procure their seeds from the private sector and the procurement of seeds from the government is limited, the diversification of the procurement channel that will remove the private sector dependency in seed procurement, and that will make farmers more powerful in this regard can be considered. Incentives may be applied by the Ministry in the procurement from the government.
- Almost half of the beneficiaries felt a positive effect in terms of product quality, variety and income. In other words, the production process has improved. One of the most distinct changes in the production processes of the farmers receiving support is the use of drip irrigation. The continuing support for drip irrigation techniques is of great importance.
- As a general development area for the project, the following areas have been identified: sales channels, customer relationships, sales and marketing. The increase in performance in these areas will further increase the incomes and general economic conditions of the producers.
- It can be said that the project has a positive impact on the beneficiaries in increasing formal sales channels. However, sales channels are still limited, and steps can be taken to include in the supply chain programs of large producers to diversify the sales channels of farmers and animal producers in the region. At this point, UNDP, World Bank and Ministry support will be important.

- When the types of infrastructure support given under the AKAKP is examined, it is seen that mostly received support type is animal drinking water constructions, it is followed by the construction of upland roads. The rate of other support types is lower. Given the importance of infrastructure support for rural development, increasing the villagers access to the different types of support and diversification of the use of support can be considered.
- Maintenance-repair mechanisms need to be developed in terms of the efficiency of the project regarding the infrastructure, the current efficiency in this regard is very limited.