

RURAL FINANCE FACILITY PROJECT IMPLEMENTATION UNIT
FARMER MARKET ACCESS PROGRAMME (FMAP)

Agreement /RFF/CS/SSS-2013/001

Impact Assessment
of Rural Finance Component
of Farmer Market Access Programme

“Private agriculture, search and view” Research Analytical Centre”
Non-Governmental Organization (PASV RAC NGO)

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Contents

Summary.....	4
Introduction	7
Farmer Market Access Programme	8
Rural Finance Component	9
Impact assessment review for FMAP Rural finance component	10
The method	10
Sample description.....	12
Land Use	13
Livestock breeding.....	17
Income	20
Employment.....	22
Women.....	22
Survey results by subsectors	23
Summary of economic results.....	32
Impact assessment of RFF by respondents	35
Relevance assessment	36
Effectiveness assessment	36
Efficiency Assessment	37
Impact on rural poverty.....	37
Stability assessment	38
Gender equality and women	38
Partner assessment	38
Assessment Summary	39
Suggestions	39
Annexes	41

Abbreviations

RFF PIU	Rural Finance Facility Project Implementation Unit
FMAP	Farmer Market Access Programme
RA NSS	National Statistical Service of the Republic of Armenia
RH	Rural household
PASV RAC NGO	“Private agriculture, search and view” Research Analytical Centre” Non-Governmental Organization
IFAD	International Fund for Agricultural Development
OFID	OPEC Fund for International Development
GDP	Gross domestic product
RAEDP	Rural Areas Economic Development Programme
PE	Private entrepreneur
SME	Small and medium enterprise

Summary

- i.** During 2009-2013 815 development loans for a total amount of 10 714 515 USD, including loan resources from other programmes of 2013, were granted by RFF to small and medium enterprises and farm households. The average loan amount made 13 147 USD. Loans were provided by 9 banks and 7 credit organizations.
- ii.** It was possible to change the slowdown in loan granting process during 2011-2012 due to tactical changes carried out by RFF. The most important of them was the involvement of credit organizations in the lending process, which, apart from the dramatic change in the situation, also contributed to solving the problem of involving the relatively poor rural population groups in the lending process.
- iii.** The share of the loans granted for the purpose of livestock breeding development is the greatest - 42%. Loans for the development of horticulture - 8 %, crop production, dairy production and fish farming, 5% each, also have a relatively high share.
- iv.** Unlike the previous programmes implemented in Armenia, when IFAD conducted Baseline, Repeat and Complete surveys for the programme impact assessment, this approach has been discontinued in regard with FMAP.
- v.** The survey was carried out by sampling method. Out of 10 marzes of RA, where FMAP implements its activity, 8 were selected.
- vi.** 55 farmers included in the sample who received loans from RFF during the period of 2009-2013 formed the group of beneficiaries, while 56 farmers who are not deemed as RFF borrowers formed the test group.
- vii.** The average amount of loans received by 55 RFF beneficiary rural households made 2.2 million AMD. The loans were provided by 4 banks and 3 credit organizations. The nominal interest rates range between 10-24%. According to the survey data, low-interest loans are granted mainly by credit organizations, while high-interest loans are provided by banks.
- viii.** Viewed in the context of comparing the data before and after the programme, only insignificant changes in connection with private lands were observed. A slight increase in private lands was registered with the beneficiary households.
- ix.** The yield capacity of 1 ha of agricultural crops in the beneficiary households, with the exception of vegetable crops in 2013, is above the total survey data.
- x.** Before and after the programme, changes in the yield capacity of agricultural crops are generally the same for all groups of the sample. Situation is not better even in the households that have received loans for horticulture and crop production purposes.
- xi.** According to the statistical data¹ of RA NSS, as compared to 2009, in 2012 the yield capacity of agricultural crops, with the exception of fruit, increased. As for the decrease in the yield capacity of fruit, it is not high.
- xii.** In total survey and control group households a decrease in the marketability level of crop products was reported during the observed period.
- xiii.** In contrast to the households of total survey and control groups, an increase in the marketability level is observed in the beneficiary group. In the households of this group, in addition to grain and fruit, in the marketability level of which there is a slight decrease, the increase in the marketability level of other products is noticeable. The marketability levels of vegetables and potatoes in the beneficiary group have increased by 9.1% and 1.4%, respectively, while the marketability level of vegetables in the control group has only increased by 0.9% and the marketability level of potatoes has decreased by 9.6%.
- xiv.** The volumes of agricultural products of own production consumed for on-farm needs has remained the same in the poorest households before and after the programme. In average income groups the

¹ Food Security and Poverty, January-December 2012.

consumption of grains and potatoes for on-farm needs increases. In the richest group the volume of grain consumed for livestock breeding was reduced, increasing the volume of feeds instead.

- xv.** Out of the 111 rural households of the sample 71 are engaged in livestock breeding. The 40 households not engaged in livestock breeding are divided equally, in twenties, into beneficiary and control groups.
- xvi.** In the observed period in all groups of the total sample a growth in livestock number was registered. The livestock number growth is more evident in the households of beneficiaries and borrowers who received loans for livestock breeding.
- xvii.** The RFF beneficiary households exceed the control group households by increase in the marketability level of livestock products too. In the beneficiary group only the marketability level of beef has decreased slightly, while in the group of borrowers who received loans for livestock breeding only the marketability level of mutton has decreased.
- xviii.** According to total survey data, an increase in processing volumes of agricultural products has been recorded. In addition, before and after the programme, the increase in processing volume in the group of RFF beneficiaries exceeds the increase registered in the control group.
- xix.** Both before and after the programme processing was implemented mainly for own consumption. Among the processed products a small increase was recorded only in sales volumes of fruit and vegetable canning and meat products.
- xx.** During the observed period income growth was recorded with the total surveyed households. However, if the growth in the control group households makes 330 thousand AMD per household, the income growth in the beneficiary households reaches 2.32 million AMD, which is more than 7 times higher than the index in the control group. It is noteworthy that the 64.7% of the income growth in the beneficiary households generated from agricultural activities.
- xxi.** Income growth of beneficiary households contributed to the expansion of households, which in turn led to the creation of new jobs.
- xxii.** Beneficiary households increase the share of hired work, reducing the work of household members, friends and relatives. Just the opposite behaviour was displayed by the control group households, which continue to rely on family members, friends and relatives.
- xxiii.** In an average beneficiary household the number of permanent and temporary jobs that increased after the programme made 3.54, while in the control group households it decreased by 0.75 jobs. Thus, due to RFF programme, the net growth in the number of jobs in an average beneficiary household made 4.29. The total number of RFF beneficiary households is 724, which allows us to calculating that 3106 new paid jobs were created in the country's rural areas due to RFF programme.
- xxiv.** 55 of the surveyed women stated that the most important decisions regarding the rural household were taken together with the husband who is the head of the household while 6 of them said that they made such decisions independently.
- xxv.** 35.7% of the surveyed women (36.4% of the beneficiaries) own land, 9.5% (7.3 %) own livestock, 26.2% (32.7%) own a house or other buildings, and 5.6% (3.6%) own other real estate.
- xxvi.** 16.7% of women (approximately 29.1% of the beneficiaries) took a loan during the last year. 11.1% of women (about 5.5% of the beneficiaries) minded against the RFF loan when the husband decided to apply for it. In response to the question whether the husband would agree if they wished to take a loan, 56.3% of women (about 78.2% of the beneficiaries) gave a positive response, 20.6% (approximately 14.5% of the beneficiaries) gave a negative response, and 23.0% of women (about 7.3% of the beneficiaries) preferred "to remain silent".
- xxvii.** 14 greenhouses in 4 marzes of RA were selected, 10 of which were RFF beneficiaries and 4 of them were not. The latter formed the control group.
- xxviii.** In beneficiary greenhouses, due to the programme implementation, the number of jobs per 1 average greenhouse increased by 1.4, while during the observed period 0.2 job cuts were recorded in an average greenhouse in the control group.

- xxix.** Given that the number of RFF funded greenhouse households is 50, we can calculate that in beneficiary greenhouses 80 new jobs were created as a result of RFF programme implementation.
- xxx.** As compared to the control group greenhouses, in the beneficiary greenhouses a quite high growth of economic efficiency was recorded. The basic reason for such advantage of RFF beneficiary greenhouses is the fact that the latter are smaller as compared to the control group greenhouses. Small greenhouses are probably more flexible and efficient for the Armenian market. In any case, higher income was earned at less expense.
- xxxi.** In the surveyed RFF beneficiary wineries, due to the programme implementation, the number of jobs increased by 4 per average winery.
- xxxii.** Given that the number of RFF funded wineries is 8, we can calculate that in the country's winemaking subsector 32 new jobs were created due to RFF programme.
- xxxiii.** In wine production, as compared to other studied subsectors, the economic efficiency growth is not very high. Despite the fact that the net revenue of an average winery has increased by more than 56 thousand USD due to RFF programme, the income/expense ratio growth is not very high. It grew from 0.1 to 0.3.
- xxxiv.** The fish farming enterprises are involved in fish production, and one of them is also engaged in the production of caviar. 3 out of the 4 surveyed enterprises had not had water use permit and only one of them received such permit after RFF loan.
- xxxv.** In surveyed fish farming enterprises, the number of jobs has increased by 1 per average enterprise due to the programme implementation.
- xxxvi.** Given that the number of RFF funded fish farming enterprises is 26, we can calculate that 26 new jobs were created in the country's fish farming subsector due to RFF programme.
- xxxvii.** Fish farming has a fairly high level of economic efficiency. As a result of RFF programme, the annual revenue growth is about 20 thousand USD per average enterprise, while the income/expense ratio has increased and reached from 2.9 (before the programme) to 3.1.
- xxxviii.** Average milk processing company farms 11.8 hectares of own and 5 hectares of rented land, owns 10 head of cows, the milk of which is processed in the company. The annual milk procurement capacity of an average company made 169 tons before the RFF programme and 252 tons after the programme. Due to the programme, the dairy production volume in an average company has increased by about 40 tons.
- xxxix.** In the surveyed milk processing enterprises the number of jobs per average company has increased by 2.5 due to the programme implementation.
- xl.** Given that the number of RFF funded milk processing companies is 11, we can calculate that about 28 new jobs were created in the country's milk processing subsector due to RFF programme.
- xli.** Milk processing is inferior to other investigated sectors by the level of economic efficiency.
- xlii.** In general, the relevance ratings of FMAP Rural finance component is satisfactory (5), as the programme objectives generally comply with the poverty reduction strategy implemented by the country and the needs of the rural poor.
- xliii.** The rating of effectiveness of RFF activities is satisfactory (5).
- xliv.** The rating of efficiency of RFF activities is moderately satisfactory (4).
- xlv.** In general the rating of the programme impact on rural poverty is moderately satisfactory (4).
- xlvi.** The rating of RFF programme stability is satisfactory (5).
- xlvii.** On the whole, women did not have problems benefiting from the programme. The rating of gender equality of RFF programmes is satisfactory (5).
- xlviii.** The implementation of FMAP "Rural Infrastructures" component can generally be considered as successful and be rated as **Satisfactory (5)** based on the 6-point system² defined by IFAD monitoring and assessment guidelines.

² 1 = highly unsatisfactory, 2 = unsatisfactory, 3 = moderately unsatisfactory, 4 = moderately satisfactory, 5 = satisfactory, 6 = highly satisfactory

Introduction

The global economic crisis that began in late 2008 seriously hit Armenia's economy too. The country's gross domestic product (GDP) in 2008, in contrast to the average double-digit annual growth of 2000s, decreased and made 6.9%. In 2009 a deep recession in Armenia's economy was recorded - 14.1%. As a result, in the same year the poverty rate grew for the first after 1998. In 2010 Armenia's economy had a small growth of 2.2%, which, however, did not stop the trends in poverty growth. Only in 2011, when the economy grew by 4.7 %, it was possible to halt the poverty rate increase. In 2012, when the economy grew by 7.2 %, the poverty rate slowly began to drop.

In 2012 every third person, 32.4% of RA population, was poor. 13.5 % of them were very poor, and 2.8% were extremely poor.

The general rates of the poverty level in 2008 and 2012 on marz basis are presented in Annex 1.

In such socio-economic conditions in May of the same year, 2008, Farmer Market Access Programme (FMAP) was launched in Armenia. The programme is the logical continuation of the Rural Areas Economic Development Programme (RAEDP) of the International Agricultural Development Fund (IFAD) and aimed at rural poverty reduction.

This report was prepared on the basis of the results of the survey carried out for FMAP final assessment.

Farmer Market Access Programme

The Farmer Market Access Programme (FMAP), which started its activities in Armenia in May 2008 and was completed in June 2013, was financed from the resources of the International Fund for Agricultural Development (IFAD), OPEC Fund for International Development (OFID), the Danish government, the RA government, financial institutions and programme clients. The total funding amounts to more than 36 million USD.

The main objective of FMAP is to improve the socio-economic situation of Armenia's rural population. To achieve this goal it was planned to. a) support the primary producers that have comparative economic advantages and enterprises that are in close contact with rural residents seeking more favourable employment opportunities, b) provide investment tools and related resources that will meet the demand for rural stock financing, c) support the further development of the financial sector in RA to meet the demand for small and medium-sized loans, and d) support stable poverty reduction through the improvement of social and economic infrastructures.

The programme, activities of which covered the entire area of RA, has had the following 3 components:

1. Rural finance - 14 640,0 thousand USD or 40.3% of the overall programme,
2. Rural infrastructures - 18 672,5 thousand USD or 51.4% of the overall programme,
3. Project management and implementation - 2 999.9 thousand USD or 8.3% of the overall programme.

The Rural finance component consists of 3 subcomponents:

1. Rural Stock Fund,
2. Investment loans to small and medium enterprises (SMEs),
3. Farm household development loans.

The FMAP target groups are the farm households, the rural landless, the unemployed, the underemployed, own account workers and poor rural women.

In order to fulfil the programme objectives the Rural Finance Facility (RFF), established during the implementation of the Rural Areas Economic Development Programme (RAEDP) operating earlier with the support of IFAD, implements the subcomponents of “investment loans to SMEs” and “farm household development loans” within the Rural finance component, through funding provided by FMAP, refinancing the loans of participating financial institutions.

Rural Finance Component

Subcomponents: Investment loans to small and medium enterprises

Farm household development loans

1. As it has already been mentioned, FMAP Rural finance component consists of 3 subcomponents. This report covers the impact assessment of 2 of them: Investment loans to small and medium enterprises and Farm household development loans.
2. During 2009-2013, 815 development loans for a total amount of 10 714 515 USD were disbursed by RFF to small and medium rural enterprises and farm households. The average loan amounted to 13 147 USD. Loans were provided through 9 banks and 7 credit organizations.

Table 1. Loans and Credit organizations

USD

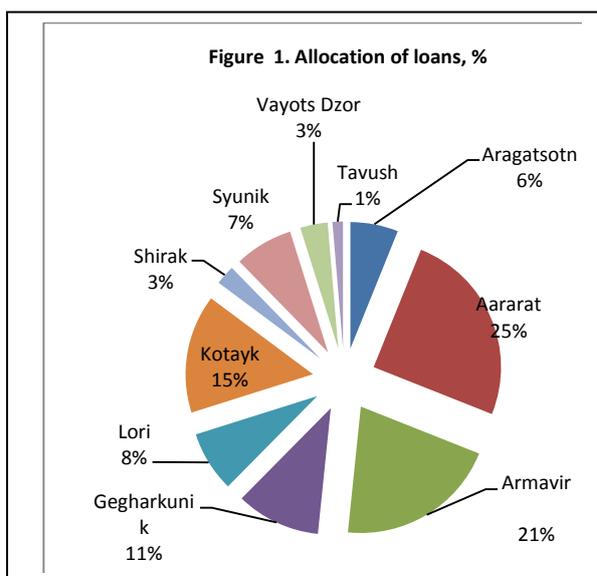
	2009	2010	2011	2012	2013 ³	Total
Inecobank CJSC	40 000				20 000	60 000
ACBA -Credit Agricole Bank CJSC						
Ardshininvestbank CJSC	91 600	461 705	178 935	297 100	214 592	1 243 932
Converse Bank CJSC	120 000	345 500			201 524	667 024
Unibank CJSC			135 000	174 000	100 000	409 000
Anelik Bank CJSC	30 958				32 013	62 971
Areximbank CJSC						
Armbusinessbank CJSC	138 400	526 800	342 300	505 920	205 000	1 718 420
Artsakhbank CJSC		563 000	2 46 999	51 500		861 499
Aregak UCO						
SEF International UCO LLC					147 236	147 236
Nor horizon UCO LLC					878 263	878 263
Farm Credit UCO					1 209 840	1 209 840
CARD Agrocredit UCO CJSC					1 865 280	1 865 280
ECLOF UCO LLC					414 476	414 476
Kamurj UCO CJSC					1 176 573	1 176 573
Total	420 958	1 897 005	903 234	1 028 520	6 464 798	10 714 515

Source - RFF

3. As seen in Table 1, a decrease in loan volumes was recorded during 2011-2012. It was possible to change the slowdown in the lending process in 2011-2012 due to tactical changes carried out by RFF. The most important of them was the involvement of credit organizations in the lending process, which, apart from the dramatic change in the situation, also contributed to solving the problem of involving the relatively poor rural population groups in the lending process. Thus, if before 2012 the average loan amount was 23,741 USD, after involving the credit organizations in the lending process the average loan amount made 10,165 USD, and 9,377 USD only in credit organizations. Apart from the involvement of credit organizations, the latter were given an opportunity of providing loans in AMD (previously loans were provided only in USD).

³ 2013 data includes loan resources of various programmes and FMAP funds were not accounted separately.

4. RFF activities encompass the entire area of RA. In terms of the number of received loans, the leaders are



Ararat and Armavir marzes, the rural households of which received about half of the loan resources. From this point of view the marzes of Tavush, Shirak and Vayots Dzor fall behind. The loan resources allocated in these marzes make only 1-3% of the total funds. Here RFF has an important issue to resolve because of the relatively high level of poverty in the frontier and mountain villages of RA, and the fact that Tavush and Shirak marzes are among the last in terms of the number of loans received may be deemed as an omission from the perspective of fulfilling FMAP objectives.

5. Livestock development loans have a great share, 42%, in loan purposes. The share of loans granted for the development of horticulture - 8%, crop production, dairy production and fish farming, 5% each, is also relatively high. During the first years of providing the loans the purpose of the majority of loans was specified as 'other agriculture', the share of which makes 17% of the total package.

Impact assessment review for FMAP Rural finance component

The method

6. Unlike the previous programmes implemented in Armenia, when IFAD carried out Baseline, Repeat and Complete surveys for the programme impact assessment, this approach has been discontinued in regard with FMAP. In this case the assessment of programme progress was implemented in the course of monitoring visits by FMAP and regular missions carried out by IFAD. As a result, lack of initial data regarding programme implementation area caused some difficulties in terms of collecting reliable information for final assessment.
7. In order to fill the gap in initial and intermediate data, in accordance with the IFAD⁴ project completion guidelines, "before and after the programme", memory use, counterfeit analysis methods were used for data collection. For the same purpose the existing secondary data collection (RFF, NSS, RA Ministry of Agriculture, marz administration offices, rural communities, etc.), quantitative and qualitative survey methods were also used. As the main data collection method the direct observation method through visiting the household (enterprise) was applied.
8. Nevertheless, it should be noted that as a result of memory use method we had some loss of survey database in terms of quality. During the survey some farmers being unable to recall the 2009 data on the situation before the programme in some cases repeated the current data, resulting in "before and after the programme" comparisons during the analysis to becoming useless in some cases.
9. The survey was carried out by sampling method. Out of 10 marzes where FMAP activities were implemented the following 8 marzes were selected: Aragatsotn, Ararat, Armavir, Gegharkunik, Lori,

⁴ Guidelines for Project Completion, 2006, IFAD, Programme Management Department

Kotayk, Shirak and Vayots Dzor. The sample was selected so that to include all the basic - mountain, foothill and lowland areas of RA.

Statistical population and sample

10. Rural finance component – RFF. During 2008-2013, 815 economic entities with different organizational-legal statuses were direct RFF beneficiaries. The sample size for Impact Assessment of RFF includes 138 households (Annex 1), which were selected on a random basis and included households from 6 subsectors proposed under the mandate of Impact Assessment of RFF (Annex 2).

- primary livestock production - 24 borrowers,
- horticulture - 16 borrowers,
- greenhouses - 14 borrowers,
- fish farming - 5 borrowers,
- dairy production – 4 borrowers,
- winemaking - 4 borrowers,
- crop production -14 borrowers,
- other agricultural services - 1 borrower,
- control group - 56 rural households.

Borrowers included in the sample represent 28 rural communities of RA. Besides the borrowers, 56 other rural households in the same communities were randomly selected. The latter made up the so-called control group. Part of the households in this group (which did not receive FMAP loans) received loans from other organizations during the observed period, while the rest did not use any loan resources. Such methodology of selection has enabled the comparison of 2 control groups that are different in terms of quality.

11. Questionnaires. 5 questionnaires were prepared to carry out the survey.

- a. Rural household questionnaire,
- b. Greenhouse questionnaire,
- c. Fish farming enterprise questionnaire,
- d. Milk processing enterprise questionnaire,
- e. Winemaking enterprise questionnaire.

Rural households involved in livestock breeding, horticulture, crop production, other agricultural services, as well as the control group households were surveyed with the rural household questionnaire. The greenhouses, fish farming, dairy production and winemaking enterprises were surveyed with separate questionnaires.

12. Field Work. Field work began on November 1, 2013 and ended on November 20. The polls were carried out with the corresponding questionnaires through direct visits to the household. Community and enterprise surveys were carried out with the participation of the leaders of communities and enterprises or other responsible persons. As for the rural household surveys, they were carried out with the participation of the head of the household or any household member of lawful age who took part in taking decisions regarding the household.

Sample description

13. 71 of the respondents were men and 40 were women. In 73 rural households questions were answered by the heads of the households and in 38 households other household members answered the questions.
14. For Impact Assessment of RFF, based on the specific characteristics of the sectors, fish farming, greenhouse, milk processing and winemaking enterprises were surveyed with separate questionnaires. Farmers who received loans for horticulture and livestock breeding were surveyed with the rural household questionnaire. 55 farmers included in the sample who received RFF loans during 2009-2013 made up the group of beneficiaries, while 56 farmers who are not RFF borrowers formed the control group. The data analysis of greenhouses, fish farming, dairy production and winemaking enterprises was carried out separately. Among these groups we had a control group only in the greenhouse group. Information about economic activity of one of them (Katran LLC) was missing from the questionnaire (was not submitted by the company). For this reason all of the data in the database regarding this enterprise was overlooked.
15. The average amount of loans received by 55 rural households that were RFF beneficiaries made 2.2 million AMD per borrower. The loans were received from 4 banks (Inecobank, Ardshininvestbank, ACBA-Credit Agricole Bank and Unibank) and 3 credit organizations (Farm Credit, Card Credit, Aregak). Loan rates range between 10-24%. According to the survey data, low-interest loans are granted mainly by the credit organizations, while high-interest loans are provided by banks. Thus, 3 out of the 4 loans with the lowest interest rate, 14%, were provided by credit organizations, and 6 out of the 8 loans with the highest interest rate, 20-24%, were provided by banks. The interest rates of the rest of the loans range between 14-20%.
16. After 2009, 18 of the beneficiaries received other loans besides the RFF loans. 16 of them again received loans from RFF, while 26 of the 56 households in the control group received loans from other organizations.
17. In order to assess the programme impact on poverty the surveyed households were grouped based on cash income gained in 2013.

Table 2. The grouping of households based on cash income

	Income group	Surveyed		Group Average
		n	%	Total
1	Up to 1 million AMD	12	10,8	0.81
2	1-2 million AMD	43	38,7	2.07
3	2-5 million AMD	27	24,3	3.87
4	5-10 million AMD	17	15,3	6.37
5	10 million AMD and more	12	10,8	22.62
	Total	111	100,0	5.25

More than half of the surveyed households are in the group with the annual cash income of 1-5 million AMD.

Land Use

18. Viewed in the context of comparing the data before and after the programme, only insignificant changes in connection with private lands were observed. A slight increase in private lands was recorded with the beneficiary households (Table 3):

Table 3. Private land, per 1 average household, ha

	2009	2013	2013+,- 2009	2009	2013	2013+,- 2009
	Beneficiaries			Control group		
Arable land	1.96	1.98	+0.02	1.16	1.16	0
Orchard	1.00	1.04	+0.04	1.28	1.28	0
Vineyard	0.92	1.00	+0.08	0.30	0.30	0
Hayfields	0.49	0.49	0	0.93	0.96	-0.03

19. Significant land changes by income groups were not recorded either.

Table 4. Land areas before and after the programme, based on income groups per 1 household, ha

	Income group	n	Total survey		Beneficiaries		Control group	
			before the programme	after the programme	before the programme	after the programme	before the programme	after the programme
1	Up to 1 million AMD	12	1,08	1,08	1.50	1.50	0.99	0.99
2	1-2 million AMD	43	1,52	1,51	2.03	2.03	1.22	1.20
3	2-5 million AMD	27	1,64	1,62	2.07	2.04	0.91	0.91
4	5-10 million AMD	17	2,46	2,46	2.14	2.14	3.21	3.21
5	10 million AMD and more	12	7,08	7,54	4.40	4.74	12.43	12.43
6	Total	111	2,26	2,25	2.39	2.39	2.12	2.11

The only slight exception is the wealthiest 5th group, where the area of agricultural lands has increased by 0.5 ha per average household. Data presented in Table 4 confirm that the cash income of the household is directly dependent on household land size.

20. The yield capacity of 1 ha of agricultural crops in 2013, as seen in Figure 2, is higher than the total survey data with the exception of vegetable crops. The yield capacity levels of grain are equal. However, it should be mentioned here that the picture was almost the same as of 2009, before FMAP implementation.

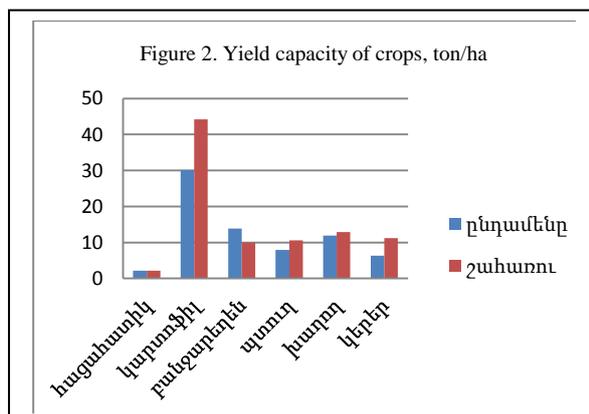


Table 5. Yield capacity of agricultural crops, ton/ha

		Total survey	Beneficiaries	Borrowers of crop production loans	Borrowers of horticulture loans
		n=111	n=55	n=14	n=16
Grain	WOP	2.1	2.0	4.4	2.1
	WP	2.2	2.2	4.6	2.6
	WP+,- WOP	+0.1	+0.2	+0.2	+0.5
Potatoes	WOP	36.3	52.9		
	WP	30.1	44.2		
	WP+,- WOP	-6.2	-8.7		
Vegetables	WOP	13.9	8.9	10.8	16.0
	WP	15.5	10.0	12.6	15.7
	WP+,- WOP	+1.6	+1.1	+1.8	-0.3
Fruit	WOP	10.5	13.2	11.9	14.4
	WP	7.9	10.6	7.4	11.6
	WP+,- WOP	-2.6	-2.6	-4.5	-2.8
Grapes	WOP	12.8	13.8	8.3	14.7
	WP	11.9	12.9	4.5	14.3
	WP+,- WOP	-0.9	-0.9	-3.8	-0.4
Feeds	WOP	6.3	10.6	10.0	9.1
	WP	6.3	11.2	10.0	9.4
	WP+,- WOP	0	+0.6	0	+0.3

In addition to the total survey and beneficiary groups, the given table presents data on changes in the yield capacity of agricultural crops in the group of households that received RFF loans for crop production and horticulture.

21. As seen in Table 5, before and after the programme changes in the yield capacity of agricultural crops are generally the same for all groups of the sample. Even in the households that received loans for horticulture and crop production the situation is not better. Such situation may be conditioned by the following reasons: a) in 2009 (before the programme), the basic year chosen for comparison, the agricultural year was more favourable than in 2013 (after the programme) and b) it is the result of applying the "memory use" method, when the respondent not remembering the 4-year-old data repeats the current year data.
22. According to the statistical data of RA NSS, as compared to 2009, in 2012 the yield capacity of agricultural crops, increased with the exception of fruit. The decrease in yield capacity of fruit is not high. According to data⁵ of the Ministry of Agriculture of RA, in 2013 too, a rise in the level of yield capacity of agricultural crops was recorded.
23. Noteworthy changes were not observed in the structure of agricultural crop lands either.

⁵ Food Security and Poverty, January-December 2012.

Table 6. The structure of sown areas based on monitored groups

	Total survey		Total beneficiaries		Borrowers of crop production development loans		Borrowers of horticulture development loans	
	WOP	WP	WOP	WP	WOP	WP	WOP	WP
Grain	38,7	36,7	56,3	53,6	73,2	66,9	6,2	6,2
Potatoes	3,1	3,6	1,9	2,6	0,0	0,0	0,0	0,0
Vegetables	5,8	6,3	4,6	5,4	7,3	13,1	3,2	3,2
Fruit	33,0	32,6	21,9	22,0	7,2	7,8	61,5	61,5
Grapes	6,1	5,8	8,1	8,1	4,6	4,6	21,3	21,3
Feeds	13,2	15,0	7,2	8,3	7,7	7,6	7,8	7,8
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

The only relatively outstanding change is the increase in the share of vegetable crop lands by about 6 percentage points at the expense of grain crop lands in the group of crop production development loan borrowers.

24. During the period before and after the programme in the beneficiary households an increase in the gross harvest of almost all crops was recorded, while in the control group households the gross harvest of almost all crops decreased.

Table 7. The gross harvest of agricultural crops, per 1 average household, ton/ha

	Total survey		Beneficiaries		Control group	
	WOP	WP	WOP	WP	WOP	WP
Grain	4.72	4.73	5.44	5.42	2.66	2.65
Potatoes	6.05	6.00	6.22	8.10	5.87	4.00
Vegetables	3.00	3.70	1.80	2.30	4.40	5.20
Fruit	10.20	8.20	9.80	8.80	10.60	7.60
Grapes	8.00	9.00	12.70	14.40	2.40	1.90
Feeds	6.70	7.30	7.30	8.40	6.10	6.10

25. In the total survey and control group households a decrease in the marketability level of crop products was recorded in the observed period (Table 8). Unlike the latter, an increase in the marketability level is observed in the group of beneficiaries. In the households of this group the growth in the marketability level of all products is noticeable, with the exception of grain and fruit, in the marketability level of which there is a slight decrease. In the group of beneficiaries the marketability levels of vegetables and potatoes have increased by 9.1% and 1.4%, respectively, while in the control group households the marketability level of vegetables has only increased by 0.9%, and the marketability level of potatoes decreased by 9.6%.

Table 8. Consumption of crop products

	Marketability, %			consumed in household, per household, ton		
	WOP	WP	WP+,-WOP	WOP	WP	WP+,-WOP
	Total survey					
Grain	65,5	64,7	-0,8	1,63	1,72	0,09

Potatoes	82,8	80,6	-2,3	1,07	1,14	0,07
Vegetables	83,4	86,6	3,2	0,45	0,44	-0,01
Fruit	95,2	94,5	-0,7	0,48	0,45	-0,03
Grapes	95,9	96,4	0,5	0,35	0,37	0,02
Feeds	16,9	15,5	-1,5	6,18	7,21	1,03
	Beneficiaries					
Grain	66,0	65,6	-0,5	1,78	1,87	0,09
Potatoes	83,3	84,7	1,4	1,09	1,17	0,08
Vegetables	72,1	81,2	9,1	0,43	0,38	-0,05
Fruit	95,5	95,4	-0,1	0,43	0,4	-0,03
Grapes	96,7	97,3	0,6	0,46	0,44	-0,02
Feeds	0,0	2,1	2,1	6,79	8,18	1,39
	Control group					
Grain	62,7	59,5	-3,1	1,12	1,21	0,09
Potatoes	82,3	72,8	-9,6	1,04	1,1	0,06
Vegetables	88,4	89,3	0,9	0,48	0,5	0,02
Fruit	94,9	93,5	-1,4	0,54	0,49	-0,05
Grapes	90,4	87,5	-2,9	0,23	0,28	0,05
Feeds	38,1	35,2	-2,9	5,23	5,69	0,46

26. The level of crop product consumption for on-farm needs did not changed significantly in the observed period and is almost the same for the households of beneficiary and control groups. However, while considering the consumption of products for own needs based on income groups some changes can be noticed (Table 9).

Table 9. Consumption of agricultural products of own production for on-farm needs

	Income group	WP +,- WOP					
		Grain	Potatoes	Vegetables	Fruit	Grapes	Feeds
		kg	kg	kg	kg	kg	kg
1	Up to 1 million AMD	0	0	0	0	0	-3000
2	1-2 million AMD	133	-71	-65	22	150	2200
3	2-5 million AMD	172	340	-66	-75	300	0
4	5-10 million AMD	260	60	-19	-81	-75	204
5	10 million AMD and more	-567	0	0	145	-225	3250
Total		87	79	-46	-25	-16	1392

27. In the poorest households the consumption of agricultural products of own production for on-farm needs after the programme has remained at the same level as before the programme. In these households the consumption of animal feeds has decreased by 3 tons on the average, which may be due to the decision to reduce livestock breeding.

28. In average income groups the consumption of grain and potatoes for on-farm needs increases. If we take into account the fact that, as mentioned above, in general changes in sown areas were not recorded (volumes used for seeds have not increased), it means that these households have increased bread and potato consumption for food. In the group of the richest households the volume of grain consumed for livestock breeding was reduced and the volume of feeds increased instead.

29. RFF loans ensure a fairly high level of efficiency in crop production. The RFF beneficiary households that received loans for the development of crop production including horticulture have managed to raise the already quite high (6.3) income/expense ratio. In the observed period a significant decline of this ratio, from 3.3 to 1.9, was recorded with the control group households (Table 10):

Table 10. Economic efficiency evaluation of crop production (including horticulture) households, per 1 average household

\$1= 405

Loan amount, USD	Measurement unit	6,526		2,726	
		Beneficiaries		Control group	
		Without programme	With programme	2009	2013
Crop product sales revenue	USD	8990	13662	3153	3027
Generated revenue	USD	8990	13662	3153	3027
Total expense	USD	1235	1592	730	1034
Net revenue	USD	7756	12070	2423	1993
Revenue growth due to the programme	USD		4314		-430
Income/expense ratio		6.3	7.6	3.3	1.9

The financial analysis of activities of households that have taken RFF loans for crop production is given in Annex 3 for the future 20 years.

Livestock breeding

30. Out of the 111 households of the sample 71 are engaged in livestock breeding. The 40 households not engaged in livestock breeding are divided equally, in twenties, into beneficiary and control groups.

31. During the observed period in all of the groups of the total sample a growth in livestock number was registered (Table 11).

Table 11. Livestock number, per 1 average household, head

	Total survey		Control group		Beneficiaries		Borrowers of livestock breeding development loans	
	WOP	WP	WOP	WP	WOP	WP	WOP	WP
cattle	8,3	9,5	9,6	9,8	7,3	9,2	8,4	10,7
cows	3,9	4,9	3,7	4,1	4,1	5,5	4,8	5,9
pigs	5,4	8,7	3,2	3,7	6,9	10,8	7,3	9,9
sheep	20,5	34,2	27,3	54,1	15,9	21,6	13,4	16,9

32. The livestock number growth is more obvious in the household of beneficiaries, including borrowers of livestock breeding loans.

Table 12. Livestock number growth

	Total survey	Control group	Beneficiaries	Borrowers of livestock breeding development loans
cattle	1,2	0,2	1,9	2,3
cows	1	0,4	1,4	1,1
pigs	3,3	0,5	3,9	2,6
sheep	13,7	26,8	5,7	3,5

The highest growth in cattle livestock number before and after the programme period was recorded in households that received loans for livestock breeding, which, at the same time, are at the same level of total survey in terms of growth in the number of cows. Based on this, a conclusion can be made that the main direction of livestock development loans is beef cattle breeding. In contrast to control group households, which, as seen in Table 12, preferred sheep breeding development, in RFF beneficiary households investments are channelled into the development of cattle and pig breeding. Thus, if financial resources are available households develop cattle and pig breeding, while sheep breeding is developed in case there is lack of funds. This leads to the conclusion that based on the economically active group of rural households (borrowers) cattle and pig breeding is more profitable than sheep breeding.

Table 13. The increase in the production of livestock products, per 1 average household, kg

	Beneficiaries	Livestock breeding beneficiaries	Control group
	WP +,- WOP	WP +,- WOP	WP +,- WOP
beef	+13	+128	+119
pork	+387	+286	-16
mutton	+153	+3	+250
milk	+2035	+1469	+846
wool	+2	+2	+35

Except for the increase in mutton and wool production volumes, RFF beneficiary households exceed the control group households in the increase of production volume for all other livestock products. During the observed period in control group households the average milk yield per cow increased by 104 litres, while in beneficiary households the increase is 175 litres.

33. RFF beneficiary households also exceed control group households in the increase of marketability level of livestock products. In beneficiary group only the marketability level of beef has slightly decreased, while in the group of livestock breeding beneficiaries the marketability level of mutton has dropped.

Table 14. The marketability level of livestock products, %

	Beneficiaries			Borrowers of livestock breeding development loans			Control group		
	WOP	WP	WP +,- WOP	WOP	WP	WP +,- WOP	WOP	WP	WP +,- WOP

beef	92,0	91,1	-0,9	90,4	90,4	0,0	95,8	94,9	-0,9
pork	93,2	95,7	2,5	94,8	97,2	2,4	80,3	78,5	-1,8
mutton	83,6	91,0	7,5	53,0	46,6	-6,4	55,5	59,2	3,7
milk	79,5	86,3	6,7	80,1	86,1	6,0	79,2	50,9	-28,3
wool	72,2	73,0	0,8	63,8	66,5	2,7	82,4	90,7	8,3

In the previous paragraph a conclusion was made that the households that received livestock breeding loans have probably started breeding beef cattle, however as seen in Table 13, no increase in the marketability level of beef was registered in these households. We can only come to a conclusion that the borrowers made the bulk of such investments (purchase and fattening of young bulls) in the development of beef cattle breeding in the past 2012-2013 years and still have not got the results. Here is another interesting fact based on the comparison of the last 2 tables. The control group households, where the sheep number growth per 1 household was the highest (26.8 head), are inferior to the beneficiary group households (7.5%) in the marketability level of mutton (3.7%). Interestingly, the highest marketability level of wool was recorded in control group households while the demand for wool in the country is significantly inferior to the proposal.

34. Parallel to increase in the marketability level of livestock products, beneficiary households are almost at the same level with control group households in terms of consumption of livestock products of their own production for on-farm needs.

Table 15. Consumption of livestock products of own production for on-farm needs

	Income group	WOP +,- WP				
		Beef	Pork	Mutton	Milk	Wool
		kg	kg	kg	kg	kg
1	Beneficiaries	8.6	9.5	-7.7	-25.5	1.7
2	Livestock breeding development beneficiaries	13.4	0	5.3	-84.4	1.5
3	Control group	10.6	13.7	117.2	194.5	2.5

35. Agricultural products processing. According to the total survey data, growth in agricultural product processing volume was registered during the observed period. In RFF beneficiary group the growth in processing volume after the programme exceeds the growth registered in the control group.

Table 16. The growth in agricultural product processing volume, per household, kg

	Growth in processing volume WP +,- WOP		Beneficiary +,- Control group
	Beneficiary	Control	
bread	+64	+34	+30
canned food	+102	+26	+75
meat products	+303	+15	+288
dairy	+122	+84	+38
spirits	+80	+3	+77

According to the survey data, out of all processed products a small increase was only registered in sales volumes of canned fruit and vegetables. Given that the bulk of recycled products is consumed within the household, it can be concluded that a significant growth in food availability was registered in the beneficiary households.

36. In livestock breeding beneficiary households, the income/expense ratio grew by more than 30% after RFF loans, while in control group households the ratio remained the same during the observed period.

Table 17. Economic efficiency evaluation of livestock breeding households,
per 1 average household
\$1=405

Loan amount	USD	4,212		2,595	
	Measurem ent unit	Beneficiaries		Control group	
		Without program me	With program me	2009	2013
Livestock product sales revenue	USD	1541	2122	1276	1661
Animal sales revenue	USD	413	436	311	430
Generated revenue	USD	1954	2559	1587	2090
Total livestock breeding expenses	USD	862	1027	1244	2334
Total expense	USD	862	1027	1244	2334
Net Revenue	USD	1092	1532	343	-244
Revenue growth due to the programme	USD		439		-587.3
Income/expense ratio		1.3	1.5	0.3	-0.1

Data in Table 17 suggest that the growth of livestock breeding revenue before and after the programme is the same in beneficiary and control groups and the growth of income/expense ratio in the beneficiary group is mainly conditioned by the reduction of expenses. Unlike the control group households, the beneficiary ones managed to ensure the same revenue growth at less expense. However, at the same time financial analysis on activities of livestock breeding beneficiaries (Annex 4) shows the maintenance of such a situation during the next 20 years to be inefficient.

Income

37. In a surveyed average beneficiary household the net cash income grew by 2.13 million AMD during the observed period. In the same period the net cash income per 1 average household in the control group decreased by 260 thousand AMD.

Table 18. Cash income of an average household, million AMD

	Beneficiaries			Control group		
	WOP	WP	WP +,- WOP	WOP	WP	WP +,- WOP
Salary, pension, other transfers	1,02	1,53	0,51	1,05	1,26	0,21
Income from agricultural activities	3,45	4,95	1,5	2,14	2,24	0,10
Total agricultural expense	0.83	1.01	0.18	0.73	1.31	0.58
Net income from agricultural activities	2.62	3.94	1.32	1.41	0.93	-0.48
Income from non-agricultural activities	0,16	0,46	0,30	0,07	0,08	0,01
Total net cash income	3.80	5.93	2,13	2.53	2.27	-0.26

It is noteworthy that 62% of the net cash income growth of beneficiary households generated from agricultural activities.

38. Despite the fact that there was a significant increase in beneficiaries' income, it was not evenly distributed among income groups of households.

Table 19. Generated annual cash income based on income groups, million AMD

Income group	WOP	WP	WP +,- WOP	WOP	WP	WP +,- WOP
	Beneficiaries			Control group		
Up to 1 million AMD	1.19	0.97	-0.22	0.81	0.78	-0.03
1-2 million AMD	1.65	1.97	0.32	1.59	2.12	0.53
2-5 million AMD	3.57	3.84	0.27	3.08	3.94	0.86
5-10 million AMD	5.31	6.41	1.1	6.47	6.26	-0.21
10 million AMD and more	12.69	25.82	13.13	16.96	16.21	-0.75
Total	4.63	6.95	2.32	3.25	3.58	0.33

As seen in Table 19, in the poorest group of beneficiaries income decline was registered after the program, for an amount of 0.22 million AMD per 1 average household. Although there is a certain income growth in the next 2 groups after the programme, it is inferior to the growth of an average household of the control group. RFF loans ensured a high level of effectiveness in the last, 'rich' group where the incomes doubled as compared to the period before the programme. Incomes of the last 2 'rich' income groups of control group households dropped compared to 2009.

39. Changes in expenses made during the month for family needs mostly comply with changes in income. In poor groups of beneficiaries expenses increased after the programme, yielding, though, to expense growth in poor households of the control group.

Table 20. Average monthly expense of a household, thousand AMD

Income group	WOP	WP	WP +,- WOP	WOP	WP	WP +,- WOP
	Beneficiaries			Control group		

Up to 1 million AMD	75,0	100,0	25,0	104,0	135,0	31,0
1-2 million AMD	128,8	143,8	15,1	121,1	148,5	27,4
2-5 million AMD	155,3	196,5	41,2	104,0	134,0	30,0
5-10 million AMD	149,2	192,5	43,3	170,0	270,0	100,0
10 million AMD and more	203,8	246,3	42,5	137,5	162,5	25,0
Total	150,4	184,0	33,7	120,5	155,4	34,8

Employment

40. Income growth of beneficiary households contributed to the expansion of households, which in turn led to the creation of new jobs.

Table 21. The number of employed, per 1 average household

	Permanent job			Temporary job		
	WOP	WP	WP +,- WOP	WOP	WP	WP +,- WOP
	Beneficiaries					
Household members	2.58	2.65	0.07	1.95	1.95	0
Friends and relatives	2.50	2.11	-0.39	2.50	2.50	0
Employees (hired workers)	3.43	4.25	0.82	3.71	6.43	2.72
Control group						
Household members	2.59	2.61	0.02	2.10	2.14	0.04
Friends and relatives	1.50	2.00	0.50	1.86	2.29	0.43
Employees (hired workers)	4.00	3.00	-1.00	3.25	3.50	0.25

As seen in Table 21, beneficiary households increase the share of hired work, reducing work of household members, friends and relatives. Just the opposite behaviour was displayed by the control group households, which continue to rely on family members, friends and relatives.

41. In an average beneficiary household the number of permanent and temporary jobs that increased after the programme made 3.54 (0,82+2,72), while in the control group households it dropped by 0.75 (-1+0.25) jobs. Thus, thanks to RFF programme, the net growth in the number of jobs in an average beneficiary household made 4.29. The total number of RFF beneficiary households, except the number of fish farming, winemaking, greenhouse and dairy production enterprises (these enterprises will be calculated separately), is 724, which allows calculating that 3106 new paid jobs were created in the rural areas of RA due to RFF programme.
42. The number of jobs in fish farming, winemaking, greenhouse and dairy production enterprises, according to calculations made in paragraphs 46-71, increased by 166. Thus, due to the programme implemented by RFF, 3272 new jobs were created in the agricultural sector of RA.

Women

43. A special section of rural household questionnaire was devoted to women. These questions were answered only by female members of rural households. 96 of the women who answered the questions were married, 10 were single, and 5 were widowed.

44. 55 of the surveyed women stated that the most important decisions regarding the rural household were taken together with the husband who is the head of the household while 6 of them said that they made such decisions independently.
45. 35.7% of the surveyed women (36.4% of beneficiaries) own land, 9.5% (7.3%) own livestock, 26.2% (32.7%) own a house or other buildings, and 5.6% (3.6%) own other real estate.
46. 79.4% of the respondents (about 92.7% of beneficiaries) work in the household, spending about half their time. 72.2% (about 89.1% of beneficiaries) are engaged in processing the agricultural products of the household.
47. 16.7% of women (approximately 29.1% of the beneficiaries) took a loan during the last year. 11.1% of women (about 5.5% of the beneficiaries) minded against the RFF loan when the husband decided to apply for it. In response to the question whether the husband would agree if they wished to take a loan, 56.3% of women (about 78.2% of the beneficiaries) gave a positive response, 20.6% (approximately 14.5% of the beneficiaries) gave a negative response, and 23.0% of women (about 7.3% of the beneficiaries) preferred "to remain silent".

Survey results by subsectors

Greenhouses

48. During 2009-2013 50 economic entities received loans from RFF funds to operate greenhouses. The total amount of loans received by greenhouses makes 753.3 thousand AMD, 15.1 thousand AMD per greenhouse.
49. 14 greenhouses in 4 marzes of RA were selected, 10 of which were RFF beneficiaries and 4 of them were not. The latter formed the control group.
50. 8 of the greenhouses are engaged in cultivation of vegetables, 4 greenhouses grow flowers, 1 greenhouse cultivates seedlings and 2 greenhouses cultivate vegetables and flowers. Before the programme the total area of greenhouses per 1 average greenhouse household made 1302 sq m and 1830 sq m after the programme. Greenhouses are covered mainly by glass. The annual production capacity of an average greenhouse producing vegetables is 37 tons, and that of a greenhouse producing flowers is 42 thousand pieces of flowers. The primary sources of heating for greenhouses are natural gas and electricity.
51. In beneficiary greenhouses, due to the programme implementation, the number of jobs per 1 average greenhouse increased by 1.4, while in the control group 0.2 job cuts were recorded per average greenhouse.

Table 22. The number of employees

	Total number of employees		
	WOP	WP	WP+,- WOP
Beneficiaries	3,3	4,7	1,4
Control group	3,5	3,3	-0,2
Beneficiary +,- Control	-0,2	1,4	1,6

The women/men ratio among greenhouse workers is 70/30 on the average. Created new jobs are distributed in almost the same ratio.

52. Table 22 shows that due to RFF programme the net growth in the number of job per 1 average greenhouse made 1.6. Thus, taking into account that the number of RFF funded greenhouse households is 50 we can calculate that in beneficiary greenhouses as a result of RFF programme implementation 80 new jobs were created, 56 of which went to women.

53. As compared to the control group greenhouses, in the beneficiary greenhouses a quite high growth of economic efficiency was recorded (Table 23). Thus, in beneficiary greenhouses net revenue increased by 5.8 times during the observed period while in control group greenhouses net revenue only grew by 1.8 times. During this period the income/expense ratio in beneficiary group grew from 0.8 to 1.7, while in the control group decreased from 1.4 to 1. Financial analysis data on greenhouse subsector for the subsequent 20 years are enclosed (Annex 5).
54. As seen in Table 23, the basic reason for such advantage of RFF beneficiary greenhouses is probably the fact that the latter are smaller as compared to the control group greenhouses. Small greenhouses are probably more flexible and efficient for the Armenian market. In any case, higher income was earned at less expense.

Table 23. Evaluation of greenhouse economic efficiency,
per 1 average greenhouse

\$1= 405

Loan amount	USD	19,296				37,778			
		Beneficiaries				Control group			
		Production		Value, USD		Production		Value, USD	
		Without programme	With programme	Without programme	With programme	2009	2013	2009	2013
Sold									
Vegetables	ton	20,38	29,72	10456,8	18007,4	51,0	74,3	26450,6	45388,9
Flowers	thousand pieces	4,4	131,5	839,5	28395,1	70,25	223,75	17438,3	46419,8
Seedlings	thousand pieces	0,7	0,5	86,4	61,7				
Generated revenue	USD			11382,7	46464,2			43888,9	91808,6
Expenses									
Purchase of seedlings, seeds and planting material	USD			1963,0	2871,6			5216,0	7518,5
Purchase of fertilizers	USD			866,7	1140,7			2537,0	4827,2
Water use fee	USD			254,3	407,9			637,7	1391,4
Purchase of pesticides	USD			464,2	661,7			1345,7	3506,2
Greenhouse heating expenses	USD			1051,9	7767,9			4481,5	16642,0
Salary	USD			340,7	1975,3			851,9	5555,6
Repair expenses	USD			703,7	1493,8			1821,0	4043,2
Other expenses	USD			691,4	987,7			1728,4	2561,7
Total expense	USD			6335,8	17306,7			18619,1	46045,7
Net revenue	USD			5046,9	29157,5			25269,8	45763,0
Revenue growth due to the programme	USD				24110,6				20493,2
Income/expense ratio				0,8	1,7			1,4	1,0

Winemaking enterprises

55. During 2009-2013, 8 winemaking enterprises received loans from RFF funds for the development of winemaking. The total amount of received loans is 235.2 thousand USD, 29.4 thousand USD per winery.
56. 4 wineries were selected from Ararat and Vayots Dzor marzes of RA. 1 of the latter did not submit data on its economic activity in 2013. For this reason only data of the 3 wineries were considered.
57. 2 of the wineries own 18 hectares of vineyards, the harvest of which is processed in the wineries. During the RFF program wine production capacity of an average winery increased by 6.3 thousand litres reaching 98.3 thousand litres. The entire raw material is purchased directly from manufacturers. Wine was not exported. In the domestic wine market the share of wine sold in stores dropped by 18% increasing in volumes sold directly to consumers. 2 of the 3 surveyed wineries plan to expand the production investing 60 million AMD, for which they are going to apply to RFF.
58. In the surveyed wineries, as a result of the programme implementation, the number of jobs increased by 4 per average winery. Due to the fact that no control group was available in the winemaking subsector, the calculation of net new jobs due to the programme was not possible. The women/men ratio among winery workers is 40/60 on the average. Created new jobs are distributed in almost the same ratio.
59. Thus, given that the number of RFF funded wineries is 8, we can calculate that in the winemaking subsector of RA 32 new jobs were created due to RFF programme, 14 of which went to women.
60. In wine production, as compared to other studied subsectors (greenhouses, fish farming), the economic efficiency growth is not very high. Thus, despite the fact that the net revenue of an average winery has increased by more than 56 thousand USD due to RFF programme, the income/expense ratio growth is not very high. It grew from 0.1 to 0.3 (Table 24). Financial analysis data on winemaking subsector for the subsequent 20 years are enclosed (Annex 6).

Table 24. Economic efficiency evaluation of RFF beneficiary wineries
per 1 average winery

Loan amount USD 58.436

\$1= 405

	Measurement unit	productions/costs		financial value, USD	
		Without programme	With programme	Without programme	With programme
Wine sales revenue	thousand litres	62.3	103.3	177,530.9	284,197.5
Total revenue				177,530.9	284,197.5
Expenses					
Grapes, own production	ton	53.3	70.0		
Purchase of grapes	ton	163.0	191.7	60,740.7	74,584.4
Price for 1 ton of purchased grapes	USD/ton			372.6	389.1
Price for grapes of own production	USD			19,874.3	27,239.5
Import of raw material	ton	45.0	47.3	14,172.8	15,160.5
Wine production expenses	USD			71,055.8	99,065.0
Total expense				165,843.6	216,049.4
Net revenue	USD			11,687.2	68,148.1
Revenue growth due to the programme	USD				56,460.9
Income/expense ratio				0.1	0.3

Fish farming enterprises

61. During 2009-2013 26 fish farming enterprises received loans from RFF funds for the development of fish farming. The total amount of the loans makes 557.9 thousand USD, 21.5 thousand USD per 1 enterprise.
62. 5 fish farming enterprises from 5 RA marzes were selected. Information about economic activity of one of them (Katrán LLC) was missing from the questionnaire (was not submitted by the company). For this reason all of the data in the database regarding this enterprise was overlooked.
63. The fish farming enterprises are involved in fish production, and one of them is also engaged in the production of caviar. 3 out of the 4 surveyed enterprises had not had water use permit and only one of them received such permit after RFF loan. The enterprises do not apply methods for increasing the amount of oxygen in water due to the high costs. Fish feed is mainly purchased. Only 1 of the enterprises plans to expand the fish farming household. 12 million AMD is necessary for it which will be taken as a loan from the same credit organization (under RFF programme).
64. In surveyed fish farming enterprises the number of jobs increased by 1 per average enterprise due to the programme implementation. Due to the fact that no control group was available in the fish farming subsector, the calculation of net new jobs due to the programme was not possible. There are almost no women working in fish farming households.

65. Thus, given that the number of RFF funded fish farming enterprises is 26, we can calculate that 26 new jobs were created in fish farming subsector of RA due to RFF programme.
66. Fish farming has a fairly high level of economic efficiency. As a result of RFF programme, the annual revenue growth is about 20 thousand USD per average enterprise, while the income/expense ratio has increased and reached 3.1 from 2.9 (before the programme) (Table 25). Financial analysis data on fish farming subsector for the subsequent 20 years are enclosed (Annex 7).

Table 25. Economic efficiency evaluation of RFF beneficiary fish farming enterprises per 1 average enterprise

Loan amount		USD		17,222		\$1= 405	
	Measurement unit	Production		Value, USD			
		Without programme	With programme	Without programme	With programme		
Produced fish	ton	7.325	12.250				
Sold fish	ton	7.250	11.875	35,185	60,926		
Generated revenue	USD			35,185	60,926		
Expenses							
Purchase of fingerlings and planting material	USD			2,160	4,012		
Purchase of fish feed	USD			2,346	3,086		
Water use fee	USD			185	574		
Pesticides	USD			463	586		
Cost of methods for increasing the amount of oxygen in water	USD			1,543	2,160		
Salary	USD			1,358	2,346		
Repair costs	USD			1,049	2,111		
Other expenses	USD			4	154		
Total expense	USD			9,109	15,031		
Net revenue	USD			26,076	45,895		
Revenue growth due to the programme	USD				19,819		
Income/expense ratio				2.9	3.1		

Dairy production enterprises

68. During 2009-2013 11 milk processing enterprises received loans from RFF funds for the development of milk processing. The total amount of the loans makes 541.4 thousand USD, 49.2 thousand USD per 1 enterprise.
69. 4 milk processing enterprises from Ararat and Gegharkunik marzes were selected.
70. Average milk processing company farms 11.8 hectares of own and 5 hectares of rented land, owns 10 head of cows, the milk of which is processed in the company. The annual milk procurement capacity of an average company made 169 tons before the RFF programme and 252 tons after the programme. Due to the programme, the dairy production volume in an average company has increased by about 40 tons. In the domestic market of dairy products the volumes sold in supermarkets increased after the programme. All 4 dairy companies plan to expand their households acquiring the estimated average amount for the investment - 153.5 million AMD, through taking loans. 3 of them are going to re-apply to RFF.
71. In the surveyed milk processing enterprises the number of jobs per average company has increased by 2.5 due to the programme implementation. Due to the fact that no control group was available in the milk processing subsector, the calculation of net new jobs due to the programme was not possible. The women/men ratio among the workers of milk processing enterprises is 40/60 on the average. Created new jobs are distributed in almost the same ratio.

72. Thus, given that the number of RFF funded milk processing companies is 11, we can calculate that about 28 new jobs were created in milk processing subsector of RA due to RFF programme, 11 of which went to women.
73. Milk processing yields to other studied subsectors by the economic efficiency level. Due to investments the annual net income of an average company increased by about 44 thousand USD, but at the same time as a result of the progressive increase in expenses the company's income/expense ratio dropped from 0.51 (before the programme) to 0.48 after the programme (Table 26). Financial analysis data on milk processing subsector for the subsequent 20 years are enclosed (Annex 8).

Table 26. Economic efficiency evaluation of RFF beneficiary milk processing enterprises per 1 average enterprise

Loan amount

USD 90,123

\$1= 405

	Measurement unit	Production		Value, USD	
		Without programme	With programme	Without programme	With programme
Cheese sales revenue	ton	29.950	69.675	94,444.4	232,284.0
Generated revenue	USD			94,444.4	232,284.0
Expenses					
Milk of own production	ton	2.5	3.5	617.3	1,251.3
Purchase of milk	ton	98.5	194.3	24,321.0	69,444.4
Price for 1 ton of purchased milk	USD/ton	246.9	357.5		
Cheese production expenses	USD			37,530.9	85,802.5
Total expense	USD			62,469.1	156,498.2
Net revenue	USD			31,975.3	75,785.8
Revenue growth due to the programme	USD				43,810.5
Income/expense ratio				0.51	0.48

Summary of economic results

74. The level of net revenue growth in beneficiary households due to RFF loans was calculated based on financial analyses of Rural finance component. Data are presented in Table 27.

Table 27. Calculation of annual net revenue growth in beneficiary households due to RFF loans

	Number of beneficiaries	Annual net revenue per 1 beneficiary	Annual net revenue per 1 control group household	Annual net revenue growth per 1 average household	Total annual net revenue growth
		000 USD	000 USD	000 USD	000 USD
Greenhouses	50	24.1	20.5	3.6	180.0
Winemaking enterprises ⁶	8	56.5	48.0	8.5	67.8
Fish farming households	26	19.8	16.8	3.0	77.2
Milk processing enterprises	11	43.8	37.2	6.6	72.3
Crop production households	I. 107	II. 4.3	III. -0.4	IV. 4.7	V. 502.9
Livestock breeding households	468	0.4	-0.6	1.0	468.0
Other rural households ⁷	145			2.9	413.3
Total	815				1,781.4

75. The value added during the year due to RFF loans is 1.8 million USD, which makes only 16.8% of funds used by RFF (10.7 million USD).

76. In order to evaluate the impact of the economic multiplier of RFF investments, the level of marginal propensity of consumption was calculated for the recent years, which made 85.6%. According to such level of marginal propensity of consumption, the economic effect of RFF investments (10.7 million USD) on Armenia's economy amounted to 51.8 million USD during 2009-2013 (Table 28).

77. Calculation was made taking into account the marginal propensity of consumption for the invested loan amounts plus the net income generated from amounts invested into economy (average income norm is 15%), less the repayment of the principal loan amount (1/5 of the loan amount) (column Ending Loan Balance + Interest):

⁶ Due to the absence of a control group, the net revenue growth was calculated based on the ratio of net revenues of beneficiary and control groups of greenhouses.

⁷ The average level of net revenue growth of crop and livestock production households was accepted as a level for other rural households.

Table 28. Economic multiplier

Average Net profit margin	15%
Loan maturity period, years	7
Grace period, years	2
Marginal propensity of consumption	85.6%

	2009				2010			
	Initial Loan amount	Generated net income	Repayment	Ending Loan Balance + Interest	Initial Loan amount	Generated net income	Repayment	Ending Loan Balance + Interest
Loan amounts, USD	841,916				3,794,010			
Consumption, 2009	841,916	126,287		968,203				0
Consumption, 2010	720,680	108,102		828,782	3,794,010	569,102		4,363,112
Consumption, 2011	616,902	92,535	168,383	541,054	3,247,673	487,151		3,734,823
Consumption, 2012	528,068	79,210	168,383	438,895	2,780,008	417,001	758,802	2,438,207
Consumption, 2013	452,026	67,804	168,383	351,447	2,379,687	356,953	758,802	1,977,838
TOTAL, USD	3,159,593	473,939	505,150	3,128,382	12,201,377	1,830,207	1,517,604	12,513,979
ECONOMIC MULTIPLIER	3.75			3.72	3.22			3.30

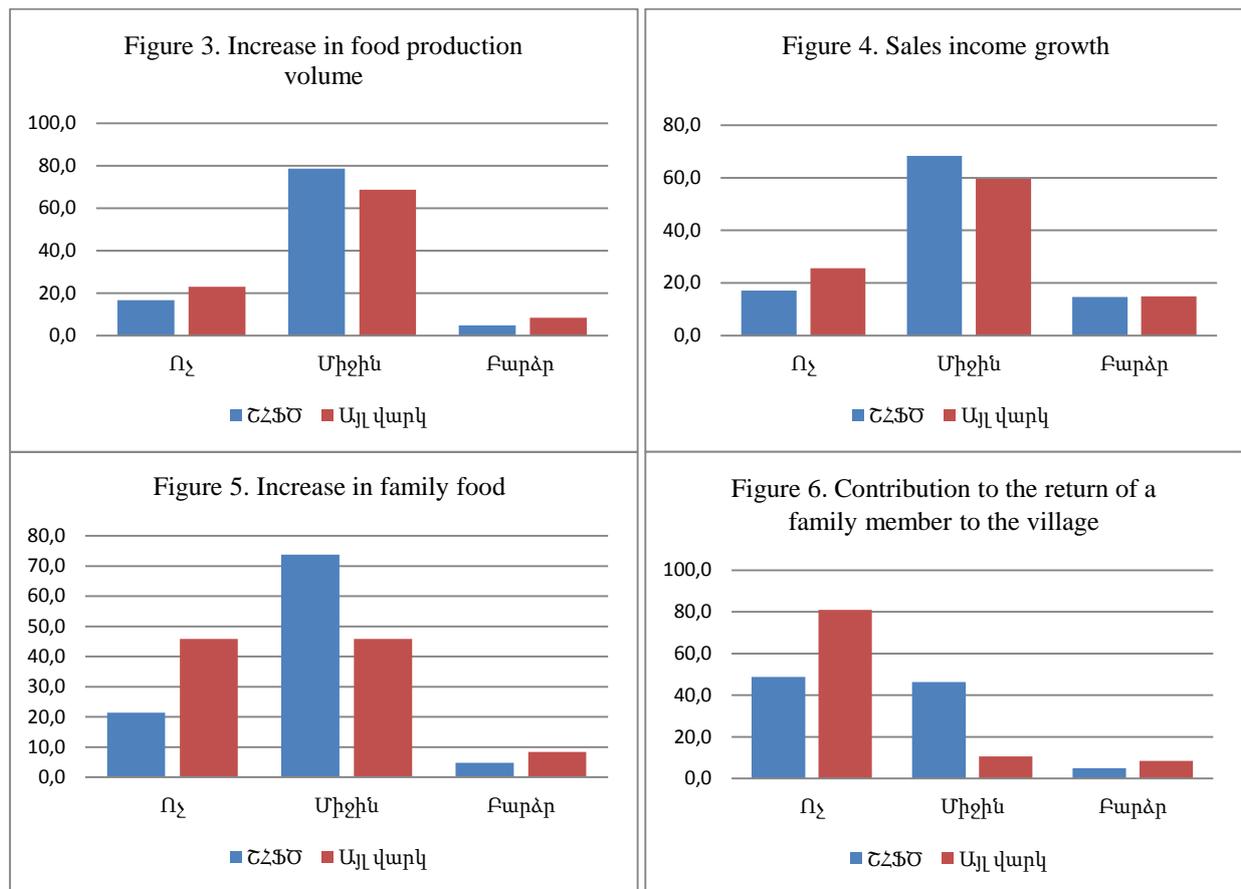
	2011				2012			
	Initial Loan amount	Generated net income	Repayment	Ending Loan Balance + Interest	Initial Loan amount	Generated net income	Repayment	Ending Loan Balance + Interest
Loan amounts, USD	1,806,468				2,057,040			
Consumption, 2009				0				0
Consumption, 2010				0				0
Consumption, 2011	1,806,468	270,970		2,077,438				0
Consumption, 2012	1,546,337	231,950		1,778,287	2,057,040	308,556	0	2,365,596
Consumption, 2013	1,323,664	198,550	361,294	1,160,920	1,760,826	264,124	0	2,024,950

TOTAL, USD	4,676,469	701,470	361,294	5,016,645	3,817,866	572,680	0	4,390,546
ECONOMIC MULTIPLIER	2.59			2.78	1.86			2.13

	2013				TOTAL
	Initial Loan amount	Generated net income	Repayment	Ending Loan Balance + Interest	(2009 - 2013)
Loan amounts, USD	5,350,913				6,442,394
Consumption, 2009				0	968,203
Consumption, 2010				0	5,191,894
Consumption, 2011				0	6,353,316
Consumption, 2012				0	7,020,985
Consumption, 2013	5,350,913	802,637	0	6,153,550	11,668,705
TOTAL, USD	5,350,913	802,637	0	6,153,550	31,203,103
ECONOMIC MULTIPLIER *⁸	1.00			1.15	4.84

⁸ As in the given case the multiplier is calculated for a limited period of time - 2009-2013, the effect of it is smaller (4.84) than it is in reality (6.94).

Impact assessment of RFF by respondents



78. Respondents were asked to assess the loan impact from the viewpoint of improvement in the living conditions of their families. The questionnaire suggested the following 3 response choices for the question on the standard of living: no improvement, average improvement and great improvement. Responses of RFF borrowers were compared with those of other borrowers.

As seen in Figures 3-6 above, according to all parameters characterizing the living standards, the rating of the impact of RFF loans is relatively higher than in rural households that received other loans. RFF borrowers, who believe that the loan did not promote the increase of food and income, are 17-21% of the respondents, while 22-46% of the respondents who received other loans mentioned the same rating. The main part of RFF borrowers, 70-80%, believes that there was an average improvement in their family's standard of living due to the loan. RFF beneficiaries' rating regarding the great impact on the living standard is slightly inferior to the ratings by other borrowers.

We have the same picture regarding the question whether the loan contributed to the return of a family member to the village.

Thus, RFF beneficiaries are generally more satisfied with their loans than the rural households that received other loans. A comparison of interest rates reveals that RFF loan interest rates are lower than those of other loans by 1-1.5%. The average amount of other loans, 1.1 million AMD, is exactly twice smaller than the amount of an average RFF loan. The average period of RFF loans is 2.1 years against the 1.8 years of other loans. The period between submitting the application and receiving the loan is almost the same for both RFF and other loans. Collateral was required for every fourth RFF loan, while in the case of other loans collateral was required for every second one.

79. About half of the respondents intend to apply for a new loan within the next 1 year. The loan amount makes 5.1 million AMD per average RFF beneficiary household and 3.3 million AMD per 1 other household. 22 out of 26 RFF borrowers are going to re-apply to RFF for a new loan, while 16 of other 21 borrowers decided to change their credit organization.

Summary of results by criteria

Relevance assessment

80. The objectives of FMAP Rural finance component broadly comply with the development priorities of the Republic of Armenia. Programme goals are in line with the 2010-2020 Strategy of Sustainable Development of Armenia's agriculture and the 2006 Poverty Reduction Strategy of RA, as well as the objectives of IFAD's activities in the country.
81. Program goals and ways of achieving them are relevant from the perspective of solving the following problems the country's agriculture is facing. a) Increase of investments in agro food industry, b) promotion of rural financial system formation, c) creation of job opportunities for women, the landless, the unemployed, the underemployed and other vulnerable rural groups.
82. Programme objectives coincide with the government objectives of the county development, the goals of rural communities, other donors and cooperating partners implementing activities in the country's agricultural sector and the strategic directions for their achievement.
83. From the viewpoint of supporting primary producers that have comparative economic advantages and enterprises that are in close contact with rural residents seeking more favourable employment opportunities; and rural poverty reduction, the programme strategy is in line with the country's policy implemented in rural areas and agricultural sector.
84. At the same time, the programme does not provide precise mechanisms for direct support to the rural poor and women. The absence of such mechanisms may result in the situation when only the relatively wealthy households will benefit from the programme. Why would banks and credit organizations be interested in granting loans to the rural poor and other vulnerable groups when the latter cannot provide security measures, and not many fellow villagers would like to take collective responsibility with them?
85. Programme efficiency would increase if the strategy included promotion of agricultural product sale, the principal directions of which would be: 1) the promotion of productions with a great potential of export and 2) the development of market infrastructures.
86. On the whole, the relevance rating for FMAP Rural Finance component is **satisfactory (5)**, as the programme objectives generally comply with the country's poverty reduction strategy and the needs of the rural poor.

Effectiveness assessment

87. In terms of fulfilling the set goals and achieving the expected results RFF activities were effective. The objectives set by the programme were generally fulfilled and the results obtained are mainly consistent with the expected results of the programme.
88. Financial analyse and models presented based on certain subsectors suggest that financial support provided by the programme to rural small and medium-sized enterprises contributed to the creation of new jobs, increase in production volumes and efficiency and therefore, income growth .
89. As a result of financial support to rural primary producers that have comparative economic advantages, favourable conditions were created to increase agricultural production and sales volumes, which contributed to improving the living conditions of the rural population to some extent.

90. Small and medium-sized enterprises that are RFF beneficiaries and are mainly engaged in agricultural production and agricultural products processing give priority to women particularly in agricultural products processing sector, because they are much more adept at processing issues.
91. At the same time, the expected income growth was recorded only in relatively wealthy groups. Households of the poorest groups being engaged mainly in farm-oriented agriculture did not increase income through employment either, and as a result did not gain any improvement in the standard of living.
92. The level of poverty is relatively high in frontier and mountainous areas of the country and from this viewpoint the fact that Tavush and Shirak marzes are among the last in terms of the number of loans received may be deemed as an omission from the perspective of fulfilling FMAP objectives
93. Given the above written, the RFF effectiveness rating is **moderately satisfactory (4)**.

Efficiency Assessment

94. Financial analyses of programs of RFF beneficiary fish farming, winemaking, greenhouse, dairy production enterprises and livestock production and horticultural rural households (see Annexes) shows that the investments Internal Rate of Return (IRR) and the Net Present Value (NPV) indexes are generally quite high. The programmes ensured a high level of efficiency in terms of receiving results before and after the programme.
95. In RFF beneficiary enterprises a high level of profitability was recorded. In beneficiary rural households the level of income growth is significantly higher than that of the control group households before and after the programme period,
96. Due to the programme the number of permanent and seasonal workers has significantly increased, which contributed to the creation of jobs mostly for women.
97. In the beneficiary rural households an increase in the marketability level of crop and livestock products was recorded, which provided additional financial flows to rural households.
98. In the beneficiary households growth of livestock number was registered, which is significantly higher than the growth recorded in the control group households.
99. In the beneficiary households, as compared to the control group households, the volume of agricultural product processing, as well as the marketability level of the processed products increased significantly.
100. At the same time, incomes increase in rural households does not refer to relatively poor households. The level of income growth in these households is significantly lower than the average level of the beneficiary group.
101. In the beneficiary households, as compared to the control group households, the yield capacity of agricultural crops did not increase.
102. RFF efficiency rating is **satisfactory (5)**.

Impact on rural poverty

103. Due to the programme, incomes of small and medium-sized rural enterprises, as well as large and medium-sized rural households increased significantly. At the same time, quite a large number of jobs were created, where mainly women were involved. As for the seasonal jobs, the unemployed and underemployed were involved, which led to a certain increase in their incomes too. The programme

- impact is weak on low-income rural households, incomes of which either dropped as compared to the period before the programme or are inferior to the control group households by increase level.
104. Land areas of beneficiary households did not increase; moreover, in small households a slight decrease was registered. Instead, the livestock number grew and the growth rate of it is higher in RFF beneficiary households than in the control group households.
 105. As compared to the control group households, the yield capacity of agricultural crops is almost the same level. In low-income groups, the consumption levels of food of own production did not increase either parallel to income decrease, which means that there are food security problems in this group.
 106. Due to RFF, a large number of credit organizations ensured broad involvement in rural areas. The latter are more flexible and in contrast with the banks tend to work with relatively small and poor households.
 107. On the whole, the rating of programme impact on rural poverty is **moderately satisfactory (4)**.

Stability assessment

108. Stability level of RFF programmes is quite high. Financial analysis of financial-economic data of small and medium-sized beneficiary enterprises shows that they ensured a high level of economic efficiency and are fully capable of functioning independently in the conditions of increasing financial flows. From the economic point of view medium and large rural households are in good situation too. The growth level of their incomes is also sufficient for the successful development of further activities. Small rural households face some problems. Small size of them does not allow ensuring financial flows that would be sufficient to continue further activities. The stability rating for RFF programmes is satisfactory (5).

Gender equality and women

109. The project did not provide for specific measures and mechanisms aimed at women, not counting the concept that the majority of jobs in case of the expansion of rural enterprises will go to women. On the whole, this proved to be true and jobs created during such expansion mostly went to women. Women did not have any privileges while receiving loans, despite the fact that in all banks and credit organizations women are believed to be more responsible borrowers. In general, women did not have problems when benefiting from the programme. The gender equality rating of RFF programmes is satisfactory (5).

Partner assessment

110. All programme partners, IFAD, the Government of RA and financial institutions have fulfilled the duties imposed on them in a timely manner and without serious violations. IFAD performance rating is highly satisfactory (6), while the rating of the RA Government and financial institutions is satisfactory (5).

Assessment Summary

1. On the whole, the implementation of FMAP Rural Infrastructures component may be considered successful and be rated **Satisfactory (5)** based on the 6-point system⁹ defined by IFAD monitoring and assessment guidelines.
2. Assessment of Rural Infrastructures component by evaluation criteria is presented in Table 29.

Table 29. Assessment of Rural infrastructures component

Criterion name	Rating
Programme implementation	
Relevance	5
Effectiveness	4
Efficiency	5
Programme implementation evaluation	4.7
Impact on rural poverty	4
Other assessment criteria	
Stability	5
Gender equality and women's empowerment	5
Overall evaluation	5
Partner evaluation	
IFAD	6
RA Government	5
Financial Institutions	5
Summary of Ratings	5

Suggestions

- At present, support to borrower rural households is offered only by credit specialists of banks and credit organizations who can only give advice on financial issues. Perhaps it is worth considering creating a small group of various agricultural specialists under RFF who, along with the monitorings, can provide farmers with advisory and other assistance.

⁹ 1 = highly unsatisfactory, 2 = unsatisfactory, 3 = moderately unsatisfactory, 4 = moderately satisfactory, 5 = satisfactory, 6 = highly satisfactory

- The current level of efficiency of the country's agriculture does not allow achieving rapid poverty reduction through agricultural production, especially for small households. Further programmes may need to stipulate the promotion of non-agricultural activities in rural areas.
- If possible, the grace period of horticulture (fruit-growing, viticulture) loans should be increased from 18 up to 36 months.
- Despite a major intensification of the lending process after the involvement of credit organizations, many rural households are not aware of RFF loans and take loans at higher interest rates. If the programme becomes well-known the demand for loans will rise and the level of loan efficiency will also increase as a result of growing competition.
- Banks are not the best way to achieve IFAD's main goal - poverty reduction. They are reluctant to cooperate with poor households, which cannot be said about credit organizations. A policy of gradually ousting banks from RFF lending process should be adopted.
- Currently, the primary task of economic entities in the country's agricultural sector is selling the produced agricultural products. One of the main directions for IFAD's subsequent programmes should be promoting agricultural and processing industries that have export potential and supporting them in the process of export.
- From the viewpoint of providing necessary information about the programme and improving the assessment efficiency, subsequent programmes should include the conduction of Baseline, Repeat and Complete assessment surveys. In case if it is impossible to conduct such survey, basic initial socio-economic information regarding the borrower should be included in loan applications.

Annexes¹⁰

Annex 1. RFF Impact assessment sample

Marz	Community	Rural Household	Greenhouse	Fish farming enterprise	Winery	Milk processing
Aragatsotn	1	5		1		
Ararat	8	25	8	1	1	2
Armavir	5	19	3			
Gegharkunik	3	14		1		2
Kotayk	3	12	2	1		
Lori	2	10	1			
Shirak	3	15				
Vayots Dzor	3	11		1	3	
Total	28	111	14	5	4	4

¹⁰ Annexes 3-8 are presented in the enclosed Excel file.

**TERMS OF REFERENCE FOR
SHORT-TERM CONSULTANT ON IMPACT ASSESSMENT OF RFF**

RECRUITMENT: Local competitive bidding

CONTRACT: Three months contract, July-September 2013

BACKGROUND: THE PROJECT

FMAP represents an investment of over 36 million USD financed by IFAD, OFID, Government of Denmark, Government of Armenia, financial institutions and programme clients. It aims to improve the economic and social status of poor rural people in Armenia. The programme became operational in May 2008 and is scheduled for completion in June 2013. It constitutes the fifth IFAD-financed programme in Armenia, and pioneers the creation of an equity fund in support of rural poverty reduction, innovative for both Armenia and IFAD; provides refinancing capital to rural lending to participating financial institutions; and supports rural infrastructure construction. To date, 97% of the implementation period has elapsed with a highly satisfactory disbursement rate of 96% on the IFAD Loan; 94% on the IFAD Grant and 99% on the Danish Grant.

As one of its key investments, FMAP provided additional funding to the operations of the Rural Finance Facility (RFF). This refinancing facility was established with IFAD support during the earlier READP project. The RFF supports rural economic development in Armenia by re-financing loans of participating financing institutions. With additional injections of capital from the World Bank, the Millennium Challenge Corporation and the Armenian Government, the RFF today refinances or manages lending operations to the value of some USD 30 million. FMAP's investment into the RFF operation consisted of approximately USD 2 million of additional investment capital.

OBJECTIVE OF ASSIGNMENT AND GENERAL SCOPE OF WORK

In view of the project closing and of the overall assessment of FMAP achievements in the Project Completion Report (PCR) by November 2013, the collection of the impact data for the FMAP activities needs to be done.

As very limited data is available on the impact of the RFF operations, a field survey of the RFF impact needs to be conducted. In the lack of a baseline study, this will have to be done on a recall basis. While the overall responsibility of the M&E function in the FMAP is with the M&E Section of the Project Implementation Unit of FMAP, it has been decided to recruit a short-term M&E consultant to conduct a field impact survey on the RFF operations and to process the collected data into an RFF impact report that can be used as an input to the final PCR. IFAD recently organised a Technical Support Mission to FMAP (May-June 2013). In the Technical Annex 1 of the report of that mission, overall guidelines are given on how carry out the impact survey on the RFF clients and how to connect the survey results to the farm and enterprise models that are used when the PCR of FMAP will be produced.

The assignment should aim at extracting knowledge with regards to the economic impact derived from rural financial service projects with emphasis on:

- direct incremental income generated;
- indirect and induced economic activity and related income generated in the rural areas;
- increase in assets;
- on-farm and off-farm employment generated from the direct, indirect and induced economic activities.

Following this approach, the FMAP impacts should be investigated through field assessments, validation of production models and calculation of the Economic Multiplier Impacts (EMIs). The estimated benefit streams

for enterprise and infrastructure models would then allow also the calculation of the investments Internal Rate of Return (IRR) and Net Present Value (NPV) from a 20 years projection of monetary incremental incomes, to assess the efficiency in the use of capital. Such calculations would be done to calculate

- Financial return for the direct beneficiaries
- Economic return to the Armenian in terms of incremental direct and indirect tax revenue from increased economic activity (increased purchase of inputs, consumption, etc) from the investment compared with the cost of the IFAD loan.
- Rural economic impact in terms of incremental economic activity in the region from the investment.

For the RFF operations under the FMAP funding, the impact data shall be collected through a sample survey. This survey has to cover the impacts on both the individual borrowers and the agro-companies that have been refinanced by the RFF with the FMAP funds. The financing for the RFF operations from FMAP was around USD 2 million. With the revolving of this capital between October 2009 and December 2012, loans to the tune of around USD 3 million were issued from this capital.

The total number of borrowers from this financing source is around 140. It is recommended that the impact survey would be based on the sample size of 55 loans (approximately 40% of the total). Furthermore, to cover all types of borrowers, it is recommended that of the 55 borrowers selected, 10 would be companies, 10 registered individual entrepreneurs and 35 individual primary producers (mainly farmers).

It is recommended that borrowers from the following five sub-sectors would be included in the sample, to achieve a good coverage of the issued refinancing:

- Primary livestock production
- Greenhouses/horticulture
- Fish farming
- Milk processing
- Wine processing.

The final analysis for the aggregate financial return and economic impact should be based on stratified analysis of such sub-sectors.

SPECIFIC DUTIES OF CONSULTANT UNDER THE CONTRACT

Working under the guidelines of the M&E Section of FMAP and receiving support from the RFF staff, the Consultant will be responsible for the successful conduct of the RFF Impact Survey. Under this overall mandate, the key tasks of him/her include:

- Familiarise himself with the approach and models to be used in the preparation of the final PCR
- Prepare, based on the PCR requirements, a detailed plan for the RFF impact survey, including the plan for the processing of the study material
- Decide, based on the agreed approach of Technical Annex 1 of the Supervision Mission Report, on the appropriate sub-sections to be included in the survey
- Design an appropriate field questionnaire for each of the selected sub-sectors
- Select, based on the agreed approach of Technical Annex 1 of the Supervision Mission Report, the persons and companies to be included in the survey sample
- Design an effective plan on how to organise the field data collection in practice
- Conduct, with RFF/FMAP support, the data field collection from the RFF beneficiaries
- Support the assumptions used for the calculation of the income streams with evidence from the PIU data or collect other information as required.
- Process the data collected from the field to tables and formats that can be used as an input to the PCR models.
- Prepare a concise report of the key findings of the RFF Impact Survey, including key conclusions and recommendations on how to improve the RFF impact in the future.