International Fund for Agricultural Development

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REPUBLIC OF ARMENIA

RURAL AREAS ECONOMIC DEVELOPMENT PROGRAMME

(IFAD Loan 653-AR)

PROJECT COMPLETION REPORT

Near East and North Africa Division
Project Management Department

August 2010

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Currency Equivalents

Monetary Unit	=	Armenian Dram (AMD)
1 USD	=	AMD 385
1000 AMD	=	USD 2.6

Weights and Measures

1 kilogram (kg)	=	2.204 pounds
1 000 kg	=	1 metric ton (mt)
1 pound (lb)	=	450 grams (gr)
1 kilometre (km)	=	0.62 miles
1 metre (m)	=	1.09 yards
1 square metre (m^2)	=	10.76 square feet
1 acre (ac)	=	0.405 hectares (ha)
1 decare (da)	=	0.1 hectare (ha)
1 hectare (ha)	=	2.47 acres
1 quintal (qq)	=	45.3 kilograms
1 gallon (gl)	=	3.785 litres (lt)

ABBREVIATIONS AND ACRONYMS

ACBA	Agricultural Cooperative Bank of Armenia
AMD	Armenian Dram
AR	At Apprasial
ASME	Armenian Small and Medium Enterprise Market Development Project
ASP	Agricultural Services Project
AWPB	Annual Work Plan and Budget
CARD	Centre for Agribusiness and Rural Development
CB	Commercial Banks
CDI	Commercially Derived Infrastructure
COSOP	Country Strategic Opportunities Paper (IFAD)
CPI	Consumer Price Index
CSS	Construction and Supervision Section
EIA	Environmental Impact Assessment

EIRR	Economic Internal Rate of Return
ENPV	Economic Net Present Value
EU	European Union
FIRR	Financial Internal Rate of Return
FNPV	Financial Net Present Value
GAV	Gross Agricultural Value
GDP	Gross Domestic Product
GGAP	Global Good Agricultural Practices
GoA	Government of Armenia
HACCP	Hazard Analysis and Critical Point Control
IFAD	International Fund for Agricultural Development
ILCS	Integrated Living Conditions Survey
IMF	International Monetary Fund
IRP	Irrigation Rehabilitation Project
IRR	Internal Rate of Return
ISO	International Organisation for Standardisation
LC	Leasing Companies
LIBOR	London Inter Bank Offered Rate
M&E	Monitoring and Evaluation
MCA	Millennium Challenge (Corporation/Account) Armenia
MT	Metric Ton
NPV	Net Present Value
ANSS	Armenian National Statistical Service
NWASP	North-West Agricultural Services Project
OFID	Organisation Petroleum Exporting Countries' Fund for International Development
PAAU	Programme Analysis and Administration Unit
PCC	Programme Coordination Committee
PCR	Programme Completion Report
PFI	Participating Financial Institution
PRSP	Poverty Reduction Strategy Paper
RAEDP	Rural Areas Economic Development Programme
RBISP	Rural Business Intermediation Service Providers
RFF	Rural Finance Facility
RIMS	Results and Impact Management System (IFAD)
RLC	Refinance Loan Committee
SDP	Sustainable Development Programme
SLA	Subsidiary Loan Agreement
SME	Small and Medium Enterprise(s)
TA	Technical Assistance
TSS	Technical Services Section
UCO	Universal Credit Organisation(s)
USAID	United States Agency for International Development
USD	United States Dollar
WOP	Without Project/Programme
WP	With Project/Programme
WUA	Water Users Association
Y	Year

PROJECT AT A GLANCE

Country	**Republic of Armenia**
Project Name	**RURAL AREAS ECONOMIC DEVELOPMENT PROGRAMME**

Key dates

IFAD Approval	**Signing**	**Effectiveness**	**Mid-Term Review**	**Original Completion**	**Actual Completion**
December 2004	January 2005	July 2005	December 2008	September 2011	December 2009
Mid-term Review	**Interim Evaluation**	**Original Loan Closing**	**Actual Loan Closing**		
June 2008		March 2012	December2010		

IFAD Financing

Loan	**USD**	**USD 15.820 million**	**USD 100 % disbursed**	**100%**	

Actual Costs and Financing (USD million)

Component	**IFAD**	**OFID**	**Beneficiaries**	**GOVT**	**RFF**	**Total**
Rural Enterprise Finance	9.084		7.413	0.020	5.252	**21.769**
Commercial Derived Investments	5.055	5.000	1.158	2.175		13.388
Programme Management	1.681			0.228		1.909
Total	15.820	5.000	8.571	2.423	5.253	**37.066**

Remarks
Indicate co-financing partners, actual amounts and amount committed for each as at appraisal.

Number of beneficiaries

Total	**Women**	**Men**			
CDI -70 308 REF -306 borrowers[1] -2 090 incrt. jobs -753 new incrt. markets	- 35154 - 27 - 775 -	- 35154 - 279 - 1 315 - 753			

Project Objective

Goal: to increase sustainable incomes among rural people in the disadvantaged programme mountain areas
Objective: to establish sustained growth of rural enterprises in the programme area.

Country Partners

Executing Agency	Ministry of Agriculture	Ministry of Finance and Economics	9 PFIs	ASME	Rural Finance Cooperation

7[1] Benefiting the entire household irrespective of gender

EXECUTIVE SUMMARY

PCR Data Sources

1. Information used for preparing this Programme Completion Report (PCR) for the Rural Areas Economic Development Programme (RAEDP) has been obtained from: (i) M&E data from the PAAU; (ii) financial information from the PAAU Finance Section; (iii) loan refinancing information from RFF; (iv) RAEDP Completion Report 2009, (iv) RFF loan refinance monitoring and evaluation data; (v) Supervision Reports; (vi) RAEDP Appraisal Report and working papers; (vii) Armenia National Statistic Service (ANSS); and (viii) field visits by the PCR mission meeting with clients and PFIs[2]. Data from these sources have been analysed and triangulated to confirm trends and results of the programme's achievements.

Programme Financing

2. At AR the total programme financing was USD 28.720 million of which IFAD accounted for 15 820 or 55%. At programme completion the total financing was 37.066 million with a notable increase in financing from beneficiaries and RFF. Beneficiary's contribution increased (CDI & REF) from USD 3.728 million to USD 8.571 and RFF's contribution from USD 0.108 to USD 5.252.

Output

3. The programme achieved its objective of establishing sustained growth of rural enterprises in the programme area. The output under the objective contributed to the programme goal of increase sustainable incomes among rural people in the disadvantaged programme mountain areas.

4. **RFS.** The programme refinanced 322 investments loans of which 27 were for women. Of the 322 loans 306 are performing loans used for 269 single purpose investments and 37 loans were for several purpose investments (2 or 3 types of investment particularly for livestock and orchards) making a total of 360 investments. Out of the 360 investments 312 were for activities related to 7 value chains (Fruit and vegetable processing, wine, milk, fresh vegetables-cold storage and grain) valued at USD 15 985 of which USD 9.896 million was loan funds and USD 6.089 million was equity. Of the 312 value chain investments 50 were for processing and produce collection. The balance of the 360 investments was for poultry, fish farming, stone cutting, retailing, beekeeping, carpets and machinery services (Table 3).

5 **RBIS.** In collaboration with ASME 16 RBISP were trained and they in turn provided business development service to some of the programme clients. According to RFF and PFIs the approach of using RBISP was appropriated in regards to preparation of business plans particularly for enterprises in need of large investment loans and in light of the fact that PFIs also assisted clients to prepare business plans

6. **CDI**. The programme supported 13 communities with investment support for water supply comprising 20 km of laid pipes, 4 collection tanks and 3 livestock watering points. These systems benefited 9 567 people from 2 610 households, around 4 430 milking cows and 3 dairy enterprises; support to gas networks for 18 communities benefiting 6 enterprises and 21 420 persons from 5 462 households. In addition gas networks for 9 communities were under completion and will benefit 2 enterprises and 12 245 persons from 3 240 households when finalised. The programme provided grant investment support to rehabilitation/development of irrigation schemes serving 14

[2] See Annex IV: Places and people meet by the CPR mission

communities for the rehabilitation of 648 ha of previously irrigated land and bringing irrigation water to the field edge for 1 977 ha of incremental land. The 2 625 ha of irrigated land is owned by 4 355 households with 14 600 members. At the time of PCR an estimated 977 ha was placed under production by 4 051 households providing benefits to their 13 580 household members. In addition, 4 communities will benefit from irrigation schemes under completion, with an incremental 1 095 ha of irrigated land owned by 1 543 households with 6 072 family members. The component also provided grant support for the rehabilitation of 17.7 km of roads across 7 communities benefiting 2 enterprises and 7 643 household with 24 721 members.

Outcome

7. **RFS.** This component contributed to the programme goal with the following outcomes: (i) the 306 performing investment loans refinanced by the programme created 2 090 jobs. Of these jobs 775 were occupied by women. The average yearly wage for each job created was USD 2 600 which compares will to the country average of USD 2 592. The cost of creating 1 job was USD 5 853 loan funds and USD 9400 for total investment similar to those created under similar interventions by WB and MCA.

8. The 50 enterprises engaged in produce collection/marketing and in processing, bought 34 633 mt (Table 5) of raw material annually at programme completion estimated to have created incremental markets from around 753 small farmers.

9. At maturity (year 15) the 306 refinanced investments supported by the programme generates a net return before tax and depreciation of USD 12.409 million[3] annually, resulting in a Financial Internal Rate of Return (FIRR) of 17% with a Financial Net Present Value (FNPV) at 12% of USD 8.773 million. The Economic Internal Rate of Return (EIRR) is 27% with an Economic Net Present Value (ENPV) at 12% of USD 24.692 million.

10. RBIS. Although not directly facilitating RBIS providers the programme through the expansion of enterprises as a result of the refinanced investment loans did stimulate a demand for RBIS. The outcome of RBIS is particularly evident in the case of milk productivity which experienced a national increase of 17% and for programme clients by 59%

11. **CDI.** The annual savings/earnings from investments in water supply systems were USD 231 244 for the 9 567 people from 2 610 households, around 4 430 milking cows and 3 dairy enterprises. Support to gas networks will generate USD 1.187 million in savings/earnings at maturity (completion in 2011) for 27 communities benefiting 6 enterprises, 33 665 person from 7 702 households. The support to developing the 18 irrigation schemes covering 3 720 ha benefiting 5878 households with 20 672 members will generate USD 3.793 annually at full maturity (full yields of orchards 2015). The programmes support for the rehabilitation of 21 km of roads across 7 communities benefiting 2 enterprises and 7 643 household with 24 721 members generated an annual savings of USD 0. 259 million.

12. The overall return to the infrastructure investments at the time of maturity in 2018 is USD 5.469 million with an FIRR of 9.46% and an FNPV at 9% of USD 0.760 million. The EIRR is 19% and the ENPV at 12% was 6.156 million.

13. The above returns indicate a very efficient use of capital equal to the opportunity cost of money (for economic analysis) which has been set at 12% and it exceeded the annual GDP (6.72% average p.a. over 2005-2009) and inflation (average of 4.23% over 2005-2009) indicating a strong contribution to the economic growth. These indicators underpin the efficient use of funds.

[3] Annex VIII: Financial and Economic analysis

14. **Systemic Impact**. The programme had several systemic impacts including increased financial outreach, improved risk management through a wider use of business planning, increase demand and use of RBIS and reduced pressure on the natural forests for fuel wood.

15. **Conclusion**. The above programme outcomes contributed to the national goal of reducing poverty. During the period between AR and programme completion the national[4] poor population had dropped from 34.6% (2004) to **23.5%** (2008) or **11.1** percentage point and during the same period extreme poverty dropped from 6.4% to 3.1%[5] or by 3.3 percentage point.

Lessons Learned

16. **RFF.** The refinance service provided by RFF did impact the accessibility of financial investment capital in the rural areas though expansion of financial outreach. It is, however, the PCR mission's assessment that the following would have improved the outcome of the programme: (i) loans issued in foreign exchange should be strictly for borrowing entities generating their earnings in foreign exchange; (ii) potential PFIs should be invited to bid on the spread to be added to the cost of RFF funds and the average (discarding outliers) would then be the maximum any PFI can charge clients, in order to transfer some of the low cost of RFF refinancing to the client group in the form of lower interest rate; and (iii) refinance targeting should be more focused in terms of expected impact like job creation and creation of incremental markets.

17. **Commercial Derived Infrastructure.** The immediate effect of CDI supported to irrigation would have been more rapid if proactively linked to an advisory service providing information on what to grow and how. It is also important that such investment be linked to financing of on-farm irrigation.

18. **International Food Standards.** The Georgian conflict with Russia made it difficult for Armenia to export to Russia, showing the importance of reducing trade barriers to other countries particularly the EU. In this respect, the first action is to facilitate exporters of agricultural produce and processed food to comply with international food standards including GGAP, HACCP/ISO certification. The programme did encourage enterprises investing in food processing, on a voluntarily basis, to organise configuration of buildings and equipment in preparedness for food standard certification. This effort resulted in 4 enterprises obtaining HACCP certification.

19. **Contract Farming.** Through the value chain approach several contract farming arrangements developed between processors and farmers. These contract arrangements stimulated diversification, investment, availability of inputs and raw materials. This effort should be further supported by new IFAD investments in Armenia, both in terms of developing contractual modalities, training and tripartite financing arrangements enabling PFIs to finance the contracted farmers' investment requirements based on their forward contracts with the processor. IFAD should also consider co-financing the cost of embedding value chain supply chain managers with the processors to engage in provision of technical advice and staggering of production and delivery of produce.

[4] Source: ANSS, Social Snapshot and Poverty In Armenia, 2009
[5] Annex V: Country and Programme Marzes Poverty Profile

A. INTRODUCTION

1. The concept for the Rural Areas Economic Development Programme (RAEDP) was based on the Government's Poverty Reduction Strategy Paper (PRSP), IFAD's Country Strategy Opportunities Paper (COSOP) and four previous IFAD-funded projects: 'Irrigation Rehabilitation Project' (IRP) (Loan 528-AM), co-financed with the World Bank, with a loan of SDR 5.4 million (approved in April 1995 and closed in June 2000); the IFAD-initiated and directly supervised North-West Agricultural Services Project (NWASP) (Loan 455-AM), for the loan amount of SDR 9.55 million (approved in December 1997 and closed in December 2002); and the Agricultural Services Project (ASP) (Loan 561-AM) for the loan amount of SDR 12.35 million (approved in April 2001 and closed in March 2006).

2. The **IRP, NWASP and ASP** contributed considerably to reducing poverty particularly through establishing productive assets in the form of more than 1 500 ha of irrigated land benefiting more than 1 000 farmers. The APS's support to establishment of the Agricultural Cooperative Bank of Armenia (ACBA) expanded the access to rural financial services for small loans to smallholders in the disadvantaged rural areas. It should be noticed that APS's funding of ACBA's lending programme (approximately USD 5 million will continue to revolve for the next 20-25 years in ACBA Bank to finance short-term loans to the lower segment of the IFAD target group.

3. **The client group** for RAEDP included unemployed rural men and women, small and medium-sized farmers, rural entrepreneurs, agro-processors and traders and non agriculture SMEs. The approach used to reach the target group was an investment response mechanisms, primarily through the commercial financial sector, which can be accessed by the rural population at large in the most disadvantaged parts of the country. Households benefiting from earlier phases of IFAD support, including farming members of WUAs, producer groups and village associations, also had the opportunity to further improve their circumstances, either through their own borrowing capital investment or by taking advantage of jobs created by other, more commercially oriented investors.

4. **Programme Area**. The programme area included the seven mountain area *marzes* of Shirak, Lori, Tavush, Gegharkunik, Vayots Dzor, Syunik and Aragotsotn. These marzes represent some 80% of the land area of Armenia and is home for 1.29 million of the country's 3.2 million of 40% of the total population. The marzes within the programme are among the poorest in the country[6] with an overall poverty level of 34.6% and extreme poverty of 6.4%.

5. **Political and Economic Changes.** The international economic crises which began in 2008 coupled with difficulties in exports to Russia via Georgia, due the conflict between the two countries, has lead to a sharp decline in the country's economic performance with GDP dropping to around zero in 2009. The crises also resulted in depreciation of the AMD rising unemployment and falling remittances. The effect from these developments on programme activities began to emerge during early 2010 in the form of delayed repayment of loans.

B. PROGRAMME DESCRIPTION AND IMPLEMENTAION ARRANGEMENTS

Goal and Objective

6. **Overall Programme**. The programme's goal was to increase sustainable incomes among rural people in the disadvantaged programme mountain areas. The objective subsumed under this goal was 'to establish sustained growth of rural enterprises in the programme area. The programme objective was achieved through the four components described below.

[6] Annex V: Country and programme marzes Poverty Profile

7. **Rural Enterprise Finance (REF) Component**. The main objective of the component was 'to stimulate sustained growth of rural economic activity in the programme area through improved access to appropriate financial services for small and medium-scale rural producers and enterprises'. This was achieved through the establishment of the autonomous unit, the Rural Finance Facility (RFF), under the Ministry of Finance and Economy by Government Decree. The RFF was managed by a director having the day to day responsibility for the refinancing activities of incremental and revolving funds. The director was supported by an accounts section and a loan refinancing section. The overall responsibility of RFF rested with the Programme Coordination Committee (PCC) (see Para 12).

8. The responsibility of approval of loan refinancing rested with the RFF's Refinance Loan Committee (RLC) composed of the Chief Advisor to the Minister, MoF, the RFF Director (see below), the PAAU Director and the WB-RESCAD Director. The MoF served as the chairperson and if the committee's vote was tied, the chairperson's vote became decisive. The RLC met regularly to approve refinancing. RFF refinanced investment loans eligible for support under the programme extended by pre-qualified financial institutions to the programme client group. Refinance decisions for loan amounts up to USD 5 000 was the responsibility of the RFF secretariat and refinancing decisions above USD 5 000 and up to 150 000 rested with RLC.

9. **Rural Business Intermediation Services (RBIS) Component**. The objective of the component was 'to develop a network of RAEDP-accredited Rural Business Intermediation Service Providers (RBISP) in the programme area'. The objective was achieved by providing identified RBISPs with training in (i) analysis of business development options; (ii) market research and development services; (iii) technology options; and (iv) general business services accountancy, tax and food hygiene/safety and environmental regulations. The USAID financed Armenian Small and Medium Enterprise Market Development Project (ASME) identified the RBIS and supported them with training during the early part of the programme implementation. In turn the RBISP assisted potential programme clients with: (i) assessment of the commercial feasibility of an investment idea; (ii) preparation of business plans; and (iii) linking clients with a RFF pre-qualified Participating Financial Institution. The RBIS was also supposed to support and monitor activities carried out by the ANIV Foundation established under the Agricultural Services Project (ASP), however this did not happen because of a dispute between ANIV Foundation and the MoF which had not been resolved at the time of programme completion.

10. **Commercially Derived Infrastructure (CDI) Component.** The objective of the component was 'to improve operational efficiencies in supply/value chains by alleviating constraints imposed by the condition of essential infrastructure'. The programme achieved this by providing contributory grants in support of investments for infrastructure vital for enhancing private investments for expansion of existing enterprises and establishing new ones. The Programme Appraisal Report (AR) foresaw that rehabilitation of small-scale infrastructure facilities such as rural roads, small scale irrigation and water supply systems for livestock and drinking water would be the main focus of the contributory grant investments. However at an early stage of implementation rural gas distribution networks were also included as eligible grant investments. The CDI was managed by the PAAU's Technical Services Section (TSS) and Construction and Supervision Section (CSS) responsible for preparation of tendering for outsourcing design work, construction and construction supervision and also responsible for quality assurance and contract management.

11. **Programme Analysis and Administration Unit (PAAU) Component.** This unit oversaw operational aspects and day-to-day programme management and was also responsible for the planning, coordination and continual review of programme outputs and effectiveness in relation to the RAEDP goal and objective. The Unit was also responsible for overall financial and administrative reporting functions as stipulated in the Loan Agreement. The PAAU had no direct implementation responsibility, instead, it had the administrative and financial autonomy to contract with third parties for programme implementation requirements. The PAAU was managed by a Programme Director

responsible for day to day management of programme activities. The PAAU Director was assisted by a: (i) Accounts Section (AC); (ii) Technical Services Section (TSS); (iii) Construction Supervision Section (CSS); (iv) Monitoring and Evaluation (M&E); (v) Foreign Relation Section (FRS); (vi) Office Management Section; and (vii) Yerevan Bureau (YB); and (viii) 7 Marzes Programme Support Units (MPSU).

12. **Programme Coordination Committee (PCC).** This committee was responsible for overseeing the programme activities including policy direction and overall oversight of the RFF operations. The PCC was chaired by the Minister of Agriculture and board members included representative from MOF, Chairman of the Chamber of Commerce, Chairman of the Bankers' Association, Ministry of Trade and Economic Development and *marz* governors. The RAEDP Programme Director was the secretary of the board. The Committee met twice a year to review programme operations and the draft Annual Work Plan and Budget (AWP/B). The Committee was also responsible for clearing annual reports and programme financial statements before their approval by the Minister of Agriculture. The Committee also provided policy advice to the Minister of Agriculture regarding programme implementation.

Output

13. **RFF**. During the programme implementation period the RFF refinanced 322 investment loans valued at USD 13. 314 million and extended to the client group by 9 commercial banks selected by RFF for participation in the programme. The participation of financial institution and their involvement regards to volume and value of refinanced loans is shown in Table 1.

Table 1: Volume and Value of Refinanced Loan across PFI

Participating Financial Institutions	Volume		Value	
	No	% of Total	USD '000	% of Total
Ardshininvest Bank	141	44	5 831	44
Haybusiness Bank	62	19	2 569	19
INECO Bank	35	11	1 451	11
UNI BANK	19	6	786	6
ACBA	18	6	746	6
Converse Bank	22	7	905	7
Anelik Bank	14	4	573	4
Artzakh Bank	10	3	413	3
Arexim Bank	1	0	40	0
Total	322	100	13 314	100

Source: RFF

14. Of the 322 loans[7] 306 are performing valued at USD 12.233 million and 16 are non-performing either because they have been used for the wrong purpose representing 5.6% of the loan portfolio value (7 loans in full an 1 in part valued at USD 0.750 million) or under deliquescing representing 2.48% of the loans portfolio (8 loans valued at USD 0.331 million) due to problems with repayment. At the time of the PCR some of these loans had been repaid by the respective PFI and others were in various stages of being recalled from the PFIs. Of the 306 performing loans 224 were for individual investors and 82 were for legal entities. In terms of loan size 120 were small loans > USD 10 000, 106 medium loans above USD 10 000 up to USD 50 000 and 80 from USD 50 000 up to USD 150 000. Women accounted for 26 of the loans representing 8% of total.

[7] Annex I: Refinanced Loan Portfolio Analysis

Table 2: Loan Size Category

Loan Size Category USD	Volume		Value	
	No	% of Total	USD '000	% of Total
0-10000	120	39	943	8
10000-50000	106	35	2 816	23
50 000-150000	80	26	8 399	69
Total	**306**	**100**	**12 158**	**100**

Source: RFF

15. Of the 306 (see Annex I) performing loans 269 were for single purpose investments and 37 loans were for several purpose investments (2 or 3 types of investment particularly for livestock and orchards) making a total of 360 investments. The composition of the type of these investments is presented in Table 3. The overall equity contribution was 38% of total investment or almost double the programme requirement of 20%. A total of 95% of the investment were directed to the value chains mentioned in Table 3 representing 93% of the total investment value (USD 19.571 million) of these the wine, dairy (cow) horticulture, fresh vegetable value chain accounts for 72% of total investment. The 360 investments generated 2 090 new jobs fulltime equivalent[8]; of these women occupy 37% (775). Of the 360 investments 50[9] were for processing of agricultural produce creating incremental new market for 753 farm family of which 215 had obtained refinanced investment under the programme.

Table 3: Refinanced Loan Organised According to Investments

Investment	**Investment Volume**		**Investment Value**				
	No	**% of Total**	**Loan USD '000**	**Equity USD '000**	**Total Investment USD '000**	**% Equity of Investment**	**Invest. Type as % of Total Investment**
Value Chains:							
Wine	11	3	978	604	1,582	38	10
Horticulture	36	10	1,780	1,051	2,830	37	18
Dairy Value (cow)	166	46	4,903	3,137	8,040	39	50
Goat Dairy	15	4	244	92	337	27	2
Meat	66	18	963	407	1,370	30	9
Grain	2	1	117	69	186	37	1
Fresh Vegetables	16	4	911	729	1,640	44	10
Subtotal	*312*	*87*	*9,896*	*6,089*	*15,985*	*253*	*100*
Others:							
Fisheries	12	3	622	562	1,184	47	6
Poultry	10	3	871	313	1,184	26	6
Beekeeping	9	3	101	47	148	32	1
Machinery Service	12	3	271	99	370	34	2
Retail Shop	2	1	172	137	309	44	2
Stone Cutting	2	1	265	122	387	31	2
Carpets	1	0	35	44	79	56	0
Subtotal	*48*	13	*2,337*	*1,324*	*3,661*	*36*	*19*
Total	**360**	**100**	**12,233**	**7,413**	**19,646**	**38**	100

Source: Based on RFF data

16. **RBIS.** A total of sixteen RBISP anchored at the Agricultural Support Regional Centres (ASRC) were trained between November 2005 and mid 2006. The RBISP in turn provided business service development to the programme's client group particularly legal enterprises obtained this service. Those clients not using the service of the RBIS were assisted by their respective PFI to prepare business plans consisting of financial projection for the investment (s) to be undertaken. The

[8] Annex II: Job Created by RAEDP
[9] Annex I: Refinance loan portfolio analysis

envisaged RBIS support to ANIV Foundation did not materialise because of a dispute between the Foundation and Government which was not resolved during the implementation of the programme.

17. **CDI**. The component supported the installation of water supply systems comprising 20 km of laid pipes, 4 collection tanks and 3 livestock watering points. These systems served 13 communities benefiting 9 567 people from 2 610 households, around 4 430 milking cows and 3 dairy enterprises. Support to gas networks was provided to 18 communities benefiting 6 enterprises and 21 420 persons from 5 462 households. In addition gas networks for 9 communities are under completion and will benefit 2 enterprises and 12 245 persons from 3 240 households when finalised. The programme provided grant investment support to rehabilitation/development of irrigation schemes serving 14 communities for the rehabilitation of 648 ha of previously irrigated land and bringing irrigation water to the field edge for 1 977 ha of incremental land. The 2 625 ha of irrigated land is owned by 4 355 households with 14 600 members. At the time of PCR an estimated 977 ha was placed under production by 4 051 households providing benefits to their 13 580 household members. In addition, 4 communities will benefit from irrigation schemes under completion, with an incremental 1 095 ha of irrigated land owned by 1 543 households with 6 072 family members. The component also provided grant support for the rehabilitation of 17.7 km of roads across 7 communities benefiting 2 enterprises and 7 643 household with 24 721 members.

Table 4: CDI Total Outreach

Type	Completed CDI investments			Co-finaced CDI investments under completion			Planned outreach		
	Communities	Households	People #	Communities	Households	People #	Communities	Households	People #
Water Supply	13	2,610	9,567				13	2,610	9,567
Roads	7	7,643	24,721				7	7,643	24,721
Irrigation	14	4,355	14,600	4	1,543	6,072	18	5,898	20,672
Gas	18	5,462	21,420	9	3,240	12,245	27	8,702	33,665
SUB-TOTAL	*52*	*20,070*	*70,308*	*13*	*4,783*	*18,317*	*65*	*24,853*	*88,625*
Double counted (communities benefitting from 2 CDI investments)							**3**	**470**	**2,217**
TOTAL OUTREACH							**62**	**24,383**	**86,408**

Source: PAAU

Assessment of Implementation Arrangement

18. Overall, the implementation arrangement has proved to be appropriate for delivering the programme output and achieving the programme purpose. However, a more proactive programme approach in providing RBIS would likely have generated additional benefits related to adoption of new technologies for small investors. Business plans, in particular developed with the help of PFIs lacked technical aspects of business operation of the respective enterprises. Indirectly this was to some extent offset by processors organising advisory service to their suppliers. This was particularly practiced by the dairy value chain (both cow and goat) and the horticulture value chain. However, it was to large extent large farmers who benefited from this type of service as they were more attractive for the processors to work with. The initial relatively low return from the completed irrigation schemes would also have benefited from a more proactive approach in regards to providing RBIS for financing of on-farm irrigation equipment and in provision of technical advisory service to smallholders.

C. PROGRAMME STRATEGY AND APPROACHES

19. The programme strategy was designed to deliver an inter-related package of business development training and loans for investment and working capital for small and medium on and off farm private enterprises and grant financing of commercially justifiable small-scale infrastructure in the public domain and through public-private partnerships. Key criteria for training, loan provision and investments in infrastructure was that: (i) they improve productivity of primary and secondary

commodities and (ii) they provide greater access for programme beneficiaries to higher levels of commodity supply and value chains, thereby retaining greater 'value-added' in the programme area

20. The overall programme approach was to maintain a consistent implementation focus on stimulating economic activity and growth through private sector initiative and development. The specific approaches related to the components are described below.

Rural Enterprise Finance (REF) Component

21. **Approaches.** The key approach of this subcomponent was to establish RFF for refinancing investments loans and lease contracts extended by Participating Financial Institutions (PFIs) (Commercial Banks (CBs), Universal Credit Organisations (UCO) Leasing Companies (LC same as UCO)) to rural enterprises. To encourage PFIs to engage in lending to the programme client group the interest rate charged by RFF was attractive. The interest charge for refinancing was equal to the reference rate of LIBOR USD plus a margin of 0.75% but not exceeding 4%. It was envisaged that these attractive refinancing conditions would create competition among PFIs to participate in the programme and contribute to the goal and objective by encouraging: (i) increased outreach of financial services; (ii) broadening the equitability of access to financial services among the programme's clientele; (iii) reduced cost of borrowing; and (iv) widening the range and sources of financial products offered to clients.

22. Two general types of loan/lease applications by programme beneficiaries were anticipated: (i) loans up to USD 5 000 by household-based on-farm and off-farm micro enterprises and (ii) rural small and medium-size enterprise development loans in the range of USD 5 000 to USD 150 000. The kind of loans seen as appropriate for the RFF refinancing include those for: (i) primary agricultural production; (ii) expanding of livestock operations; (iii) developing machinery contracting businesses offering mechanised services to smallholders; and (iv) developing small agro-produce processing factories. The currency of RFF's refinancing was in USD and the currency between the PFI and the programme client was decided by the two parties. The PFIs had to provide at least 30% of its own funds for working capital loans with duration of up to 18 months while for long term loans for capital investment the RFF would refinance 100% of the loan. It was mandatory for clients to contribute 20% of the total investment amount from their own funds.

23. **Assessment of the REF Approaches**. Overall the approach proved to be appropriate and contributed to attain the programme objective with the following results: (i) RFF selected 9 (Table 1) CBs to participate in the programme. The programme did not select UCO for participation as this segment of the market was covered by MCA (see Para 24 below); (ii) the PFI offered loans to 322 rural enterprises amounting to USD 13.314 million of which USD 8 945 million was refinanced by programme incremental funds and USD 4 369 million by revolved funds (including funds recalled by RFF). Of the 322 enterprises 306 were performing loans of which 269 were for single purpose investments and 37 were several investment purposes bringing the total investment to 360 amounting to USD 12.233 million from programme resources and USD 7.413 million in equity contribution.

24. The programme's approach contributed to increased lending of PFIs own resources to the rural areas from USD 22 million at AR to USD 82 million at programme completion or 277%[10] representing 80% of total crediting to the rural sector at the time of programme completion. The overall increase of PFIs lending to the rural areas has implicitly lead to a more equitable availability of loan financing for rural SMEs. The programme aim of reducing cost of borrowing is mixed. All PFIs lending to the programme clients were conducted in USD because clients preferred the low interest rate of around 12% compared to 18-20% for AMD loans. However, around one third of the programme clients who took a loan in 2008 early 2009 and began repayment in mid 2009 experienced a rise in the AMD to be used for repaying the loan due to the AMD depreciation during 2009 (see Table 9 for exchange rates); (iv) the RFF managed to attract funding from MCA which included the

[10] Source: Armenia Central Bank

participation of UCO resulting in the inclusion of refinancing of 4 lease contracts. The MCA also increased the number of loans for small borrowers by 581 refinanced loans.

25. Overall M&E data from PAAU and RFF verified by the PCR mission's field visits indicate that clients were satisfied with the improved availability of debt financing. However clients provided the following complaints: (i) the grace period of loans were too short limiting investments in enterprises with short gestation periods; (ii) at times loans were disbursed late and did not match with the season it was meant for; and (iii) excessive collateral requirement necessitating use of several assets leading to high cost related to notarisation of each asset used. During the first year of implementation GoA also required that the collateral be transferred to MoF and notarised separately doubling the cost born by the clients. These complaints should be viewed in light of total equity contribution representing 38% of total investments and disbursement of allocated programme funds under this component 21months ahead of planned schedule.

26. RFF improved its refinancing targeting during the implementation period by ensuring that long term loans were not used entirely for working capital and funds were use for eligible investments. The improvements were achieved by hiring a permanent M&E officer in charge of vetting all refinancing application above USD 40 000 by visiting the potential borrowers before and after refinancing. RFF also developed a loan classification system enabling management to alert the PFIs and promptly recall loans if used for the wrong purpose. The classification system also served as a tool to attract other investors by showing them the overall performance of the refinancing activities in a transparent manner. The improved targeting system produced very impressive results during the first years but it was noted by both the 2009 supervision mission and by the PCR mission that there was sign of declining performance related to monitoring of the refinanced loan portfolio which could lead to a higher rate of loans used for non eligible purposes than reported in Para 14 and subsequently result in reduced outcome of the programme.

27. Based on extrapolation of available information it is the PCR mission's assessment that the result of the strategy and approach has achieved the programme objective of contributing to expanding the outreach of the financial service to the programme area, and as noted earlier PFIs own funds accounted for 82% of this expansion. This suggests that the future focus of RFF should be to assist the financial sector develop new financial products like leasing and insurance products.

Rural Business Intermediation Services (RBIS) Component

28. **Approaches.** Under this component the programme used two approaches to stimulate rural investments. The first approach was to identify and train RBISP to provide business development services to programme clients in areas of (ii) market research and development services; (iii) technology options; and (iv) general business services accountancy, tax and food hygiene/safety and environmental regulations. The second approach was to fund the cost of RBIS provision for first-time clients up to USD 100 per client for a two-year period.

29. **Assessment of the RBIS Approaches.** In collaboration with ASME 16 RBISP were trained and they in turn provided business development service to some of the programme clients. According to RFF and PFIs the approach of using RBISP was appropriated in regards to preparation of business plans particularly for enterprises in need of large investment loans and in light of the fact that PFIs also assisted clients to prepare business plans. However the second approach of providing a USD 100 subsidy for assisting first-time borrowers to develop business plans and provision of advisory service was impractical to administer and the amount was insufficient to make any difference for the applicants. Business development in respect of assisting clients with post loan production technical assistance only took place in value chains where the processors organised this service often making use of the 16 RBISP. This type of assistance was biased toward larger suppliers generating the biggest return to the processors efforts in this regard. Provision of RBIS for adoption or

preparation for compliance with international standards was only use by 4 enterprises in receipt of investment loans refinanced by RFF.

30. It is the PCR mission's assessment that it should have been a precondition for all processors supported by refinanced investment loans to at least make the necessary preparation allowing them to be in compliance with international standards when required. It is also assessed that a more direct and proactive programme support for technical advisory service including the development of key value chain aspects would likely have strengthened the outcome of the programme.

Commercially Derived Infrastructure (CDI) Component

31. **Approaches.** The identification of CDI investments comprised desk and field reviews of: (i) applications received by the PAAU after the information campaigns carried out in the Programme marzes in July 2005; and (ii) re-assessment of reserve applications carried over from previous IFAD-funded projects. The CDI eligibility criteria were based on: (i) geographic targeting across the 7 programme mazes; (ii) economic viability and market linkages; (iii) willingness by the beneficiaries to cost-share the investments; and (iv) investments should be able to generate an Economic Internal Rate of Return of >10%.

32. **Assessment of CDI Approach.** The approach applied was effective in reaching a large number of beneficiaries as indicated by the following output[11]: (i) infrastructure investments across 65 communities had been financed amounting to USD 10.224 million (excluding in-kind contributions), of which USD 0.958 million was funded by the municipalities and *mazpets*, on behalf of the client group, meeting the required 10% contribution; (ii) 20 070 households with 70 308 members and 11[12] rural enterprises benefited from the CDI interventions; and (iii) 4 430 milking cows benefited from watering points during summer pasture and/or availability of water in the barns. Additional 4 783 households with 18 317 members and 2[13] rural enterprises will benefit when ongoing infrastructure investments are completed. The roads and water supply investments provided equitable benefits for women, men, and poor and well off rural citizens. The average size of land per household benefiting from irrigation is 0.6 ha indicating than it addresses the less endeavoured rural population. The households benefiting from gas infrastructure did not really address the most vulnerable 10% of the rural citizens as they could not afford the connection to the household. However, in some communities the municipalities sourced funds to subsidize gas connection for the vulnerable citizen. It is estimated that about 2 000 of the project beneficiaries belong to ethnic minority groups (Yezidis) in Aragatsotn marz.

33. It was evident from meetings with the client group[14] that they felt it essential to have access to better infrastructure, including roads, water, gas and irrigation in order to strengthen competitiveness of rural enterprises and to improve the wellbeing of the rural citizen. Therefore, this intervention proved to be a key factor in improving the business environment and stimulating new investments within the respective locations.

Programme Targeting

34. Notwithstanding its demand-driven basis the programme uses a number of instruments to assure targeting. In the first instance, the programme area is delimited to localities where poverty is endemic and appropriate financial services and infrastructure development in support of private sector, commercially sustainable growth had remained hitherto very limited. Secondly, criteria with

[11] Annex III: Programme Physical Results
[12] Includes gas and water connection for bakeries and dairy plant also benefiting from improved roads; additionally 4051 farm households benefit from completed irrigation projects
[13] Includes gas connection for bakeries and dairy plant; additionally 1847 households will benefit from ongoing irrigation projects
[14] Annex IV. List of places/people met by the PCR mission

respect to loan size, purpose, and duration was tailored to direct programme support to micro, small and medium on and off farm enterprises where IFAD's primary target populations was concentrated. Similarly, loan criteria assure support to enterprises with strong backward linkages to poor rural communities and high potential for generating employment. Finally, interviews and surveys during RAEDP design show that women were strongly represented in the kinds of activities to be supported under the programme. Women either held control or were majority employees in the rural trading and agro-processing sub-sectors and were consequently likely candidates for RFF re-financing. Even in on-farm primary production women benefited from investments leading to increased production, productivity and incomes, given the family management systems that prevail in Armenia.

Replicating the strategy and approach

35. It is both possible and desirable to replicate the programme strategy and most of the approaches. However, the approach to assist small investors to emerge as viable commercial entities would benefit from: (i) long-term loans with in-built risk sharing mechanism either through insurance or investment grants; (ii) to make a real difference for this client group investments should be much more guided in terms of what type of investment and its technical composition; (iii) investors access to advisory service should ease with minimum response time without being tied into a administrative slow setup; and (iv) small investors should be assisted to adopt Global GAP at a reasonable cost if not for free. High quality value chain expertise should also be made available in a systematic way in order to fast tract market expansion through export/import substitution which will lead to increased demand for raw material creating the foundation for sustainable investment in primary agriculture production and commercialisation of the agriculture sector.

36. Experience from other similar IFAD interventions in countries within the region suggests that the interest rate for the end borrower could have been more attractive if PFIs had been invited to bid on the spread they wanted to add to the cost of the refinanced funds. The average of these bids, excluding the outliers, would then be the maximum interest the PFIs could charge to the programme clients. Elsewhere this system proves to be equitable for all clients without treating small borrowers as subprime customers.

D. ASSESMENT OF PROGRAMME RELEVANCE

37. **Background**. At the time of preparing the AR it was estimated that the total national population was 3.2 million of these 1.29 million lived in the seven programme *marzes* representing 40% of the total population of Armenia. The agriculture sector employed 46% (2003) of the national workforce and accounted for 52% of rural income. In 1990 the agriculture contribution to GDP was 12.6% and at AR it was 23%. The high employment rate in the agriculture sector compared to its contribution to GDP is a very strong indicator of low productivity, underemployment resulting in low incomes from the sector. This is also reflected in the persistent high level of overall rural poverty which stood at 34.6% (2004) with an extreme poverty of 6.4% (2004). The most important reasons for the underperformance of the agriculture sector were attributed to: (i) limited availability of financial services particularly credit; (ii) poorly developed supply of agricultural input; (iii) obsolete agricultural and agro-industry machinery and equipment; (iv) poor status of social and productive infrastructure particularly gas, water (both drinking and irrigation) and roads; (v) small landholding averaging 1.4 ha comprising 3 plot located apart; and (vi) most smallholders were either industrial workers or professionals during the soviet era and had limited knowledge of agriculture if any.

38. **Overall Programme Relevance.** In light of the above constraints the AR's proposed delivery of an inter-related package of business development training and loans for investment and working capital for small and medium on and off farm enterprises and grant contributory financing of commercially derived infrastructure was very relevant. The relevance of these interventions is manifested by achieving the programme objective and goal which in turn have contributed to the

national goal stipulated in the PRSP. The programme was also relevant in addressing IFAD's country strategy[15] by focusing its area-specific interventions on the most disadvantaged mountainous part of the country where severe rural poverty is most persistent[16].

39. **Relevance of REF**. The loan size category[17] of the performing refinanced portfolio is a good indicator of programme relevance in addressing the need of the target group. A total of 120 loans were for small investments with a refinanced value of up to USD 10,000. These loans were mainly invested in livestock, orchards and beekeeping for expansion of existing subsistence production into small commercial farming generating a small surplus for sale. This type of loan mainly generated employment for family members and some seasonal jobs. RFF also supported 106 loans with a refinanced value between USD 10 000 and up to USD 50 000. These loans were for business diversification and expansion of small enterprises generating jobs for non family members and with a potential for growth and continuous job creation. The remaining 80 performing investment loans with refinanced value between USD 50 000 and up to USD 150 000 were existing commercial mostly legal enterprises. These enterprises were key drivers of new technology, creation of new technical jobs and export/import substitution.

40. Another indicator of programme relevance was the creation of incremental markets. Of the 306 performing enterprises[18] supported by refinanced loans 40 were for processing and 10 were for collection/storage and marketing of agro-products. The total procurement of annual incremental produce by these enterprises amounted to 34 633 mt of agricultural produce valued at USD 12.030 million. Milk accounted for 66% of the total procurement value and 46% of the supplier. The incremental procurement of raw material is estimated to have created new incremental markets for 753 small farmers. Of these 215 received loans were refinanced by the programme.

Table 5: Incremental Market Created

Processors		Volume Mt	Value USD '000	Suppliers		Total Suppliers
Type	No			Programme	Non Programme	
Milk (cow)	22	29 131	7 865	138	205	343
Milk (goat)	2	101	0	10		10
Fruit and vegetable	11	1 929	2 122	31	90	121
Wine (grape)	5	1 877	901	25	75	100
Meat	4	56	172	11		11
Grain	1	115	115		38	38
Cold storage	5	1 424	854		130	130
Total	**50**	**34 633**	**12 030**	**215**	**538**	**753**

Source: Calculated by the PCR mission based on data from PAAU and RFF and field verification

41. Job creations were another area of programme relevance. The 306 performing enterprises generated 2 090 (Annex II) full time jobs equivalently. Women were estimated to occupy 35% of the jobs (775) and men 65%. The jobs created by small loans (see Table 2) were mainly occupied by family members. Jobs created by the other two loan size categories were mostly occupied by previously unemployed persons and if previously employed the job held then had been taken by an unemployed person. Interviews with some of the persons occupying the new created jobs expressed that they appreciated having a job and a good indicator of relevance was that they expressed that it had made them decide to stay in Armenia instead of migrating.

42. The programme was also very relevant in contributing to the expansion of financial services to the rural area. Out of the 9 PFIs (see Table1) 5 (Artzakh Bank, Haybusiness Bank, UNI

[15] Articulated in IFAD's Country Strategic Opportunities Paper (COSOP)
[16] Annex V: Country Poverty Profile
[17] See Para 14, Table II
[18] See Para 15

Bank, Converse Bank, INECO Bank) were not involved in lending to the agriculture sector prior to the commencement of RFF. These PFIs accounted for 56% of the total loan volume refinanced by RFF (58 loans) and 47 % of the value (USD 5.773 million). In addition RFF managed to attract financial resources from the World Bank and MCA amounting to USD 14.9 million. It was evident from meeting with several of the PFIs that they used RFF's refinancing to expand their rural outreach. This resulted in overall growth of crediting to the agriculture sector from around USD 37 million at the time of AR to 122 million[19] at programme completion or an increase of 230%. Donor assistance accounted for 41% (USD 15 million) of this amount at AR and at programme completion it was 31% (USD 40 million) meaning that PFIs own funds being lend to agriculture had increased by USD 60 million or by 173%. The expansion of PFIs outreach also included increase in the branch network within the programme area from 49 at commencement of the programme to 74 at the completion or an increase of 44%.

43. The 23[20] enterprises/borrowers meet by the PCR mission in respect of data collection and verification of programme results expressed overall satisfaction with the service provided. Likewise, employees met by the PCR mission occupying some of the 2 090 new jobs created by the programme also expressed their appreciation. However, there were some criticisms: (i) some loans proceeds were received after the respective season had started; (ii) durations of investment loans and the grace period were too short for investments with long gestation periods; and (iii) change in exchange rate made loans very costly for some of the borrowers, but others also benefited. These complaints should be viewed in light of exhausting the programme funds 21 months ahead of planned schedule, a total equity contribution of USD 7.413 or 38% of total investments (USD 19.646 million) exceeding the programme requirement of 20%.

44. The relevance of the 16 RBIS providers was important for provision of advisory service particularly to processor and other larger on and off farm enterprises. The project succeeding the ASME, Centre for Agribusiness and Rural Development[21] (CARD) also provided valuable technical assistance to processors in the field of standards, packaging, and marketing through contract farming. All the processors obtained part or all of their raw material through contract arrangements with suppliers to whom they provided technical advisory services. These efforts saw the emergence of organised value chains particularly for dairy, meat, wine, fruit and vegetables. However the RBIS did not have the expected relevance for small investors both in respect to business planning and technical advisory service. The RBIS and RFF were also relevant in contributing to important systemic improvements within the commercial banking sector including: (i) a better understanding of the agricultural sector and its related risks; (ii) some banks have shifted from a purely collateral based lending to a more business oriented approach; and (iii) increased financial and physical outreach. However, the introduction of more flexible lending conditions and development of new products foreseen in the AR did not materialise. Likewise the support of non agricultural enterprises was also limited.

45. **Relevance of CDI.** The programme investments in social and productive infrastructure were relevant in meeting the programme's objective. The support reduced the cost of doing business for 11 small scale rural enterprises resulting in annual savings of USD 500 - 1400 for each of these enterprises. In addition a total of 20 070 rural households with 70 308 members benefited from improved roads and connection to natural gas and drinking water generating an aggregate annual saving of about USD 1.0 million. Infrastructure investment under completion at PCR for gas will benefit another 2 companies and 3 240 households with 12 245 members with proportional similar benefits as above. Investment in irrigation infrastructure completed at the time of PCR benefited 4 355 smallholders with the potential for generating an annual aggregate income of about USD 900 000 at full development. Additional 1 543 smallholders and their 6 072 household members will benefit upon completion of irrigation ongoing investments at the time of PCR. Most persons met at the 22[22]

[19] Source: Central Bank of Armenia
[20] Annex V: List of places/people met by the PCR mission
[21] CARD is a USAID financed project
[22] List of places/people met by the PCR mission

sites visited by the PCR expressed satisfaction with the investment in infrastructure. However some of the potential beneficiaries of gas supply could not afford the connection. Likewise some of the smallholders benefiting from the irrigation infrastructure lacked financing for on farm irrigation equipment and technical knowledge on what to grow.

46. **Conclusion**. It is assessed that the programme was very relevant and achieved the programme's objective and contributed to the national goal. The programme activities have also served as important demonstrations.

E. PROGRAMME COST AND FINANCING

47. **IFAD Loan Allocation and Reallocation in SDR.** The Loan Agreement between IFAD and the borrower provided the basis for a loan of SDR 10.450 million financing the programme loan categories mentioned in Table 6. At programme completion 100% of the loan had been expended. During the implementation period SDR 0.589 million of the loan proceed was reallocated represented by SDR 0.55 million from Unallocated funds, SDR 0.039 million from loan refinancing. Of the reallocated loan proceed SDR 0.431 was allocated to Civil Works for CDI infrastructure investments, SDR 0.091 was reallocated for equipment, goods and vehicles, SDR 0.01 million for technical assistance and training and SDR 0.057 million for operating cost.

Table 6: Loan Allocation and Reallocation of Funds in SDR

Loan Category	Loan Agreement Allocation, SDR '000	Revised allocation, SDR '000	Reallocated amount, SDR '000	% Reallocations per Loan Category and Total
Civil works	2 850	3 281	431	15%
Equipment, Goods &Vehicles	100	191	91	91%
Technical Assistance &Training	50	60	10	20%
Loan Refinancing	6 050	6 011	-39	-0.01%
Operating costs	850	907	57	7%
Unallocated	550			100%
Total	**10 450**	**10 450**	**589**	5.6%

Source: PAAU

48. **Total Programme Cost and Disbursement by Financiers in USD.** The projected base costs at AR totalled USD 28.720 million and actual disbursement was USD 37.066 million, representing an increase of USD 8.346 million or 29% compared to AR. This sizable difference is a increase of Borrower's equity contribution to refinanced loans from USD 2.773 million estimated at AR to 7.413 million at programme completion. Another increase was noted under the beneficiaries' contribution to infrastructure from USD 955 000 to USD 1.158 million (in cash and in kind) a rise of 21%. RFF contribution was USD 5.144 million an increase of USD 5.035 against AR allocation of USD 0.108. Government's contribution amounted to USD 2.423 million representing an increase of USD 0.163 million translating into 7% compared to original allocation. According to RFF, data on the PFIs contribution were not collected as the client group covered the working capital from their equity contribution. The timeliness and amount of financing exceed the requirement of the programme LA.

Table 7: Financiers, Cost Allocation, Disbursement and Reallocation (USD ’000)

Category	IFAD			OPEC Fund			USAID			GoA			GoA Taxes			Clients			RFF			PFIs			Total		
	Allo.	Disb.	Reallo.	Allo.	Disb.	Reallo.	Allo.	Disb.	Reallo.	Allo.	Disb.	Reallo.	Allo.	Disb.	Reallo.	Allo.	Disb.	Reallo.	Allo.	Disb.	Reallo.	Allo.	Disb.	Reallo.	Allo.	Disb.	Reallo.
A. Rural Enterprise Finance																											
1) RuraL Finance Facility, Refinancing	9290	8945	-345													2773	7413	4640	0	4369	4369	1803	0	-1803	13866	20727	6861
2) Rural Finance Facility, Secretariat	244	139	-105				222	0	-222				22	20	-2				108	883	775				596	1042	446
Subtotal Rural Enterprise Finance	9534	9084	-450	0	0	0	222	0	-222	0	0	0	22	20	-2	2773	7413	4640	108	5252	5144	1803	0	-1803	14462	21769	7307
B. Rural Business Intermediation Service	41		-41				176	0	-176																217	0	-217
C. Commercially Drived Infrastructure	4400	5055	655	5000	5000	0				150	162	12	1910	2013	103	955	1158	203							12415	13388	973
D. Programme Analysis and Administrative Unit																											
1) Yerevan Burau	1037	1345	308				123	0	-123				131	180	49										1291	1525	234
2) Marz Units (7)	288	336	48										47	48	1										335	384	49
Subtotal Programme Analysis and ADM	1325	1681	356	0	0	0	123	0	-123	0	0	0	178	228	50	0	0	0	0	0	0	0	0	0	1626	1909	283
Total	**15300**	**15820**	**520**	**5000**	**5000**	**0**	**521**	**0**	**-521**	**150**	**162**	**12**	**2110**	**2261**	**151**	**3728**	**8571**	**4843**	**108**	**5252**	**5144**	**1803**	**0**	**-1803**	**28720**	**37066**	**8346**

Source: CPIU-IFAD

49. The PCC selected Grant Thornton Amyot LLC as the audit firm. The PAAU should have ensured that the audit firms conducted the audit within the timeframe stipulated in the LA, however this did not happen. Throughout the programme implementation the audit process was executed in accordance with IFAD’s audit guidelines, but always submitted late. All 4 audit reports provided an unqualified opinion on the programme’s financial statements, statements of expenditure, summary of sources and uses of funds, and Special Account statement. However, a number of observations and recommendations were made regarding the accounting system and internal control system, which in most cases received management response, although slow.

50. A total of 30 withdrawal applications were submitted during the implementation of the programme. The authorised allocation of the Special Account was increased from USD 0.5 million to USD 1.5 million after the first withdrawal.

F. ASSESSMENT OF PROGRAMME EFFICIENCY

51. The actual delivery cost related to overall programme management (PAAU) was USD 1.681 or 4.5% of total disbursed funds and 10.6% of disbursed funds under the IFAD loan (Table 7). This indicates a management cost on the high side compared with other IFAD investment in the region. However the programme was completed 21 months ahead of schedule yielding a disbursement factor of 1.35 indicating a very good financial disbursement performance.

52. The average interest rate charged by the PFIs over the duration of programme implementation was around 12% for loans denominated in USD which accounted for all the 322 loans. This can be considered an efficient rate compared to loans if denominated in AMD which was around 18-20%. However, the exchange risk for loans issued in USD was borne by the programme’s client group and it will be note from Table 9 that the exchange difference across years was considerably. This particularly affected the borrowers who took loans in 2008 and early 2009 accounting for around one third of the programme’s borrowers. After end grace period most of these clients began to repay these loans at the end 2009 early 2010 costing them considerably more due to the depreciation of the AMD. Some of the PFIs made an effort to assist their clients mitigate against the exchange risk when the AMD began to depreciate against the USD by converting the balance of the loan to AMD. Unfortunately, the programme did not have a hedging mechanism in place.

Table 8: USD to AMD Exchange Rate during Programme Implementation

Variation Over the Year	2006	2007	2008	2009	2010*
Average	423	343	306	363	384
High	437	364	311	388	404
Low	363	302	301	305	368

Source: OANDA Corporation. *01.01.2010 to 31.06.2010

53. According to PFIs met by the PCR mission the RFF did stimulate the expansion of rural financial outreach from USD 22 million to USD 82 million or 277% and the establishment of 25 additional rural branches. RFF was also able to broaden the availability of financial products with the

participation of MCA financing 4 leasing contracts. The total loan portfolio at risk at PCR was 2.48% which was very good compared to 14% for the financial sector as a whole. However, RFF's monitoring of the refinanced loan portfolio was insufficient during the first year of the programme implementation but became efficient in the subsequent two years with some indication of decreased efficiency during 2009. Over the programme period, non eligible loans identified by RFF's monitoring amounted to 6.19% of all loans.

54. The average cost of creating each of the incremental 2 090 jobs was USD 5 853 against refinanced loan value, and USD 9 400 including equity contribution. This cost compares well with other similar (WB and MCA) types of interventions in Armenia and also with similar IFAD interventions in the region (Moldova, Macedonia and Romania)

55. The 306 performing investments refinanced under the programme produced a financial[23] net profit before tax and depreciation of USD 12.409 million at maturity (2018) with an Financial Internal Rate of Return of (FIRR) 17% and an Financial Net Present Value at 12% of USD 8,773 million. This is a very efficient return to investment; however, it should be noted that this is due to considerable sunk cost in the form of existing building, underutilised equipment, and existing orchards in need of rehabilitation. The economic net return is USD 12.409 million (2015 when all loan have been repaid) with an Economic Internal Rate of Return (EIRR) of 29% and an Economic Net Present Value (ENPV) at 12% of USD 24.692 million. These returns indicate a very efficient use of capital exceeding the opportunity cost of money which has been set at 12% as well as the annual GDP (6.72% average p.a. over 2005-2009) indicating a strong contribution to the economic growth. These indicators underpin the efficient use of funds. The GDP went into negative territory in 2009 due to the international crises but had recovered to 6.7% during the first half of 2010.

56. The cost of delivering **RBIS** for refinancing of the 322 loans was covered by other development partners like ASME, CARD, processors financed by the programme. However, the service did not reach the less resourceful borrowers and it is the PCR assessment that if the PAAU and RFF had facilitated and insisted that clients make use of RBIS the outcome of the programme would have increased in term of returns to investment particularly for small investment. Most of the investment less than USD 10 000 was for milk production and based on the PCR mission's field visit and data analysis it is clear that farmers with larger herd sizes have benefits from advisory service compared to smaller herd size.

Table 9: Gross Margins for Different Herd Size

Indicators	Return from 1 Cow across Herd Size			
	0-12	13-25	26-60	61-≥
Milk Yield (Lt)	2,415	2,880	4,300	5,490
Revenue (USD)	1,305	1,430	1,814	2,135
Expenditure (USD)	1,115	1,146	1,356	1,468
Income before financing and depreciation (USD)	190	284	458	667
Margin (%)	15	20	25	31

Source: Mission calculation based on verified PAAU and RFF data *income before

57. **CDI.** The design/construction and the supervision/construction cost ratios both representing 3% of total investment cost, is on the low side for design works and slightly above average for supervision, but overall compares well to WB financed ASIF II and III and RESCAD. The average cost per beneficiary was USD 115 or USD 157,285 per community-based investment that is within acceptable limits. The highest costs per beneficiary is recorded for investments in irrigation (228 USD per beneficiary). The cost/ha of incremental irrigated land (3 072 ha) is largely variable (between USD 360 in Lori and USD 2 727 in Tavoush, the highest values occurring in connection

[23] Annex VI: Financial and Economic Analysis

with extensive pipe re-routing in order to convert the existing pumping systems into gravity, resulting in operational savings.

Table 10: CDI Investment Type, Cost and Outreach

Type of Infrastructure Investment	Outreach			Programme Investment Cost (USD)		
	# Communities	# Households	# HH Members	Total	Cost per Beneficiary	Cost Per Community
Water Supply	13	2 610	9 567	918 522	96	70 656
Road	7	7 643	24 721	2 041 499	83	291 643
Irrigation	18	5 898	20 672	4 712 895	228	261 828
Gas	27	8 702	33 665	2 550 613	76	94 467
Total	65	24 853	88 625	10 223 529	115	718 594

Source: PAAU

58. During RAEDP implementation, the PAAU with support from IFAD was successful at leveraging additional resources for parallel rural infrastructure investments amounting to USD 10 million from OFID and USD 10 million from GoA.

59. The overall net return at the time of maturity in 2018 from the CDI was USD 5.469 million with an FIRR of 9.46% and an FNPV at 9% of USD 0.760 million. The EIRR was 19% and the ENPV at 12% was 6.156 million. These results are based on the utilisation of the infrastructure at maturity of the irrigation (full yields) schemes in year 2017. These returns indicate a very efficient use of capital matching/exceeding the opportunity cost of money (for economic returns) which has been set at 12% as well as the annual GDP (6.72% average p.a. over 2005-2009) and inflation (average of 4.23% over 2005-2008) indicating a strong contribution to the economic growth. These indicators underpin the efficient use of funds.

60. The programme's financial and technical management of the construction works were generally adequate. However, delays in completing a major irrigation scheme (1 095 ha) in Tavoush marz was experienced because of shortcomings in the design works and the termination of a contract for pipe laying. The shortcomings in design works resulted in more than 40% budget overrun which have been partly covered by project funds (up to 30% increase) and by additional GoA funding.

61. **Conclusion.** Overall the programme achieved its objective very satisfactorily and contributed to the national goal. However, a closer collaboration between the irrigation infrastructure investments, RBIS and RFF in promoting on farm investment would likely have brought forward the benefits and increase the efficiency of the programme outcomes. Also, a more proactive programme approach in facilitating RBIS to small investors emerging as commercial enterprises would likely have increased the efficient use of invested capital. Finally, a more proactive monitoring of refinanced investment loans would have resulted in earlier results which would have lead to better economic returns from the investments.

G. REVIEW OF PROGRAMME OUTPUT

Table 11: Result Chain

Goal	***Results***
Incomes of poor rural people living in disadvantaged *marzes* in the mountain areas sustainably increased	▪ The programme contributed to reducing the poverty from 34.6% at AR (2004) to 23.5%. (2008) at PCR. The extreme poverty dropped from 6.4% to 3.1% over the same period (source: ANSS, Social Snapshot and Poverty In Armenia, 2009)
Objectives	
Sustained growth of rural enterprise activity stimulated in the defined programme area	▪ 124 of enterprises operating after three years ▪ Revenue growth of enterprises ▪ 2 090 jobs generated of which 775 were occupied by women. ▪ 322 applications were accepted by PFIs of which 27 were for women. ▪ 16 RBIS trained
Outputs	
Medium and long term financing made available to rural commercial entities in a competitive financing environment	▪ At AR a total of USD 37million (PFIs own funds USD 22 million) was credited and at PCR it had increase to USD 122 (PFIs own funds USD 82 million) ▪ The rural branch network of CBs increased from 49 to 74 branches. ▪ Reduction in lending interest rate from 18% to 12% if denominated in USD and therefore associated with currency risk ▪ Collateral requirements liberalized ▪ A total of 322 investment loans value at USD 13.413 million ▪ Repayment % 96% ▪ 306 enterprises established, created 2090 jobs of which 775 for women ▪ RFF did refinance 8 leasing contracts with MCA funds (4) and WB funds (2)
Effective access to required business intermediation services provided to small and medium enterprises	▪ 322 business plans accepted by banks for financing ▪ 322 clients received BDS of which 27 were women and 198 received ongoing advisory service of which 27 were women. ▪ Contract arrangement between 40 enterprises and 655 farmers organised by the enterprises. ▪ 40 enterprises organised ongoing advisory service to around 650 farmers/supplier, using among others the 16 RBIS trained under the programme.
Commercially Derived Infrastructure established in programme area	▪ 13 of the infrastructure investments arising from VICSA ▪ Around 780 Farms/Businesses received RIBS ▪ 52 village infrastructure operational at completion
Programme effectively managed	▪ Disbursement percentage 100% ▪ MIS set up and used for decision-making by RFF ▪ Interest income from RFF was sufficient to cover operational cost

Activities by components

REF	**RBIS**	**CDI**	**PAAU**
1.1. Nine Commercial Banks were selected to participate in the programme. 1.2. Total disbursement under RFF was USD 13.413 million used to refinance 322 loans of which 27 (8%) was for women. Of these 306 were performing loans valued at USD 12.233 million plus an equity contribution of USD 7.413 million or 38% of total investment. The 306 loan financed 360 types of investments. 1.3. The 360 investments generated 2090 jobs of which 775 were occupied by women. 1.4. 31 farmers increased their orchard yields by around 50% for 219 ha. 1.5. Incremental markets were created for 650 farmers 1.3. Average milk yield increased from 2307 lt to 4112 lt/cow/year or by 59%	2.1. ASME assisted the programme train 16 RBIS provider. 2.2. PFIs provided business development assistance to 233 clients 2.2. The 16 RBIS provided pre investment assistance to around 89 enterprises. 2.3. Forty of the processors in receipt of refinanced investment loans provided/organised regular advisory service to around 650 farmers/suppliers. 2.4. Due to the increased demand for raw material 40 of the processors established contract arrangements with around 650 farmrs/supplier. 2.4. A total of 24 processors received assistance from CARD in HACCP, product development and marketing.	3.1. 34 financed infrastructure projects amounting to USD 10.2 million. 3.2. 14 communities benefit from financed irrigation systems. A total of 2 625 ha of land rehabilitated benefiting 14 600 farmers 3.3. 7 communities benefit from financed road rehabilitation with a total length of 17.7 km benefiting 24 721 persons 3.4. Construction of drinking water systems serving 13 communities benefiting 9 567 persons 3.5. Construction of 18 village natural gas supply systems benefiting 21 420 persons 3.6 Number of persons benefiting from infrastructure 70 308	4.1. On site meetings in 25 communities recipient of infrastructure investments 4.2. Monitoring and evaluation

Source: PAAU-IFAD

H. ASSESMENT OF PROGRAMME EFFECITIVENESS

62. **REF.** The refinancing support generated a total of 2 090 jobs of which 1 000 were permanent jobs with an average yearly earning of USD 3 095 of which 32% was paid in taxes (health and social services) of these jobs 605 were off farm employment. The remaining 1 090 jobs created were temporary full time equivalent each earning a yearly average of USD 2 105 of which 32% is paid in tax (health and social services). The average wage for each of the jobs created compares well with the national average[24] of USD 2 592 for agriculture workers and USD 3 216 for workers in the manufacturing industry. Over the programme implementation period the wages increased by an average of 12% per annum above the annual average GDP of 6.72% and above the average inflation rate 4.23%. The above indicators underpin the effectiveness of the programme in delivering sustainable work places for both men and women. The most developed value chains were wine, horticulture and dairy (cow milk) they were also most effective in creating cost effective jobs. However the difference in cost of creating jobs in the various value chains is also a reflection of the increased mechanisation/modernisation of the processing facilities within the value chains and service sector ensuring international competitiveness.

Table 12: Job Creation and Cost across Type of Investment

Investment	**Investment**			**Job Creation**		**Cost of Job Creation USD**	
	No	**Loan USD'000**	**Total Investment USD '000**	**Permanent Full Time**	**Termp. Full Time Equivalent**	**Loan**	**Total Invest.**
Value Chains:							
Wine	11	978	1 582	74	51	7 824	12 656
Horticulture	36	1 780	2 830	69	194	6 768	10 760
Dairy (cow)	166	4 903	8 040	664	655	3 717	6 095
Dairy (goat)	15	244	337	9	18	9 037	12 481
Meat	66	963	1 370	56	24	12 037	17 125
Grain	2	117	186	5	3	14 625	23 250
Fresh Vegetables	16	911	1 640	17	65	11 109	20 000
Subtotal	*312*	*9 896*	*15 985*	*894*	*1 010*	*51 97*	*8 395*
Fisheries	12	622	1 184	33	5	16 368	31 157
Poultry	10	871	1 184	42	35	11 312	15 376
Beekeeping	9	101	148	2	12	7 214	10 571
Machinery Service	12	271	370		12	22 583	30 833
Retail Shop	2	172	309	9	7	10 750	19 313
Stone Cutting	2	265	387	15	8	11 522	16 826
Carpets	1	35	79	6		5 833	13 167
Subtotal	*48*	*2 337*	*3 661*	*107*	*79*	*12 565*	*19 683*
Total	**360**	**12 233**	**19 646**	**1 001**	**1 089**	5 853	**9 400**

Source: RFF

63. Of total people employed in the country the share engaged in agriculture rose from 46% at AR to 49% at programme completion an increase of around 36 000[25]. The programme contributed to this increase by 2 090 or by 5.8%. It is important to note that the gross agriculture output grew by 27% or twice of the employment growth rate over the same period as a result of shifting from low value stable crops to high value horticulture cops leading to increased vegetable production from 663 800 mt in 2005 to 825 300 mt in 2008 or by 24%. The milk production also increased from 555 000 mt to 653 000 mt or by 18% amounting to 98 000 mt, mainly brought about by increased productivity from 1 914 lt in 2005 to 2 307 lt in 2009, an increase of 20%[26]. The refinanced loans for the 138 investment in milk production generated incremental annual recurrent

[24] Source: ANSS, Yearbook, 2009
[25] Source: ANSS, Yearbook, 2009
[26] Annex VII: Development of the Dairy Sector across Years

production of 16 324 mt[27] at programme completion representing 17% of total incremental production.

64. The gross food processing industry output (See footnote 24) grew by 28% between 2005 and 2008 and reaching 47% of total gross output from the manufacturing sector, a modest increase of 3% compared to AR. The total incremental value of the incremental gross output was around USD 97 million in 2008 compared to 2005. The 50 refinanced loans for enterprises engaged in food processing accounted for 19 million representing 19% of this increase.

65. C**DI**. Overall the CDI investments directly impacted 20 070 rural households with 70 308 members estimated to have generated an annual economic profit amounting to USD 5.469 million with an EIRR of 19% and a ENPV at 12% of 6.155 million. The annual savings/earnings from investments in water supply systems were USD 231 244 for the 9 567 people from 2 610 households, around 4 430 milking cows and 3 dairy enterprises. Support to gas networks will generate USD 1.187 million in savings/earnings at maturity (completion in 2011) for 27 communities benefiting 6 enterprises, 33 665 person from 7 702 households. The support to developing the 18 irrigation schemes covering 3 720 ha benefiting 5878 households with 20 672 members will generate USD 3.793 annually at full maturity (full yields of orchards 2015). The programmes support for the rehabilitation of 17,7 km of roads across 7 communities generated annual savings of USD 0. 259 million benefiting 2 enterprises and 7 643 household with 24 721 members.

I. ASSESMENT OF IMPACT

Physical Assets

66. At the time of programme completion the assets of the enterprises in receipt of the 306 performing loans was estimated to have increased from USD 20 million to USD 60 million. This increase is comprised of repayment of the loan capital and increase in the market value of the enterprise. Most of the enterprises supported under the programme had considerable underperforming assets (sunk cost) which increased their productivity after the investment which in turn increased their assets as indicated in Table 14.

67. The 5 450 farm-households benefiting from the investment in irrigation infrastructure have experienced an increase in the value of land from USD 3 500 per ha before irrigation to USD 8 500 per ha[28]. The market value of a rural house connected to natural gas increased from USD 15 000 to USD 18 000.

Table 13: Estimate Incremental

Type of Asserts	USD Million			No of HH Benefiting
	Before	After	Incremental	
Enterprises[29]	20	60	40	306
Land	19	32	13	5 450
Rural Dwellings[30]	157	188	31	10 426
Total	196	300	84	16 182

Source: Estimated by the PCR mission

[27] RAEDP Impact Assessment, October, 2010
[28] Source: PAAU
[29] Source: Estimate base on the collateral provide as security for the loan and the repaid loan amount at programme completion.
[30] Source: From interviews carried out by the PCR mission in Aygabats village in Shirak marz

Human Assets

68. The Programme contributed to improving the human assets through capacity-building activities, contributing to understanding and enhancement of entrepreneurial capability among individuals and SMEs including 27 women in receipt of a refinanced loan. Infrastructure investment in roads, which also included contribution from the local communities, represented a considerable improvement in accessibility and communications for local social services (schools, medical offices, postal offices, train stations, etc). Provision of water and gas supply to rural households, schools and hospitals contributed to improvement of health aspect of occupants, and reduced the manual work in collecting water and fuel.

69. The project has contributed both to the availability of increase in food supply and availability of food through increased family revenue for the 2 090 persons (8 306 MH) occupying a new job, owners of the 306 enterprises (1 215 Household Members), 538 farmers (2 140 HM) benefiting from new markets and 4 355 farmers (14 600 HM) benefiting from irrigation), implying improvements in level and quality of nutrition and affordability of health and education services for a total of 26 261 persons from 7 289 households. Indirectly another 15 715 households with 55 708 members increased their disposable income as a results of saving from the infrastructure development. Upon completion of ongoing construction of infrastructure the total number of persons increasing their disposal income would be 98 069 form 27 317 households.

70. A recent survey of 208 villages within the programme area show that (Table 15) veterinarian service is available in most villages and the quality of service is rated above average. The ASRC is available to 76 percent of the villages and the quality of service is rated average. Although the programme did not contribute directly to the availability in provision of these services it created the demand through the refinancing of expansion agriculture activities. It was evident from the PCR mission's field visits that milk producers with larger herd sizes made frequent use of these services and to a less degree by milk producers with small herd sizes. The effect of these services is evident by a national increased productivity per milking cow of 17% and by 59% for the client group (sees Para 62). The programme could have been more proactive in facilitating the service provider to make their service available to the segment of the client group taken small loans and emerging as commercial milk producers.

Table 14: Availability and Quality of Advisory Service

Service Providers	Precentage Avalliability	Good	Average	Poor	Location to Nearst Service (km)
Agricultural Support Regional Centres	76	22	72	6	18
Agronomy	54	42	55	3	1.8
Agricultural Cooperatives	4	64	18	18	0.5
Veterinarian	99	53	45	2	1.4

Source: MCA, Rural Community Survey, 2009

Social Capital and Empowerment

71. Programme support to Commercially Derived Infrastructure also resulted in non-business citizens coming together and collectively requesting their respective municipalities and *mazpets* to apply to the programme enabling them to benefit from gas and water connections. This fostered collaboration between initiative citizen groups, the respective marz offices and business communities resulting in 70 308 individuals benefiting directly because of collective action. The number benefiting will increase to 86 408 when ongoing infrastructure construction is completed. The development of road infrastructure facilitated collection of produce and improved access to markets, schools, health service and strengthened business relations between processors and suppliers.

72. Despite these very positive impacts, it is assessed that provision of technical assistance would have further enhanced the impact. In particular, issues related to marketing and choice of high value crops would have been beneficial for the farmers benefiting from irrigation infrastructure.

Food Security

73. Availability of sufficient quantities of food was not an issue during AR. However access to food was an issue for the extremely poor people. During the period between AR and programme completion the share of extreme poor have dropped from 6.4% (2004) to 3.1% (2008)[31]. The programme contributed positively to these changes in respect of generating increased earnings/savings for 23 004 households with 81 969 members (see Para 69) improving their ability to buy sufficient food.

Institutions and Services

74. The service of the RFF did contribute to the increased availability of financial services in the rural areas (see Para 52). During the implementation, there was an emerging shift from purely collateral lending to a more business orientation. A more proactive approach by RFF in relation to loan monitoring would have accelerated the delivery programme outcomes; however, through refinancing, the loans used for non eligible purposes were and will be recycled to new investments.

75. The programme approach of supporting large investment loans for key drivers of value chains created noticeable demand for raw material effective in generating additional impact particularly in backwards linkages to small farmers which have over time developed into several contract farming arrangements between processors and farmers. In many instances the value chain approach also assisted the PFIs to expand lending to other stakeholders within the respective value chain e.g. value chains for dairy (goat and cow milk) wine and horticulture.

Agricultural Productivity

76. The programme has increased agricultural productivity both in terms of growth in physical output of food and in terms of increasing the purchasing power for rural people to buy food. The milk producer supported under the programme increased their productivity of 44% and orchard farmers saw an increase in productivity of more than 50%.

77. The 2 090 persons occupying the new jobs have increased their income. It is estimated that around 6 200[32] farmers have shifted from low value field crops to cultivation of high value crops to meet the incremental demand from cold stores and processing plants.

Environment and Common Resource Base

78. Programme supported interventions do not seem to have run contrary to major environmental norms and concerns. Overall, the project has generally had a neutral to positive environmental impact. The most noticeable positive impact was the reduction of illegal wood harvesting in connection with availability of natural gas as alternative fuel having a long-term important environmental impact.

Financial Assets

79. RFF improved the availability of investment loans in rural areas for off- and on-farm enterprises amounting USD 24.19 million (IFAD USD 9.290, WB USD 6.4 million and MCA USD 8.5 million). This injection of capital stimulated lending of PFIs own resources to the rural areas from

[31] Source: ANSS, Social Snapshot and Poverty In Armenia, 2009
[32] Including the 5 853 farmers benefiting from improve irrigation infrastructure

USD 22 million at AR to USD 82 million at programme completion or 278% increase.[33]. Out of the 9 PFIs (Para 42) 5 were not involved in lending to the agriculture sector prior to the commencement of RFF. These PFIs accounted for 47% of the total loan value (USD 5.8 million) refinanced by RFF using IFAD funds. The PFIs branch network also grew from 49 branches to 74. The increased rural financial outreach of PFIs implicitly leads to a more equitable availability of loan financing for rural SMEs.

80. Meetings with persons occupying the jobs created under the programme, farmers benefiting from new market opportunities and irrigation infrastructure clearly indicated that not only did it move people out of poverty but it also allowed for savings used for procurement of household assets.

Markets

81. Through the value chain approach the programme contributed directly to the improvements of input and output markets. The output market was improved through expansion of demand for high value agricultural produce benefiting 6 200[34] farmers. Likewise the input supply also improved as a result of value chain processors organising input for their supplier/contracted farmers.

J. ASSESMENT OF SUSTANIABILITY

82. Sustainability has been assessed at the level of: (i) continued access to debt financing; (ii) provision of business development service; (iii) nonfarm, off- and on-farm based enterprises; and (iv) management and maintenance of infrastructure interventions.

83. **Access to Debt Financing**. Reflow of repaying the refinanced loan to RFF will ensure that IFAD's original loan allocation for refinancing can be revolved for similar loans until full repayment has been made to IFAD in 2044. Assuming that the present structure of the refinanced loan portfolio is repeated using revolving funds it would result in accumulative refinancing estimated at USD25 million at the end of the grace period. This would contribute to the overall rural economic growth further contributing to rise in PFIs own resources and eventually to long term sustainability of access to CBs resources for debt financing of rural investments.

84. The earnings from refinancing investments would be retained by RFF for payment of interest for the loan funds borrowed from IFAD and for operational cost of RFF. However due to the drop in LIBOR starting in 2008 the income for RFF's operation was not sufficient and it was decided to fix RFF's spread on refinanced funds at a flat rate of 4%. Earnings at this rate will ensure RFF's sustainability.

Table 15: Monthly LIBOR across Years

	Monthly LIBOR across Years				Average during the Programme
Month	**2006**	**2007**	**2008**	**2009**	
Jan	4.94%	5.44%	4.22%	2.00%	4.15%
Feb	5.15%	5.33%	2.85%	1.98%	3.83%
Mar	5.25%	5.20%	2.71%	2.12%	3.82%
Apr	5.42%	5.30%	2.49%	1.97%	3.79%
May	5.41%	5.39%	3.08%	1.88%	3.94%
Jun	5.77%	5.40%	3.16%	1.60%	3.98%
Jul	5.59%	5.43%	3.31%	1.61%	3.98%
Aug	5.45%	5.25%	3.25%	1.50%	3.86%
Sep	5.30%	5.28%	3.21%	1.33%	3.78%
Oct	5.33%	4.90%	3.96%	1.26%	3.87%
Nov	5.24%	4.64%	3.17%	1.20%	3.56%
Dec	5.31%	4.46%	2.77%	1.02%	3.39%
Average	**5.35%**	**5.17%**	**3.18%**	**1.62%**	**3.83%**

Sources: British Bankers' Association

[33] Armenian Central Bank
[34] Including the 5 853 farmers benefiting from improve irrigation infrastructure

85. **Provision of Business Development Services**. The programme support to RBIS for preparation of business plans has lead to increased appreciation of this tool both by the PFIs but also among borrowers. Increasingly business plans are being used as management tools by the enterprises particularly for medium and large enterprises owned by several persons. This has lead to increased demand for this service enabling several business service providers to include it as part of their permanent products ensuring sustainability of this service.

86. **Enterprises.** The sustainability of the enterprises supported by refinanced investment loans appears to be high. This is reflected by a number of indicators including yearly annual growth in sales, profits, hiring of additional staff, gradual growth of the business and by increase in retained earnings and fixed assets. The biggest threat to these signs of sustainability is competitiveness and access to markets. Competitiveness is relevant both for import substitution and for export and it is assessed that the biggest barrier to export and import substitution is standards like Global Gap and HACCP/ISO.

87. **Infrastructure.** Meetings with farmers and their elected leaders from the WUA in receipt of completed irrigation infrastructure indicate that organisational arrangements are in place to undertake both maintenance, replacement of equipment and fixed structures, albeit with continued reliance on state subsidies.

88. The maintenance of gas networks is the responsibility of “Armrusgasprom” a Closed Joint Stock Company that has proven successful in covering its cost through the collection of consumption fees since 2003, thus sustainable operation of the completed gas networks is not an issue. Water connections and collection of fees in most of the benefiting rural settlements are carried out by the respective Municipalities, who re-value the schemes as fixed assets on their balance sheet at final hand-over and appoint a dedicated staff for system operation. The rural road network is mainly under the ownership of the marz administration but it is not likely that these offices are able to finance the cost related to maintenance without the participation of the central government.

K. INNOVATION, REPLICATION AND UP-SCALING

89. Within the Armenian development context the AR featured 3 innovative approaches including: (i) RFF; (ii) large loans for enterprises driving value chains; and (iii) CDI.

90. **RFF**. The RFF proved to be effective in delivering refinancing service to the financial sector stimulating increased rural financial outreach. However, the effect from RFF’s service would likely have been greater if the initial targeting had been more closely monitored also convincing other financiers to invest in RFF. Likewise, a more proactive approach from RFF in developing new financial products would also have benefited the programme outcome. The approach has potential for up-scaling if the suggested improvements are implemented.

91. **Value Chain.** Providing large loans to enterprises driving value chains was very effective in developing demand for increased raw material benefiting the backwards linkage to smallholders and emerging commercial farmers. However, the programme would have benefited from a more focused support to few value chains. A more proactive approach in upgrading deficient areas of the value chain would also have created a bigger impact particular in respect of compliance with international standards, but also in providing investment models for emerging commercial farmers. The approach resulted in a number of contract farming arrangements between processors and farmers. The establishment of these arrangements would and could still benefit from assistance in regards to management/administration and linkage to financial service via forward contracting. The approach has great potential for up-scaling if provided with proactive professional support in the above-mentioned areas.

92. **Commercially Derived Infrastructure.** The feature of the business derived infrastructure was based on awarding competitive grants for investments in public infrastructure improving the overall environment of doing business within a rural locality. The immediate effect from investment in irrigation would have been much greater if linked more closely with farmers own investment in on-farm irrigation equipment and technical advisory service related to choice of crops to be grown. If the above recommendation is followed, the approach has great potential to be replicated and for up-scaling.

L. PERFORMANCE OF PARTNERS

Ministry of Agriculture

93. The MoA performed its statutory requirements as foreseen in the LA. The MoA expressed its full satisfaction with the programme implementation and endorses the findings of this document and its lessons learned.

Ministry of Finance

94. The MoF performed its statutory requirements as stipulated in the LA. The MoF provided the expected implementation support to RFF.

Programme Analysis and Administration (PAAU)

95. The PAAU was headed by a Programme Director responsible for overall programme implementation and supervision of programme operations and specifically : (i) day-to-day direction of programme activities and for the effective use of its resources; (ii) ensuring full implementation of the IFAD Loan Agreement terms and fiduciary requirements as directed by the PSC; (iii) reporting directly to the Minister in MoA and PSC; (iv) providing necessary periodic progress and audit reports as specified within the Loan Agreement and the approved Programme implementation Manuals (PIM). The PAAU Director was assisted by a: (i) Accounts Section (AC); (ii) Technical Services Section (TSS); (iii) Construction Supervision Section (CSS); (iv) Monitoring and Evaluation (M&E); (v) Foreign Relation Section (FRS); (vi) Office Management Section; and (vii) Yerevan Bureau (YB) and 13 Marze Programme Support Units (MPSU).

96. All the major statuary aspect of implementation was being implemented according to the LA and PIM**.** However, the M&E activities under the PAAU suffered from too little support from management, this at times resulting in late submission of reports and insufficient collection of data and related analysis.

Programme Coordination Committee (PCC)

97. This committee was responsible for overseeing the programme activities including policy direction and overall oversight of the RFF operations. The PCC was chaired by the Minister of Agriculture and board members included representative from MoF, Chairman of the Chamber of Commerce, Chairman of the Bankers' Association, Ministry of Trade and Economic Development and *marz* governors. The RAEDP Programme Director was the secretary of the board. The Committee met twice a year to review programme operations and the draft Annual Work Plan and Budget (AWP/B). The Committee was also responsible for clearing annual reports and programme financial statements before their approval by the Minister of Agriculture. The Committee also provided policy advice to the Minister of Agriculture regarding programme implementation.

Rural Finance Facility

98. The RFF was managed by a director having the day to day responsibility for the refinancing activities of incremental and revolving funds. The director was supported by an accounts section and a loan refinancing section. The overall responsibility of RFF rested with the Programme Coordination Committee (PCC) (see above). RFF executed its responsibility according to its governing GoA Decree and in accordance with the Subsidiary Loan Agreement (SLA) with MoF. RFF refinancing targeting was initially insufficient; however, it improved after hiring a monitoring specialist however; there were signs during PCR that monitoring had declined.

Participation of Financial Institutions

99. Through a competitive process, 9 CBs were selected to participate in the programme implementation and signed a SLA with RFF. The 9 CBs are listed in Table 1. All the CBs extended their financial services to the programme client group according to the respective SLA.

Rural Business Intermediation Services

100. In addition to organising the initial training of 16 RBIS the programme did create demand for RBIS. However, as noted in Table 14 the availability of such service appeared to be sufficient with reasonable quality of delivered service. The outcome of the programme would have been more solid for small borrowers if the programme had been more proactive in facilitating this segment of the client group with RBIS.

IFAD

101. **IFAD** has played its role according to the LA throughout programme implementation in a timely manner. IFAD was also instrumental in sourcing additional funding from OFID. IFAD also participated in supervision missions and tirelessly followed up on recommendation made by the supervision mission.

UNOPS

102. **UNOPS**[35] provided programme supervision and implementation support during the implementation of the programme. The supervision included analysis of physical targets, impact and sustainability of implemented activities. Aspects of client orientation, satisfaction of clients and quality of services were also dealt. The supervision missions also provide the PAAU with useful recommendations in relation to M&E, international standards, training of PFIs, simplification of bidding procedures, tightening the targeting of RFF's refinancing activities.

M. LESSONS LEARNED

103. **RFF**. The refinance service provided by RFF did impact the accessibility of financial investment capital in the rural areas through expansion of financial outreach. It is, however, the PCR assessment that the following would have improved the outcome of the programme: (i) loans issued in foreign exchange should be strictly for borrowing entity generating their earnings in foreign exchange; (ii) potential PFIs should be invited to bid on the spread they want added to the cost of RFF funds and the average (discarding outliers) would then be the maximum any PFI can charge clients, in order to transfer some of the low cost of RFF refinancing to the client group in the form of lower interest rate; and (iii) refinance targeting should be more focused in terms of expected impact like job creation and creation of incremental markets.

104. **Commercially Derived Infrastructure**. The immediate effect of CDI supported to irrigation would have been more rapid if proactively linked to a advisory service providing

[35] Annex IX: Record of Supervision

information in what to grow and how. It is also important that such investment are linked to financing of on-farm irrigation.

105. **International Food Standards**. The Georgian conflict with Russia made it difficult for Armenia to export to Russia, showing the importance of reducing trade barriers to other countries particularly the EU. In this respect, the first action is to facilitate exporters of agricultural produce and processed food to comply with international food standards including GGAP, HACCP/ISO certification. The programme did encourage enterprises investing in food processing, on a voluntarily y basis, to organise configuration of buildings and equipment in preparedness for food standard certification. This effort resulted in 4 enterprises obtaining HACCP certification.

106. **Contract Farming.** Through the value chain approach several contract farming arrangements developed between processors and farmers. These contract arrangements stimulated diversification, investment, availability of inputs and raw materials. This effort should be further supported by new IFAD investments in Armenia, both in terms of developing contractual modalities, training and tripartite financing arrangements enabling PFIs to finance the contracted farmers' investment requirements based on their forward contracts with the processor. IFAD should also consider co-financing the cost of embedding value chain-supply chain managers with the processors to engage in provision of technical advice and staggering of production and delivery of produce.

ANNEXES

ANNEX I: REFINANCING LOAN PORTFOLIO ANALYSIS

Table 1: Refinance Loan Sector, Volume and Value

Sector	Volume Of Loans	Value of Loans USD
Horticulture	20	1 029 700
Cattle breeding	182	4 632 876
Winery	6	610 000
Cultivation	6	310 700
Poultry	7	726 000
Fruit processing	9	867 000
Milk processing	34	2 254 000
Fish breeding	15	831 500
Beekeeping	8	99 200
Other	35	1 953 200
	322	13 314 176

Table 2: Detailed Performing Investments

Investment Volume and Value	Programme Marzes							
	Aragatsotn	Gegharkunik	Lori	Shirak	Syunik	Tavush	Vayotz Dzor	Total
Cow								
No of investments	48	31	20	8	10	6	15	138
loan USD '000	988,300	593,950	660,870	97,900	272,450	314,465	262,866	3,190,801
Equity USD '000	336,487	775,873	258,785	58,250	157,630	109,737	115,314	1,812,076
Total Investment	1,324,787	1,369,823	919,655	156,150	430,080	424,202	378,180	5,002,877
% equity	25	57	28	37	37	26	30	36
Sheep								
No of investments	18	6	2	4		2		32
loan USD '000	185,600	94,300	52,665	40,000		27,000		399,565
Equity USD '000	52,418	27,889	22,295	16,650		10,935		130,187
Total Investment	238,018	122,189	74,960	56,650		37,935		529,752
% equity	22	23	30	29		29		25
Goat								
No of investments	3						10	13
loan USD '000	27,500						87,000	114,500
Equity USD '000	6,700						32,399	39,099
Total Investment	34,200						119,399	153,599
% equity	20						27	25
Sow								
No of investments	8	2	4	2	1	1	1	19
loan USD '000	184,300	35,000	98,665	27,500	15,000	2,465	10,000	372,930
Equity USD '000	111,306	12,690	28,915	12,000	6,000	515	8,690	180,116
Total Investment	295,606	47,690	127,580	39,500	21,000	2,980	18,690	553,046
% equity	38	27	23	30	29	17	46	33
Pork								
No of investments	4		2		1	2	2	11
loan USD '000	10,830		3,500		3,750	10,000	12,500	40,580
Equity USD '000	4,295		500		1,081	4,935	7,362	18,173
Total Investment	15,125		4,000		4,831	14,935	19,862	58,753
% equity	28		13		22	33	37	31
Total volume	**81**	**39**	**28**	**14**	**12**	**11**	**28**	**213**
Total loan USD '000	**1,396,530**	**723,250**	**815,700**	**165,400**	**291,200**	**353,930**	**372,366**	**4,118,376**
Total equity USD '000	**511,206**	**816,452**	**310,495**	**86,900**	**164,711**	**126,122**	**163,765**	**2,179,651**
Total Investment	**1,907,736**	**1,539,702**	**1,126,195**	**252,300**	**455,911**	**480,052**	**536,131**	**6,298,027**
Total % equity	**27**	**53**	**28**	**34**	**36**	**26**	**31**	**35**

Table 2: Continued

Investment Volume and Value	Programme Marzes				
	Aragatsotn	Lori	Syunik	Vayotz Dzor	Total
Apple (ha)	***91.3***	***2.0***		***15.7***	***109.0***
No of investments, Rehabilitation	5	1		1	7
No of investments, Establishing	4				4
loan USD '000	323,000	1,400		75,000	399,400
Equity USD '000	204,980	1,500		19,125	225,605
Total Investment	527,980	2,900		94,125	625,005
% equity	39	52		20	36
Apricot (ha)	***2.9***	***2.9***		***1.0***	***6.8***
No of investments, Rehabilitation	1			1	2
No of investments, Establishing		1			1
loan USD '000	12,000	1,400		4,300	17,700
Equity USD '000	2,700	2,900		2,000	7,600
Total Investment	14,700	4,300		6,300	25,300
% equity	18	67		32	30
Cherry (ha)	***15.6***				***15.6***
No of investments, Rehabilitation	3				3
No of investments, Establishing					
loan USD '000	41,500				41,500
Equity USD '000	13,630				13,630
Total Investment	55,130				55,130
% equity	25				25
Grape (ha)	***2.3***		***15.5***	***2.6***	***20.4***
No of investments, Rehabilitation				3	3
No of investments, Establishing	2		1		3
loan USD '000	82,000		47,000	239,000	368,000
Equity USD '000	20,840		25,972	215,380	262,192
Total Investment	102,840		72,972	454,380	630,192
% equity	20		36	47	42
Peach (ha)	***2.6***			***19.2***	***21.8***
No of investments, Rehabilitation	1			1	2
No of investments, Establishing				1	1
loan USD '000	2,000			55,400	57,400
Equity USD '000	3,412			15,255	18,667
Total Investment	5,413			70,655	76,068
% equity	63			22	25
Pomegranate (ha)				***19.6***	***19.6***
No of investments, Rehabilitation				1	1
No of investments, Establishing					
loan USD '000				60,000	60,000
Equity USD '000				58,239	58,239
Total Investment				118,239	118,239
% equity				49	49
Quince (ha)	***18.2***			***7.5***	***25.7***
No of investments, Rehabilitation	3				3
No of investments, Establishing				1	
loan USD '000	60,700			25,000	85,700
Equity USD '000	15,880			14,413	30,293
Total Investment	76,580			39,413	115,993
% equity	21			37	26
Total hectare	**133**	**5**	**16**	**66**	**219**
Total no of investments, Rehabilitation	**13**	**1**		**7**	**21**
Total no of investments, Establishing	**6**	**1**	**1**	**2**	**10**
Total loan USD '000	**521,200**	**2,800**	**47,000**	**458,700**	**1,029,700**
Total equity USD '000	**261,442**	**4,400**	**25,972**	**324,412**	**616,226**
Total Financing	**782,642**	**7,200**	**72,972**	**783,112**	**1,645,926**
Total % equity	**33**	**61**	**36**	**41**	**37**

Table 2: Continued

Investment Volume and Value	Programme Marzes							
	Aragatsotn	Gegharkunik	Lori	Shirak	Syunik	Tavush	Vayotz Dzor	Total
Mechanisation								
No of investments	1	2	4	4			1	12
loan USD '000	9,800	75,000	93,000	72,900			20,000	270,700
Equity USD '000	5,200	30,000	36,709	21,068			6,500	99,477
Total Investment	15,000	105,000	129,709	93,968			26,500	370,177
% equity	35	29	28	22			25	27
Refrigation of Horticuloture								
No of investments	3	1			1			5
loan USD '000	123,000	40000			75,000			238,000
Equity USD '000	54,417	30,000			19,000			103,417
Total Investment	217,417	30,000			94,000			341,417
% equity	25	100			20			30
Grain Mills								
No of investments		2						2
loan USD '000		117,000						117,000
Equity USD '000		69,500						69,500
Total Investment		186,500						186,500
% equity		37						37
Green Houses								
No of investments		1	2		1		1	5
loan USD '000		50,000	160,000		150,000		2,000	362,000
Equity USD '000		17,000	52,559		37,000		965	107,524
Total Investment		67,000	212,559		187,000		2,965	469,524
% equity		25	25		20		33	23
Meat Processing								
No of investments	1	2	1					4
loan USD '000	50,000	45,000	55,000					150,000
Equity USD '000	26,144	11,700	40,500					78,344
Total Investment	76,144	56,700	95,500					228,344
% equity	34	21	42					34
Retail								
No of investments			1				1	2
loan USD '000			150,000				22,000	172,000
Equity USD '000			130,000				6,600	136,600
% equity			280,000				28,600	308,600
Stone Cutting			46				23	44
No of investments		2						2
loan USD '000		265,500						265,500
Equity USD '000		121,833						121,833
Total Investment		387333						387333
% equity		31						31
Fruit drying								
No of investments			2			1		3
loan USD '000			128000			140000		268000
Equity USD '000			118830			35000		153830
Total Investment			246830			175000		421830
% equity			48			20		36
Carpets								
No of investments		1						1
loan USD '000		35000						35000
Equity USD '000		9292						9292
Total Investment		44292						44292
% equity		21						21
Total No of Investments	**5**	**8**	**10**	**4**	**2**	**1**	**3**	**34**
Total loan USD '000	**222,800**	**587,500**	**586,000**	**72,900**	**225,000**	**140,000**	**44,000**	**1,878,200**
Total equity USD '000	**85,761**	**289,325**	**378,598**	**21,068**	**56,000**	**35,000**	**14,065**	**879,817**
Total Investment	**308,561**	**876,825**	**964,598**	**93,968**	**281,000**	**175,000**	**58,065**	**2,758,017**
Total % equity	**28**	**33**	**39**	**22**	**20**	**20**		**32**

Table 2: Continued

Investment Volume and Value	Programme Marzes							
	Aragatsotn	Gegharkunik	Lori	Shirak	Syunik	Tavush	Vayotz Dzor	Total
Winery								
No of investments	1					1	3	5
loan USD '000	80,000					145,000	385,000	610,000
Equity USD '000	43,360					136,000	162,000	341,360
Total Investment	123,360					281,000	547,000	951,360
% equity	35					48	30	36
Potatoes								
No of investments	1	2		2			1	6
loan USD '000	3,000	81,000		220,000			6,700	310,700
Equity USD '000	7,000	19,950		490,000			1,683	518,633
Total Investment	10,000	100,950		710,000			8,383	829,333
% equity	70	20		69			20	63
Poultry	***20,071***	***201,922***		***1,420,071***			***16,787***	***63***
No of investments	2	2	2	3			1	10
loan USD '000	50,000	150,000	449,000	145000			77,000	871,000
Equity USD '000	26,144	39,833	155,435	71,565			19,691	312,668
Total Investment	76,144	189,833	604,435	216565			96,691	1,183,668
% equity	34	21	26	33			20	26
Fruit Processing								
No of investments	1	1	1	1		2	2	8
loan USD '000	150,000	20,000	70,000	150,000		280,000	180,000	850,000
Equity USD '000	49,280	5,000	140,000	40,000		162,000	146,580	542,860
Total Investment	199,280	25,000	210,000	190,000		442,000	326,580	1,392,860
% equity	25	20	67	21		37	45	39
Milk Processing (Cow)								
No of investments	9	3	7	3	2		4	28
loan USD '000	567,000	125,000	409000	193000	250000		168,500	1,712,500
Equity USD '000	360,810	36,670	474,099	104,165	282,636		66,158	1,324,538
Total Investment	927,810	161,670	883,099	297,165	532636		234,658	3,037,038
% equity	39	23	54	35	53		28	44
Fish Production								
No of investments		3	4	1	3		1	12
loan USD '000		116,500	138500	150000	171500		45,000	621,500
Equity USD '000		39,490	109,793	336,464	65,266		11,250	562,263
Total Investment		155,990	248293	486464	236766		56,250	1,183,763
% equity		25	44	69	28		20	47
Beekeeping								
No of investments		2	1	1	4		1	9
loan USD '000		23,400	15000	5000	52800		5,000	101,200
Equity USD '000		8,287	11,000	2,700	22,670		2,000	46,657
Total Investment		31,687	26000	7700	75470		7,000	147,857
% equity		26	42	35	30		29	32
Milk Processing (goat)								
No of investments							2	2
loan USD '000							130,000	130,000
Equity USD '000						35,000	53,500	53,500
Total Investment							183,500	183,500
% equity							29	29
Total volume	**14**	**13**	**15**	**11**	**9**	**3**	**13**	**78**
Total loan USD '000	**850,000**	**515,900**	**1,081,500**	**863,000**	**474,300**	**425,000**	**997,200**	**5,206,900**
Total equity USD '000	**486,594**	**149,230**	**890,327**	**1,044,894**	**370,572**	**333,000**	**462,862**	**3,737,479**
	1,336,594	**665,130**	**1,971,827**	**1,907,894**	**844,872**	**758,000**	**1,460,062**	**8,944,379**
Total % equity	**36**	**22**	**45**	**55**	**44**	**44**	**32**	**42**

ANNEX II: JOB CREATION

Table 1: Job Creation and Cost across Type of Investment

Investment	Investment			Job Creation		Cost of Job Creation USD	
	No	Loan USD'000	Total Investment USD '000	Permanent Full Time	Temp. Full Time Equvilant	Loan	Total Invest.
Value Chains:							
Wine	11	978	1 582	74	51	7 824	12 656
Horticulture	36	1 780	2 830	69	194	6 768	10 760
Dairy (cow)	166	4 903	8 040	664	655	3 717	6 095
Dairy (goat)	15	244	337	9	18	9 037	12 481
Meat	66	963	1 370	56	24	12 037	17 125
Grain	2	117	186	5	3	14 625	23 250
Fresh Vegetables	16	911	1 640	17	65	11 109	20 000
Subtotal	*312*	*9 896*	*15 985*	*894*	1 010	51 97	8 395
Fisheries	12	622	1 184	33	5	16 368	31 157
Poultry	10	871	1 184	42	35	11 312	15 376
Beekeeping	9	101	148	2	12	7 214	10 571
Machinery Service	12	271	370		12	22 583	30 833
Retail Shop	2	172	309	9	7	10 750	19 313
Stone Cutting	2	265	387	15	8	11 522	16 826
Carpets	1	35	79	6		5 833	13 167
Subtotal	*48*	*2 337*	*3 661*	*107*	79	12 565	19 683
Total	**360**	**12 233**	**19 646**	**1 001**	**1 089**	5 853	**9 400**

ANNEX III: PROGRAMME PHYSICAL RESULTS

Table 1: Physical Programme Achievements by Component

Activities by component – 1st level results	
Component 1: Rural Enterprise Finance 1.1. RFF established in early 2006. 1.2. 9 commercial banks were selected to participate. 1.3. Total incremental value of refinancing amounted to USD XX and USDXX in revolved funds (including recall of funds used for wrong purpose) 1.4. 322 loans were refinanced of which 306 were performing valued at USD 12.158. Of the 306 performing loans 224 were for were for individual investors and 82 for legal enterprises. The equity contribution to the 306 amounted to USD 7.413 representing 38% of total investment well above the required 20% 1.5. Of the 306 performing loans 269 were for single purpose investments and the 37 loans were for several purpose investments (2 or 3 types of investment particularly for livestock and orchards) making a total of 360 investments. 1.6. Of the 306 performing loans 27 were for women.	
Component II: Rural Business Intermediation Services 2.1 The programme organised 16 RBIS providers to be trained by ASME. 2.2 The RBIS provide pre loan service to 89 of the large clients. 2.3 PFI assisted 233 loan recipients with business planning. 2.4 Around 50 of processors in receipts of refinance loans organised RBIS to their supplier/farmers using among other the above 16 RBIS 2.5 CARD provided RBIS to the processor in receipt of programme refinanced investment loans.	
Component III Commercial Derived Infrastructure Investment 3.1. 13 of the infrastructure investments arising from VICSA 3.2. 52 village infrastructure operational at completion (additional 13 upon completion of complementary investments) 3.3. 70 308 people benefiting from infrastructure at PCR (additional 18 317 will benefit upon completion of complementary investments) 3.4. 14 communities benefit from financed irrigation systems. A total of 2 625 ha of land rehabilitated benefiting 14 600 farmers 3.5. 7 communities benefit from financed road rehabilitation with a total length of 17.7 km benefiting 24 721 persons 3.6. Construction of drinking water systems serving 13 communities benefiting 9 567 persons 3.7. Construction of 18 village natural gas supply systems benefiting 21 420 persons	
Component IV Programme Management 4.1 PAAU established and staffed as per appraisal 4.2 PSC established in line with the LA 4.3 100% of funds disbursed within the project timeframe	
2nd level results (RIMS)	
2.2.2 Effectiveness: Improved agricultural and livestock production	• Milk productivity increase by 17% at the national level and 59% for the programme client group and vegetable and orchard productivity increased by more than 50%. • Production of horticulture product amounted to 5 230 mt • Milk production increased by 16 000 mt representing 16% of annual recurrent national incremental production
2.4.1 Effectiveness: producers benefiting from improved markets access	• 13 village enterprises benefited directly from the infrastructure investments • 753 farmers benefited from incremental markets
2.5.1 Effectiveness: creation of employment opportunities	• An estimated 2 090 jobs (full-time equivalent) were created of these 775 were occupied by women. • Enterprises with the biggest potential for job creation were dairy processors, wine producers and fruit and vegetable processors.
2.2.1 Effectiveness: Improved performance of service providers	• The client group scored the quality performance of RBIS above average. • Most post RBIS was organised by processors in receipt of refinanced investment loans.
2.3.2 Effectiveness: Improved access of the poor to financial services	• Distribution of bank branches across the project area increase by 25 during the programme period. The 9 PFIs selected by the RFF together have branches in every marz. • 5 of the 9 PFI did were not involved in rural financial service prior to the programme. • The total financial loan resource available for the rural area increased from USD 37 million to USD 122 million • The 708 persons working for the processors have developed record with a PFI enabling them to obtain consumer loans.
2.3.3 Sustainability: Improved performance of the financial institutions	• At the PCR the programme's refinanced loan portfolio across all banks was performing excellently with 2.48% at risk compared to the national average of 14%.
2.5.2 Likelihood of sustainability of enterprises	• 97enterprises (32%) out of the 306 performing enterprises are all operating indicating a high possibility of sustainability. • 50 enterprises 16% of total have entered into contracts with local farmers. • Value of assets growth – estimate to be USD 84 million -an increase of 53%. • Net profits growth on average estimated at 62%.

	• The volume of raw materials bought increased by 84%.
2.1.1 Likelihood of sustainability of irrigation infrastructure	• 79% of the targeted area is under 6 operational WUAs • Selected schemes are suitable for the production of commercially viable high value crops • 95,7% of the command area does not requires pumping units • 17% of the targeted area is estimated to consist of kitchen plots, nearby the rural houses, where sustainable O&M is most likely
2.4.2 Likelihood of sustainability of the roads, gas and water constructed/rehabilitated	• The gas operator effectively manages distribution and collection of fees at full cost recovery since 2003 • Water supply schemes are re-valued as fixed assets in the balance sheet of Municipalities • Water supply schemes do not require pumping units • Road pavements are designed based on conservative traffic projections to ensure durability and to limit the need of periodic maintenance • Road maintenance framework contracts signed by the at *marz* level, with dedicated resources transferred from the central budget

ANNEX V: LIST OF PLACES, PEOPLE AND ENTERPRISES MET BY THE PCR MISSION

Table 1: Enterprises Visited by the CPR Mission

Marze	Specifice Location	Name of Enterprise/person Meet	Type of Investment	Value of Refinanced Loan
Aragatsotn	v.Arpi	Compterium Ltd	orchard	30,000
Aragatsotn	v.Aghdsk	Unikal gininer CJSC	vineyard	80,000
Aragatsotn	c.Ashtarak	Agrolog Ltd	refragarator	30,000
Aragatsotn	c.Ashtarak	MilenArt Ltd	paultry	50,000
Aragatsotn	v.Voskehat	Azat Petrosyan SE	pig	65,000
Aragatsotn	v.Ghazaravan	Gurgen Vardanyan SE	fish farm	50,000
Aragatsotn	v.Voskevaz	Voskevaz winary	wine	80,000
Aragatsotn	v.Aghdsk	Mamaghatun Ltd	hotel,animal	10,000
Aragatsotn	v.Aghdsk	Gevorg Hakobyan	milk collection	6,000
Vayots Dzor	c.Eghegnadzor	Getnatun Ltd	wine	70,000
Vayots Dzor	v.Sali	Selim Ltd	goat cheese	17,000
Aragatsotn	v.Tsahkahovit	Cheesler Ltd	cheese	8,000
Aragatsotn	v.Tsahkahovit	Andranik Saribekyan	cattlebreeding	14,000
Lori	c.Vanadzor	Artglaman Ltd	dairy	150,000
Shirak	v.Azatan	Igit Ltd	dairy	143,000
Shirak	v.Akhuryan	Sukiasyan ekvoryak Ltd	paultry	145,000
Shirak	c.Gyumri	Khayts Ishkhan Ltd	fish farm	150,000
Gegharkunik	c.Martuni	Kav Ltd	milk farm	50,000
Gegharkunik	c.Martuni	Ohanyan Gevorik	milk farm	150,000
Gegharkunik	c.Vardenis	Sevak Shaboyan	milk farm	40,000
Gegharkunik	v.Shorja	Edik Minasyan	milk farm	9,500
Gegharkunik	c.Gavar	Volodya Khunoyan	milk farm	20,000
Aragatsotn	Karbi	Ishkan Ltd	Fruit & vegetable processi	150,000
Total				**1,517,500**

Table 2: Infrastructure Investments Visited by the PCR Mission

Marze	Specific Location	Persons met	Type of Investment	Value of Investment
Aragatsotn	Tsaghkahovit	Village Mayor	Water Supply	331.548
		Village Teacher	Water Supply	
		Cheeseler Dairy Enterprise	Water Supply	
		Milk Production Enterprise	Water Supply	
Shirak	Aygabats	Village teachers and principal	Gas Supply	184.133
		Community members benefitting from gas system	Gas Supply	
	Panik-Megrashen	Community members benefiting from road	Road	291.437
Gegharkunik	Martuni “Dari art” and Vaghashen	Community members benefiting from irrigation tubewells	Irrigation	242.862
		Martuni WUA director	Irrigation	
		Cattle breeding loan borrower (KAV)	Irrigation	
	Gandzak, Sarukhan, Landjaghbjur	Village Mayor of Sarukhan	Road	1.434.701
		Gavar WUA director and accountant	Road	
Vayots Dzor	Vayk and Azatek	Vahan Zakarian – PAAU consultant	Irrigation	N/A
		Irrigated areas under the Jermuk dam gravity main in Azatek	Irrigation	841.494
		Vayik WUA director and technician	Irrigation	
		Village mayor of Azatek	Irrigation	
		Getnatoun winery	Irrigation	
Syunik	Tegh and Kornidzor	Araik Grigorian – PAAU consultant	Irrigation/Gas Supply	N/A
		Village mayor of Kornidzor	Irrigation/Gas Supply	423.429
		Community members in Kornidzor	Irrigation/Gas Supply	
		Village mayor in Tegh	Irrigation	
		Vorotan WUA director	Irrigation	
Total				3.749.604

ANNEX IV: COUNTRY AND MARZE POVERTY PROFILE

Table 1: Marze and Country Poverty Profile

Marzes	2004		2008		Reduction	
	Poverty	Extreme	Poverty	Extreme	Poverty	Extreme
Aragatsotn	35.4	5.6	20.7	1.5	14.7	4.1
Gegharkunik	41.9	4.5	24.8	1.2	17.1	3.3
Lori	31.3	4.5	25.1	4.1	6.2	0.4
Shirak	48.8	10.4	30.6	6	18.2	4.4
Syunik	36.5	5.9	19.6	1.7	16.9	4.2
Vayotz Dzor	28.9	4.1	16.6	1.1	12.3	3
Tavush	30.5	3.3	19.8	2.6	10.7	0.7
Country	34.6	6.4	23.5	3.1	11.1	3.3

Source: ANSS, Social Snapshot and Poverty in Armenia, 2009

ANNEX VI: FINANCIAL AND FINANCIAL AND ECONOMIC

The financial and economic analysis is based on data obtained from PAAU, RFF, supervision mission reports and PCR mission's visit to 23 enterprises and 22 sites for infrastructure investments supported by the programme. The prices used in the financial and economic analysis are 2009 prices converted into USD. Except for debt servicing, no attempt has been made to disaggregate types of input and their respective unit cost for use in converting financial price into their approximate economic values.

Table 1: Financial Analysis for the Programme

Indicators	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019-2025
Net Benefit Enterprises	-10,914,874	-8,877,341	-9,136,262	-7,412,027	6,730,251	8,122,420	9,093,460	11,438,697	11,635,177	12,039,210	12,214,882	12,368,512	12,409,883	12,409,883
Net Benefit CDI	-3,475,703	-5,879,323	-3,466,970	-2,715,903	-3,315,159	-1,043,769	-83,992	1,240,155	1,562,928	2,758,365	3,782,654	4,458,785	5,469,410	5,469,410
Total Net Benefit	-14,390,577	-14,756,664	-12,603,232	-10,127,929	3,415,092	7,078,650	9,009,468	12,678,853	13,198,105	14,797,575	15,997,537	16,827,297	17,879,293	17,879,293
FIRR	16%													
NPV @12% USD	898,196													

Source: RAEDP Impact Assessment Report, October 2010

Table 2: Economic Analysis for the Programme

Indicators	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019-2025
Net Benefit Enterprises	-10,027,362	-6,552,883	-5,480,167	-2,360,815	11,718,793	12,179,896	12,302,042	13,079,681	12,397,900	12,409,883	12,409,883	12,409,883	12,409,883	12,409,883
Net Benefit CDI	-2,996,296	-3,951,697	-978,194	-276,001	-356,908	1,327,293	1,669,485	1,844,471	2,025,379	2,940,467	3,782,654	4,458,785	5,469,410	5,469,410
Total Net Benefit	-13,023,658	-10,504,581	-6,458,362	-2,636,815	11,361,885	13,507,189	13,971,528	14,924,152	14,423,279	15,350,350	16,192,538	16,868,668	17,879,293	17,879,293
EIRR	24%													
NPV @12% USD	26,246,939													

Source: RAEDP Impact Assessment Report, October 2010

Table 3: Financial Analysis of Refinanced Enterprises

Indicators	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Revenue	0	10,909,953	23,344,673	37,071,666	49,440,319	49,806,645	49,970,076	50,105,104	50,127,343	50,139,326	50,139,326	50,139,326	50,139,326	50,139,326
Investment Capital	4,842,181	4,873,403	5,397,935	4,457,830										
Cost of sale	5,185,181	12,589,433	23,426,906	34,974,651	37,721,526	37,626,750	37,668,034	37,025,423	37,729,443	37,729,443	37,729,443	37,729,443	37,729,443	37,729,443
Debt Service	887,512	2,324,458	3,656,094	5,051,212	4,988,543	4,057,476	3,208,582	1,640,984	762,723	370,673	195,001	41,371		
Total outflow	10,914,874	19,787,294	32,480,935	44,483,693	42,710,068	41,684,226	40,876,616	38,666,407	38,492,166	38,100,116	37,924,444	37,770,814	37,729,443	37,729,443
Incremental Net Benefit Before Depriciation and	-10,914,874	-8,877,341	-9,136,262	-7,412,027	6,730,251	8,122,420	9,093,460	11,438,697	11,635,177	12,039,210	12,214,882	12,368,512	12,409,883	12,409,883
FIRR	17%													
NPV @12% USD	8,773,014													

Source: RAEDP Impact Assessment Report, October 2010

Table 4: Economic Analysis of Refinanced Enterprises

Indicators	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Revenue	0	10,909,953	23,344,673	37,071,666	49,440,319	49,806,645	49,970,076	50,105,104	50,127,343	50,139,326	50,139,326	50,139,326	50,139,326	50,139,326
Investment Capital	4,842,181	4,873,403	5,397,935	4,457,830										
Cost of sale	5,185,181	12,589,433	23,426,906	34,974,651	37,721,526	37,626,750	37,668,034	37,025,423	37,729,443	37,729,443	37,729,443	37,729,443	37,729,443	37,729,443
Total outflow	10,027,362	17,462,836	28,824,841	39,432,481	37,721,526	37,626,750	37,668,034	37,025,423	37,729,443	37,729,443	37,729,443	37,729,443	37,729,443	37,729,443
Net Benefit	-10,027,362	-6,552,883	-5,480,167	-2,360,815	11,718,793	12,179,896	12,302,042	13,079,681	12,397,900	12,409,883	12,409,883	12,409,883	12,409,883	12,409,883
FIRR	27%													
NPV @12% USD	24,692,463													

Source: RAEDP Impact Assessment Report, October 2010

Table 5: Financial Analysis of Commercial Derived Infrastructure

Indicators	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019-2015
Incremental Revenue	0	300,760	603,917	719,435	1,102,332	1,327,293	1,669,485	1,844,471	2,025,379	2,940,467	3,782,654	4,458,785	5,469,410	5,469,410
Investment Capital	2,996,296	4,252,457	1,582,111	995,436	1,459,240									
Debt repayment	479,407	1,927,626	2,488,776	2,439,902	2,958,251	2,371,062	1,753,477	604,316	462,451	182,102				
Total outflow	3,475,703	6,180,083	4,070,887	3,435,338	4,417,491	2,371,062	1,753,477	604,316	462,451	182,102				
Net Benefit	-3,475,703	-5,879,323	-3,466,970	-2,715,903	-3,315,159	-1,043,769	-83,992	1,240,155	1,562,928	2,758,365	3,782,654	4,458,785	5,469,410	5,469,410
FIRR	9.46%													
NPV @09% USD	759,827													

Source: RAEDP Impact Assessment Report, October 2010

Table 6: Economic Analysis of Commercial Derived Infrastructure

Indicators	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019-2025
Incremental Revenue	0	300,760	603,917	719,435	1,102,332	1,327,293	1,669,485	1,844,471	2,025,379	2,940,467	3,782,654	4,458,785	5,469,410	5,469,410
Investment Capital	2,996,296	4,252,457	1,582,111	995,436	1,459,240									
Incremental Net Benefit	-2,996,296	-3,951,697	-978,194	-276,001	-356,908	1,327,293	1,669,485	1,844,471	2,025,379	2,940,467	3,782,654	4,458,785	5,469,410	5,469,410
EIRR	19%													
NPV @12% USD	6,155,756													

Source: RAEDP Impact Assessment Report, October 2010

ANNEX VII: DEVELOPMENT OF THE DAIRY SECTOR ACROSS YEARS

Table 1: Development of the Dairy Sector across Years

Indicators	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
No of cows ('000)	276.8	277.8	256.2	254	260	263	267	278	283	291	290	297	307	311	283
Cows % chagne from priviouse year	-	0.4	-7.8	-0.7	2.4	0.8	1.8	4.2	1.7	2.8	-0.3	2.4	3.4	1.1	-8.9
Milk production mt ('ooo)	428.3	431.3	435.3	448	456	452	465	490	514	555	555	595	620	641	653
Productivity/cow/year	1547	1553	1699	1760	1753	1722	1741	1758	1814	1908	1914	2001	2019	2064	2307
Productivity % change/cow/year	-	0.3	9.4	3.6	-0.4	-1.7	1.1	1.0	3.2	5.1	0.3	4.6	0.9	2.3	11.8
Milk used for processing mt ('000)	10.3	260	277	290	298	295	285	287	314	365	385	400	452	472	482
% change in Milk used for processing	-	2424	6.5	4.8	2.5	-0.7	-3.6	0.7	9.4	16.4	5.5	3.8	13.0	4.4	2.1
Farm houshold consumption mt ('000)	418	171.3	158.3	157	159	157	181	203	200	190	170	194	168	169	171

Source: National Statistical Service of the Republic of Armenia, Yearbooks.

ANNEX VIII: RECORD OF SUPERVISION MISSION

Table 1: Record of Supervision

Type of Mission	Timing	Mission Members
UNOPS Supervision	Oct/Nov 2005	The mission consisted of Henning Pedersen, Country Programme Manager, IFAD and Mr Omer Zafar, Manager, Italy Operations Centre, UNOPS.
UNOPS Supervision	October 2006	The mission consisted of Mr. Henning Pedersen, Country Programme Manager, IFAD, Mr Omer Zafar, Manager, Italy Operations Centre, UNOPS, Mr Jens Kristensen, Consultant, UNOPS (agribusiness specialist), and Mr Michele Pirazzoli, Consultant, IFAD (environmental engineer)
UNOPS Supervision	October 2007	The mission consisted of Mr. Henning Pedersen, Country Programme Manager, IFAD, Mr Omer Zafar, Manager, Italy Operations Centre, UNOPS, Mr Jens Kristensen, Consultant, UNOPS (agribusiness specialist), and Mr Michele Pirazzoli, Consultant, IFAD (environmental engineer)
UNOPS Supervision	October 2008	The mission consisted of Mr. Henning Pedersen, Country Programme Manager, IFAD, Mr Omer Zafar, Manager, Italy Operations Centre, UNOPS, Mr Jens Kristensen, Consultant, UNOPS (agribusiness specialist), and Mr Michele Pirazzoli, Consultant, IFAD (environmental engineer)
UNOPS Supervision	October 2009	The mission consisted of Mr. Henning Pedersen, Country Programme Manager, IFAD, Mr. Edward Watt, Manager, Italy Operations Centre, UNOPS, Mr Jens Kristensen, Consultant, UNOPS (agribusiness specialist), and Mr Michele Pirazzoli, Consultant, IFAD (environmental engineer)

Source: Supervision Mission Reports

ANNEX IX: LOAN AMMENDMENTS

One loan amendment for reallocation of unallocated funds was requested by the programme on 14.04.2008 and agreed to by IFAD on 10.06.2008. The funds were reallocated to CDI and operational cost (see Table: 7 of the main PC report)

One loan amendment for change in supervision arrangement from UNOPS to direct supervision by IFAD was requested by IFAD on 05.12.2008 and was agreed upon by the GoA on 29.02.2009.

ANNEX X: ENVIRONMENTAL IMPACT

At AR the programme's environmental classification was Category B. The overall environmental impact of RAEDP was expected to be neutral and it was in fact neutral to positive. Programme investments were in infrastructure and buildings directly related to farming such as irrigation system improvements, on-farm investments in modern irrigation technology, livestock watering points, produce handling/storage facilities, housing for livestock, etc., farming-related and non-farming light industries, and improving the condition of access roads and public utility systems.

There was no major shift in designated land use. The irrigation works was confined to improvement of existing schemes on current agricultural land. Off-farm enterprise establishment and expansion was accommodated within previously established industrial and commercial facilities, generally in small towns and villages. The eligibility criteria for programme support to CDI and refinancing of investment loans for enterprises stipulated that works should be environmentally acceptable in accordance with the Armenian EIA regulations and IFAD guidelines. During supervision no diversification from these requirements was observed. However, it was noted that the gasification did have a positive impact on natural forest cover.

ANNEX XI: FINANCIERS, COST ALLOCATION, DISBURSEMENT AND REALLOCATION

Table 1: Financiers, Cost Allocation, Disbursement and Reallocation (USD '000)

Category	IFAD			OPEC Fund			USAID			GoA			GoA Taxes			Clients			RFF			PFIs			Total		
	Allo.	Disb.	Reallo.	Allo.	Disb.	Reallo.	Allo.	Disb.	Reallo.	Allo.	Disb.	Reallo.	Allo.	Disb.	Reallo.	Allo.	Disb.	Reallo.	Allo.	Disb.	Reallo.	Allo.	Disb.	Reallo.	Allo.	Disb.	Reallo.
A. **Rural Enterprise Finance**																											
1) RuraL Finance Facility, Refinancing	9290	8945	-345													2773	7413	4640	0	4369	4369	1803	0	-1803	13866	20727	6861
2) Rural Finance Facility, Secretariat	244	139	-105				222	0	-222				22	20	-2				108	883	775				596	1042	446
Subtotal Rural Enterprise Finance	9534	9084	-450	0	0	0	222	0	-222	0	0	0	22	20	-2	2773	7413	4640	108	5252	5144	1803	0	-1803	14462	21769	7307
B. Rural Business Intermediation Service	41		-41				176	0	-176																217	0	-217
C. Commercially Drived Infrastructure	4400	5055	655	5000	5000	0				150	162	12	1910	2013	103	955	1158	203							12415	13388	973
D. Programme Analysis and Administrative Unit																											
1) Yerevan Burau	1037	1345	308				123	0	-123				131	180	49										1291	1525	234
2) Marz Units (7)	288	336	48										47	48	1										335	384	49
Subtotal Programme Analysis and ADM	1325	1681	356	0	0	0	123	0	-123	0	0	0	178	228	50	0	0	0	0	0	0	0	0	0	1626	1909	283
Total	**15300**	**15820**	**520**	**5000**	**5000**	**0**	**521**	**0**	**-521**	**150**	**162**	**12**	**2110**	**2261**	**151**	**3728**	**8571**	**4843**	**108**	**5252**	**5144**	**1803**	**0**	**-1803**	**28720**	**37066**	**8346**