



IFAD
INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT
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REPORT AND RECOMMENDATION OF THE PRESIDENT

TO THE EXECUTIVE BOARD ON A PROPOSED LOAN TO THE

REPUBLIC OF ARMENIA

FOR

THE AGRICULTURAL SERVICES PROJECT



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CURRENCY EQUIVALENTS

Currency Unit	=	Armenian dram (AMD)
USD 1.00	=	(AMD) 540
(AMD) 1000	=	USD 1.85

WEIGHTS AND MEASURES

1 kilogram (kg)	=	2.204 pounds (lb)
1 000 kg	=	1 metric tonne (t)
1 kilometre (km)	=	0.62 miles (mi)
1 metre (m)	=	1.09 yards (yd)
1 square metre (m ²)	=	10.76 square feet (ft ²)
1 acre (ac)	=	0.405 ha
1 hectare (ha)	=	2.47 acres

ABBREVIATIONS AND ACRONYMS

ACBA	Agricultural Cooperative Bank of Armenia
AREGAK	Sustainable Guaranteed Agricultural Assistance to Women
ASIF	Armenian Social Investment Fund
FWUCC	Federation of Water User Consumer Cooperatives
IRP	Irrigation Rehabilitation Project
M&E	Monitoring and Evaluation
NGO	Non-Governmental Organization
NWASP	North-West Agricultural Services Project
O&M	Operation and Maintenance
PCC	Project Coordination Committee
PCU	Project Coordination Unit
VA	Village Association
WUA	Water Users' Association
WUCC	Water User Consumer Cooperatives

GOVERNMENT OF THE REPUBLIC OF ARMENIA

Fiscal Year

1 January - 31 December

MAP OF THE PROJECT AREA



Source: United Nations.

The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.



REPUBLIC OF ARMENIA
AGRICULTURAL SERVICES PROJECT
LOAN SUMMARY

INITIATING INSTITUTION:	IFAD
BORROWER:	Republic of Armenia
EXECUTING AGENCY:	Ministry of Agriculture
TOTAL PROJECT COST:	USD 20.39 million
AMOUNT OF IFAD LOAN:	SDR 12.35 million (equivalent to approximately USD 15.51 million)
TERMS OF IFAD LOAN:	40 years, including a grace period of ten years, with a service charge of three fourths of one per cent (0.75%) per annum
COFINANCIERS:	Armenian Social Investment Fund (ASIF)
AMOUNT OF COFINANCING	USD 1.05 million
TERMS OF COFINANCING:	Grant
CONTRIBUTION OF BORROWER:	USD 2.42 million
CONTRIBUTION OF BENEFICIARIES:	USD 0.79 million
CONTRIBUTION FROM PARTICIPATING FINANCIAL INSTITUTIONS/NGOS:	USD 0.62 million
APPRAISING INSTITUTION:	IFAD
COOPERATING INSTITUTION:	United Nations Office for Project Services (UNOPS)



PROJECT BRIEF

Who are the beneficiaries? Approximately 33 000 farm families will benefit directly from the project. For the irrigation development and seed development components, which are national in scope, the potential target group will include a major portion of the farming population living in rural areas (approximately 230 000 families). The incidence of absolute poverty among the rural population is estimated to be twice the national average. The single most important source of off-farm income is seasonal male labour migration to other Commonwealth of Independent States countries.

Why are they poor? The rapid transition to a market economy has been achieved at high cost. In the post-independence period, radical economic reforms, elimination of subsidies on essential goods and substantial cuts in the provision of social services has led to declining real wages, a drop in the standard of living, mass unemployment and overall impoverishment of the population (of which the rural inhabitants were hardest hit). Macroeconomic stabilization has not brought immediate economic growth and social development for the rural population. Farmers and other rural inhabitants face numerous constraints, the most serious of which are: (i) lack of effectively maintained and operated irrigation infrastructure adapted to service the 320 000 small farms established following land reform; (ii) limited access to credit, both for primary agricultural processing and marketing; and (iii) a shortage of employment opportunities.

What will the proposed project do for them? The Agricultural Services Project is based on a strategy of: (i) broad poverty alleviation through support for agricultural growth; (ii) targeted assistance for poor rural people who are not in a position to benefit from agricultural growth; and (iii) focus on the country's poorest and most marginalized areas. It will support improved seed production and certification to provide farmers with higher quality, certified seed. Water users' consumer cooperatives (WUCCs) will be assisted to cater for the operation and maintenance (O&M) of tertiary and secondary irrigation infrastructure. Federations and unions of WUCCs will be supported at the district and national levels. Rural financial services will be provided by means of: (i) lending for agricultural production through the Agricultural Cooperative Bank of Armenia (ACBA); and (ii) support for small enterprise development and microfinance for groups of women.

How will the beneficiaries participate in the project? Most project activities will be implemented on the basis of a participatory approach whereby potential beneficiaries will be involved in programming, final design of the activity and subsequent operations. On-farm irrigation rehabilitation and management will involve WUCCs, which will provide inputs in the form of labour, approve the final construction/rehabilitation design of small-scale irrigation systems and endorse contracts with private entrepreneurs. A precondition for receipt of credit under the project will be the formation of village-based credit associations which will be responsible for the initial screening of credit applications and for providing assistance to members in the preparation of loan applications. Microfinance activities will be based on a demand-driven, participatory approach similar to the credit system developed under ACBA. The selection of projects for rehabilitation (under the component cofinanced with the Armenian Social Investment Fund (ASIF)) will be undertaken directly by the village communities.



**REPORT AND RECOMMENDATION OF THE PRESIDENT OF IFAD
TO THE EXECUTIVE BOARD ON A PROPOSED LOAN TO
THE REPUBLIC OF ARMENIA
FOR
THE AGRICULTURAL SERVICES PROJECT**

I submit the following Report and Recommendation on a proposed loan to the Republic of Armenia for SDR 12.35 million (equivalent to approximately USD 15.51 million) on highly concessional terms to help finance the Agricultural Services Project. The loan will have a term of 40 years, including a grace period of ten years, with a service charge of three fourths of one per cent (0.75%) per annum. It will be administered by the United Nations Office for Project Services (UNOPS) as IFAD's cooperating institution.

PART I - THE ECONOMY, SECTORAL CONTEXT AND IFAD STRATEGY¹

A. The Economy and the Agricultural Sector

1. Armenia is a landlocked country located in the Caucasus region, with a population of 3.8 million and a total area of 29 800 km². The country's independence from the Soviet Union in 1991 came about under difficult circumstances. Conflict with neighbouring Azerbaijan resulted in a flow of about 500 000 refugees, a trade blockade, chronic shortages of fuel and other essentials, and tremendous hardship following the breakdown of the rouble zone and harsh winters in 1991 and 1992. Macroeconomic conditions in the early years following independence were volatile, with a fall in output of more than 50% over 1990 levels by 1992.

2. In 1994, a comprehensive programme of macroeconomic stabilization and structural reform was undertaken. This included the introduction of a national currency (the Armenian dram) and tight fiscal and monetary policies, and led to the elimination of hyperinflation (inflation dropped from 32% in 1995 to -1.3% in 1999) and an annual growth in real gross domestic product (GDP) which reached a high of 7.2% in 1998 and fell to 3.8% in 1999 (reflecting the impact of the Russian economic crisis and domestic political events). In the first six months of 2000, GDP growth remained depressed at 2.6%, due also to the serious drought that has significantly reduced agricultural output, but prospects were for growth to reach 5% during the remainder of the year.

3. Armenia was the first former Soviet Union country to distribute agricultural land to individual households. In 1991, facing a blockade on essential food and fuel imports, the distribution of land to the rural population helped to ensure a minimum basic food supply. Land was distributed on an egalitarian basis, depending on the size of the household. The result of the land reform programme has been the creation of approximately 330 000 smallholder farms with an average size of 1.3 ha. The share of agriculture in GDP increased from less than 19% in 1988 to over 40% in 1994 and at present seems to have stabilized at about 30% (with an average annual growth rate of approximately 1.3%). In 2000, a severe drought affected most of the northern areas of the country. An assessment mission fielded by the Food and Agriculture Organization of the United Nations (FAO) in September 2000 estimated the overall drought damage at some USD 40 million.

¹ See Appendix I for additional information due.



4. Main crops are wheat, barley and potatoes, which serve as both subsistence and cash crops. Vegetables, fruit and grapes are important locally. In spite of significantly lower use of imported chemical inputs and reduced availability of irrigation water, yields have been keeping up with pre-1990 levels: in 1998, average cereal output was 1.7 t/ha (compared with 2.1 t/ha pre-1990), while potatoes yielded 13 t/ha (13.5 t/ha). Livestock numbers have continued to decline since 1985 as a consequence of adapting to market conditions and reduced fodder cropping in favour of food crop production. In 1999, the national herd comprised 452 600 cattle, 488 100 sheep and 49 200 pigs. Overall, agricultural production is currently subsistence-oriented but the potential exists for developing a market-oriented agricultural sector in the medium term.

5. The main focus of Armenia's strategy for rural poverty alleviation and overall economic development is related to stabilization and furthering of sustained economic growth, which is essential to recover from the overall output fall of 70% experienced between 1991 and 1994. However, the Government is aware that, under a growth-only strategy, it will be some time before income and consumption levels are comparable with those achieved under the Soviet system. It is also aware that segments of the population will be unable to benefit from economic growth, which will lead to persistent forms of extreme poverty for some groups. Ongoing sector policies bearing on poverty are: (i) promotion of job creation and consolidation of self-employment through small enterprise and microfinance scheme development; (ii) reform of education and health services to ensure continued availability and quality; and (iii) transformation of a social assistance programme that provided humanitarian aid into a social security scheme. Given the present importance of the agricultural sector to overall GDP, agricultural development and growth are the main instruments for rural poverty alleviation. Within this sector, the emphasis is on irrigation and livestock development.

B. Lessons Learned from Previous IFAD Experience in Armenia

6. IFAD has financed two projects in Armenia: the Irrigation Rehabilitation Project (IRP), with a loan of SDR 5.40 million and cofinanced with the World Bank (approved in April 1995 and closed in June 2000); and the ongoing IFAD-initiated North-West Agricultural Services Project (NWASP), which was approved in December 1997 in an amount of SDR 9.55 million.

7. Under IRP, IFAD financed the establishment of pilot water management schemes involving institutional support to water users' associations (WUAs). As of 2000, the IFAD-financed portion of IRP was supporting 106 irrigation schemes and had established an equal number of WUAs, with approximately 32 500 direct beneficiaries. The project has achieved considerable success in improved water management and WUA development, and has rehabilitated 26 000 ha instead of the 10 000 ha originally foreseen at appraisal.

8. The objectives of NWASP, which is supervised directly by IFAD, are to improve the well-being of the target population, their food security and income, and includes four components: (i) crop and livestock development through private production and distribution of improved seed with publicly-controlled certification; (ii) irrigation rehabilitation and water management; (iii) a rural credit programme implemented by ACBA; and (iv) community development through civic action groups supported by a non-governmental organization (NGO). Implementation thus far has been positive and is ahead of schedule, with disbursements currently standing at 93% after three years of implementation.

9. Implementation of the above interventions has helped IFAD derive a number of lessons to sharpen the focus of future projects in Armenia. However, while setting up and providing essential elements for productive activities in agriculture has a quick **impact** on poverty reduction, what is needed is a longer-term strategy of moving beyond the current focus on increased production and taking account of demand characteristics, marketing and processing constraints. Future programmes should include poor groups that are unable to qualify for NWASP through microfinance and explicit



gender-oriented support. Although grass-roots institutions are involved in the implementation of most project activities, there has been a tendency to concentrate on 'hardware' aspects rather than on institutional development. Therefore, future programmes will need to: (i) capitalize on achievements thus far in institutional development; and (ii) further strengthen and transfer responsibilities to grass-roots institutions in order to help them achieve self-reliance and sustainability.

C. IFAD's Strategy for Collaboration with Armenia

10. **IFAD's strategy in Armenia.** In line with the Government's development policy, the agricultural sector will evolve over time into a consolidated commercial farming sector. IFAD's role is to improve farm productivity, increase the incomes of farming families that are barely able to sustain themselves, and facilitate transition from the currently fragmented subsistence-oriented farming system towards one that is more market-oriented. Given its positive experience in Armenia, IFAD's strategy is based on four key points: (i) broad poverty-alleviation achievements through agricultural growth; (ii) focus on the poorest areas of the country, including the highlands and border areas; (iii) institution building through increased responsibilities and further involvement of grass-roots organizations and the private sector in implementation and management; and (iv) targeted poverty alleviation for poor segments of the population that have not yet benefited from growth in the agricultural sector.

11. Agricultural growth is an essential element of IFAD's country strategy as it has a direct and immediate bearing on the poverty situation. Growth will continue to be promoted through improved supply systems and increasing attention to considerations of demand for and support to marketing operations. The latter activities will become increasingly important in the development of IFAD's portfolio in Armenia.

12. **Geographic focus.** NWASP is under implementation in three of the poorest provinces of the country. The project has demonstrated that, even in such areas, credit and irrigation can help reduce the incidence of poverty in a cost-effective manner and that further expansion of support into other extremely poor areas is feasible and justified. Future IFAD support will consolidate activities and institutional arrangements in the present project area as well as in other poverty zones at high altitudes in an additional five marzes.

13. **Institution building and beneficiary participation.** Grass-roots organizations have been successful in implementing project activities under NWASP. Future IFAD interventions will continue to use such organizations for project implementation, although further strengthening will be required in terms of management capacity and technical aspects. Training and follow-up support will be provided to enable beneficiary groups to play a more important role in the selection and implementation of project activities.

14. **Targeted poverty alleviation.** Agricultural growth in rural areas does not benefit all groups of poor people, either because they have insufficient agricultural potential or because they are unable to mobilize the necessary contributions from their own resources in order to qualify for credit programmes. Such groups will be supported through microfinance programmes that will help them to rapidly increase their incomes and create savings, and eventually help them to gain access to the formal financial system. An explicit emphasis on women will be maintained, similar to that applied in ongoing NGO microfinance programmes.

15. As part of its corporate strategy and its emphasis on beneficiary participation and improved governance, IFAD will continue to support and foster the development of representative, accountable and member-managed beneficiary organizations and go a step further in promoting regional and national federations. Once established and operating properly, such organizations may become involved in the management of future IFAD projects.



16. **Poverty-alleviation activities of other donors.** Apart from IFAD, the major donors engaged in poverty alleviation initiatives in Armenia's rural sector are the World Bank, the European Union through its Technical Assistance to the Commonwealth of Independent States (TACIS) Programme, the United States Agency for International Development (USAID) and the German Agency for Technical Cooperation (GTZ). Through the Irrigation Rehabilitation Project, World Bank has supported the rehabilitation of main and secondary canals in the Ararat valley. It has also supported the establishment of the Armenian Social Investment Fund (ASIF), which is implementing programmes to rehabilitate social infrastructure and lend support to microbusinesses, and the Agricultural Reform Support Project, which has established agricultural support centres (ASCs) that provide advice on marketing, applied research and extension. TACIS has provided technical assistance for the establishment of ACBA as well as an initial capital contribution for the development of smallholder lending. USAID and GTZ are the main donors supporting microfinance programmes implemented by NGOs, including Save the Children, the Foundation for International Community Assistance, Catholic Relief Services, World Vision and the United Methodists Committee on Relief.

PART II - THE PROJECT

A. Project Area and Target Group

17. The project will cover the eight *marzes*² of Shirak, Lory, Aragatzotn, Tavush, Ghegharkunik, Kotayk, Vayats Dzor and Syunik, accounting for 762 villages and 228 520 farm households (69% of all farms in Armenia), with an average of 300 farms per village. Each project component will have slightly different area coverage, depending on appropriate criteria for poverty, development potential, population density and technical feasibility, while some activities will be carried out on a national scale. The estimated total rural population in the eight project *marzes* amounts to 852 000 persons (44%). The average farm size of 1.67 ha is slightly above the national average of 1.37 ha. The land-use pattern differs from the national average, as over half of all perennial crops are located outside the project area while practically all private natural pasture is situated within it. The urban population is not part of the target group.

18. According to 1996 data, all project area *marzes* register a high incidence of poverty, ranging from 47% in Syunik to 63% in Shirak. Compared with the rural average of 48%, rural poverty is marginally more prevalent in border zones (51%) and higher-altitude areas (50%). The IFAD repeater survey of October 1999 found a 72% poverty incidence in the project villages of the northwestern *marzes* of Aragatzotn, Shirak and Lory.

19. Given the differentiation of the project area by activity, the target groups will also vary in terms of project interventions. Where project support is on a national scale, the target group will comprise all rural households that are eligible for such support. However, most project activities will be concentrated in Lory, Shirak, Aragatzotn, Tavush, Ghegharkunik, Kotayk, Vayats Dzor and Syunik.

20. The predominant farming system is one of mixed crops and livestock, with food crops grown on arable land and garden crops on household plots; and with livestock feed obtained from pastures, meadows and arable areas. On average, farms produce at least five different commodities, usually three crops and two livestock products. This system makes for rational use of resources in a difficult natural environment, given the present situation of small landholdings, uncertain markets and limited access to inputs.

21. The food security situation differs between households and regions, with seasonal variations in the food basket. Using several indicators, the impact analysis of NWASP found that food security

² *Marzes*: provinces.



improved in households that participated in project activities: (i) the share of home-produced food consumed rose (from 53% to 62% on average); (ii) the number of households holding larger food stocks increased; (iii) the percentage of households that considered their diet to be excellent, good or satisfactory increased from 45% to 79%; (iv) food intake, especially among women and children, became more regular and fewer meals were missed; and (v) the number of families consuming high-protein-content food at least once or twice a week increased from 19% to 41%.

22. The country's traditionally patriarchal social structure and a strong division of domestic labour between the sexes govern the gender situation. The transition has had a negative impact on the role and responsibilities of women, and their appointment to positions of importance in public administration has declined markedly (no woman has been appointed as governor or deputy governor since 1996). Likewise, professional women represent a small percentage of professional staff in externally financed projects, although women tend to attain higher levels of education than men do.

B. Objectives and Scope

23. The rationale for the project is based on the policies and current country situation described above. As demonstrated by the baseline and repeater surveys carried out under NWASP³, the provision of external resources for rural and agricultural development is expected both to accelerate growth and to improve the rural population's living standards. In the absence of the project, this process would need to be based on domestic resources, very modest farm surpluses and limited budget funding. Without external assistance, the timespan involved in such a development process would be lengthened and avoidable privation would occur.

24. The overall goal of the project is to help bring about a sustainable improvement in the living conditions of the poorest project-area households in terms of higher levels of agricultural production, income and food security. This will be achieved through: (i) functional maintenance and management of irrigation infrastructure systems, with increased involvement of WUCCs and federations; (ii) development of tertiary infrastructure to bring additional areas under irrigation; (iii) provision of loans by ACBA to village association (VA) members to help improve agricultural production and for off-farm activities; (iv) establishment of financially sound small and medium enterprises (SMEs) providing employment opportunities in poorer villages; (v) provision of microfinance services to poor women to enable them to engage in profitable economic activities; (vi) enhanced community infrastructure; and (vii) improved support services for seed production, certification and distribution involving the private sector.

C. Components

25. In light of the institutional environment in Armenia and experience gained through IRP and NWASP, a straightforward design, based on a project coordination unit (PCU) contracting out to different implementing agencies for the activities foreseen under each component, as under NWASP, has been replicated. Particular attention will be paid to three key constraints within the country – lack of access to rural financial services for the poor, inadequate irrigated areas for agricultural production, and poor infrastructure – thus allowing for a realistic implementation plan that will alleviate difficult living conditions in the rural areas. The project will have five components, as follows:

Agricultural Development

26. Intensification of agricultural production depends, to a large extent, on the availability of quality seed of improved varieties. The project will focus on important issues identified with farmers: poor seed quality, insufficient quantities of improved seed and weak support and certification

³ Survey data points to a 50% reduction in household poverty incidence after one year of project activities.



services. Building upon NWASP experience, further development of the private seed sector is envisaged. Provision has been made to support specific investments in smallholder seed production of relevance to the target group. A specialized institution will be contracted to develop capacity for improved availability and distribution of quality seed, building on current efforts to establish a sustainable seed producers' support association.

27. Accompanied by appropriate external assistance, the project will aim to streamline the operations of the Seed Certification and Testing Service. It will provide backstopping to selected laboratories, equipment and operations costs. Support will also be provided to the Variety Testing Unit in the form of basic field equipment and the operating costs of field trials. Five local certification and testing stations will be selected for support. A small applied research and demonstration grant programme will be managed by the Foundation for Agriculture and Agribusiness established in the Academy of Agriculture with assistance from the United States Department of Agriculture.

Irrigation Development

28. Activities under this component will aim at improving the management and the operation and maintenance (O&M) of secondary and tertiary irrigation systems through the establishment and strengthening of approximately 60 WUCCs covering an estimated 15 000 ha of irrigated land. Beneficiary water users of tertiary canals will be encouraged and assisted to form WUCCs and take over responsibility for O&M of their respective irrigation canals, building on IRP and NWASP experience. Federations of WUCCs (FWUCCs) will be established on secondary canals managed by more than one WUCC. The establishment of functioning FWUCCs is the next step in the shift from government to user-managed irrigation. The project will support committed FWUCCs in selected *marzes* to establish a union for promoting their common interests, regulate their activities and provide training and technical assistance in irrigation and legal matters. Once the established unions achieve sufficient representation of WUCCs and FWUCCs in the country, the project will support the establishment of a national union.

29. All irrigation infrastructure development will be linked to WUCC or FWUCC capacity building. At least 50% of project interventions for WUCCs will be carried out for 'local systems' that are already managed by users without government support. In addition, the project will fund the rehabilitation of secondary canals in the pilot FWUCC areas. Implementation of the component will be carried out by a water management agency (WMA) to be established through the restructuring of the water development sector. The Water Management Section (WMS) of IRP's project implementation unit will be transferred to WMA, which will be strengthened at the central (Yerevan) level. Three existing field offices will be maintained and three additional field offices established to cover the extension of irrigation development activities to Tavush, Gegharkunik, Syunik and Vayats Dzor.

Rural Finance

30. Demand for finance in rural areas includes: (i) short-term working capital for agricultural production; (ii) longer-term SME investment funds; and (iii) small, non-collateralized loans for borrowers not eligible for other financial products. No single institution is yet in a position to meet this spectrum of needs, and thus a more competitive and specialized delivery system would be more cost-effective and allow for a more acceptable risk spread. The project will therefore support both existing and new financial services institutions in the delivery of specific financial products to meet demand in each of the three sectors.



Agricultural credit

31. Continuing the collaboration established under NWASP, the project will support the expansion of ACBA lending into the *marzes* of Syunik, Kotayk, Tavush and Gegharkunik, thereby completing ACBA's national coverage. ACBA will establish branch offices in these four *marzes*, and provide the necessary additional staff. The project will finance the costs of branch construction, required equipment and vehicles and non-salary operating costs for the first year of operation, while ACBA will finance all salary costs and training expenses. ACBA will provide approximately 20 000 loans⁴ in the course of project implementation, requiring an additional USD 2.9 million in loan funds. The average loan size will increase from USD 700 in project year (PY) 1 to USD 800 at the end of the project. These resources, together with principal repayment, will be added to a revolving fund, which will be used for the provision of additional loans in accordance with similar modalities. In line with the project's efforts to reach women beneficiaries, no less than 30% of all loans will be made to women. This will be a condition for disbursement of all funds under this subcomponent from PY 3 onward.

Microfinance

32. Investment resources will be provided to women who are not eligible for any other type of funding, on the basis of tested approaches implemented by NGOs. The Foundation for the Sustainable Guaranteed Agricultural Assistance to Women (Aregak) will be supported to expand its ongoing programme into Tavush and Gegharkunik and to increase activities in Vayats Dzor and Syunik and northern Lory. Eligible borrowers will be women, who will either start up new income-generating activities or expand existing ones. Loan sizes will increase with subsequent borrowing cycles and start in the USD 100-300 range, with small groups of borrowers jointly responsible for repayment. The programme is expected to cover 20 towns/villages in Gegharkunik, 16 in Tavush and 10 in Lory, where, by December 2002, approximately 1 200 loans are expected to have been granted. IFAD funds will be used to finance loans in rural areas only. The subcomponent is integrated in the national Aregak programme, which will be financially self-sustaining in four years.

Small Enterprise Development

33. The project will provide required resources to Aniv Foundation, established by an Armenian NGO, for the development of small rural enterprises. These enterprises will either be operated by the target group or provide marketing, services or goods of direct interest to them. Aniv will establish and manage a revolving fund for that purpose. Eligible borrowers will be existing and new small enterprises, which have a positive impact on rural employment and create demand for products produced in local rural areas. Initial loan ceilings will be set at USD 15 000, to be raised to USD 25 000 following two years of operation in a given *marz*. About 150 loans will be provided, requiring an incremental amount of approximately USD 1.0 million. The project will provide loans in Lory, Shirak, Aragatzotn, Tavush, Vayats Dzor and Syunik. The NGO will be supported through the establishment of a field office and through the financing of a declining share of operating costs, which will then be covered by interest income.

Community Infrastructure

34. The budget cuts following independence have led to sharp cuts in the O&M programmes of essential, community-level services; and most local inhabitants have become unemployed, thus greatly reducing the local resource base. Established with World Bank assistance, ASIF provides external support and resources for the repair and rehabilitation of community services and infrastructure. The project will finance the implementation of approximately 55 small community

⁴ This will allow the programme to reach approximately 4% of farm households in the project *marzes*.

infrastructure projects with ASIF on a matching fund (50-50) basis. The total costs of individual community infrastructure projects will not exceed USD 50 000, and the expected average costs will be USD 35 000. Project selection will be based on a participatory analysis in selected villages, with due consideration to gender issues.

Project Coordination

35. The Ministry of Agriculture will be responsible for overall project coordination, while implementation will be entrusted to competent institutions, services and agencies in the public, private and NGO sectors on the basis of service agreements acceptable to IFAD. For that purpose, the Ministry will set up a PCU, which will be financed by the project and staffed in accordance with IFAD requirements.

D. Costs and Financing

36. **Costs.** Total project costs are estimated at USD 20.39 million, including price and physical contingencies of USD 1.22 million. The foreign exchange element is estimated at 18% (USD 3.72 million) of total costs. Costs include identifiable taxes estimated at USD 2.25 million. Total project costs are summarized in Table 1.

37. **Financing.** The IFAD loan will amount to USD 15.51 million, or 76% of total costs, and will be used mainly to finance agricultural development, irrigation rehabilitation, incremental credit and infrastructure rehabilitation. As shown in Table 2, approximately USD 0.79 million (4%) will be provided by the beneficiaries, mainly as contributions in kind to irrigation and infrastructure rehabilitation, and USD 2.42 million (12%) by the Government, mainly in foregone duties and taxes. IFAD loan funding will complement ASIF funding of USD 1.05 million (5%) for infrastructure rehabilitation; the NGO will contribute USD 0.20 million (1%) for the small enterprise development subcomponent; and Aregak Foundation will contribute USD 0.42 million (2%) to cover operating costs under the microfinance subcomponent.

TABLE 1: SUMMARY OF PROJECT COSTS^a
(USD '000)

Components	Local	Foreign	Total	% Foreign Exchange	% Total Base Costs
A. Agricultural Development					
1. Development of seed production	80.0	395.0	475.0	83	2
2. Support services	144.8	73.2	218.0	34	1
Subtotal	224.8	468.2	693.0	68	4
B. Irrigation Development					
1. Irrigation infrastructure rehabilitation	5 077.7	1 857.0	6 934.7	27	36
2. Institutional dvlp. for water management	1 701.8	359.4	2 061.3	17	11
Subtotal	6 779.6	2 216.4	8 996.0	25	47
C. Rural Finance					
1. Agricultural credit	3 239.9	369.0	3 608.9	10	19
2. Microfinance	1 261.3	146.7	1 408.0	10	7
3. Small enterprise development	1 235.3	12.0	1 247.3	1	7
Subtotal	5 736.5	527.7	6 264.2	8	33
D. Community infrastructure	2 230.2	-	2 230.2	-	12
E. Project coordination	814.8	165.9	980.7	17	5
Total Baseline Costs	15 785.8	3 378.3	19 164.1	18	100
Physical Contingencies	509.8	201.4	711.2	28	4
Price Contingencies	374.1	138.9	513.0	27	3
Total Project Costs	16 669.8	3 718.5	20 388.3	18	106

a Discrepancies in totals are due to rounding up of figures.

TABLE 2: FINANCING PLAN^a
(USD '000)

Components by Financiers	IFAD		ASIF		Aregak		NGO		Beneficiaries		Government				Total	For. Exch.	Local (Excl. Taxes)	Duties & Taxes	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	(Budget) Amount	(Budget) %	(Taxes) Amount	(Taxes) %					Amount
A. Agricultural Development																			
1. Development of seed production	426.2	85.9	-	-	-	-	-	-	-	-	-	-	70.2	14.1	496.4	2.4	412.3	13.9	70.2
2. Support services	210.2	93.3	-	-	-	-	-	-	-	-	-	-	15.1	6.7	225.3	1.1	75.5	134.7	15.1
Subtotal	636.4	88.2	-	-	-	-	-	-	-	-	-	-	85.3	11.8	721.7	3.5	487.8	148.6	85.3
B. Irrigation Development																			
1. Irrigation infrastructure rehabilitation	5 958.0	74.8	-	-	-	-	-	-	604.2	7.6	170.9	2.1	1 237.2	15.5	7 970.3	39.1	2 137.0	4 596.2	1 237.2
2. Inst. dev. for water management	1 820.6	83.6	-	-	-	-	-	-	-	-	-	-	357.5	16.4	2 178.1	10.7	384.9	1 435.7	357.5
Subtotal	7 778.6	76.6	-	-	-	-	-	-	604.2	6.0	170.9	1.7	1 594.7	15.7	10 148.4	49.8	2 521.9	6 031.8	1 594.7
C. Rural Finance																			
1. Agricultural credit	3 503.7	97.1	-	-	-	-	-	-	-	-	-	-	105.2	2.9	3 608.9	17.7	369.0	3 134.7	105.2
2. Microfinance	1 000.0	70.5	-	-	417.7	29.5	-	-	-	-	-	-	0.0	-	1 417.7	7.0	148.9	1 268.8	-
3. Small enterprise development	1 057.7	84.5	-	-	-	-	194.7	15.5	-	-	-	-	-0.0	-0.0	1 252.4	6.1	13.4	1 239.0	-
Subtotal	5 561.3	88.6	-	-	417.7	6.7	194.7	3.1	-	-	-	-	105.2	1.7	6 278.9	30.8	531.3	5 642.4	105.2
D. Community Infrastructure	708.5	31.8	1 048.7	47.0	-	-	-	-	189.0	8.5	-	-	284.1	12.7	2 230.2	10.9	-	1 946.1	284.1
E. Project Coordination	828.3	82.1	-	-	-	-	-	-	-	-	-	-	180.8	17.9	1 009.0	4.9	177.5	650.8	180.8
Total Disbursement	15 513.1	76.1	1 048.7	5.1	417.7	2.0	194.7	1.0	793.2	3.9	170.9	0.8	2 250.1	11.0	20 388.3	100.0	3 718.5	14 419.7	2 250.1

a Discrepancies in totals are due to rounding up of figures.





E. Procurement, Disbursement, Accounts and Audit

38. **Procurement.** All goods and services to be financed from the proceeds of the IFAD loan will be procured in accordance with IFAD's procurement guidelines. The PCU will enter into service agreements with the implementing agencies, specifying modalities for procurement, and procure goods and services for implementing agencies that lack capacity in this respect. All procurement of vehicles, equipment and office furniture will be grouped together whenever feasible to establish lots of significant size. International competitive bidding will be required for procurement of vehicles, equipment and goods estimated to cost over USD 250 000. National competitive bidding (NCB) will be required for procurement of vehicles, equipment, goods and civil works contracts estimated at less than USD 150 000 but more than USD 25 000. Purchases of the same items worth less than USD 25 000 will be undertaken through local shopping, with pro forma invoices obtained from at least three suppliers. Contracts for the procurement of vehicles, equipment, goods and civil works worth less than USD 5 000 will be awarded on the basis of direct contracting.

39. **Procurement of civil works for irrigation rehabilitation.** Following established IRP/NWASP practice, irrigation rehabilitation works will be undertaken by local construction enterprises on the basis of local shopping and NCB, while pre-qualification will be required for contracts exceeding USD 200 000. Standard documentation, developed with World Bank support, will be used. Contracts exceeding USD 100 000 will require a statement of 'no-objection' from the cooperating institution.

40. **Disbursement.** The proposed IFAD loan of USD 15.51 million equivalent will be disbursed over a four-year period. Withdrawals from the loan account will be effected through procedures acceptable to IFAD. A special account in United States dollars will be opened in a bank acceptable to IFAD. The authorized allocation of the special account will be USD 1.50 million. On the basis of annual work programmes and budgets (AWP&Bs), the PCU will provide the implementing agencies with sufficient advance liquidity for an estimated three months of implementation, taking account of the seasonality of expenditures for civil works during the spring and autumn agricultural seasons.

41. **Accounts and audit.** In accordance with established practice under IFAD's previous loans, the project accounts and all separate accounts of implementing agencies will be audited annually by an internationally recognized audit firm, acceptable to IFAD, which will audit the statements of expenditures and the movements of the special account, and will provide a specific opinion on the project's contracting procedures to implementing agencies, including the accountability of such agencies and the management of project resources by them. On the basis of ACBA's, Aniv Foundation's and Aregak Foundation's own internal audits, the audit firm will provide an opinion on each agency's use of IFAD resources. The report will be submitted to Government, IFAD and the cooperating institution within six months of the close of the financial year.

F. Organization and Management

42. **Overall approach.** The responsibility for project management will be entrusted to the project coordination committee (PCC), chaired by the Minister of Agriculture, and made up of the Governors of Aragatzotn, Lory, Shirak, Kotayk, Tavush, Gegharkunik, Vayats Dzor and Syunik. The PCC will ensure that the project is implemented in accordance with national policies and criteria and as agreed with IFAD. The PCU will be responsible for programming, coordination, financial management and monitoring and evaluation (M&E) of the project, with no direct implementation responsibility.

43. Actual project implementation will be the responsibility of the implementing agencies, which will enter into service agreements acceptable to IFAD with the PCU. Such agreements, the formats of which were developed under NWASP, define the framework and the modalities for implementation.



44. **Beneficiary participation.** Most project activities will be demand driven. The participation of beneficiary households will be based on the activities that meet their priority needs and institutionalized through group formation in a number of components. The development, design and operation of tertiary irrigation infrastructure will be undertaken by WUCCs; the selection of borrowers and the monitoring of their loans will be carried out by ACBA's VAs; and the microfinance programme will be operated through women's groups. All these institutions will be vehicles for empowerment: the formation of FWUCCs for secondary canal management will strengthen dialogue with the Government-operated O&M enterprises; and regular ACBA management/VA meetings have already led the modification of existing legislation on collateral registration.

45. **Reporting, monitoring and evaluation.** All implementing agencies will provide PCU with monthly progress reports in which physical and financial results will be compared with the approved programme of work. The reports will present results, highlight implementation issues and outline possible solutions. On the basis of these reports, the PCU will prepare a consolidated quarterly report that will be sent for information to the members of the PCC, the cooperating institution and IFAD. An annual report on physical and financial progress and on impact will be prepared by each implementing agency. The PCU will consolidate these reports into the project's annual report for submission to the PCC, including consolidated financial statements for all implementing agencies.

46. Project M&E will be the responsibility of the PCU, taking advantage of the M&E system (and associated management information system) established under NWASP, and will be coordinated in accordance with the loan agreement. The main indicators to be monitored have been identified, and means for verifying them and methods for data collection will be adjusted on the basis of the Logical Framework. The system now used relies on beneficiary feedback to report on project results and impact. Provision has been made for baseline and repeater surveys. Evaluation will be carried out continuously, backed up by technical assistance and based on results obtained from the monitoring system. A joint mid-term review by Government and IFAD to review project progress and impact is scheduled to take place at the end of PY 2.

G. Economic Justification

47. Incremental production of agricultural outputs (livestock, cereals, fodder and vegetables) at full development will range from 36% for wheat to 64% for alfalfa. A large proportion of the incremental production will be used for home consumption, while marketable surpluses will be absorbed into the domestic market without major difficulty. The production increase will result from two major factors: an increase in crop intensity due to greater use of inputs and irrigation; and a conservative average yield increase of about 50%, with a range of 25-64%, depending on the crop and farm type. Livestock productivity will also rise, mainly as a result of better feed and fodder availability. Approximately 33 000 direct beneficiaries are expected to benefit from project activities.

48. An economic analysis was carried out for the project. The costs of credit were not taken into consideration as they constitute transfer payments within the economy, while the costs of inputs have been taken into account in the on-farm production costs. Benefits include incremental crop and livestock production derived from four typical farm models. All output has been valued at economic farmgate prices that were considered to be equal to the financial prices, resulting in an economic rate of return of 25%. Sensitivity analyses of the base rates of return for the project to variations in activity benefits and project costs were carried out for various lags in the realization of benefits. Overall, although it is expected that there will be a significant boost in farm productivity as a result of the project, given the present low levels of productivity of farm households in the 'without-project' situation, the estimated returns could fall within a fairly large margin of error.



H. Risks

49. The technical risks associated with the project are limited, given that the same types of project activities successfully implemented under NWASP have had a positive impact on farm incomes. However, the project will be implemented in a rapidly changing political, macroeconomic and institutional framework. The institutional basis and definition of operational responsibilities between central services, provinces and communes is evolving and, as such, the project will require flexible management to accommodate necessary adjustments in such a fluid environment. An example is the limited international access to Armenian goods (and potentially competitive import prices) caused by the closed borders with Azerbaijan and Turkey. In the event of a sudden change in the situation, the relative prices could change drastically, thereby lowering the cost of food imports and inputs.

I. Environmental Impact

50. The project's irrigation rehabilitation work is not expected to have a negative impact on the environment and it is not located in environmentally sensitive areas. Beneficial effects will derive from improved soil fertility and organic matter content, as well as water savings from rehabilitated irrigation schemes. The project will, however, bring about a moderate increase in the use of fertilizer and plant protection chemicals on beneficiary farms. Slight increases in livestock numbers will also occur, but given the massive decline in the livestock herd during the transition period it is doubtful that these increases will have a major effect on summer grazing resources.

51. During the course of project implementation and as an integral part of the mid-term review in PY 2, the project's environmental impact will be assessed to ascertain any effects of the increased use of chemical inputs as a result both of credit and development of additional irrigated areas (especially in the Lake Sevan area of Gegharkunik *marz*). The project completion exercise will also carry out a similar analysis.

J. Innovative Features

52. The project contains a number of innovative features, especially in terms of using civil-society organizations as implementing agencies with the aim of creating a more sustainable base for grass-roots organizations in the country. In particular, the continued support (pioneered under IRP and replicated under NWASP) to WUCCs and FWUCCs to empower them to negotiate with water management agencies and better manage the O&M of tertiary and secondary systems is one of the project's most innovative and successful features.

53. The identification and development of partner institutions in the field of rural financial services is another important development for the IFAD portfolio in the Caucasus. Recognizing the expertise of Aregak Foundation in the provision of microcredit for women, the Fund is supporting the extension of the Foundation's programme in rural areas (its approach has been mainly urban-based), based on group formation, joint responsibility and savings mobilization. This subcomponent, is complemented by the financing of a small enterprise component through Aniv Foundation, held accountable to the General Assembly of the NGO involved, with a programme that focuses on a programme targeting the poorest villages in the project area.

54. Another important innovation will be the policy dialogue embodied in the project to create an enabling environment for water-user efficiency. This dialogue will be conducted closely with ongoing and future International Development Association operations in Armenia.



PART III - LEGAL INSTRUMENTS AND AUTHORITY

55. A loan agreement between the Republic of Armenia and IFAD constitutes the legal instrument for extending the proposed loan to the borrower. A summary of the important supplementary assurances included in the negotiated loan agreement is attached as an annex.
56. The Republic of Armenia is empowered under its laws to borrow from IFAD.
57. I am satisfied that the proposed loan will comply with the Agreement Establishing IFAD.

PART IV - RECOMMENDATION

58. I recommend that the Executive Board approve the proposed loan in terms of the following resolution:

RESOLVED: that the Fund shall make a loan to the Republic of Armenia in various currencies in an amount equivalent to twelve million three hundred and fifty thousand Special Drawing Rights (SDR 12 350 000) to mature on and prior to 15 April 2041 and to bear a service charge of three fourths of one per cent (0.75%) per annum, and to be upon such terms and conditions as shall be substantially in accordance with the terms and conditions presented to the Executive Board in this Report and Recommendation of the President.

Lennart Båge
President

SUMMARY OF IMPORTANT SUPPLEMENTARY ASSURANCES INCLUDED IN THE NEGOTIATED LOAN AGREEMENT

(Loan negotiations concluded on 11 April 2001)

1. **Annual workplans and budgets.** The PCU will prepare draft annual workplans and budgets (AWP/Bs) for each project year. The PCU will submit the draft AWP/Bs to the PCC for its approval. When so approved, the PCC will submit each draft AWP/B to IFAD, for its comments and approval, no later than 60 days before the beginning of the relevant project year. The PCC will adopt the AWP/Bs substantially in the form approved by IFAD and the cooperating institution.
2. **Project account.** The PCU will open and thereafter maintain in a bank, proposed by the Government of the Republic of Armenia (the Government) and accepted by IFAD, a current account denominated in United States dollars for project operations (the “project account”). The project coordinator will be fully authorized to operate the project account.
3. **Availability of loan proceeds.** The Government will make the proceeds of the loan available to the PCU in accordance with the AWP/Bs and its customary national procedures for development assistance to carry out the project.
4. **Availability of additional resources.** In addition to the proceeds of the loan, the Government will make available to the Ministry of Agriculture and each other project party, promptly as needed, such funds, facilities, services and other resources as may be required from time to time to carry out the project in accordance with the loan agreement. The Government will deposit the cash contribution of the Republic of Armenia required for the irrigation development component, or as otherwise agreed by the Government and IFAD, to cover the entire period of project implementation, into the project account. This will not preclude the possibility of the deposit of further counterpart funds that may be required as a result of modifications to the project agreed by the Government and IFAD.
5. The Government will transfer all NwasP and water management section assets to the project and the water management agency, respectively.
6. **Channelling of project resources.** The Government will transfer available funds and other resources called for in the AWP/Bs:
 - (a) to ACBA, in accordance with the ACBA subsidiary agreement, to carry out the agricultural credit sub-component of the rural finance component;
 - (b) to the NGO, in accordance with the NGO subsidiary agreement, to carry out the small enterprise development sub-component of the rural finance component; and
 - (c) to the Aregak Foundation, in accordance with the Aregak Foundation subsidiary agreement, to carry out the microfinance sub-component of the rural finance component.
7. **Suspension.** IFAD may suspend, in whole or in part, the right of the Republic of Armenia to request withdrawals from the loan account in accordance with Section 12.01 of the General Conditions, upon the occurrence of any of the events set forth therein or any of the following events:

The ACBA, NGO and/or the Aregak Foundation credit by-laws, or any provision thereof, has been waived, suspended, terminated, amended or otherwise modified without the prior consent of

IFAD, and IFAD has determined that such waiver, suspension, termination, amendment or modification has had, or is likely to have, a material adverse effect on the rural finance component.

8. **Cancellation.** IFAD may terminate the right of the Republic of Armenia to request withdrawals from the loan account in accordance with Section 12.02 of the General Conditions, upon the occurrence of any of the events set forth therein or any of the following events:

The mid-term review has recommended that the project be terminated.

9. **PCC.** The Government will establish a PCC by governmental decree.

10. **PCU.** A PCU will be established by governmental decree. The PCU will enjoy administrative, financial and operational autonomy and be empowered to enter into contractual relations with third parties. The staff of the PCU will be appointed by the project coordinator, on a contractual basis, after public announcement of the vacancies and selection of candidates on the grounds of qualifications, experience and motivation. Candidates selected by the project coordinator for the key positions of deputy project coordinator, agricultural advisor, water management specialist, and monitoring and evaluation specialist will be submitted for approval by IFAD before their appointment. The PCU will report to the Minister for Agriculture and will be responsible for programming, coordination, financial management and monitoring and evaluation. It shall have no direct implementation responsibility. Two project monitoring units will be established, one in the northern part and one in the southern part of the project area.

11. **Project coordinator.** The Government will appoint a project coordinator on or before the effective date. The project coordinator will be appointed subject to the prior approval of IFAD. The project coordinator shall have qualifications and experience acceptable to IFAD. The project coordinator may only be removed by the Government after prior consultation with IFAD and the replacement therefor will be acceptable to IFAD. The project coordinator will head the PCU and be responsible for the coordination of project activities.

12. **Implementation agreements.** The Government will cause the PCU to enter into an implementation agreement, acceptable to IFAD, with each of the following agencies for the implementation of their respective parts of the project. Each implementation agreement will specify the objectives and range of activities to be undertaken by the respective agency, including, in particular, defining the implementation modalities as well as the programming and financing arrangements with the PCU:

- (a) the water management agency for the irrigation development component;
- (b) the civil works implementation agency for the civil works under the irrigation development component;
- (c) ASIF for the community infrastructure component; and
- (d) the qualified organization to be selected and approved by the Republic of Armenia and IFAD to execute the agricultural development component.

13. **Rural finance component.** The rural finance component will be carried out by:

- (i) for the agricultural credit sub-component, ACBA;
- (ii) for the small enterprise development sub-component, a qualified NGO; and

- (iii) for the microfinance sub-component, the Aregak Foundation.

14. **Subsidiary agreements.** The Ministry of Finance and Economy will enter into a subsidiary agreement with ACBA, the NGO and the Aregak Foundation, respectively, which will provide, among other things, that:

- (a) The Ministry of Finance and Economy will transfer funds available from the proceeds of the loan to ACBA, the NGO and the Aregak Foundation, respectively, as financing in accordance with the AWP/Bs and terms and conditions acceptable to IFAD.
- (b) ACBA, the NGO and the Aregak Foundation will each declare their respective commitment to the goals and purposes of the project and, in furtherance of such goals and purposes, they will each undertake to carry out the rural finance component in accordance with the loan agreement and the credit by-laws, which will be annexed to the relevant subsidiary agreement.

15. The Government will submit a draft of each subsidiary agreement to IFAD for its comments and approval before signature.

16. **Credit by-laws.** ACBA, the NGO and the Aregak Foundation will each prepare draft by-laws for their respective sub-component of the rural finance component as soon as practicable, but in no event later than 30 days after the effective date. The PCU will submit the draft of each of the credit by-laws to the PCC for approval. When approved by the PCC, the PCU will submit the draft of each of the credit by-laws to IFAD for its comments and approval. The PCC will adopt each of the credit by-laws, substantially in the form approved by IFAD, for application to all credits extended to project beneficiaries of the respective sub-component which are financed (directly or indirectly) by the loan. The PCU will provide copies thereof to IFAD and the cooperating institution promptly after adoption.

17. **Revolving fund.** ACBA, the NGO and the Aregak Foundation will each establish and maintain a revolving fund into which all net revenues from credits extended to project beneficiaries financed (directly or indirectly) by the loan will be deposited. ACBA, the NGO and the Aregak Foundation, respectively, will use the revolving fund to fund further credits to project beneficiaries in accordance with the loan agreement at least until such date as will be specified in the relevant subsidiary agreement or, if no date is so specified, until all loan service payments have been made in full.

18. **ACBA.** (a) The PCU will provide an advance to ACBA from the special account equivalent to the estimated demand for the autumn lending programme in 2001, less amounts available from the revolving fund under the NWASP. Subsequent disbursements from the special account to ACBA will be on the basis of loans effectively disbursed by ACBA.

(b) The approval procedure for ACBA's AWP/B will in no case infringe on ACBA's autonomy to decide on the location of its new branch offices, the selection of villages, on the approval or disapproval of loans and on all other lending and repayment modalities.

- (c) Funds will be provided to ACBA as follows:

- (i) a subsidiary loan of USD 2 828 000, carrying an interest rate of 5.99% per annum, or as will be otherwise agreed between the Government, IFAD and ACBA, over the outstanding balance, with a grace period of 10 years and a maturity of 30 years; and



- (ii) a grant of USD 675 000 to cover the costs of the regional unions and institutional support therefor.

(d) The ACBA subsidiary loan and grant will be provided to help ACBA expand its operations according to the present policies and modalities, which are in line with IFAD's strategy of support to smallholders. However, if major structural changes in this environment occur, the loan and grant will be withdrawn. For this purpose two events are specified:

- (i) **Policies:** In the case where the present policies of ACBA are modified in a manner which, in the reasonable judgement of IFAD, may lead to a situation where the target group of small individual farmers are no longer the main clients of ACBA, the loan and grant will immediately become repayable in three annual instalments.

- (ii) **Ownership:** In the case where the ownership structure of ACBA is modified and ACBA no longer operates as a cooperative bank or as a shareholder bank in which small farmers hold at least 80% of the capital, the loan and grant will immediately become repayable in full.

(e) Any reasonable amount of savings by ACBA on a particular grant may be used for any of the other grant purposes.

(f) The interest rate on ACBA loans will be the lending rate of ACBA prevailing from time to time. The rates will be reviewed annually with IFAD.

19. **The NGO.** (a) The implementation of the small enterprise development sub-component will be entrusted to an NGO selected by the Government and IFAD. Selection criteria will include: (i) having the status of an NGO and being formally registered; (ii) having a constituency of members; (iii) having by-laws which allow for accountability and transparency; (iv) having established field offices in the project area with competent and well trained staff; (v) having a positive experience in community development and small enterprise development; and (vi) having previous experience in working with IFAD.

(b) The interest rate on small enterprise development loans provided by the NGO selected by IFAD will be reviewed annually with IFAD.

20. **The Aregak Foundation.** The approval procedure for the Aregak Foundation's AWP/B will in no case infringe on the Foundation's autonomy to decide on the location of its new service centres, the selection of villages, the registration of members and guarantee groups, on the approval or disapproval of loans and on all other lending and repayment modalities.

21. **Disbursement conditions.** (a) No withdrawals will be made in respect of expenditures under respective sub-components of the rural finance component until:

- (i) the credit by-laws shall have been approved by IFAD in draft; a copy of the credit by-laws as adopted by ACBA, the NGO and the Aregak Foundation, respectively, substantially in the form so approved and certified as true and complete by the PCC, shall have been delivered to IFAD;
- (ii) with respect to ACBA, the NGO and the Aregak Foundation, the respective subsidiary agreements shall have been approved by IFAD in draft; a copy of such subsidiary agreement, as signed by the Ministry of Finance and Economy, the PCU and ACBA, the NGO and the Aregak Foundation, respectively, substantially in the



form so approved and certified as true and complete by the PCC, shall have been delivered to IFAD; the signature and performance thereof by the Ministry of Finance and Economy, the PCU and ACBA, the NGO and the Aregak Foundation, respectively, have been duly authorized or ratified by all necessary corporate, administrative and governmental action; and all conditions precedent to the effectiveness thereof shall have been fulfilled;

- (iii) for the agricultural lending sub-component, ACBA shall have opened a subsidiary loan account and a subsidiary grant account satisfactory to IFAD; and
- (iv) for the small enterprise development sub-component, the NGO shall have established a foundation for the management of the revolving fund and the Board of Trustees of the foundation membership shall have been approved by IFAD.

(b) From PY3 onwards, except as IFAD otherwise agrees, no withdrawals will be made in respect of expenditures for the agricultural credit sub-component of the rural finance component if the proportion of women borrowing from ACBA is not at least 30% of the total number of borrowers.

22. **Effectiveness conditions.** This agreement will become effective subject to the fulfilment of the following conditions precedent:

- (a) a project coordinator shall have been duly appointed by the Ministry of Agriculture and approved by IFAD;
- (b) the PCC shall have been duly established;
- (c) the PCU shall have been duly established and made administratively and financially autonomous;
- (d) the Government shall have opened the project account;
- (e) the water management agency shall have been duly established as a governmental agency;
- (f) the Government shall have deposited the counterpart funds into the project account;
- (g) this agreement shall have been duly signed, and the signature and performance thereof by the Government shall have been duly authorized and ratified by all necessary administrative and governmental action; and
- (h) a favourable legal opinion, issued by the Ministry of Justice or other legal counsel approved by IFAD, in form and substance acceptable to IFAD, shall have been delivered by the Government to IFAD.

APPENDIX I

COUNTRY DATA

ARMENIA

Land area (km² thousand) 1997 1/	28	GNP per capita (USD) 1998 2/	460
Total population (million) 1998 1/	3.8	Average annual real rate of growth of GNP per capita, 1990-98 2/	-4.7
Population density (people per km²) 1998 1/	135	Average annual rate of inflation, 1990-98 2/	349.1
Local currency	Armenian Dram (AMD)	Exchange rate: USD 1 =	AMD 530
Social Indicators		Economic Indicators	
Population (average annual population growth rate), 1980-98 1/	1.1	GDP (USD million), 1998 1/	1 900
Crude birth rate (per thousand people), 1998 1/	11	Average annual rate of growth of GDP 1/	
Crude death rate (per thousand people), 1998 1/	6	1980-90	n.a.
Infant mortality rate (per thousand live births), 1998 1/	15	1990-98	-4.7
Life expectancy at birth (years), 1998 1/	74	Sectoral distribution of GDP, 1998 1/	
Number of rural poor (million) (approximate) 1/	n.a.	% agriculture	32.9
Poor as % of total rural population 1/	n.a.	% industry	31.8
Total labour force (million), 1998 1/	1.9	% manufacturing	22.4
Female labour force as % of total, 1998 1/	48.4	% services	35.3
Education		Consumption, 1998 1/	
Primary school gross enrolment (% of relevant age group), 1997 1/	87.4	General government consumption (as % of GDP)	11.2
Adult literacy rate (% of total population), 1997 3/	98.8	Private consumption (as % of GDP)	103
Nutrition		Gross domestic savings (as % of GDP)	
Daily calorie supply per capita, 1996 3/	2 147		-14.2
Prevalence of child malnutrition (height for age % of children under 5), 1992-98 1/	12.3	Balance of Payments (USD million)	
Prevalence of child malnutrition (weight for age % of children under 5), 1992-98 1/	3.3	Merchandise exports, 1998 1/	229
Health		Merchandise imports, 1998 1/	806
Health expenditure, total (as % of GDP), 1990-98 1/	7.8	Balance of merchandise trade	- 577
Physicians (per thousand people), 1990-98 1/	3	Current account balances (USD million)	
Percentage population without access to safe water, 1990-97 3/	n.a.	before official transfers, 1998 1/	- 568
Percentage population without access to health services, 1981-92 3/	n.a.	after official transfers, 1998 1/	- 390
Percentage population without access to sanitation, 1990-97 3/	n.a.	Foreign direct investment, 1998 1/	232
Agriculture and Food		Government Finance	
Food imports as percentage of total merchandise imports, 1998 1/	31.2	Overall budget surplus/deficit (including grants) (as % of GDP), 1997 1/	n.a.
Fertilizer consumption (hundreds of grams per ha of arable land), 1995-97 1/	155	Total expenditure (% of GDP), 1997 1/	n.a.
Food production index (1989-91=100), 1996-98 1/	76.8	Total external debt (USD million), 1998 1/	800
Land Use		Present value of debt (as % of GNP), 1998 1/	29.8
Arable land as % of land area, 1997 1/	17.5	Total debt service (% of exports of goods and services), 1998 1/	8.9
Forest area (km ² thousand), 1995 1/	3.3	Nominal lending rate of banks, 1998 1/	48.5
Forest area as % of total land area, 1995 1/	11.8	Nominal deposit rate of banks, 1998 1/	24.9
Irrigated land as % of cropland, 1995-97 1/	51.5		

n.a. not available.

Figures in italics indicate data that are for years or periods other than those specified.

1/ World Bank, *World Development Report*, 2000

2/ World Bank, *Atlas*, 2000

3/ United Nations Development Programme (UNDP), *Human Development Report*, 1999



PREVIOUS IFAD LOANS TO THE REPUBLIC OF ARMENIA

Project No.	Project Name	Lending Terms	IFAD Approved Financing (USD '000)	IFAD Current Financing (USD '000)	Board Approval	Loan Effectiveness	Original Closing	Current Closing	Cooperating Institution	Project Status
380-AM	Irrigation Rehabilitation Project	HC	8 000	8 000	12 Apr 95	06 Oct 95	30 Jun 00	30 Jun 00	World Bank	Closed
455-AM	North-West Agricultural Services Project	HC	15 166	15 166	04 Dec 97	14 Mar 98	31 Dec 02	31 Dec 02	IFAD	Ongoing

LOGICAL FRAMEWORK

Narrative Summary	Verifiable Indicators	Means of Verification	Assumptions/Risks
Goal			
Living conditions of the poor, rural population improved in Lori, Shirak, Aragatzotn, Syunik, Vayats Dzor, Tavush, Gegharkunik and Kotayk <i>marzes</i> .	<ul style="list-style-type: none"> • Rate of outmigration decreased • Number of very poor rural households decreased by 50% • Reduction in rate of child malnutrition. 	Baseline survey, annual updates Evaluation studies National Poverty Profile studies National and <i>marz</i> statistical reports	
Objective			
Incomes increased and food security improved for the targeted poor rural households through improved agricultural productivity and development of small rural and microenterprises.	<ul style="list-style-type: none"> • Reduction in % of household income spent on food (from 73% for very poor) • Reduction in rural unemployment rate from 63% • Cropping patterns changed in favour of fodder and perennial crops 	Baseline survey, annual updates Evaluation studies National Poverty Profile studies National and <i>marz</i> statistical reports Ministry of Agriculture reports.	No abrupt changes in the macroeconomic policy environment. Increased income used to reduce effects of poverty at the household level. Output prices remain sufficiently attractive
Outputs			
1. Quality, locally produced seed made available to farmers	<ul style="list-style-type: none"> • Locally produced certified seed as % of total seed purchases 	Producer records Beneficiary monitoring PCU reports	No abnormal meteorological occurrences.
2. Rehabilitated tertiary and secondary infrastructure managed and maintained by WUCCs and FWUCCs.	<ul style="list-style-type: none"> • % of O&M met by WUCCs and FWUCCs • Payment of water delivery charges • Amount, proportion of requirement, and timeliness of water delivery to plots • Crop yields/hectare improved 	WUCC records FWUCC records Beneficiary monitoring PCU reports	Reorganisation of OME completed. No government interference in the collection or utilisation of water charges. Legal status of WUCCs/FWUCCs clarified.
3. Producer credit made available to farmers through ACBA village associations in all <i>marzes</i>	<ul style="list-style-type: none"> • Number and value of loans made, disaggregated by gender • Arrears remain under 5% 	ACBA records PCU reports	
4. Small enterprises established in rural areas, providing employment opportunities and services to rural communities.	<ul style="list-style-type: none"> • Key financial indicators: net capital, current ratios • Number of enterprises operating at end of project • Number of employment days created, by enterprise 	Financial reports of enterprises NGO reports PCU reports	Smallholders sell production to enterprises for processing.
5. Microfinance provided to women in support of income-generating activities by fiscally managed and sustainable local entity (Aregak).	<ul style="list-style-type: none"> • Costs of programme recovered from loan repayments • Revolving fund established • % of groups/members dropping out of the programme 	Aregak records PCU reports	
6. Infrastructure in poor villages is upgraded and maintained by the communities.	<ul style="list-style-type: none"> • 55 sites rehabilitated by end-PY4 with an average cost of USD 35 000 	ASIF records Beneficiary monitoring	No external influence on selection of villages or village projects.
7. Project interventions effectively managed by PCU.	<ul style="list-style-type: none"> • Activities completed compared to APW&B • Disbursement rate in line with appraisal targets • Timely progress reporting 	Beneficiary interviews Contracts APW&B, Progress reports, IFAD	Government does not micro-manage PCU activities.

COSTS AND FINANCING

Expenditure Accounts by Components - Base Costs (USD '000)	Agricultural Development		Irrigation Development		Rural Finance			Community Infrastructure	Project Coordination	Total	Physical Contingencies		
	Development of Private Farmer Seed Production	Support Services	Irrigation Infrastructure Rehabilitation	Water Management	Agricultural Credit	Microfinance	Small Enterprise Development				%	Amount	
I. Investment Costs													
A. Civil Works													
1. Survey, design & supervision	-	-	110.0	-	-	-	-	-	-	110.0	10.0	11.0	
2. Construction works	-	-	6 695.0	-	270.0	-	10.0	2 230.2	-	9 205.2	7.3	670.5	
Subtotal Civil Works	-	-	6 805.0	-	270.0	-	10.0	2 230.2	-	9 315.2	7.3	681.5	
B. Vehicles, Equipment & Goods													
1. Vehicles	-	-	-	66.0	-	-	-	-	9.6	75.6	5.0	3.8	
2. Equipment & goods	400.0	84.0	-	46.3	360.0	12.5	15.0	-	10.0	927.8	0.7	6.3	
Subtotal Vehicles, Equipment & Goods	400.0	84.0	-	112.3	360.0	12.5	15.0	-	19.6	1 003.4	1.0	10.1	
C. Technical Assistance & Studies													
1. International TA	75.0	30.0	-	-	-	109.3	-	-	100.0	314.3	-	-	
2. National TA	-	-	-	495.0	-	-	38.9	-	20.0	553.9	-	-	
3. Studies	-	60.0	-	-	-	-	-	-	114.0	174.0	-	-	
Subtotal Technical Assistance & Studies	75.0	90.0	-	495.0	-	109.3	38.9	-	234.0	1 042.2	-	-	
D. Training													
1. Farmer training	-	32.0	-	165.8	-	-	-	-	-	197.8	-	-	
2. Staff training	-	12.0	-	31.2	-	6.0	17.0	-	-	66.2	-	-	
Subtotal Training	-	44.0	-	197.0	-	6.0	17.0	-	-	264.0	-	-	
E. Credit	-	-	-	-	2 978.9	1 000.0	676.3	-	-	4 655.1	-	-	
Total Investment Costs	475.0	218.0	6 805.0	804.3	3 608.9	1 127.8	757.1	2 230.2	253.6	16 280.0	4.2	691.6	
II. Recurrent Costs													
A. Salaries and allowances													
1. Salaries and Allowances	-	-	82.9	966.2	-	157.3	-	-	507.0	1 713.4	-	-	
B. Operation and Maintenance													
1. Vehicle O&M	-	-	-	156.0	-	45.6	-	-	78.0	279.6	5.0	14.0	
C. Other Operating Costs													
	-	-	46.8	134.8	-	77.3	490.2	-	142.0	891.1	0.6	5.6	
Total Recurrent Costs	-	-	129.7	1 257.0	-	280.2	490.2	-	727.1	2 884.1	0.7	19.6	
Total BASELINE COSTS	475.0	218.0	6 934.7	2 061.3	3 608.9	1 408.0	1 247.3	2 230.2	980.7	19 164.1	3.7	711.2	
Physical contingencies	-	3.0	681.5	17.8	-	2.3	1.8	-	4.9	711.2	-	-	
Price contingencies	21.4	4.3	354.1	99.0	-	7.4	3.3	-	23.5	513.0	6.4	32.9	
Total PROJECT COSTS	496.4	225.3	7 970.3	2 178.1	3 608.9	1 417.7	1 252.4	2 230.2	1 009.0	20 388.3	3.6	744.1	
Taxes	70.2	15.1	1 237.2	357.5	105.2	-	-	284.1	180.8	2 250.1	5.1	114.4	
Foreign exchange	412.3	75.5	2 137.0	384.9	369.0	148.9	13.4	-	177.5	3 718.5	5.7	210.6	





Agricultural Services Project																			
Disbursement Accounts																			
by Financiers (USD '000)	IFAD		ASIF		Aregak		NGO		Beneficiaries		Government				Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	(Budget)	(Taxes)	Amount	%	Amount	%			
A. Civil and Earth Works																			
Civil works	6 795.4	71.1	1 048.7	11.0	-	-	-	-	-	-	170.9	1.8	1 536.3	16.1	9 551.3	46.8	2 211.4	5 803.6	1 536.3
Earth works	-	-	-	-	-	-	-	-	793.2	100.0	-	-	-	-	793.2	3.9	-	793.2	-
Subtotal Civil and Earth Works	6 795.4	65.7	1 048.7	10.1	-	-	-	-	793.2	7.7	170.9	1.7	1 536.3	14.9	10 344.5	50.7	2 211.4	6 596.8	1 536.3
B. Equipment and goods	792.2	82.5	-	-	12.7	1.3	-	-	-	-	-	-	155.5	16.2	960.3	4.7	726.7	78.1	155.5
C. Vehicles	67.2	83.3	-	-	-	-	-	-	-	-	-	-	13.5	16.7	80.6	0.4	64.5	2.7	13.5
D. Technical assistance and studies	966.3	89.6	-	-	109.3	10.1	-	-	-	-	-	-	2.9	0.3	1 078.5	5.3	363.4	712.2	2.9
E. Training	269.0	97.8	-	-	6.2	2.2	-	-	-	-	-	-	-	-	275.2	1.3	117.6	157.6	-
F. Credit	4 655.1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	4 655.1	22.8	-	4 655.1	-
G. Salaries and allowances	1 159.0	65.4	-	-	161.3	9.1	-	-	-	-	-	-	450.7	25.5	1 771.0	8.7	-	1 320.3	450.7
H. Other operating costs	808.9	66.1	-	-	128.3	10.5	194.7	15.9	-	-	-	-	91.1	7.5	1 223.0	6.0	234.9	897.0	91.1
Total	15 513.1	76.1	1 048.7	5.1	417.7	2.0	194.7	1.0	793.2	3.9	170.9	0.8	2 250.1	11.0	20 388.3	100.0	3 718.5	14 419.7	2 250.1



ORGANIZATION AND MANAGEMENT

A. Introduction

1. The Minister of Agriculture, will have overall responsibility for project implementation. Project activities will be implemented by implementing agencies (IAs), coordinated by a project coordination committee (PCU), under the guidance of a project coordination committee (PCC). The roles and responsibilities of IAs will be based on implementing agreements and/or subsidiary agreements signed with Government and acceptable to IFAD.

B. Project Management and Execution

Project Coordination Committee

2. Project coordination will be guided by a PCC chaired by the Minister of Agriculture, who will *ex officio* have overriding authority in matters of project policy. Membership of the PCC will include the *Marzpets* (Governors) of Shirak, Lory, Tavush, Aragatzotn, Kotayk, Gegharkunik, Vayats Dzor and Syunik, the General Manager of ACBA; the Director of the WMA; the Director of Aregak Foundation, the Director of an NGO and the Director of ASIF.

3. The PCC will meet bi-annually and will have the right to co-opt other members and to form executive subcommittees when necessary. It will ensure that project activities are not at variance with government policies and that implementing agencies are fulfilling the terms and conditions of the project loan agreement. The PCC will review reports, approve the project's consolidated AWP&B, ensure compliance with Ministry of Finance (MOF) requirements for the submission of reimbursement claims, accounts and financial reports, and ensure cooperation with government agencies and other donors in matters affecting the implementation of the project. It will also provide a forum for the resolution of any inter-agency, bureaucratic or financial impasse and generally oversee the systematic implementation of the project.

Project Coordination Unit

4. An independent PCU will be established as an administrative entity of the Ministry of Agriculture (MOA), responsible to the Minister and reporting to the PCC, through a ministerial decree. It will have a legal status and administrative and financial autonomy within the structure of the Ministry. The PCU will be led by a project coordinator appointed by the Minister, and acceptable to IFAD. The PCU will be responsible for programming, procurement for its own requirements, financial management, accounting and monitoring and evaluation (M&E) of the implementation and impact of the project. The Project Monitoring Units, North and South, will implement an M&E programme under the supervision of the M&E specialist in the PCU.

5. On the basis of the modalities and planned budgets in the appraisal report, the loan agreement and the subsidiary and implementation agreements, each implementing agency, taking account of the results of the previous year, will propose in October of each year a work programme and a budget to the PCU. In consultation with each implementing agency, the PCU will consolidate such programmes into the project's AWP&B for the next implementation year. The AWP&B will be sent to the cooperating institution and IFAD for comment, after which the PCC will review them and the Minister of Agriculture will approve them in December of each year.



Implementation

6. Actual project implementation is the responsibility of IAs, which sign implementation agreements with the PCU, acceptable to IFAD. Such agreements, the format of which was developed under NWASP, define the framework and the modalities for implementation. IAs propose AWP&B to the PCU and carry out the approved programmes and budgets. In the case of ACBA, Aregak Foundation and the Aniv Foundation, subsidiary agreements, acceptable to IFAD, will be signed between the Government and the respective organizations.

7. **Agricultural development.** The support to the seed sector subcomponent will be implemented by an organization selected by IFAD. Selection criteria will include: (i) being involved in implementing a substantial programme in support of private seed production on the basis of its own or external funds; (ii) having had previous experience in supporting the seed sector; (iii) having appropriate technical and administrative capacity to implement the overall programme and incremental project support; and (iv) having had previous experience of working with IFAD.

8. **Seed testing and certification.** Activities will be under the overall responsibility of the Chief of the Seed Service in the Crops Department of MOA, with specific responsibility assigned to the Chief of the Central Seed Testing Laboratory in Yerevan. The project approach is to provide assistance to the Seed Certification and Testing Service to streamline its operations and develop an appropriate schedule of charges for its services payable by the seed producers.

9. **Variety testing.** Support for the testing and evaluation of varieties by the Variety Testing Unit (Selection Achievements Test and Protection Centre) will be provided by the project. The implementation of the activity will be under the overall responsibility of the Chief of the Seed Service in the Crops Department of MOA, with specific responsibility assigned to the Chief of the Variety Testing Unit in Yerevan.

10. **Mini-grants for applied research and demonstrations.** This activity will be coordinated by the Foundation for Agricultural and Agribusiness (FARA). Following a request for proposals, small applied research grants and demonstration mini-grants will be made available on a competitive basis to research and extension institutions for work that will support and provide information for seed producers and seed users. Each research topic may be funded up to a limit of USD 4 000, and will be submitted to the FARA Board for evaluation and approval in accordance with current procedures.

11. **Irrigation development.** Support for the development of WUCCs as well as the design of irrigation rehabilitation and/or construction works will be implemented by the Water Management Agency (WMA). The WMA, as a government agency, will be established by Ministerial decree on the basis of the Water Management Section (WMS) of the World Bank's Irrigation Rehabilitation Project. Component activities will be implemented through a contractual arrangement between the project and WMA, which will operate through its headquarters in Yerevan. The field offices will work directly with, and report to, headquarters on all technical, financial and administrative matters. A Civil Works Implementation Agency (CWIA) will be appointed to carry out the supervision and contracting of private contractors who will then carry out the civil works in each irrigation system. M&E of WUCCs, their federations and unions as well as of component activities will be carried out by WMA. The AWP&B will be prepared by WMA and its field offices in conformity with government financial regulations and contractual arrangements with the project.

12. **Agricultural credit.** The General Manager, ACBA, will be responsible for the implementation of the agricultural lending subcomponent. Annually, and with the help of the branch managers and the head of the Credit Department, he will draw up a detailed work programme and budget, on the basis of the estimates included in the appraisal report and of the previous year's experience. He will submit these to the PCU for formal approval. The PCU will provide an advance from the Special



APPENDIX V

Account equivalent to the estimated demand for the autumn lending programme in 2001. Subsequent disbursements to ACBA from the Special Account will be based on the number of ACBA loans effectively disbursed.

13. The approval procedure for the AWP&B will in no case infringe on ACBA's autonomy to decide on the location of its new branch offices, the selection of villages, the approval or disapproval of loans and all other lending and repayment modalities. An assurance to that effect will be obtained during negotiations. Implementation of the lending programme in each *marz* will be the responsibility of the branch manager, under the supervision of the general manager and the head of the Credit Department.

14. **Subsidiary financing agreement.** The IFAD resources will be made available by MOF to ACBA under terms and modalities specified in a subsidiary financing agreement, acceptable to IFAD. The execution of an acceptable subsidiary financing agreement will be a condition for disbursement.

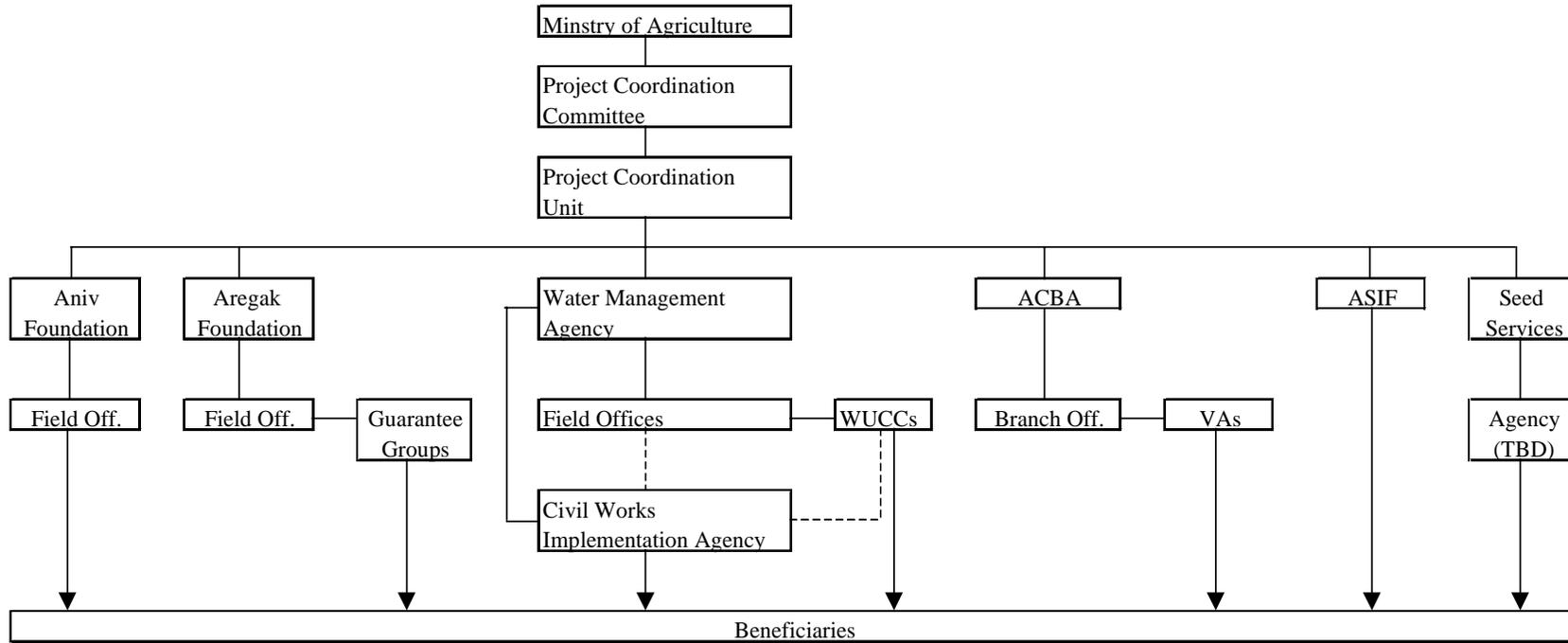
15. **Small enterprise development.** The subcomponent will be implemented by Aniv Foundation and an NGO, which will sign subsidiary agreements with Government, acceptable to IFAD. The NGO will establish the Aniv Foundation for the management of a revolving fund, out of which loans will be provided to small enterprises. To enhance accountability, the Board of the Foundation (with membership acceptable to IFAD) will report annually to the NGO's General Assembly. Following information campaigns in eligible villages, applications will be screened on the basis of a summary financial analysis and cash flow projection. All proposals will be reviewed by the NGO's head office, and a detailed business plan will be developed for accepted applications. Full proposals will then be submitted to the Board of the Aniv Foundation for approval. The latter will disburse funds to the borrower, and will train the borrowers and monitor the responsibility of field office staff.

16. **Microfinance.** This subcomponent will be implemented by Aregak Foundation, established by the United Methodist Committee on Relief (UMCOR), which will sign a subsidiary agreement with Government, acceptable to IFAD. Present Aregak Foundation lending modalities will be applied – group solidarity lending, with a maximum first loan size of USD 300 and a flat interest rate of 1.5% per month over the principal. The Foundation will establish a service centre in Gegharkunik and Tavush *marzes* from its own resources. A satellite office will also be set up to cover the northern parts of Lory *marz*. Pending successful project implementation, the Foundation intends to expand the programme.

17. The Aregak Foundation's approach is based on the creation of collective responsibility guarantee groups, which are responsible for the selection of their members and a group representative. The representative sits on the Village Guarantee Group Coordination Unit (GGCU), which is the primary contact point between Aregak Foundation and the villages.

18. **Community infrastructure.** Implementation will be the responsibility of the Armenian Social Investment Fund (ASIF), which will sign an implementation agreement with the PCU, acceptable to IFAD. Projects will be financed in Shirak, Vayats Dzor and Syunik *marzes* in Pys 1-2, and in Tavush in Pys 2-3. Implementation modalities will be on the basis of the established ASIF approach. Village selection will be undertaken by ASIF together with *Marzpets*, but at the village level, and identification of the priority community projects will be based on participatory methods (including participatory rural appraisal). Particular attention will be given to addressing women's needs. The community will contribute 10% of total costs, either in cash or in kind. Poor communities may contribute only 5%, as per current ASIF policy. Implementation responsibility will be shared by the community and ASIF.

Agricultural Services Project - Project Organogram



ECONOMIC AND FINANCIAL ANALYSIS

1. The direct beneficiaries of the project will be rural households in the project area, farming on small-scale irrigation schemes eligible for rehabilitation and in areas where credit, community infrastructure rehabilitation and support services will be made available. The number of beneficiaries is estimated to include approximately 33 000 farm families. The impact on agricultural production and input usage has been estimated by means of 18 crop production models and two livestock activity models, designed to replicate production patterns in the pre-mountain and mountain zones (both irrigated and non-irrigated) characterizing the project area.

Crop and Livestock Activities

2. The assumptions for crop yields for the farm types analysed are given in Table 1 below. Yields are expected to increase significantly as a result of greater application of irrigation water and agricultural inputs, in particular fertilizer and high-quality seed. The with-project yields will increase gradually over the project period. The without-project yields are assumed to remain constant at their present level in view of farmers' lack of access to credit for seasonal inputs and financial constraints that make it difficult for Government to otherwise support development in poor rural areas.

Table 1: Yield Assumptions - Crop Models (t/ha)

Main Production	Without	With	Increments ¹	% of change
Pre-mountain zones				
<i>Rainfed farms</i>				
Wheat	1.0	1.5	0.5	50
Barley	0.9	1.4	0.5	56
Alfalfa	1.6	2.5	0.9	56
<i>Irrigated farms</i>				
Wheat	2.0	2.5	0.5	25
Potato	10.0	15.0	5.0	50
Alfalfa	4.5	7.0	3.5	55
Vegetables	8.0	12.0	4.0	50
Grapes	3.3	5.0	1.7	33
Fruit	3.9	6.0	2.1	54
Mountain zones				
<i>Rainfed farms</i>				
Wheat	1.4	1.9	0.5	36
Barley	1.2	1.8	0.4	33
Potato	8.0	12.0	4.0	50
Alfalfa	1.9	3.0	1.1	58
<i>Irrigated farms</i>				
Wheat	2.2	3.2	1.0	45
Potato	12.0	16.0	4.0	33
Alfalfa	5.5	9.0	3.5	64
Vegetables	10.0	15.0	5.0	50
Fruit	4.0	6.5	2.5	63

3. Livestock activity in the project areas is currently low, owing to a number of factors including limited access to quality animal feed, high mortality and poor reproduction performance. Two livestock models were developed: one for cows and the other for sheep. It has been assumed that the

¹ Full development.

APPENDIX VI

increased feed available due to the project's agronomic interventions and access to credit will enable farmers to increase livestock production. In the without-project situation, lack of cash forces households to hold the minimum subsistence number of animals. An average number of animals per household, under the specific agronomic conditions, were estimated from data obtained from field visits in the project area. This number was incorporated at the farm level, with livestock production improvements introduced in PY 2.

Financial Returns

4. Table 2 compares the per hectare income in the without- and with-project scenario for each crop model. Incremental increases are expected to range from AMD 7 470 for rainfed alfalfa in pre-mountain zones to AMD 323 800 for irrigated potato in mountain zones. The largest gains will be achieved for the crops that benefit from improved irrigation. An incremental benefit/cost ratio was also calculated for each crop, which clearly illustrates the attractiveness of the project interventions.

Table 2: Financial Returns: Crop Production Models (ARD/ha)

Model/Crop	Without	With	Incremental	Incremental Return to Labour-Day	Incremental Benefit/Cost Ratio
Zone A					
<i>Rainfed farms</i>					
Wheat	18 950	46 480	27 530	13 760	2.43
Barley	12 770	34 190	21 420	10 710	2.15
Alfalfa	25 280	32 750	7 470	4 980	1.38
<i>Irrigated farms</i>					
Wheat	81 900	107 930	26 030	13 010	2.18
Potato	137 600	461 400	323 800	10 790	5.25
Alfalfa	58 500	82 700	24 200	12 100	1.48
Vegetables	341 600	511 200	169 600	8 480	3.41
Grapes	312 640	460 000	147 360	3 680	3.60
Fruit	226 120	348 400	122 280	6 110	3.35
Zone B					
<i>Rainfed farms</i>					
Wheat	50 140	80 570	30 430	15 210	2.73
Barley	28 860	56 630	27 770	11 110	2.37
Potato	1 700	258 100	256 400	25 640	5.03
Alfalfa	30 370	43 600	13 230	6 620	1.67
<i>Irrigated Farms</i>					
Wheat	98 950	169 420	70 470	23 490	3.76
Potatoes	285 300	534 900	249 600	12 480	4.55
Alfalfa	92 100	157 230	65 130	16 280	2.63
Vegetables	464 350	709 640	245 290	8 180	5.48
Fruit	230 250	385 300	155 050	5 170	3.96

5. Table 3 compares the livestock-derived income from increased milk production and liveweight gains, under the without- and with-project (in PY 3) scenario. Increases are expected to range from ARD 1 660 for sheep to ARD 46 440 for cattle. An incremental benefit/cost ratio was also calculated for each model, which shows the attractiveness of the project interventions.

**Table 3: Financial Returns: Livestock Models (ARD/head)**

Model/Crop	Without	With	Incremental	Incremental Return to Family Labour-Day	Incremental Benefit/Cost Ratio
Cattle	57 730	104 170	46 440	11 610	1.92
Sheep	5 860	7 520	1 660	3 310	1.40

Enterprise Models

6. Two enterprise models (Table 4) are included for illustrative purposes and represent activities with small and medium credit requirements. As shown, the potential returns on investment should provide sufficient incentives for entrepreneurs to borrow.

Table 4: Financial Analysis: Milk Processing and Solar Dryer Units

Item	Milk Processing	Solar Dryer
Internal Rates of Return (IRR) %		
IRR – before financing costs	55	107
IRR – after financing costs	NA	NA
Switching Values (after financing costs)		
- revenues	12	43
- investments costs	891	570
- operating costs	15	101
With-Project (PY 3)²		
- financing costs as % value of production	7	44

7. Significant financial benefits are expected to accrue to individuals taking up project credit to invest in productive activities. Financial analysis shows that households will be able to service the loan. The positive cash flow after financing in PY 1 is an important characteristic of the models, as farmers or small entrepreneurs would not normally be willing to borrow without an immediate financial benefit. The financial attractiveness of the models relates to positive net present values and benefit cost ratios, calculated under the without/after financing scenarios. Since the majority of models show that incremental benefits before and after financing would be positive beginning in the first year, no IRR could be calculated. Sensitivity analysis shows that the models will remain attractive even if costs increase or benefits decrease.

Economic Analysis

8. The analysis attempts to identify quantifiable benefits and costs that relate directly to the activities undertaken in the components, or that can be attributed as a consequence of the project's implementation. The results of the indicative farm models described above in the financial analysis provide the basis for the derivation of the benefits stream.

9. The analysis does not include costs or benefits associated with the microfinance or small enterprise development interventions, as it is impossible at this time to quantify either the number or the types of activities that will be adopted. Similarly, costs and benefits under the community infrastructure component have also not been included as it is anticipated that most of the benefits under this component will be quantifiable.

² When all the benefits from the projects have been realized and investment loan repayments (principal & interest) are in their final year.



10. Since agricultural and other economic reforms are well under way in Armenia and all major distortions between domestic and border prices have been removed, it has not been considered necessary to make an adjustment for economic prices, except for water, which is 50% subsidized by the Government. The economic value of water cost is estimated at ARD 12.7 per cubic meter³. All values are given in constant 2000 prices.

11. **Derivation of incremental benefit stream.** The incremental benefit stream comprises the economic net value of production from the farms expected to participate in both the credit and/or irrigation infrastructure components of the projects. It is assumed that all of these farms will achieve the full development output levels. For the economic analysis, costs exclude any financial charges, e.g. interest paid on seasonal credit, but include the opportunity cost of labour.

12. The phasing of households receiving credit is reproduced below in Table 5. The aggregated incremental benefits and costs arising from the changes in the farming systems and costs and benefits are shown in Table 6.

Table 5: Phasing of Activities

	PY 1	PY 2	PY 3	PY 4	Total
Rainfed (pre-mountain)	225	303	377	407	1 311
Rainfed (mountain)	227	301	376	407	1 311
Irrigated (pre-mountain)	907	1 210	1 512	1 634	5 263
Irrigated (mountain)	605	806	1 009	1 089	3 509
Total	1 965	2 619	3 274	3 536	11 394

13. **Derivation of incremental cost stream.** The incremental costs of the farm models in economic terms have been calculated by the removal of price contingencies and taxes. No residual values on capital investment items have been assumed. Recurrent costs beyond PY 4 have been valued at the annual O&M costs of the rehabilitated irrigation schemes. For the economic analysis, family labour was valued at ARD 1 000, a figure representative of the daily agricultural wage. This wage assumes that other opportunities for non-farm income will develop over the course of the 20-year period

14. **Project costs.** In addition to the costs of individual household production, the analysis includes the project costs for support to the seed sector, support for the establishment of credit institutions and village associations (excluding the credit line, which is already accounted for in the analysis), irrigation rehabilitation, water management and the costs for institutional support by PCU.

15. **Economic rate of return.** The economic rate of return (ERR) is estimated at 25%. This rate of return reflects the already considerable costs in existing irrigation infrastructure and the fact that the use of agriculture inputs is low. Substantial increases in yields are expected to be realised from the improved irrigation system, increases application of fertilizer and use of better-quality seeds.

16. **Sensitivity analysis.** The ERR has been tested for sensitivity to changes in the level of the cost and benefit streams and to the timing of benefits. A summary of the findings is shown in Table 6.

³ Irrigation Development Project, World Bank, 2000.

**Table 6: Sensitivity of Returns with Benefits Lagged One Year**

Change in project Costs	Change in Incremental project Benefits				
	-20%	-10%	0%	10%	20%
-20%	16.5%	20.9%	24.8%	28.4%	31.8%
-10%	14.3%	18.4%	22.1%	25.5%	28.7%
0%	12.3%	16.3%	19.9%	23.1%	26.1%
10%	10.7%	14.5%	17.9%	21.0%	23.9%
20%	9.2%	12.9%	16.2%	19.2%	21.9%

17. **Incremental production.** Annual incremental production of the main project outputs, at full development, is detailed in Table 7. It is expected that a large portion of the output will continue to be consumed by the household. However, since sufficient demand exists in the project area, surpluses (particularly of vegetables, fruit and livestock production) could be marketed through existing channels.

Table 7: Incremental Production of Selected Commodities

Commodity	Unit	Existing	PY 6	Incremental	% Increase
Calf (liveweight)	kg	539 704	833 800	294 096	54%
Milk	litre	5 722 089	9 808 798	4 086 709	71%
Lamb (liveweight)	kg	525 700	785 921	260 221	50%
Wheat	kg	12 256 739	16 910 219	4 653 480	38%
Barley	kg	991 872	1 676 088	684 216	69%
Alfalfa hay	kg	10 462 712	19 394 736	8 932 024	85%
Potato	kg	11 892 200	16 924 880	5 032 680	42%
Vegetables	kg	2 007 044	7 526 415	5 519 371	275%
Grapes	kg	4 515 654	8 552 375	4 036 721	89%
Fruit	kg	3 158 850	8 552 797	5 393 947	171%