

PDF "Block B" Proposal for the Global Environment Facility

Country: Republic of Armenia
Focal Area: Biodiversity
Operational Program: Mountain Ecosystems
Project Title: *In-situ* conservation and sustainable use of agrobiodiversity in Armenia
Funding Requested: \$97,100
In-kind Contribution: \$10,000 Government of Armenia
Requesting Agency: UNDP
Executing Agency: Ministry of Environment
Eligibility: Ratified CBD in February 1994
GEF Focal Point: Ministry of Environment
Block A Grant: None requested
Project Duration: 8 months
Starting Date: May 1998
Estimated size of project: US\$ 2- 2.5 million (incl. \$500,000-750,000 co-funding)

Summary Project Objectives and Description

Objective:

The objective of the full project is to develop an integrated approach to *in-situ* conservation of plant agrobiodiversity in Armenia.

Description:

The full project will combine *in-situ* conservation of crop wild relatives in protected areas with the strengthening of conservation within traditional agricultural systems through farmer extension work on landrace management. The approach to be developed will remove barriers that are preventing the conservation of biodiversity important to agriculture. The approach of the full project is characterised by the following three components:

1. Component 1: the conservation of crop wild relatives and wild food plants in protected areas;
Related Barriers: lack of staff trained in agrobiodiversity management methodologies and; and lack of reliable funding mechanism for protected area management.
Several of Armenia's existing protected areas hold important plant genetic resources important for food and agriculture, including endemic and threatened wild crop relatives and wild plants. Yet, these protected areas are not currently being managed adequately. In fact, nearly all of Armenia's protected areas have become, or are in danger of becoming "paper parks" and are in need of human and institutional strengthening.

Up to four of these priority, agrobiodiversity-rich reserves and protected areas will be strengthened through the development of necessary human and institutional capacities to promote sustainable management regimes for agrobiodiversity conservation. This will

include training , know-how transfer, demonstration models and community participation in management plan development and implementation.

2. Component 2: the conservation and management of landraces or traditional crop varieties on-farm, in home gardens and also in the buffer zones of protected areas;
Related Barriers: lack of access to information on viable farming practices and technologies that can improve conservation of agrobiodiversity, and lack of experience in applying those techniques.

In Armenia, newly privatised farms mean new or inexperienced farmers who lack traditional knowledge and experience with its application. This “knowledge gap” is a barrier to the *in-situ* conservation and sustainable use of Armenia’s land-races and other agrobiodiversity. To revitalise on-farm conservation in Armenia, traditional knowledge will be strengthened through outreach extension programmes in agricultural areas near priority protected areas. The project will explore linkages between farmers, protected areas and the free market. The project will develop information, advisory and extension services that emphasise viable farming practices that help to conserve agrobiodiversity in subsistence and market economies. The extension programs will provide the “vehicle” for the development of ongoing partnerships between Armenia’s biodiversity and agriculture experts, protected areas, and the newly privatised farming community. The project will do this in specific agrobiodiversity-rich areas to be determined under this Block B.

3. Component 3: development of a legislative and policy framework to enable Armenia to sustainably conserve and yet equitably utilise agrobiodiversity
Related Barriers: Regulatory and control gaps in the governmental policy framework, and lack of positive incentives for farming systems that enhance agrobiodiversity.

In Armenia the existing legal, policy and regulatory framework does not promote the sustainable conservation and utilisation of agrobiodiversity. The full project will strengthen existing laws, and develop new policies and regulations in order to facilitate *in-situ* conservation of agrobiodiversity and its marketing with due consideration of intellectual property rights. For example, specific incentive measures will be developed to facilitate the private-public partnerships (farmer-science-government) and networks to promote agrobiodiversity.

II. Background:

The situation

In many countries, farmers have practised and continue to practice *de facto* conservation of agrobiodiversity by applying traditional knowledge to the maintenance of traditional landraces. In Armenia, such practice was almost entirely diminished during the Soviet period. *Ex-situ* conservation was emphasised instead. In addition, the social and economic upheaval of 10 years of dramatic, free-market style agricultural and land-use reform and regional conflict have been cause for further marginalization and neglect of Armenia’s agrobiodiversity.

Armenia’s *ex-situ* conservation programmes (botanical gardens and laboratories) can only be supported by the government at the most minimum levels and have weakened to the point where they are largely ineffectual. Consequently, with *ex-situ* conservation programmes barely operational and little in the way of *in-situ* conservation underway, there are no programmes to conserve and utilise Armenia’s globally significant agrobiodiversity. In the resulting

agrobiodiversity conservation “vacuum,” the chance of losing land-races and their wild relatives in Armenia are very great. Given the realistic resource limitations of Armenia’s government, sustainable *in-situ* conservation is Armenia’s best hope of conserving its wild crop relatives and landraces.

Biogeography/Agrobiodiversity

The Republic of Armenia is comprised of diverse natural landscapes that are the product of a widely varying physical topography and the convergence on Armenian territory of four major phytogeographical regions: the Irano-Turanian, the Caucasian, the Euro-Siberian, and the Mediterranean. This ecological diversity has made Armenia a globally important harbinger of agrobiodiversity. According to the noted Russian agriculture scientist Dr. Vavilov, Armenia falls well within a “centre of diversity” encompassing Turkey, parts of Iran, and the Caucasus¹. As such, Armenia is one of the priority areas for agrobiodiversity in the world and is considered to be part of the center of origin for wild wheat and other cereals.

Of the four known species of wild wheat in the world, three occur in and are endemic to Armenia: *Triticum araraticum*, *T. uruvaratu*, and *T. boeoticum*. Displaying a wide intraspecific polymorphism, *T. boeoticum*, is manifested in approximately 90 varietal forms in Armenia. Armenia’s territory is central to the overall distribution of the genus *Aegilops*, which has played a crucial role in the origin of modern strains of wheat. Among the *Aegilops* to be found in Armenia are: *Aegilops tauschii*, *A. triuncalis*, *A. cylindrica*, *Amblyopyrum muticum*. Recognizing its unique patrimony, Armenia is the only country in the world to legally establish a reserve (Erebouni Reserve) for the sole purpose of *in-situ* conservation of the progenitors of cultivated wheat and other cereals (note: this will be one of the reserves strengthened under the envisioned follow-on full project).

Armenia is a mountainous country. Cultivation is restricted to narrow valleys where vegetables and fruit trees are grown under irrigation. Marginal land is either under some form of protection or is used for grazing. It is on these marginal lands that many other wild relatives of globally important food crops can be found in Armenia. Thirty-two forms of the Persian walnut grow here, as do 17 species of pear (*Pyrus*). Wild apple (*Malus*), forest cherry (*Cerasus*), Turkish filbert (*Corylus colurna*) and others can be found throughout Armenia. The wild apricot (*Armeniaca vulgaris*) is native to Armenia (the latin name is “armenia-ca”). Six species of wild almond are native to Armenia. One species, *Amygdalus fenzliana*, is morphologically more akin to the cultivated almond than any other almond species. It has traditionally been used for the reforestation of drylands.

Laws and Policies

In recent years Armenia has reshaped the country’s property regimes. The legal basis for land reform and privatization of collective and state farms is established by four laws: a) The Law on Peasant and Collective Peasant Enterprises; b) the Land Law; c) the Law on Owners Rights; d) the Law on Enterprises and Enterprise Ownership. These laws provide the legal basis for land privatization and the re-delineation of property rights at the local level.

Two other important laws related to biodiversity were passed in Armenia. The Forestry Law saves the country’s forests as public land to be utilised for various purposes (protection,

¹ Krivchenko, V.I. 1988. “The Role of Vavilov in Creating the National Soviet Program for Plant Genetic Resources,” DIVERSITY Journal, No. 16. Washington, D.C. USA.

recreation; and conservation). The Forestry Law provides the main legal basis for protected area management. The “Law on Protected Natural Areas” establishes specific protected area categories based upon internationally recognised distinctions. Currently, the Ministry of Nature Protection is developing two new laws covering the conservation and sustainable utilization of Armenia’s Fauna and Flora.

Institutional Framework:

The focus for wildland conservation and management in Armenia is the network of protected areas which has been recently re-organised under the new Protected Areas Law and given legal standing in the Forestry Law. These areas occur mainly within the “forestry estate” and their legal protection is ensured. Responsibility for the management of both the forestry estate and the protected areas lies with the Ministry of Nature Protection (MNP). The MNP’s Department of Protected Areas and the Department of Forestry are responsible for managing most of the system of reserves. The Ministry of Nature Protection is responsible for the system of 26 protected areas in Armenia, as well as regulating hunting of wild animals and collecting of wild plants. The protected areas are organised under four management regimes: 1) state reserves; 2) state reservations; 3) national parks; and 4) natural monuments. Note: existing management programmes for these areas will form part of the baseline for calculation of incremental costs.

Agriculture in Armenia has more impact on the country’s biodiversity than any other sector. The Ministry of Agriculture (MoA) is responsible for working with private farmers to facilitate sustainable management of farmland, support ongoing research into new seed development, and for the facilitating the future development of farmer’s cooperatives and associations. The MoA’s Department of Scientific Research and Education is comprised primarily of the Academy of Agricultural Science, which through eight agricultural research institutes and 26 experimental stations, trains students for careers in agriculture. The MoA’s Farming Research Institute is responsible for the country’s seed testing and distribution programmes.

The National Academy of Sciences Institute of Botany and Institute of Zoology also support research and management of the country’s genetic fund. The Botanical Garden/National Herbarium of the Academy possesses a rich seed stock for 1,200 species of flora endemic to Armenia and other research institutes contain valuable collections as well. The MoA’s Cultivated and Wild Plant Genetic Resources Laboratory and is charged with the work of studying cultivated plants and their wild relatives. A recently established agricultural extension service is working with Armenian farmers to improve their seed quality. The Armenian Farmers Association helps farmers in all aspects of agriculture production and marketing, as well as lobbying for agricultural policies and programmes. Note: existing management programmes for these areas will form part of the baseline for calculation of incremental costs.

III. PDF Implementation:

The PDF-financed activities will be carried out by a project team leader supervising a consulting team of national consultants. The team leader will report to a Steering Committee comprised of representatives from principle stakeholder groups: the Ministry of Environment; the Ministry of Agriculture; the Farming Research Institute; the National Academy of Sciences; the Armenian farming community; the Armenian Farmers Association; a private agricultural enterprise; local government official(s).

The steering committee will guide project development activities by ensuring stakeholder involvement and reviewing and approving the different iterations of the developing project

proposal. The project coordinator will be designated by the Ministry of Environment. He/she will be responsible for liaising with the project team on a frequent basis. The team leader will be responsible for the final production of a GEF project document. He/she will provide expert input on his/her area of expertise as well as coordinating national and international expert input and organizing all consultations and meetings. National consultants will conduct analyses and assessments. International consultant input will be required to assist with targeted field surveys, the logical framework approach, GEF project development, and agrobiodiversity-related technical aspects of project design.

IV. Description of Proposed PDF Activities:

Synopsis:

An incremental cost approach will be used throughout the project development process to ensure good project design. Project development activities will begin with an analysis of existing information, targeted field surveys of agrobiodiversity-rich areas, and initial consultations with germane stakeholders to identify threats, activities to address those threats and related baseline activities. This work will provide the preparation necessary for the identification of the GEF Alternative and the effective utilization of the participatory logical framework approach to project development. A participatory planning workshop will be held to develop the logical framework of the proposal as well as specific activities and outputs. On the basis of this, the incremental cost will be calculated. A draft document will then be developed and subsequently reviewed by a steering committee of stakeholders, finalised, and submitted to GEF for co-financing.

Detailed Activity-Output Description

1. **Activity 1:** Establish Steering Committee and hire national project coordinator and national consultants. Finalise specific TORs for national consultant input to PDF.
2. **Activity 2:** Conduct an analysis of existing information related to the development of specific activities and outputs under each component for the full project. More specifically by component:

Components 1 and 2:

Choosing priority protected areas and agricultural lands for demonstration programmes

- Based upon known micro-centers of Armenian agrobiodiversity within the three agroecological systems of Armenia -- Dilizhan (northeastern), Khosrov and the Arrarat Valley (central), and Mtandzor (southeastern) -- existing information on globally significant agrobiodiversity will be examined, including land races and wild relatives, their localization and level of vulnerability. Such an examination will enable the undertaking of targeted "verification" surveys of known biodiversity-rich protected areas and agricultural lands to provide up-to-date information on occurrence, and abundance. This will provide a targeted list of priority protected areas and agricultural areas for consideration during the logical framework workshop held in Activity 4. Such surveys will also serve as a baseline for measuring future changes. The surveys will also identify threats, measures to address those threats, and related baseline activities. This will also be done under Component 3.

Component 3:

- An analysis will be conducted of existing national and sectoral policies, laws, and regulations affecting land-use, agricultural development and related sectors to determine

their actual and potential effects on the conservation of agrobiodiversity. This will focus on existing reports and information; species and form diversity and their distribution within and outside of the existing system of protected areas. An appraisal will also be done of existing organizations, universities, and community-based groups involved in the conservation, cultivation, and commercialization of traditional crop varieties.

Outputs:

- a written analysis as described above with gaps identified in the policy, legal, and agriculture sectors.
- a written report and results of rapid field verification surveys provided in both written and spatial (map) format.
- Information will be gathered as well on all possible related baseline activities
- Report on baseline activities addressing threats

3. Activity 3: Preliminary clarification of priority issues for stakeholders and linkage to conservation.

Component 1 and 2:

Consultations will be held with and surveys conducted of representatives from local villages, the farming community and other private sectors, and environmental and agricultural officials. The consultations and surveys will be conducted around key priority agrobiodiversity-rich areas identified in Activity #2. These consultations will be the first step to the development of a participatory management and implementation process for this preparatory and the subsequent full project. By further defining the GEF Alternative (activities to address root causes and baseline), these consultations will lay the groundwork for a productive logical framework planning workshop.

Outputs:

- A written summary of activities for GEF Alternative covering the following topics: 1) level of traditional agrobiodiversity knowledge possessed by farmers in priority areas, 2) socio-economic conditions of local communities and how best to re-establish “*de facto*” on-farm and in-garden conservation, 3) gaps and existing needs for strengthening management of priority protected areas, and 4) gaps and existing needs for development of a legal and policy framework that facilitates sustainable agrobiodiversity conservation and utilization and the equitable sharing of benefits thereof.
- A summary of issues important to developing effective collaboration among the local communities, the agricultural institutions, private farmers, and academicians.
- An analysis of potential market mechanisms to sustain long-term agrobiodiversity conservation and the equitable distribution of its benefits.
- Information on related baseline activities.

Incremental Cost Step: This step will preliminarily define the system boundary. In other words, an outline of the existing baseline and proposed Alternative will be produced for discussion under Activity 4.

4. Activity 4: Conduct a logical framework participatory planning workshop in the fourth month of the Block B.

Components 1,2,&3:

The purpose of the workshop will be to come to agreement among stakeholder representatives on a logical framework of objectives, outputs and activities from an

incremental perspective. Three working groups (one for each of the three components) will be formed representing concerned stakeholders to further define outputs and activities to remove the threats and their root causes germane to each of the three components. Participants will include the Steering Committee members, and additional representatives from the Armenian farming community, germane villages, representatives from potential co-funders, a representative from International Plant Genetic Research Institute or CGIAR, a national expert, and a GEF expert. Note: a project manager of another GEF agrobiodiversity project could also attend to share experiences.

From a project design perspective, the purpose of the workshop will be to reach agreement on “the problem” to be solved by the project, the corresponding project objective, the threats causing the problem and their corresponding root causes. This is crucial and will establish the logical framework for the rest of the project development process. This framework will serve as the detailed outline for the finalization of the project document.

Outputs:

A first draft of proposed GEF Alternative intervention complete with:

- A further-defined baseline (i.e. current agricultural and rural development strategies and programmes, ongoing conservation efforts for the sustainable use of plant genetic resources, as well as related programmes and activities).
- A clear logical framework (problem definition, project strategy, objectives, outputs, activities). Objectives, outputs and activities described in detail for each of the three components.
- Activities to build linkages between Armenia’s protected areas, policy framework, and newly privatised farmers in order to conserve and sustainably utilise agrobiodiversity.
- A draft project institutional framework/implementation mechanism, including the program for monitoring and evaluation, stakeholder participation, and gender equality.
- A budget estimate, complete with estimated co-funding requirements.
- A clear distinction between the baseline and the Alternative and within the Alternative itself, what is incremental and what is not.

5. **Activity 5:** Produce draft project document.

Building on the logical framework and other materials, a draft project document will be prepared (no more than 12 pages in length) for review by steering committee and potential co-funders.

The draft project document will:

- be designed as a “package” of integrated interventions intended to produce the GEF Alternative scenario – some of them incremental and some of them not incremental.
- focus and refine the priority activities needed to address root causes, (i.e. programme development, institutional strengthening, farmer extension services, area demarcation, etc...) in order to include them into the full project proposal.
- determine the technical and managerial skills needed for the effective implementation and sustainability of the projects outputs and activities.
- build-in a monitoring and evaluation programme needed to measure project impact, progress towards achieving global benefits;
- finalise the mechanisms required for effective stakeholder participation and determining economic instruments to sustain long-term agrobiodiversity conservation and the equitable distribution of its benefits.

- design the project's activities and outputs to build upon existing social and economic capacities and to be socially, economically, and ecologically sustainable.

Output: Draft Project Document

6. Activity 6: Review of draft Project Document by Steering Committee

The Steering Committee will convene to consider previously circulated project document outline. Comments will be received from co-funders and other stakeholders as well.

Output: Recommendations for revision

7. Activity 7 Round-table with potential co-funders.

A round-table presentation/discussion with potential co-funders will be held to discuss the project document and consider possible co-funding arrangements. Co-funders will, of course, be consulted throughout the project development process as well as included in the participatory planning workshop.

Output: Agreement on specific co-funding arrangements.

8. Activity 8: Revision and finalization of project document.

Steering Committee considers final version of full project document.

Output: Project document is submitted to GEF for co-financing.

V. PDF Outputs

A complete full project proposal with requisite co-funding for non-incremental activities.

Eligibility

Armenia ratified the Convention on Biological Diversity in February 1994 and currently receives technical assistance from UNDP. The resulting project will be eligible under GEF Operational Programme #4: Mountain Ecosystems.

National Level Support

In 1992, the Government of Armenia adopted a "Nature Protection Programme for Armenia." This programme gives specific importance to plant genetic resources protection, regeneration and sustainable utilisation. There are plans to develop a law specific to the conservation and sustainable utilisation of Armenia's plant genetic heritage. In addition, Armenia has demonstrated its support for plant genetic resources conservation by establishing the world's first reserve specifically for the purpose of protecting the progenitors of modern agricultural crops (in this case, wheat and other cereals). Recently, the conservation of plant genetic resources in Armenia was expressed as a priority in a national report by the Armenian delegate to the FAO's Plant Genetic Resources Conference in Leipzig. Armenia's GEF focal point has endorsed this project as Armenia's top biodiversity priority.

Justification

Meeting GEF's priorities:

The project resulting from this Block B effort will support activities which protect biodiversity and promote sustainable use in montane, Mediterranean-type ecosystems, a prime objective of

GEF in its efforts to conserve biodiversity and combat desertification. Secondly, GEF's Operational Strategy specifies agrobiodiversity as a biodiversity programme priority (page 24, section III). GEF seeks to support projects that lead to the "identification and monitoring of wild and domesticated biodiversity components, in particular those under threat, and implementation of measures of their conservation and sustainable use." And thirdly, GEF seeks to reduce the learning cost and risks associated with new biodiversity conservation endeavors. This project will build upon lessons learned from other agrobiodiversity projects (i.e. Turkey and Ethiopia).

Meeting the International Communities Priorities in Agrobiodiversity:

The recent Conference of Parties-3 for the CBD (held in Argentina) recommended specific measures related to agrobiodiversity, many of which are addressed or will be addressed by this project initiative. Secondly, the Consultative Group on International Agricultural Research (CGIAR) has targeted genetic resource conservation in the former Soviet Union as a priority. Within the former Soviet Union, Armenia's agrobiodiversity is certainly prominent. And thirdly, the activities of this PDF have been designed to incorporate the main *in-situ* elements of FAO's recently finalised Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture.

Co-funding and Incremental Cost-related Notes:

The full project will complement UNDP-Armenia's Country Cooperation Framework, which is working on income generating programmes in the agriculture sector. Possible co-funding partners include: TACIS, UNHCR, and US-AID. Baseline activities that could be "topped-up" are underway in protected area management, farmer education and outreach (through an Armenian-American group), and policy development (through a UNDP supported initiative).

IX. Timetable

Activity:	Month
Establishment of Steering Group and development of detailed work plan. Recruitment of expert consultants.	Month 1
Field surveys conducted and priority areas verified	Month 1-2
Preparation for Workshop: Stakeholder consultations, rapid socio-economic and knowledge-base surveys	Month 3
Logical framework workshop held, framework developed	Month 4
Project draft produced. Baseline defined, incremental cost activities identified and project designed.	Month 4-5
Draft reviewed by Steering Committee. Ongoing consultations with co-funders, UNDP, GEF	Month 6
Project brief revised and discussed by Steering Group	Month 6-7
Co-funder Roundtable	Month 7
Project brief finalised and submitted to GEF	Month 7-8

X. Budget (Activities to be financed)

PDF Activity	Sub-total	Total
Activity 1: Establish Project Team <ul style="list-style-type: none"> Project coordinator (8 months @ 800/month) Assistant (8 months @ 400/month) 	6,400 3,200	9,600
Activity 2,3: Targeted Field Assessments/Preliminary Consultations <ul style="list-style-type: none"> National consultants (15 personnel months @ 600/month) International agrobiodiversity consultant (2 weeks) Rural assessments (travel-related site identification, socio-economic assessments, threat and root cause refinement, farmer involvement, market mechanisms) 	9,000 8,000 5,000	22,000
Activities 4-8: Log Frame Workshop/Draft Document Production, Revision, and Submission <ul style="list-style-type: none"> Workshop (rent, hotels, etc) Logical Framework Planning Facilitators² (2 @ 1 week) GEF Consultant (1 @ 4 weeks) International agrobiodiversity consultant (2 weeks) National consultant assessments (18 personnel months @ 600/month) Project proposal finalization (Printing/Reproduction/Translation Costs) 	8,000 10,000 10,700 8,000 10,800 7,000	54,500
Communication/Computer Costs		\$5,600
Project Coordination/Management		\$5,400
Total		\$97,100

XI. Special Features

Chance for replicability w/in the region:

This effort, if approved, will not only develop and implement an innovative, sustainable management regime for Armenia's agrobiodiversity, but it will have the important opportunity to serve as a useful demonstration model for the development of the new *in-situ* agrobiodiversity conservation approaches for other newly independent states of the Commonwealth of Independent States.

² Typically, log frame planning facilitators work in pairs, but it may be possible for the GEF consultant to serve as the second to the planning facilitator, thereby cutting this cost in half.

