

Proposal for Review

Project Title:	Armenia: Enabling Activity (Country Study on Climate Change)
GEF Focal Area:	Climate Change
Country Eligibility:	Convention Ratified May 14, 1993
Total Project Costs:	\$ 350,000
GEF Financing:	\$ 350,000
Government Counterpart Financing of GEF Component:	"in kind"
Cofinancing/Parallel Financing:	not applicable
Associated Project:	not applicable
GEF Implementing Agency:	UNDP
Executing Agency:	Ministry of Nature and Environmental Protection
Local Counterpart Agencies:	Ministry of Nature and Environmental Protection State Hydrometeorology Department
Estimated Approval Date:	July 1995
Project Duration:	2 years
GEF Preparation Costs:	US \$ 10,000 PDF A (approved 13/3/1995)

**ARMENIA: ENABLING ACTIVITY
(COUNTRY STUDY ON CLIMATE CHANGE)**

BACKGROUND AND PROJECT CONTEXT

1. Armenia is a small, landlocked and mountainous country with a land area of 29,800 square kilo-metres. Over 40 % of the terrain lies in the altitude of over 2,500 m. Turkey lies to the West, Georgia to the North, Iran to the South and Azerbaijan to the east. Armenia declared independence in 1991.

Economics

2. Armenia's transition to market economy has been marked by a strong privatization program and drift to price liberalization and on the other hand great difficulties with these efforts, arising mainly from the fast decline of the general economic situation during the last few years. Armenia is highly dependent on trade with other CIS countries. Thus the conflict over Nagorno-Karabakh with Azerbaijan and instability in Georgia, which since 1991 have almost completely blockaded the major trade and transit routes, have resulted serious damages to the economy. In one year the GNP dropped down from the 1991 level US \$ 1,930 to the US \$ 780 per capita in 1992 and was further declining during 1993. Especially the energy sector has suffered of the blockade since Armenia is almost completely dependent on primary energy imports (natural gas and oil). The only relative stable source of energy has during the last few years been hydropower, the use of which, however, has led to environmental problems with further draw-down of water level of Armenia's major water reservoir, Lake Sevan (the water level has during the last 60 years already drawn down by about 18 meters having remarkable effects to the microclimate of its surroundings).

3. The cease-fire in Nagorno-Karabakh (in effect from 25 May 1994), increasing stability in Georgia and developing trade with Iran give hope that the economic situation will start slowly to recover from its collapse. The rehabilitation of the power sector is underway with the help of the World Bank, the European Bank for Reconstruction and Development (EBRD), US AID and some other international organisations. The European Union has established an Energy Centre in Yerevan under its TACIS program to assist enterprises with measures dealing with energy efficiency (energy audits etc.). To relieve the acute energy shortage, the Government plans also to reopen the Medzamor nuclear power plant, which was closed for safety reasons after the December 1988 earthquake.

Environment

4. It can be said that there is both the willingness and scientific capacity in Armenia to implement projects dealing with environmental issues, but due to the present economical situation very few concrete measures have been undertaken. On the other hand, most of the plants, which were still working and emitting greenhouse gases in 1990 are now either closed or work only with partial capacity. However, it's evident that the emissions will increase sharply with recovery of the economy and the government is eager to find solutions which could both minimize the environmental

impacts and be eventually also the least cost option or have other benefits like enhanced independency of imported fuels. Thus promoting efficient use of energy by developing measuring and billing systems, energy audits of the enterprises and utilization of "domestic" renewable sources of energy are of high priority in the government's program. Also an Energy Law targeting these issues is currently under preparation.

5. The Ministry of Nature and Environmental Protection has already collected data on the industrial emissions to the air and the enterprises have a legal responsibility to calculate and provide information for this purpose. The system must, however, be extended to cover all greenhouse gases and their sources as formulated in the reporting instructions of the IPCC.

Project Background

6. A request for funding from GEF to fulfil the commitments of Armenia to the UN Framework Convention on Climate Change was sent to UNDP by the Government in January 1995. The request was based on the proposal prepared by the Environmental Research and Development Centre of the State Hydrometeorology Department and undersigned by the Ministry of Economy and Ministry of Nature and Environmental Protection. With respect to the request, a preparatory mission was undertaken to Armenia in March 1995 to formulate the project framework and a project brief for submission to the GEF-OP and GEF Council Meeting. There are no other ongoing or planned projects to assist Armenia to fulfil its commitments to the UNFCCC.

PROJECT OBJECTIVES

7. The immediate objectives of the project are to prepare the first National Communication of Armenia to the Conference of the Parties in accordance with Article 12 of the UN Framework Convention on Climate Change, and build in country capacity to fulfil its commitments to the Convention on a continuous basis.

8. The project can also be seen as a useful exercise to enhance general awareness and knowledge of climate change related issues in Armenia thus enabling Armenia to take these issues into account in planning processes and strategy formulation for different economical and technical sectors in general and to strengthen its role also international scientific forums and negotiation processes related to climate change. A part of this task is to develop an institutional mechanism/framework to strengthen the dialogue, information change and cooperation among all the relevant players in the field including governmental, non-governmental, academic, private and "grassroots" sectors.

9. Last but not least, the project will help Armenia to identify and develop concrete projects with the target of reducing global greenhouse gas emissions or studying the climate change phenomena itself; projects which may also be eligible also for further funding or cofunding by GEF or other multilateral or bilateral organizations.

PROJECT DESCRIPTION

10. During the project preparation, the following components and activities have been identified to respond to the objectives of the project and implement the project successfully:

- (a) Identify a local Project Coordinator/Manager and establish a Steering Committee with participants from all the project relevant sectors to prepare a detailed work plan for the project (eventually with the help of an international consultant), coordinate the tasks and ensure an effective dissemination and change of information both during and after the project.
- (b) Strengthen the already existing information centres of the State Hydrometeorology Department and Ministry of Nature and Environmental Protection to identify and create links to both national and international sources of information in order to undertake the specific tasks of the project; learn from experiences and ideas of similar kind of projects elsewhere; and avoid duplication of effort. One main goal of this activity is to find potential international partners to cooperate with the projects related to mitigation of the greenhouse gas emissions. To the extent possible electronic networks are used to save travel costs and enhance the geographical coverage of available information. In this context the project will cooperate with a UNDP project: "Strengthening of Information and Communication Infrastructures for Academic, Scientific and Social Development", if it is implemented (at the moment the project is still under development and seeks cofinancing).

11. In accordance with the objectives of the project need, for e.g. "up-to-date" information such as the following could be identified:

- information on climate change phenomena itself and its potential effects (as understood now) to the global and local climates and biosystems
- sources and sinks of greenhouse gases (including greenhouse gas formation mechanisms)
- methods to collect the statistical information needed for the inventories and tools to manage the data
- internationally available information about the greenhouse gas mitigation strategies and specific technologies and practices in the fields of energy efficiency, renewable energy sources, carbon sequestration, reduction of methane emissions etc.
- potential international partners to provide services for and assist the implementation of the greenhouse gas mitigation strategy or pre-feasibility studies of the projects related to it.

12. Specific attention will be paid to dissemination of and public access to the available information (as well as to the results of this project) in order to enable a wide participation and involvement of all the interested individuals and organizations both during and after the project. Information centre(s) staff members will consist of computer specialists, also providing support for other departments) as well as experts of the specific fields related to project (meteorology & atmospheric physics, renewable energy sources & energy efficiency; forestry, etc.)

3. Study the climate change phenomena itself and its possible impacts with respect to the specific geographical and climatological characteristics of Armenia
 - 3.1 Systemize and establish a database of climatological data based on the long term observations of the State Department of Hydrometeorology
 - 3.2 Study the microclimates and mountain biosystems as indicators of the climate change and assess the adaptability/vulnerability of these systems on change
 - 3.3 Publish the results of the studies
4. Undertake a national inventory of greenhouse gases in 1990 with a methodology recommended by the IPCC.
 - 4.1 Build capacity and establish a data collection and management system to provide the basic statistical data, detailed enough for the actual and following inventories, on a continuous basis
 - 4.2 Undertake the inventory using the appropriate methodology and contribute on the development of the IPCC methodology with a study on methane and nitrous oxide emissions from the specific biosystems in Armenia
5. Build capacity, develop tools and undertake studies to provide relevant information for formulation of a national greenhouse gas mitigation strategy
 - 5.1 On the basis of inventory, develop a computer model to estimate the future emissions of different sectors as well as to study the effect of different policies and technological options.
 - 5.2 Build capacity in the research institutes and NGOs working with alternative energy sources or carbon sinks to make preliminary feasibility studies and cost analysis of different options as well as to prepare follow-up projects to mitigate greenhouse gas emissions.
6. Organize a workshop (with wide local participation and relevant international partners) to present the results of the project, together with results or status of other

ongoing national projects relevant to the issue and to discuss the results with the objective of formulating a national strategy on the reduction of greenhouse gases.

7. Using the outputs of this project as well as results of other ongoing projects, prepare the first communication of Armenia to the Conference of the Parties.

RATIONALE FOR GEF SUPPORT

13. The project is consistent with the enabling activity and capacity building objectives listed in INC Document (A/AC.237/90/Add.3), prepared jointly by the interim secretariat of the UNFCCC and the GEF Secretariat in order to facilitate coordinated and timely assistance to countries for the implementation of the Convention. This project responds to such objectives by implementing an activity needed to enable Armenia to fulfil its commitments to implement the Convention.

14. Given the high priority which the 11th INC Meeting in February 1995 gave to the projects of enabling activities, and with respect to the present economical situation of Armenia, being at the beginning of rehabilitation of its collapsed economy and energy sector, the timing of this kind of project, which builds capacity to assess the effects of the different options also from the point of view of greenhouse gas emissions, is an ideal one. The results of the project can be used directly in the planning and policy formulation process currently underway in Armenia, as well as to provide information and "tools" for the international donor and loan organizations assisting Armenia in its efforts.

15. With respect to the comments of the technical review, the project does not try to be particularly innovative but rather to determine the practical tasks which are necessary to enable Armenia to fulfil its commitments to the Convention. There are, however, two components which have very interesting elements also from the viewpoint of demonstration/replication (activity 2) or international research related to the impacts of climate change and the phenomena itself (activity 3). With respect to the activity 2: if the use of electronic networks (Internet) proves to be an efficient way to change information and create links to potential international partners, it will have a remarkable replication potential in other countries like Armenia and enhance significantly possibilities e.g. for "grassroots" and non-governmental organisations to participate in the process. With respect to activity 3: mountain plant communities, as mentioned also by the Technical Reviewer) are known to be sensitive indicators of climatic change and thus Armenia as one of the most mountainous countries in the world can be seen as a good candidate for these studies.

SUSTAINABILITY AND PARTICIPATION

16. The Government of Armenia fully supports the objectives of this project and gives a very high priority to it due e.g. to the reasons already mentioned in the chapter "Background and Project Context". The Government has also endorsed that the project outputs be used for national communications in compliance with the UN Framework Convention on Climate Change. In financial

terms, the Government is contributing "in kind" covering the costs of various support staff, space for the work and meetings etc.

17. After the project has ended and the first communication for the Conference of the Parties has been finalized, the Government will take responsibility to regularly update the inventory and prepare further communications to the COP, as needed.

18. To ensure wide participation a national Steering Committee will be established on the basis of the already existing National GEF Committee with representatives from the Ministry of Economy, Ministry of Agriculture, Ministry of Nature and Environmental Protection and Ministry of Energy and Fuels together with representatives from the Environmental Research and Development Centre of the State Hydrometeorology Department, UNDP and other relevant governmental or non-governmental organizations, research institutes, international experts working in the country (ie. under EU/TACIS, USAID) or corporations. It is expected that after successful completion of the project, the Project Steering Committee will continue to deal with UNFCCC related matters on a permanent basis. Also, as already mentioned under activity 2, specific attention will be paid to dissemination of and public access to the available information as well as capacity building in the project relevant sectors in order to target later the actual mitigation of the greenhouse gas emissions.

LESSONS LEARNED AND TECHNICAL REVIEW

19. A number of points are raised in the technical review. While several have been incorporated, several others have not been. This is due to the fact that the Reviewer was not fully informed about the nature of "enabling activities" as defined by the INC for the FCCC. The response to his major points are explained below:

- (a) The project is not particularly innovative -- this has been responded to, mainly in the chapter "Rationale for GEF support".
- (b) What is the significance of INPO ? This question is a result of the poor quality fax which was forwarded to the Reviewer. INPO is a mangled version of CC:INFO
- (c) "Specific objective 3.2" is unnecessary. This objective was eliminated from the proposal.
- (d) The question of specific Armenian candidates for the study of biosystems as indicators of climatic change and how does further understanding of these systems contribute to the GEF objective of reducing emissions of greenhouse gases is, with respect to the first part of the question, has been responded in the chapter "Rationale for GEF support". With respect to the second part, an assessment of vulnerability and adaptation of different biosystems to the potential change are part of the commitments (article 4 e-h) and is eligible also for GEF funding. Besides being

sensitive indicators of climatic change the mountain plant communities are also very vulnerable to the change.

- (e) The Reviewer questions the appropriateness of budgeting 31 experts and no clerical and administrative support. The management of these staff will be the responsibility of the Government of Armenia and support staff will be provided by the Government as an "in-kind" contribution.
- (f) A request for more information on the EU and other ongoing projects has been taken into account, to the extent possible, in the first chapter of the brief

PROJECT FINANCING, BUDGET AND INCREMENTAL COSTS

21. As an enabling activity, this project would not take place without the FCCC. Therefore, the full costs of the project equal the incremental costs of the project. With the exception of the in-kind contribution of the Government of Armenia, GEF is being requested to fund the full amount of the project. The detailed project budget reflecting the different sub-tasks is presented below:

Activity 1 Identify a local Project Coordinator/Manager, establish a National Steering Committee and prepare a detailed work plan

(a) Project Coordinator (24 months @ US \$ 300 p/m)	US \$ 7,200
(b) International Consultants (2 months @ US \$ 7,000 p/m)	US \$ 14,000
(c) Equipment	US \$ 2,500
(d) Travel	US \$ 10,000
(e) Other operational expenses (mail, photocopies etc.)	US \$ 800
Subtotal:	US \$ 34,500

Activity 2 Strengthen the already existing information centres of State Hydrometeorology Department and Ministry of Nature and Environmental Protection

(a) Local Experts (5x24 months @ US \$ 200 p/m)	US \$ 24,000
(b) Travel	US \$ 10,000
(c) Equipment (computers, copy machine etc.)	US \$ 20,000
(d) Operational costs (satellite connection, publications etc.)	US \$ 15,000
Subtotal:	US \$ 69,000

Activity 3 Study the climate change phenomena itself and its possible impacts with respect to the specific geographical and climatological characteristics of Armenia

(a) Local Experts (10x24 months @ US \$ 200 p/m)	US \$ 48,000
(b) Travel	US \$ 10,000
(c) Equipment (computers, programs etc.)	US \$ 30,000
(d) Operational costs	US \$ 2,000
Subtotal:	US \$ 90,000

Activity 4 Undertake a national inventory of greenhouse gases and contribute to the development of the methodology of IPCC

(a) Local Experts (5x24 months @ US \$ 200 p/m)	US \$ 24,000
(b) Travel	US \$ 10,000
(c) Equipment (computers, programs etc.)	US \$ 10,000
(d) Operational costs	US \$ 1,000
Subtotal:	US \$ 45,000

Activity 5 Build capacity, develop tools and undertake studies to provide relevant information for formulation of a national greenhouse gas mitigation strategy

(a) Local Experts (10x24 months @ US \$ 200 p/m)	US \$ 48,000
(b) International Consultants (2 month @ US \$ 7,000 p/m)	US \$ 14,000
(c) Travel	US \$ 10,000
(d) Equipment	US \$ 10,000
(e) Operational costs	US \$ 1,000
Subtotal:	US \$ 83,000

Activity 6 Organize a workshop to present the results and discuss them with the objective of formulating a national strategy on the reduction of greenhouse gas

US \$ 10,000

Activity 7 Prepare the first Communication of Armenia to the COP

(a) Personnel The Project Coordinator/Manager is responsible for the preparation of the communication see activity 1	
(b) Operational and Reporting Costs, Materials etc.	US \$ 5,000
Monitoring and Evaluation	US \$ 13,500
Total Project Costs	US \$ 350,000

ISSUES, ACTIONS AND RISKS

22. The crucial element of fulfilling the objectives of the project will be a close collaboration between the different ministries and departments at the institutional level as well as collaboration of the project personnel at the individual level with the project support staff paid by the government. The project will respond to these issues by creating these links through the Project Steering Committee as well as ensuring that other presuppositions for close collaboration of the project personnel with each others and with other staff and partners are existing.

24. Another crucial element is the international collaboration, especially, when preparing the work plan for and implementing the research oriented activities 3 and 4. During this process, IPCC and UNEP will be consulted to ensure that the methods and details of the subjects are relevant also from a global point of view.

25. The scientific and technical (human) capacity to implement the project should not be a problem since the level of education in Armenia is very high and there are qualified local experts to undertake most of the tasks under the project.

INSTITUTIONAL FRAMEWORK AND PROJECT IMPLEMENTATION

26. The implementing agency of the project is UNDP. The Project Steering Committee will be charged with overseeing and advising project execution and will have decision making power over all aspects of the project. The project will also collaborate closely with all the other relevant ongoing projects in Armenia both through the Project Steering Committee and between the research teams in order to enable an effective information change between the projects and full utilization of their results in the formulation of a national greenhouse gas mitigation strategy.

27. Under the different sub-tasks study tours will be undertaken and working links with international partners will be established in order to ensure effective change of information and appropriate implementation of the project.

28. With these arrangements the project seeks to establish close links with other climate change related activities being carried out by other GEF implementing agencies or by other multilateral and bilateral organizations. It will do so practically as figured above and also by participating in the informal consultative mechanism, CC:INFO, being set up by the UNFCCC secretariat, to ensure that results and outputs of this project will be shared among all actors involved in climate change activities in order to enable such actors to mutually benefit from one another's activities for the present and for the future.

Monitoring and Evaluation

29. After the detailed workplan has been prepared, an external review on it will be undertaken. The purpose of the review is to identify in the very early stage of the project the eventual gaps, overlaps and other risks of the successful implementation as well as to identify potential partners and sources of information of which the project could benefit.

30. The Project Steering Committee together with the Executing Agency will be responsible for monitoring the project on a continuous basis. In order to do this, the Project Manager with the help of the leaders of the research teams will prepare regular reports on the progress of the project as whole and the different sub-tasks under it. In addition to this, an external midterm evaluation will be conducted about 12 months after the start of the project. The purpose of the evaluation is to review the overall success of the project and suggest modifications to the implementation of the

project for the remaining part. It is vital that the recommendations from the evaluation are disseminated immediately, so that appropriate action can be undertaken without delay. A joint meeting of the evaluators together with the Project Steering Committee has been designed for this purpose.

TECHNICAL REVIEW

ARMENIA: ENABLING ACTIVITY (COUNTRY STUDY ON CLIMATE CHANGE)

RELEVANCE TO GEF

1. The proposed project relates directly to the reduction of greenhouse gas emissions and global warming purposes of GEF.

OBJECTIVES

2. The substantive project objectives are to enhance the understanding of climatic change, to establish the capability to prepare a valid inventory of greenhouse gas sources and sinks, and to identify greenhouse gas emission reduction strategies. These are appropriate and fully consistent with GEF purposes.
3. The procedural objectives, namely to put in place the staff and resources necessary to accomplish the substantive objectives, are appropriate and necessary to the success of the project.

APPROACH

4. The approach, which the project intends to adopt is clearly defined in the brief.
5. The approach is appropriate and technically sound.
6. The project brief provides no information as to why Armenia was selected for this project.

BACKGROUND INFORMATION

7. More information regarding the Medzamor nuclear power plant and the nature of the "serious environmental problems" associated with the further draw-down of water levels in Lake Sevan would strengthen the proposal. The project brief indicates that World Bank power sector project is underway - it would be surprising were more information not available regarding the present energy system, general patterns of fuel and electricity end-uses (and, hence, the potential for increased energy efficiency), and an indication of potential primary energy sources.
8. The project brief indicates that the EU is promising technical assistance for the development of the [natural] gas industry and a national saving-strategy which would make unnecessary the

restarting of the Medzamor nuclear power station - more detail as to how the proposed work complements the pending EU project would be helpful.

FUNDING LEVEL

9. The overall funding level seems appropriate. Comments on specific budget items follow below at item eight.

INNOVATION

10. The project is not particularly innovative, but it deals with issues fundamental to the development of a greenhouse-gas minimizing strategy

STRENGTHS/WEAKNESSES

11. **Strengths:** The proposal outlines a valid approach to achieving the substantive objects. The incorporation of a program to achieve information exchange and cooperation among the involved players is a strength.

12. The project relies heavily on local experts and strengthening communication links with little use of international consultants.

13. **Weaknesses:** The proposal provides no indication of the potential reductions in greenhouse gas emissions. The synergism with the EU technical assistance and the World Bank power-sector projects should be detailed.

OTHER COMMENTS

14. Specific objective 2 includes a reference to INPO.

What is the significance of INPO to the project?

15. Specific objective 3.2 is to: "enhance the capacity of Armenia to undertake studies of the greenhouse gas contents and vertical distribution in the atmosphere"

The atmospheric greenhouse gas concentrations and vertical distributions are well understood.

16. Specific objective 3.3 is to: "study the microclimates and biosystems as indicators of the climate change and assess the adaptability/vulnerability of these systems on change"

Biosystems, for example mountain plant communities, are known to be sensitive indicators of climatic change. What sensitive Armenian systems are candidates for study, and how does further understanding of these systems contribute to the GEF objective of reducing emissions of greenhouse gases ?

17. The proposed Institutional Framework and Monitoring and Evaluation are appropriate to the project.

18. A full-time staff of 31 local experts is projected, but there is no mention of, nor budget items for, the necessary clerical and administrative support staff. Overall management and coordination of the work of such a large staff may be an issue.