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November 16, 1995

Dear Mohamed,

ARM/95/G31/A1G/99 - Armenia Country Study on Climate Change

Please find attached the project document for the Armenia Country Study on Climate Change. This project was cleared by the GEFOP and submitted by the GEF Secretariat to the GEF Council at its meeting of 3-5 May, where it was approved.

In line with the procedures of the GEF Project Cycle, we request your endorsement of the project.

We appreciate your submission of this project to the GEF Council at your earliest convenience.

Yours sincerely,


Rafael Asenjo
Executive Coordinator

Mr. Mohamed T. El-Ashry
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**UNITED NATIONS DEVELOPMENT PROGRAMME
GLOBAL ENVIRONMENT FACILITY**

PROJECT DOCUMENT

Number and title: ARM/95/G31/A/1G/99 Armenia - Country Study on Climate Change

Duration: Two Years

Project Site: Yerevan, Armenia

ACC/UNDP Sector and Subsector: Environment (200)

GEF Theme: Climate Change

Government Implementing Agency: Ministry of Nature and
Environmental Protection

Executing Agency: Government of Armenia

Estimated Starting Date: December 1995

UNDP and cost sharing financing

UNDP:

GEF \$350,000

Total: \$350,000

Brief Description: This nationally-executed project builds capacity in Armenia to fulfill its commitments to the UN Framework Convention on Climate Change (UNFCCC) and to respond to the objectives of the Convention on a continuing basis. The elements of the project consist of (a) preparation of the first National Communication of Armenia to the Conference of Parties in accordance with Article 12 of the UNFCCC. The Communication will consist of an inventory of greenhouse gases in 1990 made in accordance with the IPCC guidelines, material for calculation of emission trends, a general description of available or envisaged mitigation options, an assessment of Armenia's vulnerability to climate change, and a general description of available or envisaged adaptation options; (b) enhancement of general awareness and knowledge among the Government planners on climate change related issues, and subsequent incorporation of such issues into general development plans of various sectors; (c) development of an institutional mechanism/framework to strengthen the dialogue, information exchange and cooperation among Governmental, NGOs, academic, private and grassroots sectors; and (d) identification of projects related to climate change and mitigation of greenhouse gases.

On behalf of:	Signature	Date	Name/Title
The Government:	_____	_____	_____
Executing Agency:	_____	_____	_____
UNDP:	_____	_____	_____

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ABBREVIATIONS

CIS	Commonwealth of Independent States
COP	Conference of the Parties of the UNFCC
EBRD	European Bank for Reconstruction and Development
EU/TACIS	European Union Technical Assistance for the Commonwealth of Independent States
GEF	Global Environment Facility
GHG	Greenhouse Gas
GNP	Gross National Products
NGOs	Non-Government Organizations
PSC	Project Steering Committee
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
US AID	United States Aid for International Development

A. CONTEXT

1. Description of the Country / Project Background

Armenia is a small, landlocked and mountainous country with a land area of 29,800 square kilometres. 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.

a. **Economics:** Armenia's transition to a market economy has been marked by a strong privatization program and a drift to price liberalization. On the other hand, great difficulties have been experienced with these efforts, arising mainly from the fast decline of the general economic situation during the past 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 of US \$ 1,930 to the US \$ 780 per capita in 1992 and declined further during 1993. Especially the energy sector suffered from the blockade as Armenia is almost completely dependent on primary energy imports (natural gas and oil). The only relatively stable source of energy has been hydropower, the over-reliance on 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 already been drawn down by about 18 metres over the past 60 years having remarkable effects on the microclimate of its surroundings.

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 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 under its TACIS program has established an Energy Centre in Yerevan 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.

b. **Environment:** It can be said that there is both willingness and scientific capacity in Armenia to implement projects dealing with environmental issues. Because of the present economic situation, however, very few concrete measures have been undertaken. On the other hand, most of the plants, which were still operating and emitting greenhouse gases in 1990 are now either closed or operate at partial capacity. However, it is evident that the emissions will increase sharply with the recovery of the economy, and the government is eager to find solutions which could both minimize the environmental impacts and be 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, undertaking energy audits of the enterprises and utilizing "domestic" renewable sources of energy are given high priority in the government's program. In addition, an Energy Law targeting these issues is currently under preparation.

The Ministry of Nature and Environmental Protection has already collected data on some industrial emissions to the air (e.g. SO₂) and the enterprises have a legal responsibility to calculate and provide information for this purpose. However, the data collection system must be extended to cover all greenhouse gases and their sources as formulated in the reporting instructions of the IPCC.

c. **Project Background:** A request for funding from GEF to help Armenia to fulfill its commitments to the UN Framework Convention on Climate Change (UNFCCC) 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 Operations Committee (GEFOP) and the GEF Council Meeting. There are no other ongoing or planned projects to assist Armenia to fulfil its commitments to the UNFCCC.

2. Host Country Strategy

The Government strategy in requesting the GEF for funding of this project is achieve the following objectives:

1. to prepare the first National Communication of Armenia to the Conference of Parties in accordance with Article 12 of the UNFCCC;
2. to build capacity in Armenia to fulfill its commitments to the Convention on continuing basis;
3. to enhance general awareness and knowledge of Government planners on issues related to climate change and reduction of greenhouse gas emissions, thus enabling them to take such issues into account in general development plans of various sectors; and
4. to identify and develop projects related to climate change and mitigation of greenhouse gases; projects which may be eligible also for further funding or cofunding by GEF and other multilateral or bilateral organizations.

3. Prior and On-going Assistance

3.1 UNDP/GEF Preparatory Mission in March 1995

A UNDP Preparatory Mission was undertaken to Armenia in March 1995 in response to the request sent by the Government of Armenia in January 1995. The task of the mission was to formulate a project brief for submission to the GEFOP and GEF Council Meeting.

3.2 Other On-Going Assistance

- rehabilitation of power sector is underway with assistance from the World Bank, European Bank for Reconstruction and Development (EBRD), US AID and some other international organizations; and
- establishment of an Energy Centre in Yerevan (the Capital of Armenia) by the European Union under its Technical Assistance Programme for the Commonwealth of Independent States (TACIS) which mainly deals with energy efficiency and demand-side management.

4. **Institutional Framework**

In order to successfully implement the project activities, and to ensure the sustainability of the results and wide participation in the implementation process, the Government has endorsed that a Project Steering Committee will be established on the basis of the already-existing National GEF Committee. The final composition of the PSC will be decided in the beginning of the project, and it might include representatives from the following institutions:

- Ministry of Nature and Environmental Protection;
- State Hydrometeorology Department/Environmental Research and Development Centre;
- Ministry of Energy and Fuels;
- Ministry of Agriculture;
- Ministry of Finance;
- UNDP;
- local NGOs: Green League, Green Cross, etc;
- international consultant to be recruited as a facilitator;
- Project Manager;
- US AID and EU/TACIS representatives (as technical advisers without a right to vote); and
- other representatives from State Energy Companies, State Statistical Department, and local universities.

B. **PROJECT JUSTIFICATION**

1. **Problems to be Addressed**

1. The United Nations Framework Convention to Climate Change was signed in June of 1992 in the Rio "Earth Summit". The ultimate objective of the Convention is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with climate. By becoming Parties to the Convention, both developed and developing countries accepted a number of commitments which include, *inter alia*:
 - < develop, periodically update, publish and make available to the Conference of the Parties (COP) of the UNFCCC national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol;
 - < formulate and carry out national programmes for mitigating climate change and adapting to its effects; and
 - < strengthening scientific and technical research and systematic observation related to the climatic system, and promoting the development and diffusion of relevant technologies.

Due to the economic problems that Armenia is facing, there is a lack of funds to start the implementation of the Convention in Armenia and to prepare its first Communication to the COP. This situation prompted the Government to request UNDP/GEF funding for assistance.

2. The recognition of the concept of linking productivity of any sector with the protection of environmental resources is lacking in Armenia. This was due to the strong centralization and top-down management during the Soviet era where planning and overall management decisions and information used to be centralized in Moscow without regards to their consequences on environment. Only recently, ministries, state institutions and centres have been empowered to incorporate the concept of environmental resources management into the national development policy in various sectors.

3. There are limited and ineffective interaction and coordination between ministries, and scientists of the research institutions in decision making and planning. The effects of various uncoordinated plans on each other and in relation to larger goals have not been considered in the Government plans. Also, long-term sustainability of development plans in terms of their environmental impacts have been neglected.

2. Expected End of Project Situation

The specific results of the project will be:

1. Preparation of the first National Communication of Armenia to the Conference of Parties in accordance with the article 12 of the UNFCCC. The Communication will consist of an inventory of greenhouse gases in 1990 made in accordance with the IPCC guidelines, material for calculation of emission trends, a general description of available or envisaged mitigation options, an assessment of Armenia's vulnerability to climate change, and a general description of available or envisaged adaptation options.
2. A permanent mechanism and trained staff to update regularly the different elements of the Communication.
3. Enhanced awareness and knowledge among the Government planners on climate change related issues, and subsequent incorporation of such issues into general development plans of various sectors.
4. A permanent institutional mechanism/framework to strengthen the dialogue, information exchange and cooperation between the local Ministries, NGOs, academic, private and grassroots sectors as well as internationally.
5. Identified follow-up projects related to climate change and mitigation of greenhouse gases.

3. Target Beneficiaries

The project will contribute to the overall efforts to mitigate global greenhouse gas emissions and thus the target beneficiaries must be seen in a global context, including the people of Armenia. With respect to the immediate objective 3 (impact assessment), the benefits are more of national nature.

Beside the various aspects related directly to climate change, the project will contribute to the general planning and strategy formulation process currently underway in Armenia by identifying "win-win" measures, measures which beside the mitigation of greenhouse gases are also least cost options or have other national benefits which exceed the additional costs (e.g., reduction of local pollution by identified energy saving measures and developing strategies to implement these measures).

Furthermore, the recruitment of large number of national experts and the involvement of counterparts and Government representatives from the relevant ministries in the implementation of project activities will result in building the capacity of such personnel in various aspects related to climate change, thus ensuring the sustainability of these benefits.

4. Project Strategy and Implementation Arrangements

4.1 Project Strategy

This project is part of UNDP/GEF planned assistance to Armenia within the framework of the GEF Operational Strategy. The project will implement an activity needed to enable the Government of Armenia to prepare its first National Communication in accordance with Article 12 of the UNFCCC and to build capacity in the country to fulfill its commitments to the UNFCCC on a continuing basis. The project will last for a period of two years.

The project will focus on capacity building and training of selected national experts and counterparts in various ministries and institutes, as well as those of local non-governmental organizations (NGOs). This will happen by involving a number of people in the actual implementation of the project and thus the people will be trained by a "learning by doing" method rather than organizing separate training courses. The necessary external support will be provided by strengthening and encouraging the exchange of information between the project staff and international organizations and research institutes dealing with issues relevant to the project, as well as hiring short-term international consultants to assist in the implementation of the project through the critical stages.

During the implementation of the project activities, a permanent mechanism will be established to regularly update the different components of the Communication, and an institutional framework will be formed to strengthen the dialogue, information exchange and cooperation among the local Ministries, NGOs, academic, private and grassroots sectors. It is also envisaged that during the project and especially as a follow up activity of the project, feasibility studies are to be conducted for the formulation of nationally or internationally financed projects related to the mitigation of greenhouse gas emissions. These follow-up activities will provide necessary elements for long-term sustainable development and achievements in the reduction of greenhouse gases.

4.2 Implementation Arrangements

1. The Ministry of Nature and Environmental Protection will be the Government Implementing Agency for the project; the State Hydrometeorology Department will be a Counterpart Agency and work with close collaboration with the Ministry of Nature and Environmental Protection.
2. The Project Steering Committee (PSC) will be charged with overseeing, coordinating and advising the project staff on the execution of project activities, and will have decision-making power over all aspects of the project operation.
3. The project will be implemented, under the overall coordination of the PSC, by qualified national experts and a project manager, assisted by Government counterpart teams from the relevant ministries and institutes.
4. International consultant(s) will be recruited to facilitate the initiation and coordination of project activities.
5. The national experts and institutes to be subcontracted will be selected from the institutions relevant to the project, in the fields of communications, GHG inventories and data management, impacts of climate change, and mitigation of greenhouse gases (energy, forestry, etc.)

6. The implementation of the project activities will be facilitated by dividing the work into four functional research teams, each to be lead by a "Team Leader". These research teams are:
 - a. Team 1: Information gathering/Communications.
 - b. Team 2: Impact/Vulnerability Study.
 - c. Team 3: Greenhouse Gas Inventories/Data Management.
 - d. Team 4: Mitigation Analysis and Mitigation Strategy.
7. Under the different sub-tasks, study tours will be undertaken, and working links with international partners will be established in order to ensure effective exchange of information and the appropriate implementation of project activities.

4.3 Monitoring and Evaluation

1. After the preparation of the work plan by the Project Manager, an external review, by the PSC, UNDP, [and a member of STAP Roster of Experts,] will be undertaken. Such an early review is essential to identify gaps, deficiencies and overlaps, as well as potential risks to the successful implementation of the project. Further, the review will enable the identification of potential partners and sources of information which might be of benefit to the project.
2. The PSC, together with the Executing Agency, will be responsible for continuous monitoring of the progress of the project. In order to do this, the Project Manager, with the help of the leaders of the research teams, will prepare regular progress reports. Periodic joint meetings of the PSC, UNDP and the Executing Agency will be scheduled for project review and evaluation of staff performance. Annex II of the Project Document contains the Schedule of Project Reviews, Reporting and Evaluation. The purpose of the periodic review and evaluation is to assess the overall success of the project and suggest modifications in the implementation process.

5. Reasons for Assistance from UNDP

The project is consistent with the enabling activity and capacity building objectives listed in the Operational Criteria for GEF Enabling Activities prepared by the GEF Task Force on Climate Change. This project responds to these objectives by supporting an activity to enable Armenia to fulfil its commitments to implement the Convention.

Given the high priority which the first COP of the UNFCCC gave to enabling activities, and with respect to the collapsed economy and energy sector in Armenia, the timing of this project 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 to recover from the collapse.

6. Special Considerations

1. There will be an emphasis on the capacity building of the national technical staff including those recruited by the project and those identified by the Government as counterparts. This is essential for the sustainable development of strategies and tools for the mitigation of greenhouse gas emissions in Armenia. This includes the identification and capacity building of local NGOs as part of a participatory approach to the reduction of global greenhouse gas emissions. Further, the integration of climate change related issues into Government planning will be a key feature in the

development of training projects and developmental programmes.

2. Specific attention will be paid to the dissemination of and public access to the available information to ensure wide participation and involvement of interested individuals and organizations both during and after the implementation of the project activities.
3. Of utmost importance is the close cooperation between the different ministries and institutions, to avoid overlapping of the activities, to involve the best specialists in the work, and ensure the sustainability of the results of the project. This will be addressed more in detail in the section 7 (below).

7. Coordination Arrangements

1. The PSC will function as the main body to:
 - (i) give guidance for, steer and monitor the implementation of the project activities;
 - (ii) work as an additional information link between the project management and the international community;
 - (iii) coordinate activities and issues related to climate change in the country; and
 - (iv) support smooth transition from this enabling activity to the actual GHG mitigation measures and implementation of the national GHG mitigation strategy.
2. It is envisaged that, after successful completion of the project, the PSC will continue to deal with climate change related matters on a permanent basis.
3. Other international agencies, such as US AID and EU/TACIS, are working on energy issues in Armenia, and will benefit the project by (i) providing technical expertise in determining the potential of greenhouse gas mitigation measures (esp. energy efficiency); and (ii) linking the project to international sources for funding of potential follow-up projects.
4. The Project Manager will be located at the Ministry of Nature and Environmental Protection. The Project Manager will be responsible for the implementation and coordination of project activities, and will be assisted by national experts.
5. The national experts and institutes to be hired or subcontracted will be identified and selected by the Project Manager in cooperation with the PSC and UNDP. The selected experts will assist in the implementation of the different subcomponents of the project, including (i) communications (Internet, etc); (ii) impact/vulnerability assessment; (iii) greenhouse gas inventories and data management; and (iv) mitigation of greenhouse gases (energy planning, energy efficiency, renewable energy sources etc.). The work will be divided into four research teams, each with a team leader, to facilitate the management and implementation of the project activities.

8. Counterpart Support Capacity

The Government of Armenia fully supports the objectives of this project and gives a high priority to its implementation. It has also endorsed that the immediate output of the project will be the first National Communication of Armenia in accordance with the paragraph 12 of the UNFCCC. To achieve this goal, the Government has agreed to the formulation of a Project Steering Committee to assist in, and ensure of the successful implementation of project activities. The PSC consists of senior officials from the relevant

ministries, institutes and universities who are qualified to provide assistance to the project manager and the national experts and counterparts; most of the project staff will be recruited from these ministries and institutes. During the period of project implementation, the Ministry of Nature and Environmental Protection who is the Executing Agency of the project, will be responsible for providing:

- counterpart teams made of key staff capable of assisting the project staff in executing the project activities as planned;
- office facilities at the Ministry for the Project Manager and staff;
- support staff, information gathering, and logistic support to the project staff.

C. DEVELOPMENT OBJECTIVE

The development objective of this project is to build capacity in Armenia to fulfill its commitments to the UN Framework Convention on Climate Change and to respond to the objective of the Convention on a continuing basis. The objective of the UNFCCC is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with climate.

D. IMMEDIATE OBJECTIVES, OUTPUTS AND ACTIVITIES

1. Immediate Objective 1

To identify and hire a competent national Project Manager and his/her Assistant, establish a Project Steering Committee (PSC), prepare a detailed work plan for the project, identify the national counterparts, and hire/subcontract the national experts and institutes to start the implementation of the project.

1.1 Output 1

A competent Project Manager and his/her assistant has been selected, the PSC has been formed, and a detailed work plan for the project has been prepared. The Project Assistant, beside his/her other duties, will work also as a translator/interpreter (Armenian/English) for the project assisting project personnel with the international contacts and translating documents which are relevant for the project.

1.1.1 Activity 1

Hire an international consultant for the project initiation phase to provide assistance for (i) organization of a Project Initiation Workshop, (ii) preparation of a detailed work plan for the project identifying specific problems to be addressed and tasks to be undertaken to achieve the objectives of the project, (iii) preparation of Terms of Reference for the national experts and institutes to be hired or subcontracted, and (iv) identification of potential international partners and ongoing international projects or programmes that the project can benefit from.

1.1.2 Activity 2

Organize a Project Initiation Workshop with representatives from the relevant ministries, institutions and organizations (for a list of potential candidates see Chapter A 4, Institutional Framework) in order to present the objectives and implementation arrangements of the project, and to decide for the national Project Manager and the composition of the PSC. During the Workshop training material prepared for the CC:TRAIN as well as for other UNDP/GEF Training Initiatives will be used, as seen appropriate.

1.1.3 Activity 3

Select and hire the Project Manager and his/her Assistant and establish the PSC as agreed in the workshop.

1.1.4 Activity 4

The Project Manager will prepare, with help of an international consultant, a detailed work plan for the project as well as Terms of Reference for the national experts and institutes to be hired or subcontracted. Specific attention when preparing the work plan will be paid to effective dissemination and exchange of information both during and after the project as well as to identification of international partners and other ongoing national or international projects and programmes that the project can benefit from.

1.2 Output 2 (a part of the work will be done under the activity 5.2.1)

The national experts and institutes implementing the project activities have been selected and hired (or subcontracted) and the work has been organized into four research teams.

1.2.1 Activity 1

Identify and select the national experts and counterparts in cooperation with the Project Manager, PSC, and UNDP.

1.2.2 Activity 2

Divide the work into four research teams (see page 9 for more details) , and select a team leader for each team who will be responsible to the Project Manager.

2. Immediate Objective 2

To strengthen the already existing Information Centre of the Ministry of Nature and Environmental Protection to identify and create links to both national and international sources of information (such as the US Country Study Program and other bilateral programmes, UNEP, IPCC, CC:TRAIN, international research institutes dealing with climate change or mitigation of greenhouse gas emissions, ongoing national projects in recipient countries etc.) in order to undertake the specific tasks of the project; to learn from experiences and ideas of similar kind of projects elsewhere; and to avoid duplication of effort. One main goal of this activity is to find potential international partners to cooperate with either on this project or on the following projects dealing with implementation of the identified mitigation measures.

2.1 Output 1

Strengthened and adequately equipped and staffed Information Centre at the Ministry of Nature and Environmental Protection.

2.1.1 Activity 1

Hire a local consultant to assist in the selection and installation of the computers and to connect them to the Internet Network and World Wide Web.

2.1.2 Activity 2

Train the project staff to use the Internet for communication as well as for searching and down loading internationally available information on various subjects.

2.2 Output 2

Information on the issues relevant to the project

2.2.1 Activity 1

Identify and create links either electronically or by other means (e.g. study tours) to the sources of information which are relevant to the specific objectives and activities of the project.

2.2.2 Activity 2

Gain information and identify partners for cooperation on the following topics, *inter alia*:

- < climate change phenomena itself and its potential impacts on the global and local climates and biosystems;
- < sources and sinks of greenhouse gases, including greenhouse gas formation mechanism;
- < methods to collect statistical information needed for the inventories and tools to manage the data;
- < methodologies and tools related to greenhouse gas mitigation analysis, 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 and/or funding for the follow-up activities of the project or assistance for the implementation of the actual project.

3. Immediate Objective 3

To study the climate change phenomena itself and its possible impacts with respect to the specific geographical and climatological characteristics of Armenia.

3.1 Output 1

Adequate and up-to-date studies on the phenomena of climate change in Armenia.

3.1.1 Activity 1

Systematize and establish a database of climatological data based on the long-term observations of the State Department of Hydrometeorology.

3.1.2 Activity 2

Study the impacts of climate change on microclimates of mountain biosystems and assess the adaptability of these systems on change.

3.1.3 Activity 3

Publish the results of the studies.

4. Immediate Objective 4

Undertake a national inventory of greenhouse gases following the latest IPCC methodology and guidelines, establish a permanent mechanism to regularly update the inventory, and contribute on the overall development of the IPCC methodology by undertaking selected studies on methane and nitrous oxide emissions from specific biosystems of Armenia.

4.1 Output 1

A permanent data collection and management system to provide the basic statistical data, detailed enough for the actual and following inventories and trained staff to maintain and regularly update this database.

4.1.1 Activity 1

Identify the existing data gaps with respect to the latest IPCC methodology and guidelines, evaluate the reliability of the data, and prepare a strategy or undertake specific studies to fill the data gaps or enhance reliability of the data up to the level needed in the inventory.

4.1.2 Activity 2

Establish a permanent data collection and management system to provide the basic statistical data, detailed enough for the actual and following inventories, and train the staff to maintain and regularly update this database (might contact "US Country Study Team for testing computer programmes and models in Eastern and Central European countries with Economies in Transition ").

4.2 Output 2

Emission factors for methane and nitrous oxide emissions of the specific biosystems in Armenia.

4.2.1 Activity 1

Undertake selected studies to define the emission factors for methane and nitrous oxide of the specific biosystems in Armenia.

4.3 Output 3

A completed national inventory of anthropogenic greenhouse gas emissions by sources and removals by sinks in 1990 using the latest IPCC methodology and guidelines.

4.3.1 Activity 1

Undertake and finalize the inventory using the IPCC methodology and guidelines.

5. Immediate Objective 5

To build capacity, develop tools and undertake studies to provide relevant information for formulation of a national greenhouse gas mitigation strategy.

5.1 Output 1

Adequate methods and computer models to estimate future greenhouse gas emission trends and different options to mitigate these emissions in Armenia.

5.1.1 Activity 1

Organize a workshop to present different methods and tools for mitigation analysis (like MARKAL, LEAP etc.) and clarify challenges and opportunities of such an analysis for the relevant institutions in Armenia; not only from the viewpoint of mitigation of greenhouse gases but also related to the general planning and development processes currently underway in the country.

5.1.2 Activity 2

Select adequate methods and computer "software" to estimate future greenhouse gas emission trends and different options to mitigate these emissions in Armenia.

5.2 Output 2

Organized and trained project staff to undertake the mitigation analysis and to provide necessary background information for the analysis.

5.2.1 Activity 1

Establish a research group consisting of representatives from the relevant institutions to undertake the mitigation analysis and/or provide essential background information for the analysis, and train the group to use the selected tools. Relevant fields are energy production and end use in industrial and residential sectors, transport, agriculture, forestry and waste treatment.

5.2.2 Activity 2

Build capacity in the research institutes and NGOs working with alternative energy sources, energy efficiency, advanced agricultural practises or carbon sinks to make preliminary feasibility studies and cost analysis of different options (covering also the regulatory and legislative framework, tariff and fiscal policies, tax incentives etc.) in order to provide the essential background information for the mitigation analysis and formulation of a national greenhouse gas mitigation strategy.

5.3 Output 3

Background information for the mitigation analysis.

5.3.1 Activity 1

Undertake selected studies to provide the essential background information for the mitigation analysis and formulation of a national greenhouse gas mitigation strategy.

5.4 Output 4

Mitigation analysis and a draft proposal to implement the most promising mitigation measures.

5.4.1 Activity 1

Undertake a mitigation analysis using the selected tools and collected background information in order to construct a series of different climate change mitigation scenarios, evaluate their consistency with the general development goals of Armenia and prepare a draft proposal to implement the most promising mitigation measures.

6. Immediate Objective 6

To disseminate the project results to the relevant local and international partners (by organizing a workshop) and formulate a national strategy on the reduction of greenhouse gas emissions.

6.1 Output 1

A national strategy on the mitigation of greenhouse gas emissions.

6.1.1 Activity 1

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 mitigation of greenhouse gas emissions.

6.1.2 Activity 2

In cooperation with the different ministries and institutions formulate a national strategy on the mitigation of greenhouse gas emissions.

7. Immediate Objective 7

To prepare the first national communication of Armenia to the Conference of the Parties.

7.1 Output 1

The first national communication of Armenia to the Conference of the Parties.

7.1.1 Activity 1

Using the outputs of this project and other on-going projects, prepare the national communication and translate it into English.

E. INPUTS

	<u>Total\$</u>
UNDP:	350,000
a) Personnel	102,000
b) Official Travel	55,000
c) Subcontracts	67,000
d) Training (workshops).	13,000
e) Equipment	73,000
f) Miscellaneous.	40,000

F. RISKS

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, and ensuring that other presuppositions for close collaboration of the project personnel with each other and with other staff and partners are existing.

Another crucial element is international collaboration, especially when preparing the work plan for and implementing the research oriented activities under Immediate Objectives 3, 4 and 5. During this process, IPCC and UNEP will be consulted to ensure that the methods and details of the subjects are also relevant from a global point of view.

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.

G. PRIOR OBLIGATIONS AND PREREQUISITES**a. Prior Obligations**

Armenia ratified the UN Framework Convention on Climate Change on 14 May 1993 and it entered into force on 21 March 1994. As stated in the article 12, paragraph 5 of the Convention, each Party not listed in the Annex 1 shall make their initial communication within three years of the entry into force of the Convention for that Party. Thus the National Communication of Armenia will be due in March 1997.

The Government of Armenia sent a request to UNDP for the funding from GEF in January 1995 to enable Armenia to fulfill its commitments to the UNFCCC. The request was based on the proposal prepared by the

Environmental Research and Development Centre of the State Hydrometeorology Department and was undersigned by the Ministry of Economy and Ministry of Nature and Environmental Protection. Subsequently, UNDP fielded a preparatory Mission to Armenia in March 1995 to prepare a project brief in cooperation with the local counterparts. This project brief was approved in the GEF Council Meeting in May 1995. Thus, UNDP expects that the Government of Armenia meets its commitments in facilitating the UNDP/GEF activities as specified in this Project Document.

b. Prerequisites

The Government of Armenia will allocate the necessary funds in the national budget to support the Project Steering Committee and the relevant ministries and institutes in their role of facilitating the implementation of the UNDP/GEF project activities through:

1. Availability of data to the project staff and consultants as may be required for the implementation of project activities and the realization of the project objectives.
2. Availability of qualified national experts and consultants to participate in the project activities.
3. Designation of qualified counterparts to the project staff from the relevant ministries, departments and centres during the duration of the project.
4. Approval of the Project Steering Committee as the main body to guide the implementation of project activities.

The Project Document will be signed by UNDP, and UNDP/GEF assistance to the project will be provided only if the prerequisites stipulated above have been fulfilled or are likely to be fulfilled. When anticipated fulfilment of one or more prerequisites fails to materialize, UNDP may, at its discretion, either suspend or terminate its assistance.

H. PROJECT REVIEW, REPORTING AND EVALUATION

- a. The project shall be subjected to joint review by the PSC and UNDP at least once every 12 months, the first such meeting to be held within the first 12 months of the start of full implementation. The Project Manager shall prepare and submit to each review meeting a Project Performance Evaluation Report (PPER). Additional PPER may be required, if necessary, during the project.
- b. A project terminal report will be prepared for consideration at the terminal review meeting. It shall be prepared in draft sufficiently in advance to allow review and clearance by the PSC and UNDP at least four months prior to the terminal review.

I. LEGAL CONTEXT

This project shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the **Government of Armenia** and the United Nations Development Programme, signed by the parties on 8 March 1995. The host country implementing agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government cooperating agency described in that agreement.

The following types of revisions may be made to this project document with the signature of the UNDP Resident Representative only, provided he or she is assured that the other signatories of the project document have no objections to the proposed changes:

- a. Revisions in, or addition of, any of the annexes of the project document;
- b. Revisions which do not involve significant changes in the immediate objectives, outputs or activities of a project, but are caused by rearrangement of inputs agreed to or by cost increases due to inflation;
- c. Mandatory annual revisions which rephase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility.

J. BUDGET: UNDP CONTRIBUTION

Budget Code	Description	Total		1995		1996		1997	
		m/m	\$	m/m	\$	m/m	\$	m/m	\$
10.00	<u>Project Personnel</u>								
11.00	International Experts								
11.01	International Consultants	3	42,000	1	14,000	2	28,000		
11.99	Sub Total	3	42,000	1	14,000	2	28,000		
13.00	<u>Admin. Support Personnel</u>								
13.01	Assist. Admin. Officer	1	4,800	1	200	12	2,400	11	2,200
13.99	Sub Total	1	4,800	1	200	12	2,400	11	2,200
15.00	<u>Expert Official Travel</u>								
15.01	Expert Official Travel		45,000		5,000		20,000		20,000
15.99	Sub Total		45,000		5,000		20,000		20,000
16.00	<u>Mission Cost</u>								
16.01	Mission Costs		10,000				5,000		5,000
16.99	Sub Total		10,000				5,000		5,000
17.00	<u>National Professionals</u>								
17.01	National Project Manager	24	7,200	1	300	12	3,600	11	3,300
17.02	National Experts	240	48,000	5	1,000	125	25,000	110	22,000
17.99	Sub Total	264	55,200	6	1,300	137	28,600	121	25,300
19.00	COMPONENT TOTAL	266	157,000	8	20,500	151	84,000	132	52,500
21.00	<u>Subcontracts</u>								
21.01	Subcontracts		67,000				37,000		30,000
29.00	COMPONENT TOTAL		67,000				37,000		30,000
30.00	<u>Training</u>								
33.00	<u>In-Service Training:</u>								
33.01	Workshops		13,000		1,500		1,500		10,000
39.00	COMPONENT TOTAL		13,000		1,500		1,500		10,000
40.00	<u>Equipment</u>								
41.00	Expendable Equipment		23,000		3,000		10,000		10,000
42.00	Non-Expend. Equipment		50,000		5,000		45,000		
49.00	COMPONENT TOTAL		73,000		8,000		55,000		10,000
50.00	<u>Miscellaneous</u>								
51.00	Operation and Maintenance		15,000		1,000		7,000		7,000
52.00	Reporting Costs		9,800				3,800		6,000
53.00	Sundry		5,000		1,000		2,000		2,000
54.00	Project Support Services		10,200		1,200		4,500		4,500
59.00	COMPONENT TOTAL		40,000		3,200		17,300		19,500
99.00	GRAND TOTAL		350,000		33,200		194,800		122,000

ANNEX I

WORK PLAN

PRELIMINARY WORK PLAN

Immediate Objective 2. To strengthen the already existing Information Centre of the Ministry of Nature and Environmental Protection to identify and create links to both national and international sources of information.

[illegible]

[illegible]

Immediate Objective 4. To undertake a national inventory of greenhouse gases following the IPCC methodology and guidelines, establish a permanent mechanism to regularly update the inventory, and contribute to the overall development of the IPCC methodology by undertaking selected studies on methane and nitrous oxide emissions from specific biosystems of Armenia.

[illegible]

Immediate Objective 5. To build capacity, develop tools and undertake studies to provide relevant information for formulation of a national greenhouse gas mitigation strategy.

[illegible]

Immediate Objective 6. To disseminate project results to the relevant local and international partners and formulate a national strategy on the reduction of greenhouse gas emissions.

[illegible]

ANNEX II**SCHEDULE OF PROJECT REVIEWS, REPORTING AND EVALUATION***

Project Starting Date:		1 December 1995
Description		Date
1.	Inception report	1 February 1996
2.	Project Performance Evaluation Report (PPER)	1 August 1996
3.	Tripartite Performance Report (TPR)	1 November 1996
4.	Terminal Report	1 August 1997
5.	Terminal TPR	1 November 1997

*The National Project Manager will prepare the details at the outset of project operations.

ANNEX III

BUDGET DETAILS

As an enabling activity, this project would not take place without the UNFCCC. 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 (or objectives) is presented below:

1. Immediate Objective 1. To identify competent national project manager, experts and counterparts, establish a National Steering Committee and prepare detailed work plan.

a) Project Coordinator (24 months @ US \$ 300 p/m)	US \$ 7,200
b) Assistant (bilingual Armenian/English, 24 months @ US 200 p/m)	US \$ 4,800
c) International consultant (1 month @ US \$ 14,000 p/m)	US \$ 14,000
d) Travel	US \$ 9,000
e) Equipment	US \$ 3,000
f) Other operational expenses (mail, photocopies etc.)	US \$ 2,000
Subtotal:	US \$ 40,000

2. Immediate Objective 2. To strengthen the already existing Information Centre of the Ministry of Nature and Environmental Protection.

a) Local experts and subcontracts	US \$ 20,000
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 \$ 65,000

3. Immediate Objective 3. To study the climate change phenomena itself and its possible impacts with respect to the specific geographical and climatological characteristics of Armenia.

a) Local experts and subcontracts	US \$ 30,000
b) Travel	US \$ 8,000
c) Equipment (computers, programs etc.)	US \$ 30,000
d) Operational costs	US \$ 2,000
Subtotal:	US \$ 70,000

4. Immediate Objective 4. To undertake a national inventory of greenhouse gases and build capacity to frequently update the inventory.

a) Local experts and subcontracts	US \$ 30,000
b) Travel	US \$ 8,000
c) Equipment (computers, programs etc.)	US \$ 10,000
d) Operational costs	US \$ 2,000
Subtotal:	US \$ 50,000

5. Immediate Objective 5. To build capacity, develop tools and undertake studies to provide relevant information for formulation of a national greenhouse gas mitigation strategy.

a) Local experts and subcontracts	US \$ 35,000
b) International Consultants (2 months @ US \$ 14,000 p/m)	US \$ 28,000
c) Travel	US \$ 10,000
d) Equipment	US \$ 10,000
e) Operational costs	US \$ 2,000
Subtotal:	US \$ 85,000

6. Immediate Objective 6. To disseminate the project results to the relevant local and international partners (through organizing a workshop) and formulate a national strategy on the reduction of greenhouse gas emissions.

US \$ 10,000

7. Immediate Objective 7. To prepare the first National Communications of Armenia to the COP to fulfill the country's commitments to UNFCCC on continuous basis.

a) Personnel The Project Coordinator/Manager is responsible for the preparation of the communication	
b) Operational and Reporting Costs, Materials etc.	US \$ 4,800

Monitoring and Evaluation **US \$ 15,000**

GEF Subtotal **US \$ 339,800**

Project Support Services (3%)
(including Executing Agency Support Costs) **US \$ 10,200**

Total Project Costs **US \$ 350,000**

ANNEX IV

**TERMS OF REFERENCE
THE PROJECT MANAGER**

Duties: The Project Manager (PM) is responsible for managing the UNDP/GEF project activities in consultation with the Project Steering Committee (PSC). His/her duties are:

- to coordinate with the PSC in managing the project and implementation of its activities, and coordinate all activities implemented by the national experts and consultants, and the international consultant to ensure smooth and timely execution of project activities;
- to liaise with the representatives of international organizations such as the World Bank and the European Union TACIS in order to identify their development programmes in the country and coordinate the complementary activities, especially those related to energy efficiency and computer models; this cooperation may provide the project staff with technical assistance, and link the project to international sources for future funding;
- to liaise with the relevant ministries, institutes and local civil society organizations (CSOs, or NGOs) in order to include their staff in the project activities, particularly those related to training and capacity building, and coordinate their activities with those of the project's national experts to ensure maximum attainment of project objectives;
- to prepare, within the first two months of the starting of project operation, the detailed work plan (Inception Report) of planned activities with the assistance of international consultant, PSC members and national experts;
- to interview and hire local experts, consultants and assistant administrative officers in full consultation with the PSC;
- to organize local training programmes as needed, and actively participate in these programmes;
- to prepare lists of equipment for the project in consultation with the international consultant, and coordinate the installation of these equipment;
- to prepare the periodic progress reports of the project in accordance with UNDP regulations;
- to control the local expenditures of the project according to the project budget, and prepare periodic budget revisions with the help of UNDP Admin. Officer in Yerevan;

Duty Station: The duty station is in Yerevan, the Capital of Armenia, with office facilities provided by the Ministry of Nature and Environmental Protection; the assignment also involves extensive travel throughout the country with project staff as dictated by the nature of the activities.

Qualifications: The National Project Manager must have an advanced degree (at least M.S. or equivalent) in a discipline related to natural resources or environmental management (such as engineering, natural sciences, social science, agriculture). He/she must have a minimum of 10 years of experience, preferably in environmental management. A working knowledge of English is considered as a plus.

ANNEX IV**TERMS OF REFERENCE
THE NATIONAL EXPERTS****Duties**

The national experts will be identified in cooperation with the Project Steering Committee (PSC), Project Manager and UNDP and approved by the PSC. Their specialties are in five major relevant sectors, including (i) communications (Internet, etc.), (ii) climate change (impact/vulnerability assessment), (iii) greenhouse gas inventories and data management; and (iv) mitigation of greenhouse gases (energy planning, energy efficiency, renewable energy sources, reforestation. To facilitate the implementation of project activities, these experts will be assigned to four research teams, each with a team leader. The four research teams are (1) Information gathering/communications; (2) Impact/vulnerability studies; (3) Greenhouse gas inventories and data management; and (4) Mitigation analysis and mitigation strategy.

Beside being responsible of the specific activities defined for each expert in their individual Terms of Reference, each expert will have the following duties:

- to assist the Project Manager (PM) in managing the UNDP/GEF project and in coordinated implementation of its activities by cooperating with other experts and national and international consultants;
- to assist the PM in the identification and involvement of local NGOs and research institutes in the activities related to climate change, energy and mitigation strategy of greenhouse gas emissions, and assist in coordination of the relevant project activities with those of the local NGOs and research institutes.
- to assist the PM, and actively participate, in the local training programmes (seminars, workshops);
- to accompany the PM (and team leader when necessary) on field trips as directed;
- to assist the PM to prepare the periodic progress reports, and a terminal report in accordance with UNDP procedures;

Duty Station

The duty station is in Yerevan, the Capital of Armenia, with office facilities provided by the Ministry of Nature and Environmental Protection when necessary; the assignment might also involve some travel as dictated by the Project Manager.

Qualifications

The national experts must have an advanced degree (at least M.S. or equivalent) in a discipline related to the project activities. He/she must have a sufficient working experience (determined in detail in each individual Terms of Reference), preferably in environmental management, energy planning and utilization, computer models and/or communications.

ENABLING ACTIVITIES AND RELATED MEASURES -- A GLOSSARY OF TERMS

ABATEMENT

The term abatement refers to activities undertaken to reduce the emission of greenhouse gases into the atmosphere. Abatement measures are a subset of mitigation activities, the other main mitigation measure being sink enhancement.

ADAPTATION

Adaptation activities are measures undertaken to reduce vulnerability and to moderate the adverse effects of environmental impacts, for example climate change. In the context of climate change, decision 11/CP.1 of the COP identifies three stages in the adaptation process:

Stage I is predominantly concerned with vulnerability studies and the assessment of available adaptation options. It also envisages initial measures to build adaptive capacity. Stage I adaptation may be incorporated into, and become part of a country's national communication. Where this is the case, Stage I measures are eligible for GEF funding.

Stages II and III include the medium and long term adaptation measures envisaged in Articles 4.1(b) and 4.1(e) of the FCCC. Stage II and III activities are not yet eligible for funding under the Convention.

CAPACITY BUILDING

The term capacity building refers to a wide range of measures relevant not only to global environment issues but to development activities in general. Capacity building may be defined as the process of creating or enhancing indigenous capabilities to perform specific tasks on an on-going basis in order to attain a given development objective. Among others, the following three aspects are often stressed:

- (a) human resource development (training, education);
- (b) institutional strengthening (improve organizational methods, administrative procedures); and
- (c) creation of a receptive environment (increase public awareness; create regulations and socio-interactive processes conducive to development).

COUNTRY STUDIES

The development of country studies is one example of an enabling activity. Country studies have been sponsored by several bodies, including GEF and bilateral agencies. Studies usually aim at enhancing the capability of a country to formulate its national communication and/or to develop a national strategy to deal with climate change in the longer term, e.g. by assisting in the development of an emission inventory or the assessment of mitigation options.

EMISSION INVENTORIES

A national emission inventory is one of the key elements of a national communication. An inventory is expected to cover all anthropogenic greenhouse gas emissions not controlled by the

Montreal Protocol, listed by sources and sinks. The IPCC and the OECD have established a standard format and procedure to perform this task.

ENABLING ACTIVITIES

In the context of climate change, enabling activities were defined by the COP as those measures that facilitate the implementation of response measures in accordance with the FCCC (decision 11/CP.1). Enabling activities in developing country parties are a program priority and eligible for funding under the Convention. Measures include:

- (a) planning; and
- (b) capacity building measures such as
 - (i) institutional strengthening,
 - (ii) training,
 - (iii) research,
 - (iv) education,

which help countries to implement the Convention.

MITIGATION

Activities which aim at a reduction of the net amount of greenhouse gases released into the atmosphere, and thus help slowing down the process of anthropogenic climate change, are called mitigation measures. They include both emission abatement and sink enhancement, and cover all greenhouse gases, as well as all economic sectors and activities where emissions occur. Mitigation measures undertaken in developing countries are eligible for incremental cost funding under the FCCC.

NATIONAL COMMUNICATIONS

The FCCC requires each Party to communicate to the COP information relevant to the achievement of the objective of the FCCC (Art. 4.1(j) and Art. 12). While recognizing the differentiated responsibilities of different countries, communications are expected to contain the following elements (A/AC.237/55, annex I):

- (a) a national inventory of emissions and sinks;
- (b) if feasible, material relevant for the calculation of emission trends;
- (c) a general description of available or envisaged mitigation options;
- (d) a general description of available or envisaged adaptation options;
- (e) an assessment of the country's vulnerability to climate change;
- (f) a description and assessment of measures adopted to implement the FCCC (Annex I countries only); and
- (g) any other relevant information.

Communications of Annex I countries are due within 6 months of the entry into force of the FCCC (countries with economies in transition are granted 'a certain degree of flexibility'). Least developed countries may make their initial communication at their discretion. The communications of all other countries are due within 3 years of the entry into force of the Convention for the country, or within 3 years of the availability of financial resources in accordance with Article 4.3. Non-Annex I countries are eligible for full-cost funding under the Convention.

NATIONAL PLAN

Prior, or parallel to the formulation of the national communication, a national strategy may be developed which sets out in detail how a country intends to achieve the objective of the FCCC, which mitigation and adaptation options it has available, how and when they are best implemented, and so on. Ideally, the development of a national strategy will result in a program of climate change projects, to be subsequently implemented, with appropriate support through the Convention as and when applicable.

SINK ENHANCEMENT

Sink enhancement measures aim at the protection or expansion of forests and other natural systems that are capable of storing carbon and thus reduce the net emission rate of CO₂ into the atmosphere.

VULNERABILITY ASSESSMENT

Part of stage-I adaptation, a vulnerability assessment analyzes the potential impacts of climate change on a country or region in one or several sectors (e.g., impact on agriculture, on coastal zones, etc.).