

Terms of Reference

Greenhouse Gas Inventory

Under the UNDP-GEF Project:

“Enabling Albania to prepare its Second National Communication to the CoP of the UNFCCC”

Prepared by:

Ermira Fida, Program Manager
Besim Islami, GHG Inventory Team Leader

Tirana, June 2005

Table of Contents

1. BACKGROUND TO THE PROJECT	3
2. OBJECTIVE OF GHG INVENTORY	3
3. SCOPE OF THE STUDY	3
4. DELIVERABLES AND SUBMISSION REQUIREMENTS	4
5. CONTENT/OUTLINE OF THE GHG INVENTORY REPORT	5
5.1 BACKGROUND INFORMATION:	5
5.2 SCOPE OF THE STUDY.....	5
5.3 BASELINE OF THE GHG INVENTORY STUDY.....	5
5.4 METHODOLOGICAL APPROACH.....	5
5.6 INVENTORY OF GREENHOUSE GAS EMISSIONS	6
5.9 ANNEXES.....	7
5.10 GHG CHAPTER FOR ALBANIA’S SNC	8
5.11 EXECUTIVE SUMMARY	8
6. JOB DESCRIPTIONS	9
6.1 NATIONAL GHG INVENTORY INSTITUTION.....	9
6.2 TEAM LEADER FOR GHG INVENTORY	10
6.3 EXPERT OF ENERGY & TRANSPORT	11
6.4 EXPERT OF AGRICULTURE	13
6.5 EXPERT OF LAND USE CHANGE AND FORESTRY (LUCF).....	15
6.6 EXPERT OF INDUSTRY AND SOLVENT	17
6.7 EXPERT OF WASTE.....	19
6.8 EXPERT FOR GHG UNCERTAINTY ESTIMATES.....	21
7. REFERENCE MATERIALS AND WEB LINKS:	22
7.1 GENERAL GUIDANCE MATERIALS:	22
7.2 METHODS AND TOOLS FOR GHG INVENTORY ASSESSMENTS.....	22
8. WORKING PLAN/ SCHEDULE OF ACTIVITIES (Q-THREE MONTHLY PERIOD)	23
9. TERMS OF PAYMENT	28
10. LIST OF DELIVERABLES FOR THE FIRST YEAR OF PROJECT	29

1. Background to the project

In accordance with GEF Operational Procedures for the Expedited Financing of National Communications from Non-Annex I Parties (GEF/C.22/Inf.16), the Government of ALBANIA after the completion and submission to the Cop of the UNFCCC its first National Communication has requested US\$ 420000 from the Global Environment Facility (GEF) to prepare the Second National Communication to the Cop of the UNFCCC.

This project *aims* at enabling Albania to prepare and report its Second National Communication with the Conference of the Parties (Cop) of the UN Framework Convention on Climate Change (UNFCCC) according to 17/CP8 and other guidance provided. It will be a follow up of previous studies already identified under a stocktaking exercise. The project will be working under a priority area / category selection approach in order to allocate resources in the most effective manner. The *main components* of the project are: (a) an inventory of greenhouse gases for the year 2000 and time series 1994-2000; (b) an update of analysis of potential measures to abate the increase in greenhouse gas emissions in Albania; (c) an assessment of potential impacts of climate change in a selected area of Albania and adaptation measures; (d) preparation of the Second National Communication of Albania and submission to the Cop. In addition, public awareness activities and stakeholder consultations will be cross-cutting along the overall course of this exercise therefore, the preparation of the Second National Communication is expected to enhance general awareness and knowledge on climate change-related issues in Albania, and help into highly taking them into account in the process of national planning and policy.

2. Objective of GHG Inventory

The aim of the GHG inventory exercise to be carried out under the [Second National Communication](#) is to perform the estimates of greenhouse gas emissions for Albania for the base year and all sources and sinks as mandated by 17/CP8.

In addition the team will aim in improving the quality of estimates compared to the first inventory already carried out in the framework of the Albania's First National Communication, by filling data gaps and reducing the uncertainty level of estimates with a focus on key source categories. This will mainly be done by utilizing the resources and outputs produced and/or are under compilation process under the sister project: *"Building capacities to improve the quality of GHG emissions (East Europe and CIS)"* funded by GEF.

3. Scope of the study

As mandated by 17/CP8 the greenhouse gas inventory will be done for the base year: 2000 along with estimates for time series: 1990 -2000. The team will perform re-estimates for the base year of FNC: 1994 after filling the gaps identified in the course of the FNC and the difference in results will be analyzed in the light of improvements made. Given the variability of activity data after '90s the team has agreed to develop *time series for a 10-year time frame* (1994-2000) in order to provide a clear view of the emission trends. This will also create a clear background for the abatement analysis. A special attention will be given to the key source categories and a sensitivity analysis is needed to be done in order to see how/whether the key sources have changed.

As per the gases, the second national inventory will cover three direct GHGs: CO_2 , CH_4 and N_2O and other indirect GHGs such as: CO , NO_x , SO_x and $NMVOC$. In addition, estimates of new gases: $HFCs$, $PFCs$ and SF_6 will be provided. Estimates of these gases are not reported under the Albania's First National Communication.

Emissions released from *bunker fuels* will be estimated and reported separately as instructed by the above mentioned guidelines. Estimates of the *key sources*, *sensitivity analysis* and *uncertainty level* will be provided. The second GHG inventory will report on estimates of aggregated GHG emissions and removals expressed in CO₂ equivalent. In addition, indicators such as *CO₂/GDP* and *CO₂/Capita* would be estimated mainly for comparability purposes. Therefore priority will be given to the key source categories.

As regards emission factors, in most of the cases default factors provided by IPCC 1996 Revised Guidelines will be used. The team will see the possibility to use Emission factors calculated under other studies / projects/ programs like the case of industrial boilers or wood stoves. In addition, Emission Factor Database will be visited to see if appropriate factors relevant to our circumstances are provided. Also regional Emission Factors that are or will be developed under the GEF regional project on GHG inventories will be utilized if appropriate.

The progress made so far on improvement of GHG Inventory carried out in the frame of the regional project that consist on strengthening national arrangements for compiling, archiving, updating and managing GHG inventories will be utilized from the inventory team in the course of the SNC project. At the end of the inventory exercise reports, manuals and systems developed under the regional project on GHG improvement will be updated and reviewed in the light of new estimates, data and resources. The strategy for improvement of GHG inventory will be implemented and will be updated in the light of future developments.

All the new input data utilized along with emission estimates will be archived using the same format as for the first inventory archive done under the GEF regional project on GHG inventories. Also the Manual of Procedures and National Inventory Report developed under the above project will be updated in the same line. Improved estimates of GHG emissions are expected mainly due to the majority of outputs of the GEF regional project on GHG inventories. Soft methodology for filling the activity data gaps that do not exist already developed under the GEF regional project on GHG inventories will be utilized under SNC phase. This will be critical for the implementation of the GHG inventory improvement strategy, already drafted under the above project. In addition, the Quality Assurance/Quality Control (QA/QC) plan drafted under the regional project will be implemented as well.

4. Deliverables and submission requirements

Based on above scope of the study, after the elaboration of the GHG inventory the Team will deliver to the climate change program within the deadlines set under the working plan, the following parts:

1. Long national GHG inventory report for base year 2000 and all time series 1994-2000: *about 45 - 50 pages*
2. GHG inventory chapter for the purpose of Albania's Second National Communication: *maximum 25 pages*
3. Executive summary of the GHG Inventory chapter: *maximum 2-3 pages*.
4. Respective part of national circumstances for sectors and area covered under the GHG Inventory study, including the situation of systematic observations.
5. Enter all new input data and emission factors for each sector into the e-version of the archive established under the GEF regional project on GHG inventories.
6. Update manual of procedures developed under the GEF regional project

The above reports will be submitted in Time New Romans Font and Size 11. In order to make the report as much as comprehensive they must have tables and charts. Charts must be submitted in excel in order to allow editing. All worksheets compiled under the study must be provided to the climate change program and be archived and documented.

5. Content/Outline of the GHG Inventory report

5.1 Background information:

The section will set the context for the GHG inventory under the UNFCCC and especially to the National Communication. More specifically this section will be based on:

- GHG inventory related requirements under UNFCCC and National Communication exercise
- Importance of GHG inventory exercise. The key role of this exercise under the overall National Communication. Explanation Why we do need GHG inventory.
- The link and difference between GHG inventory and GHG mitigation.
- Basis of provision of GHG inventory related information such as IPCC guidelines, IPCC Good Practice Guidance and other international literature.
- The importance of evaluation GHG key source, uncertainty assessment and time series for 1994-2000.

5.2 Scope of the study

This section will provide information on what will be the scope of the new GHG inventory study, what's new compared to the first inventory, what are the sectors, source categories under analysis, and gases under focus. This section will indicate the base year and the time line that will be used for time series.

5.3 Baseline of the GHG Inventory study

This section will provide information on the baseline conditions of the study, i.e. where the new study starts on and the situation of sectors relevant to the GHG emissions. More specifically this section will include information on:

- The previous/first GHG inventory performed under previous projects, key sources, data gaps, attempts to fill them, and the level of uncertainty.
- The baseline condition of the sectors responsible for GHG emissions
- Methodological approaches used to perform previous GHG inventory (s)
- Lessons learnt from previous experience

5.4 Methodological approach

This section will summarize the overall methodological approach to be used for the GHG inventory. Specifically it will cover the following:

- Guidelines for GHG inventory and make reference to all of them as an Annex
- Methodology of estimates used and make reference to all of them as an Annex. Indicate what is the Tiers used for estimates; Bottom-up versus reference approaches used; Activity data; Emission Factors (default or national); Methodology of filling data gaps when identified.
- Uncertainties and other limitations must be mentioned. Methods of estimation of combined uncertainties.

5.5 Institutional arrangements

This section will provide information about the procedures and arrangements (e.g institutional) established in order to sustain the process of data collection and archiving aiming at establishment of a continuous process.

5.6 Inventory of greenhouse gas emissions

This section will provide information estimates of emissions on gas-by-gas basis and in sector-by-sector basis, expressed in units of mass. This section will provide information on the emissions of direct greenhouse gases (CO₂, CH₄, N₂O), indirect gases (CO, NO_x, NMVOCs) and information on hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs) and Sulphur hexafluoride (SF₆). In addition the section will provide information on the emissions of GHGs according to the sectors responsible to these emissions, such as energy, agriculture, LUCF, waste, industrial processes and solvents.

More specifically this section will contain the following subsections:

- Greenhouse gas emissions in 2000 and time series (1990-2000)
 - Direct Green House Gas Emissions
 - CO₂ emission in 2000 and time series (1990-2000)
 - CH₄ emission in 2000 and time series (1990-2000)
 - N₂O emission in 2000 and time series (1990-2000)
 - HFCs emission in 2000 and time series (1990-2000)
 - PFCs emission in 2000 and time series (1990-2000)
 - SF₆ emission in 2000 and time series (1990-2000)
 - CO₂ equivalent emission in 2000 and time series (1990-2000)
 - Indirect Green House Gas Emissions in 1994
 - Main CO₂ indicators
 - Albania's CO₂ emissions per capita [tonCO₂/capita] in 2000 and time series for the period of 1990-2000. Make comparison with some other countries.
 - Albania's CO₂ emissions per GDP [tonCO₂/ 1000 USD] in 2000 and time series for the period of 1990-2000. Make comparison with some other countries.
- GHG emissions from each economic sector / source category
 - GHG Emissions from energy and transport for 2000 and time series (1990-2000)
 - Energy and transformation of fuels Industries
 - Industry: emissions from final fuel consumption in industry (not for transportation in enterprises)
 - Transport: GHG from combustion and evaporation of fuels for all transport activities, as by sub-sectors: road, rail, water and air.
 - Small Combustion: Emissions from fuel combustion from sectors: (Commercial/Institutional Buildings; Residential Building; Agriculture/ Forestry/ Fishing; Other)
 - Traditional biomass burned for energy purposes: emissions of CO₂, CH₄, CO, N₂O, NO_x and NMVOC from the burning of wood.
 - Fugitive emissions from fuels
 - Solid Fuels
 - Oil & Natural Gas
 - Venting & Flaring
 - GHG Emissions from Industrial Processes in total in 2000 and time series 1990-2000
 - Iron and Steel Industrial Sub-sector
 - Non-Ferrous Metals Industrial Sub-sector
 - Non Metallic Industrial Sub-sector
 - Other Industrial Sub-sector (Mechanical, Electronic, Mining, Sub-sectors)

- Solvent and other product use
- GHG Emissions from Agriculture in total in the year 2000 and time series for the period 1994-2000
 - Enteric fermentation
 - Manure management
 - Rice cultivation
 - Field burning of agricultural residues
- GHG Emissions from Land Use Change and Forestry in total in the year 2000 and time series for the period 1994-2000
 - Changes in forest and other woody biomass stocks
 - Forest and grassland conversation
 - Abandonment of managed lands
- GHG Emissions from Waste in total in the year 2000 and time series for the period 1994-2000
 - Solid waste disposal on land
 - Waste water treatment
 - Waste incineration
- GHG Emissions from International Bunkers¹ in the year 2000 and time series for the period 1994-2000
- Albania's aggregated² GHG Emissions for 2000 and time series (1990-2000)

5.7 Key sources.

This section will provide information on the key source categories for the base year 2000. An analysis of the previously identified key sources under FNC and regional GEF project on GHG inventories will be done. Sensitivity analysis will be done as well.

5.8 Uncertainty level

This section will contain information on the uncertainty level for each gas each sector. This section will provide information on differences between reference and sectoral approach which is an indicator of uncertainty level. This section will also provide information on uncertainty level regarding activity data, emissions factors and conversion factors. This information will be provided for year 2000. In addition a trend analysis of combined uncertainty for 1990-2000 will be provided. More specifically this section will contain the following sub-sections:

- Difference between reference and sectoral approach.
- Uncertainty level concerning activity data, conversion factors and emission factors.
- Uncertainty level for CO₂ emissions regarding each sector.
- Uncertainty of non CO₂ Emissions (CH₄ and N₂O) regarding sectors.
- Uncertainty of CO₂ eqv emissions regarding sectors.
- GHG Trend Analyze of Combining Uncertainties for the period 194-2000

5.9 Annexes

This section will contain but not limited to the following items:

¹ This category will be reported separately to the overall inventory as IPCC guidelines indicate.

² This section will report in terms of aggregated emissions by applying the Global Warming Potential in order to convert the emissions into CO₂ equivalent.

- Different guidelines for the study to fulfil data gaps and select the emission factors based in Albanian National Circumstances
- Acronyms
- Main excel working sheets (electronic version)
- List of authors
- List of references
- Other information, if deemed necessary

5.10 GHG Chapter for Albania's SNC

This section will be elaborated upon the completion of the final draft of the GHG inventory report. It will summarize the long report in a size up to 25 pages the maximum.

5.11 Executive summary

This section will be elaborated upon the completion of the final draft of the GHG inventory chapter of the Albania's SNC.

6. Job descriptions

6.1 National GHG Inventory Institution³

Duration:	3 years
Type of engagement:	Part-time
Entry on duty:	Ass soon as possible
Duty station:	Tirana

For performing the work under the GHG Inventory in the frame of the above project, a National GHG Inventory Institution needs to be hired. The National Institution is responsible to carry out all activities foreseen under GHG inventory exercise to be carried out under the SNC project. The National Institution should work under the overall guidance and supervision of the Climate Change Program Manager and under the technical supervision of the NITL. The institution should prepare technical material, information and progress reports as requested for dissemination nationally and regionally. All national inventory team members will be sub-contracted under the national institution.

Specifically, its responsibilities are but not limited to the following:

- Assist the NPM in coordinating the preparation of the GHG inventory under the SNC project
- Assist the NPM to finalize the National Working Plan
- Assist the NPM to finalize the TORs for National Experts to be hired according to the national working plan, national budget allocated and project duration.
- Review all national inventory information generated during the project
- Ensure that the sub-contracted national experts are familiar with the GHG inventory related methodology such as IPCC Guidelines, IPCC Good Practice Guidance and with the approaches to be used for developing emission factors
- Advise and supervise the national experts for filling the data gaps when available
- Advise and supervise the national experts in developing the inventory
- Assist the NPM to prepare the final version of deliverables
- Provide substantive comments on any technical materials generated from regional project activities, as requested by the Project Manager
- Ensure the publication and dissemination of the national outputs identified in the project document
- Drafting the GHG inventory chapter of the Second National Communication

Qualifications and experience

- Sound and broadly-recognized scientific expertise on climate research
- Prior experience and substantial involvement in inventory preparation, through involvement in the initial National Communication and sister projects.
- Highly qualified scientists or part-time collaborators working in the fields of climate change related issues (data collection methods, emission factor estimation/development)
- Familiarity with the United Nations Framework Convention on Climate Change and with the technical, scientific and political issues involved in the preparation of GHG inventories
- Demonstrated ability to manage and supervise climate projects
- Substantial knowledge of methodologies for inventories (*IPCC Revised 1996 Guidelines* and *Good Practice Guidance*)
- Substantial experience in Government and in interdepartmental procedures preferred

³ This job description is applicable in case of recruitment of an institution/NGO rather than individuals

6.2 Team Leader for GHG Inventory

Duration:	3 years
Type of engagement:	Part-time
Entry on duty:	Ass soon as possible
Duty station:	Tirana

For performing the work under the GHG inventory in the frame of the above project, a team of experts need to be set up and a leader to manage the team is needed to be hired. The GHG inventory Team Leader should work under the overall guidance and supervision of the Climate Change Program Manager. Specifically, his/her responsibilities are but not limited to the following:

- Assists the PM in establishing the team of experts for performing the GHG inventory on the basis of the roster of experts;
- Provide technical backstopping to the PM regarding GHG inventory issues.
- Provide technical guidance to the team of experts and coordinate their work for compilation of the final output.
- Prepares a detailed work-plan for GHG inventory on the basis of the overall project work plan
- Provides periodic progress report to the NPM on the GHG inventory thematic area
- Develops the scope of work and respective terms of reference for the team members;
- Leads the data and information collection process for performing the GHG inventory study.
- In consultation with NPM decide on approaches (not concluded under stocktaking phase) to be used if necessary;
- Organize the scheduled consultations/workshops and ensure their success;
- Ensures synergy with other relevant and /or ongoing sister projects
- Ensure the timely and effective management of the activities as scheduled;
- Drafts the GHG inventory report and respective chapter of Albania's SNC along with the respective part of executive summary
- Provide the report to the review team for comments
- Incorporates comments received from the review process.
- Oversees the documentation of the studies made and archiving of the worksheets and other related information

Qualifications and experience

- An advanced degree in energy, environmental management or other field relevant to the project;
- A minimum of 7 years of working experience in the area relevant to the Climate Change;
- Substantial involvement in the preparation of the initial National Communication is mandatory (GHG inventory);
- Good understanding of climate change and sustainable development issues;
- Demonstrated ability of analytical and drafting work;
- Demonstrable knowledge of IPCC guidelines, IPCC GPG, LEAP, and other relevant GHG inventory software.
- Familiarity with computers and word processing;
- Fluency in English and ability to write reports in English language.

6.3 Expert of Energy & Transport

Duration:	3 years
Type of engagement:	Part-time
Entry on duty:	Ass soon as possible
Duty station:	Tirana

For performing the work under the GHG Inventory in the frame of the above project, a team of experts need to be set up and an energy expert is needed to be hired. The **Energy & Transport** expert will work under the technical guidance of the Inventory Team Leader (TL) and supervision of the Climate Change Program Manager. Specifically, his\her responsibilities are but not limited to the following:

- Review the IPCC methodology and become familiar with IPCC Good Practice Guidance mainly regarding **Energy & Transport** Sector
- Review data gaps related to key sources of national significance under the First National Communication
- Review the first GHG inventory and check the possibility of data improvements for **Energy and Transport**
- Identify available data from prior or ongoing projects
- Identify sources of available data from national institutions
- Utilize the methodology developed under the regional project on GHG inventories for filling the gaps to which data does not exist.
- Collect activity data for **Energy & Transport** for whole period 1994-2000.
- Estimate GHG inventory for **Energy and Transport** for 2000
- Develop time series for 1994-2000 for **Energy and Transport**
- Draft the respective section of the GHG inventory report for **Energy and Transport**.
- Attend training activities and contribute to discussions through the preparation of technical papers
- Train other experts regarding the inventory of GHG gases in **Energy and Transport**
- Receive and incorporate comments on respective section under the GHG inventory report, if any.
- Provide substantive comments on any technical materials generated from regional project activities, as requested by the TL and the PM;
- Attend exchange workshops and contribute with preparation of technical papers in energy and transport sector
- Assist the Team Leader in writing the final deliverables under the inventory exercise.
- Document and archive the method and assumptions used for **Energy and Transport** sector
- Elaborate the respective part of the national manual of procedures to prepare the inventory for **Energy and Transport**

Qualifications and experience

- An advanced post-graduate university degree in energy sector, climate change and/or environmental management, or equivalent work experience;
- A minimum of 3 years of relevant experience in a field related to climate change;
- Demonstrated ability to manage and supervise climate change / energy projects;
- Substantial involvement in the preparation of the national GHG inventory and the initial National Communication is mandatory;
- Substantial knowledge of methodologies for inventories (*IPCC Revised 1996* and *GPG*);
- Substantial knowledge of all the main players of data statistics of Albania in Energy and Transport sector;
- Substantial knowledge of energy balance in general and Balance of each energy commodity;

- Substantial experience in Government and in interdepartmental procedures preferred;
- Familiarity with international negotiations and processes under the UNFCCC preferred;
- Familiarity with IPCC, EXCEL, computers software and word processing;
- Good willingness to work on the team and good ability to train others;
- Very good knowledge of English and ability to write technical reports.

6.4 Expert of Agriculture

Duration:	3 years
Type of engagement:	Part-time
Entry on duty:	Ass soon as possible
Duty station:	Tirana

For performing the work under the GHG Inventory in the frame of the above project, a team of experts need to be set up and an agriculture expert is needed to be hired. The **Agriculture** expert should work under the overall guidance and supervision of the National Team Leader and the Climate Change Program Manager. Specifically, his\her responsibilities are but not limited to the following:

- Review the IPCC methodology and become familiar with IPCC Good Practice Guidance mainly regarding **Agriculture** Sector
- Review data gaps related to key sources of national significance (to which activity data exists) under the First National Communication
- Review the first GHG inventory and check the possibility of data improvements for **Agriculture**
- Identify available data from prior or ongoing projects
- Identify sources of available data from national institutions
- Utilize the methodology developed under the regional project on GHG inventories for filling the gaps to which data does not exist.
- Collect activity data for **Agriculture** for whole period 1994-2000.
- Estimate GHG inventory for **Agriculture** for the year 2000
- Develop time series for 1994-2000 for **Agriculture**
- Draft the respective section of the GHG inventory report for **Agriculture**
- Attend training activities and contribute to discussions through the preparation of technical papers
- Train other experts regarding the inventory of GHG gases in **Agriculture**
- Receive and incorporate comments on respective section under the GHG inventory report, if any.
- Provide substantive comments on any technical materials generated from regional project activities, as requested by the TL and the PM;
- Attend exchange workshops and contribute with preparation of technical papers in energy and transport sector
- Assist the Team Leader in writing the final deliverables under the inventory exercise.
- Document and archive the method and assumptions used for **Agriculture** sector
- Document the method and assumptions used for **Agriculture** sector
- Elaborate the respective part of the national manual of procedures to prepare the inventory for **Agriculture** sector.
-

Qualifications and experience

- An advanced post-graduate university degree in agriculture sector related to climate change and/or environmental management, or equivalent work experience;
- A minimum of 3 years of relevant experience in a field related to climate change;
- Demonstrated ability to manage and supervise climate projects;
- Substantial involvement in the preparation of the national GHG inventory and the initial National Communication is mandatory;
- Substantial knowledge of methodologies for inventories (*IPCC Revised 1996* and *GPG*);
- To know all the main players of data statistics of Albania in Agriculture sector;
- Substantial experience in Government and in interdepartmental procedures preferred;

- Familiarity with international negotiations and processes under the UNFCCC preferred;
- Familiarity with IPCC, EXCEL, computers software and word processing;
- Willingness to working with higher standards during project timetable;
- Good willingness to working on the team and good ability to train others;
- Very good knowledge of English and ability to write technical reports

6.5 Expert of Land Use Change and Forestry (LUCF)

Duration:	3 years
Type of engagement:	Part-time
Entry on duty:	Ass soon as possible
Duty station:	Tirana

For performing the work under the GHG Inventory in the frame of the above project, a team of experts need to be set up and a land use change and forestry expert is needed to be hired. The Land Use Change and Forestry expert should work under the overall guidance and supervision of the National Team Leader and the Climate Change Program Manager. Specifically, his/her responsibilities are but not limited to the following:

- Review the IPCC methodology and become familiar with IPCC Good Practice Guidance mainly regarding **LUCF** Sector
- Review data gaps related to key sources of national significance (to which activity data exists) under the First National Communication
- Review the first GHG inventory and check the possibility of data improvements for **LUCF** Identify available data from prior or ongoing projects
- Identify sources of available data from national institutions
- Utilize the methodology developed under the regional project on GHG inventories for filling the gaps to which data does not exist.
- Collect activity data for **LUCF** for whole period 1994-2000.
- Estimate GHG inventory for **LUCF** for the year 2000
- Develop time series for 1994-2000 for **LUCF**
- Draft the respective section of the GHG inventory report for **LUCF**
- Attend training activities and contribute to discussions through the preparation of technical papers
- Train other experts regarding the inventory of GHG gases in **LUCF**
- Receive and incorporate comments on respective section under the GHG inventory report, if any.
- Provide substantive comments on any technical materials generated from regional project activities, as requested by the TL and the PM;
- Attend exchange workshops and contribute with preparation of technical papers in energy and transport sector
- Assist the Team Leader in writing the final deliverables under the inventory exercise.
- Document and archive the method and assumptions used for **LUCF** sector
- Elaborate the respective part of the national manual of procedures to prepare the inventory for **LUCF** sector.

Qualifications and experience

- An advanced post-graduate university degree in LUCF sector, climate change and/or environmental management, or equivalent work experience;
- A minimum of 3 years of relevant experience in a field related to climate change;
- Demonstrated ability to manage and supervise climate change /LUCF projects;
- Substantial involvement in the preparation of the national GHG inventory and the initial National Communication is mandatory;
- Substantial knowledge of methodologies for inventories (*IPCC Revised 1996* and *GPG*);
- To know all the main players of data statistics of Albania in LUCF sector;
- Substantial experience in Government and in interdepartmental procedures preferred;

- Familiarity with international negotiations and processes under the UNFCCC preferred;
- Familiarity with IPCC, EXCEL, computers software and word processing;
- Willingness to working with higher standards during project timetable;
- Good willingness to work on the team and good ability to train others;
- Very good knowledge of English and ability to write technical reports

6.6 Expert of Industry and Solvent

Duration:	3 years
Type of engagement:	Part-time
Entry on duty:	Ass soon as possible
Duty station:	Tirana

For performing the work under the GHG Inventory in the frame of the above project, a team of experts need to be set up and an industry and solvent expert is needed to be hired. The industry and solvent expert should work under the overall guidance and supervision of the National Team Leader and the Climate Change Program Manager. Specifically, his\her responsibilities are but not limited to the following:

- Review the IPCC methodology and become familiar with IPCC Good Practice Guidance mainly regarding **Industry and Solvents** Sector
- Review data gaps (to which activity data exists) under the First National Communication
- Review the first GHG inventory and check the possibility of data improvements for **Industry and Solvents**
- Identify available data from prior or ongoing projects
- Identify sources of available data from national institutions
- Utilize the methodology developed under the regional project on GHG inventories for filling the gaps to which data does not exist.
- Collect activity data for **Industry and Solvents** for whole period 1994-2000.
- Estimate GHG inventory for **Industry and Solvents** for the year 2000
- Develop time series for 1994-2000 for **Industry and Solvents**
- Draft the respective section of the GHG inventory report for **Industry and Solvents**
- Attend training activities and contribute to discussions through the preparation of technical papers
- Train other experts regarding the inventory of GHG gases in **Industry and Solvents**
- Receive and incorporate comments on respective section under the GHG inventory report, if any.
- Provide substantive comments on any technical materials generated from regional project activities, as requested by the TL and the PM;
- Attend exchange workshops and contribute with preparation of technical papers in energy and transport sector
- Assist the Team Leader in writing the final deliverables under the inventory exercise.
- Document and archive the method and assumptions used for **Industry and Solvents** sector
- Elaborate the respective part of the national manual of procedures to prepare the inventory for **Industry and Solvents** sector.
-

Qualifications and experience

- An advanced post-graduate university degree environmental management, or equivalent work experience;
- A minimum of 3 years of relevant experience in a field related to climate change;
- Demonstrated ability to manage and supervise climate change projects;
- Substantial involvement in the preparation of the national GHG inventory and the initial National Communication is mandatory;
- Substantial knowledge of methodologies for inventories (*IPCC Revised 1996* and *GPG*);
- To know all the main players of data statistics of Albania in Industry and Solvents sector;

- Substantial experience in Government and in interdepartmental procedures preferred;
- Familiarity with international negotiations and processes under the UNFCCC preferred;
- Familiarity with IPCC, EXCEL, computers software and word processing;
- Willingness for working with higher standards during project timetable;
- Good willingness to work on the team and good ability to train others;
- Very good knowledge of English and write technical reports

6.7 Expert of Waste

Duration:	3 years
Type of engagement:	Part-time
Entry on duty:	Ass soon as possible
Duty station:	Tirana

For performing the work under the GHG Inventory in the frame of the above project, a team of experts need to be set up and a waste expert is needed to be hired. The Waste expert should work under the overall guidance and supervision of the National Team Leader and the Climate Change Program Manager. Specifically, his\her responsibilities are but not limited to the following:

- Review the IPCC methodology and become familiar with IPCC Good Practice Guidance mainly regarding **Waste** sector
- Review data gaps related to key sources of national significance (to which activity data exists) under the First National Communication
- Review the first GHG inventory and check the possibility of data improvements for **Waste** Identify available data from prior or ongoing projects
- Identify sources of available data from national institutions
- Utilize the methodology developed under the regional project on GHG inventories for filling the gaps to which data does not exist.
- Collect activity data for **Waste** for whole period 1994-2000.
- Estimate GHG inventory for **Waste** for the year 2000
- Develop time series for 1994-2000 for **Waste**
- Draft the respective section of the GHG inventory report for **Waste**
- Attend training activities and contribute to discussions through the preparation of technical papers
- Train other experts regarding the inventory of GHG gases in **Waste**
- Receive and incorporate comments on respective section under the GHG inventory report, if any.
- Provide substantive comments on any technical materials generated from regional project activities, as requested by the TL and the PM;
- Attend exchange workshops and contribute with preparation of technical papers in energy and transport sector
- Assist the Team Leader in writing the final deliverables under the inventory exercise.
- Document and archive the method and assumptions used for **Waste** sector
- Elaborate the respective part of the national manual of procedures to prepare the inventory for **Waste** sector.

Qualifications and experience

- An advanced post-graduate university degree in environmental management, or equivalent work experience;
- A minimum of 3 years of relevant experience in a field related to climate change;
- Demonstrated ability to manage and supervise climate change / waste management projects;
- Substantial involvement in the preparation of the national GHG inventory and the initial National Communication is mandatory;
- Substantial knowledge of methodologies for inventories (*IPCC Revised 1996* and *GPG*);
- To know all the main players of data statistics of Albania in Waste sector;
- Substantial experience in Government and in interdepartmental procedures preferred;

- Familiarity with international negotiations and processes under the UNFCCC preferred;
- Familiarity with IPCC, EXCEL, computers software and word processing;
- Willingness to working with higher standards during project timetable;
- Good willingness to work on the team and good ability to train others;
- Very good knowledge of English and ability to write technical reports

6.8 Expert for GHG Uncertainty Estimates

Duration:	3 years
Type of engagement:	Part-time
Entry on duty:	Ass soon as possible
Duty station:	Tirana

For performing the work under the GHG Inventory in the frame of the above project, a team of experts need to be set up and an uncertainty estimations expert is needed to be hired. The Uncertainty Estimates expert should work under the overall guidance and supervision of the National Team Leader and the Climate Change Program Manager. Specifically, his\her responsibilities are but not limited to the following:

- Review the IPCC methodology and become familiar with and Good Practice Guidance on Inventory regarding to the uncertainty assessment.
- Estimate the Value of Uncertainty concerning Activity Data for time series 1994-2000
- Estimate the Value of Uncertainty concerning Emission Factors for time series 1994-2000
- Estimate the Value of Uncertainty concerning Conversion Factors for time series 1994-2000
- Estimate uncertainty for each sector and GHGs for time series 1994-2000.
- Estimate combining uncertainty for time series 1994-2000 (Tier 1&2).
- Develop the GHG trend analysis for 1994-2000.
- Attend project training activities and contribute to discussions through the preparation of technical papers
- Update the quality analysis and quality control plan, already developed under the Regional Projct on GHG inventories.
- Coordinate the QA/QC process under the supervision of the Team Leader
- Train other experts regarding the inventory of GHG gases in uncertainty assessment (train the trainers)
- Attend exchange workshops and contribute to the preparation of technical papers regarding uncertainty assessment in all sectors
- Draft the respective section of the GHG inventory report.
- Document and archive the method and assumptions used regarding Uncertainty assessment
- Receive and incorporate comments on respective section under the GHG inventory report, if any.
- Assist the Team Leader in writing the final deliverables under the inventory exercise.

Qualifications and experience

- An advanced post-graduate university degree in exact sciences, or equivalent work experience;
- A minimum of 3 years of relevant experience in a field related to climate change;
- Substantial involvement in the preparation of the national GHG inventory and the initial National Communication is mandatory;
- Substantial knowledge of methodologies for inventories (*IPCC Revised 1996* and *GPG*)
- Familiarity with international negotiations and processes under the UNFCCC preferred;
- Familiarity with IPCC, EXCEL, MONTECARLO computers software and word processing;
- To have willingness for working with higher standards during project timetable;
- To have good willingness to work on the team and good ability to train others;
- Very good knowledge of English and ability to write technical reports

7. Reference materials and web links:

7.1 General guidance materials:

- UNDP-GEF Project Document: "Enabling activities for the preparation of Albania's second national communication to the UNFCCC". 2005; <http://www.ccalb.org>
- UNFCCC secretariat. Reporting on climate change. User manual for the guidelines on national communications from non-Annex I parties. November 2003; <http://www.unfccc.int>

7.2 Methods and tools for GHG Inventory assessments

- *The Revised 1996 IPCC Guidelines* contain three volumes, each of which provides assistance to the analyst in the preparation of national GHG inventories. The *IPCC Guidelines* were first accepted in 1994 and published in 1995. UNFCCC COP3 held in 1997 in Kyoto reaffirmed that the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories* should be used as "methodologies for estimating anthropogenic emissions by sources and removals by sinks of greenhouse gases" in calculation of legally-binding targets during the first commitment period.
- *The Reporting Instructions (Volume 1)* provides step-by-step directions for assembling, documenting and transmitting completed national inventory data consistently, regardless of the method used to produce the estimates. These instructions are intended for all users of the *IPCC Guidelines* and provide the primary means of ensuring that all reports are consistent and comparable.
- *The Workbook (Volume 2)* contains suggestions about planning and getting started on a national inventory for participants who do not have a national inventory available already and are not experienced in producing such inventories. It also contains step-by-step instructions for calculating emissions of carbon dioxide (CO₂) and methane (CH₄), as well as some other trace gases, from six major emission source categories. It is intended to help experts in as many countries as possible to start developing inventories.
- *The Reference Manual (Volume 3)* provides a compendium of information on methods for estimation of emissions for a broader range of greenhouse gases and a complete list of source types for each. It summarizes a range of possible methods for many source types. It also provides summaries of the scientific basis for the inventory methods recommended and gives extensive references to the technical literature.
- *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*. This report on Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories is the response to the request from the United Nations Framework Convention on Climate Change (UNFCCC) for the Intergovernmental Panel on Climate Change (IPCC) to complete its work on uncertainty and prepare a report on good practice in inventory management. This report provides *good practice guidance* to assist countries in producing inventories that are neither over nor underestimates as far as can be judged, and in which uncertainties are reduced as far as practicable. To this end, it supports the development of inventories that are transparent, documented, consistent over time, complete, comparable, assessed for uncertainties, subject to quality control and quality assurance, and efficient in the use of resources.

Outputs/Activities	2005		2006				2007				2008	
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
9.4 Non Metallic Industrial Sub-sector			X	X								
9.5 Other Industrial Sub-sector (here should be included: Mechanical, Electronic, Mining, Sub-sectors)			X	X								
9.6 Solvent and other product use			X	X								
10. Gathering activity data for Agriculture Sector for whole period 1994-2000.			X	X								
10.1 Filling data gaps for enteric fermentation through an agricultural survey.			X	X	X							
10.2 Enteric fermentation			X	X	X							
10.3 Manure management			X	X								
10.4 Rice cultivation			X									
10.5 Field burning of agricultural residues			X	X								
11. Gathering activity data for Land Use Change and Forestry Sector for whole period 1994-2000.			X	X								
11.1 Changes in forest and other woody biomass stocks			X	X								
11.2 Forest and grassland conversation			X	X								
11.3 Abandonment of managed lands			X	X								
12. Gathering activity data for Waste Sector for whole period 1994-2000.			X	X								
12.1 Solid waste disposal on land			X	X								
12.2 Waste water treatment			X	X								
12.3 Waste incineration			X	X								
13. GHG Emissions from International Bunkers in the year 2000 and time series for the period 1994-2000			X	X	X							
14. A completed national inventory for 2000 along with time series 1994-2000 developed			X	X	X	X						
15. Re-estimate GHG emissions inventory of 1994				X								
16. Estimate the GHG emissions inventory for 2000 and develop time series for 1994-2000				X	X	X						
17. Prepare a draft inventory for 2000 and time series 1994-2000					X	X						

Outputs/Activities	2005		2006				2007				2008	
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
18. Develop key sources analysis for 2000 and sensitivity analysis (1994-2000)				X	X	X	X					
19. Develop a key sources inventory for 2000.				X	X	X	X					
20. Undertake uncertainty assessment				X	X	X	X	X				
20.1 Evaluation of Value of Uncertainty concerning Activity Data,				X	X							
20.2 Evaluation of Value of Uncertainty concerning Conversion Factors				X	X							
20.3 Value of Uncertainty concerning Emission Factors						X	X					
20.4 CO ₂ Emission Uncertainty Estimation in Energy and Transport Sector						X						
20.5 Non CO ₂ Emissions (CH ₄ and N ₂ O) Uncertainty Estimation: <i>Energy and Transport Sector, Industry and Solvents, Land Use Change and Forestry, Agriculture, Waste</i>							X					
20.6 Estimation of combining uncertainties for year 2000 regarding: <i>CO₂: Tier 1&2 Uncertainty Calculation and Reporting; N₂O: Tier 1&2 Uncertainty Calculation and Reporting; CH₄: Tier 1&2 Uncertainty Calculation and Reporting; HFCs: Tier 1&2 Uncertainty Calculation and Reporting; PFCs: Tier 1&2 Uncertainty Calculation and Reporting; SF₆: Tier 1&2 Uncertainty Calculation and Reporting; CO₂ equivalent: Tier 1&2 Uncertainty Calculation and Reporting.</i>							X	X				
21. Circulate the inventory for internal review as part of QA/QC plan						X	X	X				
22. Technical peer review performed as part of QA/QC plan						X	X	X				
22.1 Perform a QA/QC plan for energy and transport sector.					X	X						
22.2 Perform a QA/QC plan for industry and solvent sector.					X	X						
22.3 Perform a QA/QC plan for agriculture sector.					X	X						
22.4 Perform a QA/QC plan for land use change and forestry sector.					X	X						
22.5 Perform a QA/QC plan for waste sector.					X	X						
22.6 Perform a QA/QC plan for uncertainty assessments.					X	X						
23. Organize a national workshop to present findings of the GHG inventory									X			
23.1 Present findings in Workshops from Energy and Transport									X			
23.2 Present findings in Workshops from Industry and Solvent									X			
23.3 Present findings in Workshops from Agriculture									X			

9. Terms of payment

Each member of the GHG inventory will be paid according to the following schedule of payments upon delivery of satisfactory products as specified under the TORs in accordance with Working Plan, object of satisfactory performance certified by the Team Leader and Program Manager.

The GHG Inventory final report might be object of the peer review, if provided by the UNDP-GEF National Communication Support Program.

Table of Payments for GHG Inventory Team													
Experts/ Quarters/ Year	First Year				Second Year				Third Year				TOTAL 36 months
	2005		2006		2007		2008		Q11	Q12			
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8			Q9	Q10	
	25/6/05- 15/9/06	15/9/05 - 15/12/05	15/12/05- 15/03/06	15/03/05- 15/06/06	15/6/06- 15/9/06	15/9/06 - 15/12/06	15/12/06- 15/03/07	15/03/07- 15/06/07	15/6/07- 15/9/07	15/9/07 - 15/12/07	15/12/07- 15/03/08	15/03/08- 15/06/08	
Team Leader	0	3000	0	3000	0	1900	0	1900	0	600	0	600	11,000
Energy and Transport	0	800	0	800	0	450	0	450	0	250	0	250	3,000
LUCF	0	750	0	750	0	400	0	400	0	100	0	100	2,500
Agriculture	0	500	0	500	0	500	0	500	0	250	0	250	2,500
Industry and Solvents	0	300	0	300	0	250	0	250	0	150	0	150	1,400
Waste	0	300	0	300	0	250	0	250	0	100	0	100	1,300
Uncertainty Assessment	0	300	0	300	0	250	0	250	0	100	0	100	1,300
Survey to fulfill data gaps	0	4500	0	4500	0	6000	0	0	0	0	0	0	15,000
Technical Assistance	0	250	0	250	0	250	0	250	0	0	0	0	1,000
TOTAL	0	10700	0	10700	0	10250	0	4250	0	1550	0	1550	39000

10. List of deliverables for the first year of project

First year of the project

At the end of the Q2 of the first year of the project (Q4/2005) the GHG Inventory Team will deliver to the Climate Change Unit /Program the following items:

1. Draft report on activity data gathered for each category of each sector
2. Draft report on emission factors for Tier 1 and 2 (used at the extend possible) selected for each source category of respective sectors

At the end of the Q4 of the first year of the project (Q2/2006) the GHG Inventory Team will deliver to the Climate Change Unit /Program the following items:

3. Draft report on activity data gaps collected by using the tool of survey for most important key sources categories as decided during stocktaking and regional project on GHG inventories.

Second year of the project

By the end of the Q2 of the second year of the project (Q4/2006) the GHG Inventory Team will deliver to the Climate Change Unit/Program the following items:

4. First draft of national GHG inventory report for base year 2000 and time series (1990-2000): about 40-50 pages

By the end of the Q4 of the second year of the project (Q2/2007) the GHG Inventory Team will deliver to the Climate Change Unit/Program the following items:

5. First draft of GHG inventory chapter for Albania's Second National Communication: maximum 25 pages
6. After sending for peer review to UNDP-GEF NCSU, reflect comments into the report.
7. First draft of national circumstances for GHG inventory relevant sectors.

Third year of the project

By the end of the Q2 of the third year of the project (Q4/2007) GHG Inventory Team will deliver the following item:

8. Draft executive summary for the SNC report for the GHG inventory: maximum 2 pages.
9. Finalize all reports (long GHG inventory report; GHG inventory chapter and national circumstances)
10. Archive all the data gathered and estimates