

UNITED NATIONS ENVIRONMENT PROGRAMME  
EVALUATION AND OVERSIGHT UNIT  
EVALUATION REPORT ON  
UNEP/GEF SUBPROJECT GF/2200-96-16 LESOTHO

Enabling activities for the implementation of the United Nations  
Framework Convention on Climate Change (UNFCCC)

(Name)

(Date)

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## SUMMARY

### A. Background

1. Climate change as a result of human activities is one of the most serious problems facing the environment. The international community agreed to address this problem in a global manner by drafting the United Nations Framework Convention on Climate Change (UNFCCC) and the subsequent Kyoto Protocol. Lesotho ratified the Convention in February 1995.
2. The objective of this Convention is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous human-induced interference with the climate system. This level should be achieved early enough to allow ecosystems to adapt naturally to climate change and for food production not to be threatened. The Convention is founded on the principle that Parties should take courses of action, in respect of their economic and social activities, and with regard to the Convention's specific requirements, that will protect the climate system for present and future generations.
3. Under the UNFCCC, Lesotho is categorized as one of the countries highly vulnerable to the impact of climate change, deserving special attention. The country experiences frequent droughts that result in poor harvests and large livestock losses to rural farmers, exacerbating poverty and suffering. Heavy snowfalls, strong winds and floods that pose devastating social impacts also affect Lesotho. These adverse climatic conditions undermine the economic development of the country and the well-being of the nation.
4. Under climate change conditions, Lesotho is expected to have a warmer climate with low precipitation. On the whole the climate will be unfriendly. According to the current climate change scenarios, the frequency and intensity of droughts and floods will increase.
5. In order to address the above concerns and to fulfil its obligations under the UNFCCC, the Government of Lesotho undertook a Climate Change Enabling Activities project in November 1996. The project was scheduled to run for two years, but completion was slightly delayed owing to political unrest in Lesotho in 1998.

### B. Major findings, conclusions and recommendations

6. It is important to mention that the assumptions made during project design were realistic. This is substantiated by the fact that most of the planned objectives were achieved in time and within budget. The material support and level of commitment of participating or partnership organizations was good, and this led to the timely completion and positive outputs such as the initial national report on climate change. The United Nations Environment Programme (UNEP) was designated by the Global Environment Facility (GEF) as the implementing agency for this project. It assisted Lesotho to draft the project proposal and provided technical and administrative guidance. All components of the project were completed, but there is room for further work such as the enhancement of capacity-building, identification of climate change technologies and expansion of the climate observation network. GEF has approved additional financing for a second phase of the project to fund these activities. A published version of the initial national communications on climate change was transmitted to the UNFCCC secretariat in April 2000. The design and implementation of the project may be considered very good for the reasons given in section IV of this report.
7. The effectiveness of capacity-building can be judged by the good work that was produced by the teams. Lesotho has in place capable individuals who will be able to undertake preparation of future national communications. This aspect of the project was rated as excellent.

8. The project activities will have a short-term impact by exposing the population of Lesotho to climate change issues. In the long run, the impact will be reflecting in changes in the behaviour of the population. However, this will happen only if the project results are integrated into national policies. The efforts to undertake an awareness campaign are rated as good.

9. One of the major outputs of the project was the compilation of a greenhouse gas (GHG) inventory for Lesotho. It shows that carbon dioxide (CO<sub>2</sub>) equivalent emissions in 1994 were 6,288.66 Gg, while absorption in sinks was 3,039.20 Gg, giving a net emission of 3,249.46 Gg. A breakdown shows that land use, land use change and forestry constitute the largest source of emissions, being responsible for net emissions of 1,260.57 Gg of CO<sub>2</sub> equivalent. The second source was agriculture, emitting about 1,074.05 Gg or 33.06%. Energy took third place, emitting about 854.99 Gg or 26.31%. Since more work needs to be done on the inventory, plans for phase II of the project include work to revise the inventory.

### C. Responding to climate change

10. The outputs of the project have led to suggestions that the national development plan should include the following policy elements:

#### Agriculture sector

11. Climate change will affect agriculture in Lesotho, and this in turn will exacerbate poverty, threaten food security, reduce employment creation and adversely affect the social fabric. To respond to climate change, the agriculture sector has to be transformed through policy reforms, changing social attitudes to the use and protection of the country's resource base, disseminating new production technologies, introducing new and more resistant crop varieties, introducing an appropriate form of intensive production and improving farmers' responsiveness to market signals.

#### Water sector

12. For the water sector, scenarios show that if the current climate change projections remain valid, and if the total available fresh water is 5.4 cubic kilometres per annum, the country will enter a water stress period with availability of less than 1,700 cubic metres per capita per year in 2019. It is predicted that this figure will fall to about 1,000 cubic metres per capita per year by 2062. The studies have led to a recommendation that a water resources management policy and strategy that adequately recognize the impact of climate change be developed. There should be rationalization and improvement of the water sector. Legislation governing water use and pollution should also be reviewed.

#### Land use

13. Lesotho is facing a major threat of land degradation taking the form of severe loss of vegetation, massive soil erosion that leads to gully formation and abandonment of land, loss of biodiversity and low agricultural production and productivity. It is crucial to develop policies that would promote environmental conservation and preservation.

### D. Recommendations to help improve Lesotho's response to climate change

14. It is recommended that:

(a) The Lesotho Meteorological Service (LMS) should strengthen the effectiveness of the Climate Change Steering Committee;

(b) A multi-year research and training programme on climate change should be created to ensure that the impacts of the project are sustainable;

- (c) Simple non-technical documents on climate change should be translated into Sesotho and compiled into a special brochure;
- (d) The LMS should encourage the search for "win-win" options for climate change;
- (e) The LMS should develop stronger liaison with the Environment and Land Management Unit of the Southern African Development Community (SADC) on climate change issues, for example in the area of cost-effective management of water resources in the region;
- (f) Mitigation options should be carefully reviewed by experts before they are implemented by the Government;
- (g) The LMS should establish a dedicated division on climate change;
- (h) Responsibility for policy development and implementation should be entrusted to the relevant departments – Foreign Affairs, Energy, Trade and Industry, Water and Forestry, Transport, Science and Technology, Agriculture, Housing and Environment.

## I. INTRODUCTION

1. The main objective of the evaluation was to assess the project outputs and results in terms of effectiveness, efficiency, impact, sustainability, relevance and appropriateness.
2. The positive impacts of the project were assessed to ascertain whether they are likely to be sustained the future and to highlight lessons learned that would improve the implementation of future projects in the areas of climate change. A consultant from South Africa undertook this task during December 2000.
3. The subproject entitled “Enabling activities for the implementation of the United Nations Framework Convention on Climate Change in Lesotho” was undertaken with the assistance of UNEP. It was funded by GEF to the tune of US\$ 350,000. The National Environment Secretariat (NES) was the overseer of the project, while the executing agency was the Lesotho Meteorological Service (LMS). Under the guidance of the LMS, a National Climate Change Study Team (NCCST) was formed, composed of experts who prepared a greenhouse gas inventory and a vulnerability assessment and studied mitigation and adaptation options.

## II. PURPOSE AND METHODOLOGY OF THE EVALUATION

4. The purpose of the evaluation was to determine the extent to which the project had been successful in fulfilling its objectives and obtaining the expected results, and whether it had proved a cost-effective way of obtaining those results.
5. A series of face-to-face interviews with key informants from stakeholder departments and sectors were conducted. A telephone interview with the UNEP task manager also took place. The interviews were followed by a critical review and evaluation of actions that could be taken to realize the long-term benefits of the project. Annex I contains the names of the stakeholders who were interviewed.
6. In addition to the interviews, a number of documents pertaining to the project were reviewed, including project reports and the Lesotho National Report on Climate Change. A list of references appears in annex II.

## III. PROJECT OBJECTIVES, ACTIVITIES AND OUTPUTS

### A. Objectives

7. The planned objectives of the project were as follows:
  - (a) To enable Lesotho to fulfil its commitments and obligations as required by articles 4.1 and 12.1 of the UNFCCC, especially the preparation and submission of its initial national communication as required by article 12.1 (a), (b) and (c), using the recommended format for non-annex I Parties;
  - (b) To enhance the scientific and technical capacity of Lesotho so that it can sustain all aspects of its activities related to the implementation of the Convention. This would be achieved by strengthening the capacity of appropriate national institutions;
  - (c) To assist Lesotho to develop least-cost greenhouse gas abatement and climate change adaptation strategies that promote environmentally sustainable development;
  - (d) To assist the general public, as well as policy makers and decision makers, to better understand climate change issues and their implications for natural resources and the management of such resources.

## B. Planned activities

### 1. Activity 1: Capacity-building for the Project Management and National Climate Change Study Teams and public awareness campaigns

8. The capacity of the National Environment Secretariat, the LMS, the Project Management Team and the NCCST was to be enhanced through appropriate training in all aspects of the enabling activities.

9. A series of public awareness campaigns, including seminars for both public and private sectors, including non-governmental organizations and rural communities, were to be undertaken by the Project Management Team. News releases through newspapers, radio and television were to be organized. The capacity of the major educational institutions was to be strengthened to enable them to effectively provide training courses related to climate change.

10. The expected outputs for activity 1 were:

- (a) Establishment of Project Management and National Climate Change Study Teams with appropriate skills;
- (b) Enhancement of public awareness on climate change issues;
- (c) Strengthening of the ability of major educational institutions to provide training courses related to climate change.

### 2. Activity 2: Compilation of greenhouse gas inventories

11. A comprehensive inventory of greenhouse gas sources and sinks was to be undertaken by the GHG Inventory Group formed within the National Climate Change Study Team and including scientific and technical expertise from appropriate public institutions (e.g., the Departments of Energy, Transport, Forestry, Livestock and Crops), the private sector, (e.g., industries), non-governmental organizations and scientific, technical and educational institutions (e.g., the University of Lesotho).

12. Following the compilation of the GHG inventories, and with the support of the Project Management Team, the GHG Inventory Group was to hold a workshop to review and present its results to national policy makers and decision makers.

13. The expected major outputs from activity 2 were:

- (a) A full GHG inventory based on the most current version of the Guidelines drawn up by the Intergovernmental Panel on Climate Change (IPCC), in the standard reporting format;
- (b) Identification of shortcomings and gaps in the IPCC Guidelines in relation to local conditions;
- (c) A description of any original research needed to develop or apply new emission factors for specific activities;
- (d) Recommendations on areas of targeted research to improve future inventories and to suggest revisions to the existing IPCC GHG inventory methodology;
- (e) Report of the workshop.

### 3. Activity 3: Vulnerability assessment

14. A comprehensive vulnerability assessment was to be undertaken for various sectors, including agriculture (crops and livestock), forestry, water resources, natural ecosystems, human health and other (e.g. social) impacts, so as to enable the country to fulfil its reporting requirements for the initial national communication. Particular attention was to be paid to the impact of climate change on water resources, which are most valuable and important for economic development in Lesotho.

15. A workshop was to be held for various stakeholders, policy makers and decision makers to review and publicize the results at the end of the study.

16. The following were expected major outputs from activity 3:

- (a) Important baseline data required for assessing climate change vulnerability and adaptation options;
- (b) A comprehensive vulnerability assessment for various sectors based on established procedures;
- (c) Report of the workshop.

### 4. Activity 4: Mitigation options

17. In the light of the GHG inventory, a range of potential mitigation options for various sectors were to be identified, analysed and assessed so that a national strategy could be formulated. This task was to be undertaken by a Mitigation and Adaptation Options Group formed within the National Climate Change Study Team.

18. A workshop was to be conducted for key stakeholders, policy makers and decision makers to review the options and strategies at the end of the study.

19. The expected outputs from activity 4 were:

- (a) Identification of mitigation options;
- (b) Recommendations on reducing the volume and intensity of emissions from various emission sources and the enhancement of sinks;
- (c) Preparation of the first national mitigation strategy for inclusion in the national communication;
- (d) Report of the workshop.

### 5. Activity 5: Adaptation options

20. On the basis of the findings of the comprehensive vulnerability assessment for various sectors, a range of potential adaptation (stage I) options were to be identified, analysed and assessed so that a national strategy could be formulated. A workshop was to be conducted for key stakeholders and policy makers to review the options and strategies at the end of the study.

21. The expected outputs for activity 5 were:

- (a) Identification of adaptation (stage I) options;

(b) Preparation of the first national adaptation strategy for inclusion in the national communication;

(c) Report of the workshop.

#### 6. Activity 6: Preparation of national plans for mitigation and adaptation

22. On the basis of the analysis of mitigation and adaptation (stage I) options and strategies, national plans for mitigation and adaptation were to be prepared by the Mitigation and Adaptation Options Group with a view to fulfilling Lesotho's reporting requirements under the UNFCCC. A workshop was to be conducted for key stakeholders, policy makers and decision makers to review the plans.

23. The expected output from activity 6 was:

Formulation of national plans for mitigation and adaptation.

#### 7. Activity 7: Preparation of national communication

24. The initial national communication required under article 12 of the UNFCCC was to be prepared and submitted to the UNFCCC secretariat. It would include the outputs of activities 2 to 6 as described above.

25. The expected output of this activity would be the initial national communication to be submitted to the UNFCCC secretariat in the specified period.

### IV. FINDINGS AND CONCLUSIONS

26. Many of the findings set out below were endorsed during discussions between the consultant and the stakeholders.

#### A. Appropriateness and relevance

27. The project focused on fulfilment of the objectives of the UNFCCC (stabilization of GHG levels in the atmosphere), GEF (cost-effective financing of environment programmes) and UNEP (implementation of an agenda for sustainable development). The objectives, approaches, strategies and priorities of the project contributed directly to accomplishment of the mission and mandate of UNEP, which is to provide leadership and encourage partnership in caring for the environment by inspiring, informing and enabling nations and peoples to improve their quality of life without compromising that of future generations. UNEP is actively involved in the climate change process at both convention and project levels. It is one of the parent bodies of IPCC and provides input to the work of the Convention bodies in the implementation of the Convention and the preparations for the entry into force of the Kyoto Protocol. UNEP is also taking action in pursuit of the Convention's objectives and working to raise awareness about climate change. The project therefore conforms to the priorities and focus approved by the UNEP Governing Council in the programme of work.

28. Although Lesotho was one of the first African countries to ratify the UNFCCC in 1995, it did not have the capacity to fulfil its obligations under the Convention. This project was undertaken in a timely manner to cater for the capacity-building that was urgently needed. It may be noted that Lesotho used its nationals to undertake most of the project activities. This should ensure ownership and enhancement of capacity for local stakeholders.

29. The project activities were in line with Lesotho's national priorities. In the National Development Plan the Government accepts responsibility for combating climate change by reducing the emission of greenhouse gases to the extent possible in Lesotho. There is recognition that climate change will impact negatively on a number of economic sectors.

30. It is important to mention that the assumptions made during project design were realistic. The budget of US\$ 350,000 covered the activities as set out in the project proposals and there was a surplus at the end of the project. The outputs envisaged in the project documents were produced on time and to the required standard.

#### B. Effectiveness and efficiency of objectives and outputs

31. In order to assess the effectiveness and efficiency of the planned objectives and outputs, they were compared and analysed against the actual outputs.

##### 1. Capacity-building for the Project Management and National Climate Change Study Teams and public awareness campaigns

32. Workshops were held for influential people – chiefs, local government representatives, school headmasters and church leaders – and non-governmental organizations in all of Lesotho's 10 districts. "Talk shops" were organised at tertiary institutions. Posters and extensive broadcast coverage also served as vehicles.

33. The capacity-building component of the project was very well executed in respect of training the Study Teams. Team members attended the following courses and workshops:

(a) Five experts from the Inventory Group participated in a UNEP Training Seminar on Climate Change Scenarios, convened by the Climate Research Unit, University of East Anglia, United Kingdom, from 12 to 20 December 1996. The participants acquired skills in the application of the Model for Assessment of Greenhouse-gas-induced Climate Change (MAGICC) and Scenario Generator (SCENGEN) models for the development of regional climate change scenarios. Each participant was provided with a copy of the MAGICC software. The purpose of the workshop was to introduce participants to the concept of global climate change modelling, as most of them had had no previous exposure to climate change issues. On their return to Lesotho, they participated in the compilation of the greenhouse gas inventory and assisted in conducting awareness workshops;

(b) Four members of the National Climate Change Study Team participated in the South African Climate Change Country Studies Workshop, convened under the United States Country Studies Program in Pretoria from 10 to 14 March 1997. They were trained to analyse climate change vulnerability and assess mitigation options. They participated in the production of the vulnerability and mitigation reports;

(c) One member participated in the IPCC Asia-Pacific Workshop on Integrated Assessment Models convened by the United Nations University in Tokyo from 10 to 12 March 1997. He studied the applicability of integrated assessment models and their limitations. On his return to Lesotho, he assisted in the management of the project;

(d) Two members participated in a Training Workshop on Computerized Climatological Data Management, organized in Manzini, Swaziland, by the Swaziland Meteorological Services, from 14 to 19 May 1997. They were trained to set up the CLICOM climate data system, which was used to manipulate the sectoral data for the vulnerability and adaptation assessments;

(e) Two members participated in a Workshop on the Economics of Greenhouse Gas Limitations, convened in Mauritius by the UNEP Collaborating Centre on Energy and Environment from 22 to 28 May 1997. They were trained to use guidelines for mitigation analysis and calculation of baselines in addition to macroeconomic assessments. They later participated in the formulation of baseline assessments for the mitigation options;

(f) Two members of the project team dealing with vulnerability and adaptation participated in a Training Workshop on Vulnerability and Adaptation Assessment based on the IPCC Guidelines, convened by the United Nations Institute for Training and Research under its Climate Change Training and Research

Programme in Zimbabwe from 26 May to 6 June 1997. They were trained in conducting national vulnerability and adaptation assessments;

(g) Two members of the GHG Inventory Group participated in a Training Workshop on the Application of Satellite Information on Evaluation of land use Change convened by the South African Council for Scientific and Industrial Research in Pretoria on 4 and 5 August 1997. They underwent training in the application of remote sensing techniques in the evaluation of land use change. They were able to generate images showing 1994 land use changes, which they brought to Lesotho for use in the inventory work;

(h) Two members participated in the African Regional Workshop on Initial National Communications to the UNFCCC, convened by the non-governmental organization Environment and Development in the Third World (ENDA) in Dakar, Senegal from 28 to 30 August 1997. During the workshop they were further exposed to preparing inventories and assessing vulnerability and mitigation. The guidelines agreed on at the workshop were used in the preparation of the Lesotho national communications;

(i) A member of the NCCST participated in a Workshop on the Economic Impacts of Annex I Actions on Non-Annex I Countries, convened by IPCC in Oslo, Norway, from 18 to 20 August 1997. He was trained in the model intercomparisons used in some Annex I countries for mitigation assessments, and studied modelling of the impacts of various mitigation options;

(j) Two members of the mitigation analysis project team participated in a Mitigation Training Workshop convened by the United Nations Institute for Training and Research in Harare, Zimbabwe from 22 to 26 September 1997. They were trained in using a mitigation analysis package. The ranking mitigation options was explored. This knowledge was used to prepare the mitigation report for Lesotho;

(k) The project management team procured equipment, including computers and associated peripherals, during 1997. The Government of Lesotho shared the cost of procuring this equipment. The acquisition of this equipment enabled the LMS to set up a PC climate change database. This data base will be used for future phases of the project.

## 2. GHG inventories

34. A 19-member National Climate Change Study Team was constituted to evaluate the volume of greenhouse gases emitted in Lesotho. This multidisciplinary team included staff from the Lesotho Meteorological Service, the Department of Energy, the National University of Lesotho, the Land Use Planning, Forestry and Soil Conservation Division, the Department of Livestock and the Lesotho National Development Corporation.

35. The Lesotho greenhouse gas report shows that total carbon dioxide equivalent emissions in 1994 were 6,288.66 Gg, while absorption in sinks was 3,039.20 Gg, giving a net emission of 3,249.46 Gg. A breakdown shows that land use, land use change and forestry constitute the largest source of emissions, being responsible for net emissions of 1,260.57 Gg of CO<sub>2</sub> equivalent. The second source was agriculture, emitting about 1,074.05 Gg or 33.06%. Energy took third place, emitting about 854.99 Gg or 26.31%.

36. The compilation of the GHG inventory provided Lesotho with an opportunity to calculate its GHG profile. It is now possible to take specific actions to mitigate the increase in the emission of these gases.

## 3. Vulnerability assessment

37. A comprehensive vulnerability assessment was undertaken in a number of sectors.

38. Climate change will affect agriculture in Lesotho, and this in turn will exacerbate poverty, threaten food security, reduce employment creation and adversely affect the social fabric. To respond to climate

change, the agriculture sector has to be transformed through policy reforms, changing social attitudes to the use and protection of the country's resource base, disseminating new production technologies, introducing new and more resistant crop varieties, introducing an appropriate form of intensive production and improving farmers' responsiveness to market signals.

39. For the water sector, scenarios show that if the current projections remain valid, and if the total available fresh water is 5.4 cubic kilometres per annum, the country will enter a water stress period with availability of less than 1,700 cubic metres per capita per year in 2019. It is predicted that this figure will fall to about 1,000 cubic metres per capita per year by 2062. The studies have led to a recommendation that a water resources management policy and strategy that adequately recognizes climate change be developed. There should be rationalization and improvement of the water sector. Legislation governing water use and pollution should also be reviewed.

40. Lesotho is facing a major threat of land degradation taking the form of severe loss of vegetation, massive soil erosion that leads to gully formation and abandonment of land, loss of biodiversity and low agricultural production and productivity. It is crucial to develop policies that would promote environmental conservation and preservation.

#### 4. Mitigation options

41. Efforts to find mitigation options concentrated on the energy and forestry sectors. The NCCST recommended the following:

- (a) For cooking and heating – introduction of biodigesters, solar heaters, electric stoves and energy-efficient coal and wood stoves;
- (b) For lighting – a switch to lower GHG emission factors, such as solar panels and electricity;
- (c) For transport – reduction of fuel demand through taxes; improvement of vehicle import regulations; introduction of measures to ensure better engine maintenance; improved route planning; encouragement of higher-capacity transport;
- (d) For industry – lowering of electricity tariffs and improvement of boiler efficiency

42. Through this project, Lesotho has realized that in order to provide energy to all sectors and regions of the country at minimum social, economic and environmental cost, there is a need for:

- (a) Energy conservation in buildings, transport, commerce and industry and in rural areas;
- (b) Development of indigenous energy sources;
- (c) Supplementing of commercial sources of energy with indigenous alternative sources;
- (d) Expansion of indigenous hydropower generation and electricity distribution infrastructure.

43. The NCCST recommended that in the forestry sector, the following should be considered:

- (a) Reforestation of indigenous forests;
- (b) Afforestation of gullies and degraded land;
- (c) Rehabilitation of wetlands.

## 5. Adaptation options

44. For adaptation options, the study teams focused on the agricultural sector, the water sector and sanitation, land use change and forestry. When the climate changes, agriculture may be affected by drying up of the land, shifting of seasons, changing of the soil structure, and severe storms. The NCCST recommended the following:

- (a) Development and adoption of drought-resistant crops;
- (b) Crop diversification;
- (c) Irrigation development;
- (d) Crop intensification;
- (e) Shift in planting dates;
- (f) Application of organic fertilizers;
- (g) Soil conservation;
- (h) Abandonment of marginal land and mountain slopes;
- (i) Soil liming;
- (j) Improvement in disaster preparedness and food security.

45. For the water sector, the project objectives reinforce the national priorities. The following actions were recommended by the NCCST:

- (a) Development of a water resources management policy and strategy;
- (b) Rationalization and improvement of sectoral institutions;
- (c) Review of existing and proposed water resources and related projects;
- (d) Development and enactment of legislation to regulate and control water use and pollution;
- (e) Development of a national drought policy to mitigate the adverse impacts of periodic droughts.

## 6. National plans for mitigation and adaptation

46. According to a report from the LMS, this activity involved a review of existing and planned policies and measures to mitigate and adapt to climate change. Two reports were prepared: one addressed mitigation options for the energy and land sectors, and the other assessed adaptation measures for the water and agricultural sectors, as well as for cross-cutting areas in land use.

## 7. National communication

47. The initial national communication containing all the chapters required by the UNFCCC secretariat and reflecting Lesotho's policy and institutional priorities was produced. This document was produced more or less within the required time and budgetary constraints.

### C. Institutional arrangements employed in project implementation

48. The project was hosted by the Ministry of Natural Resources, where it received strong support from the Minister. Project management was located in the Lesotho Meteorological Service, which demonstrated strong initiative and organizational skills in facilitating project implementation. Project implementation was carried out by an inter-agency team of highly skilled professionals from ministries, agencies, academic institutions and non-governmental organizations in Lesotho.

49. According to the available reports, the LMS began the project by organizing a group of experts, which eventually became the National Climate Change Study Team. The inventory group for the GHG emissions study was the first to be constituted and was composed of 12 experts from various ministries and agencies. It met in November 1996 to discuss the work plan and specific activities to be undertaken. Following this, the team participated in the First National Training Workshop on GHG Inventories that was held in Maseru from 3 to 6 December 1996, conducted by an expert from the Southern Centre, Zimbabwe. The workshop focused on procedures, guidelines and IPCC methodology.

50. A vulnerability and adaptation group composed of eight national experts was established during the first half of 1997. A four-day consulting assignment was executed with an international data processing expert to set up the CLICOM climate data system for vulnerability and adaptation analysis. As mentioned above, two members of the project team were trained in how to set up this system. The system was used to manipulate the sectoral data for the vulnerability and adaptation assessments. The same team attended a workshop on vulnerability and adaptation Assessment that was held from 26 May to 6 June 1997.

51. In August 1997 the NCCST became almost complete with the addition of a group on mitigation comprising six national experts. The first major activity of this team was to participate in the Lesotho Greenhouse Gas Mitigation Analysis Initiation Workshop.

52. UNEP supported the project as the GEF implementing agency and assisted Lesotho to draft the project proposal in addition to providing technical and administrative guidance. Quarterly reports on progress were submitted on schedule to UNEP as timely advice and comments were provided.

53. Discussions with the Project Manager, the staff of the Lesotho Meteorological Service and UNEP revealed that the project's financial management systems were sound. This claim is supported by the fact that the expected outputs and results were achieved within the planned budget and time-frame. The good collaboration between the implementing partners was indicated in the quarterly reports. The project management appreciated the flexibility with which the funds were utilized.

### D. Impact of the project and outputs

54. While the project activities will have a short-term impact by exposing the population of Lesotho to the issues of climate change, in the long run there should be changes in the behaviour of the population. However, this will happen only if the project results are integrated into the various national policies. Unfortunately this integration has not been undertaken, but the consultant was informed that efforts are under way to do so during the second phase of the project.

55. The interviews revealed that a number of individuals working in government departments and academia had improved their understanding of climate change issues. A team member from academia suggested that it would be beneficial for Lesotho to introduce climate change studies in school curricula. It is important to note that awareness of climate change will be enhanced once the National Communications Strategy is launched during 2001. It was difficult to evaluate and determine the extent to which gender considerations were incorporated into the various technical and operational aspects of the project. It is recommended that all future work should adequately involve both men and women if this did not happen in the first phase of the project.

56. Phase II of the project, which has been approved, will be implemented as an interim activity between the issue of the initial and the second communications to UNFCCC. Hence it is intended to complement activities under phase I of the project, related to the initial communication, while at the same time forming the basis for the initiation of work on the second national communication. Its main objectives are to:

- (a) Enhance national capacity-building in the identification, assessment and acquisition of technologies for mitigation and adaptation in the energy and land use sectors;
- (b) Develop a database for new viable technologies for access by all stakeholders;
- (c) Promote market and business opportunities for new technologies;
- (d) Promote public awareness in the private sector, local communities and all stakeholders of new technologies and the need to adopt them;
- (e) Enhance the capacity of the national meteorological service (Lesotho Meteorological Service) in climate monitoring through the formulation of a policy and strategy for meteorological station network development;
- (f) Facilitate incorporation of the initial national communication in overall national development programmes.

57. The consultant was informed that some of the funds for phase II will be used for the launching of the initial national communication. It is envisaged that this will take place at a grand occasion to be attended by the Prime Minister. It is recommended that on this occasion, the LMS should ensure that policy makers from the various departments are informed about the need to incorporate the results of the National Communications Strategy into national policy.

#### E. Problems and constraints

58. The following were some of the problems that were experienced during the implementation of the project:

- (a) Funds were received two months after the commencement date of the project. This was due to the fact that prolonged formalities were required in Lesotho before an account could be opened;
- (b) There was a delay in purchasing equipment and materials for the awareness campaign due to the government tendering process. UNEP assisted by providing some awareness materials;
- (c) The inventory team encountered difficulties in obtaining SPOT images for assessing GHG emissions from land use. In future the team should be able to obtain these images from South Africa;
- (d) As this was the first climate change enabling activity for UNEP, it had to collect sector models from different organizations and countries. This delayed the project for a few months, but all the models were eventually obtained. Planning for this requirement should be improved for future projects.

#### V. RECOMMENDATIONS

59. A Climate Change Steering Committee scheduled to play a major role in project implementation did not do so because it has not been fully constituted. There is a need to strengthen it so that it can advise on climate change matters. Its terms of reference should reflect the fact that it is advisory and consultative. This committee should consist of all relevant stakeholders.

60. To ensure that the impacts of the project are sustainable, the Department of Science and Technology should include in its research and development programme a clearer reference to the role of research and

development relating to climate change. It would be very helpful to create a multi-year research programme on climate change within the overall research structure. This programme should ensure that the names of the nationals trained in the first phase of the project (many of whom are still working for the Government) are kept on the roster of experts. Furthermore, capacity-building and training should be maintained for all stakeholders, including schoolchildren and academia. Translation into Sesotho of simple non-technical documents and a special brochure on climate change would promote this end.

61. In order to build on the benefits of the project, the LMS should encourage the search for "win-win" options for climate change. These could include energy efficiency (improving competitiveness and saving energy), the promotion and production of solar water heaters (creating jobs, reducing home energy use and limiting emissions), and off-grid solar electrification (extending the electrification programme beyond the grid areas and limiting emissions). The Department of Energy should take the lead in this effort.

62. Since SADC plays an important role in regional coordination and in making the voice of southern Africa heard in international discussions under the UNFCCC, clear objectives should be laid down for Lesotho to pursue in SADC in respect of climate-change-related issues. Phase II of the project will offer an opportunity for liaison between Lesotho and other countries in the region in dealing cost-effectively with climate change. The LMS should therefore work together with the Environment and Land Management Unit of SADC on this matter.

63. In the process of undertaking capacity-building for stakeholders, the LMS should ensure that the relevant expertise within and outside the Government is involved in developing options for mitigation and adaptation. The options should be developed against the background of scenarios with sound assumptions before political decisions are taken.

64. Currently climate change tasks are undertaken by LMS officials in addition to their meteorological duties. Clearly this state of affairs cannot be sustained because of the heavy load of work, and climate change tasks will be accorded lower priority. It is therefore recommended that a Climate Change Division be established. This division will help to determine the most urgent action required on climate change, to maximize linkages with other political priorities and to look for complementarity and convergence of measures, saving resources and time.

## VI. SPECIFIC RESPONSIBILITIES OF RELEVANT MINISTRIES

65. The following ministries have specific responsibilities that are critical to the management of climate change issues:

(a) Foreign Affairs: coordination of contacts with international agencies and institutions; coordination of international relations; providing expertise on international environmental law;

(b) Energy: energy policy, in particular improvement of energy efficiency and promotion of renewable energy sources;

(c) Trade: incentives for improvement of energy efficiency in industry, incentives for job creation via production of renewable energy equipment (solar water heaters, solar home systems, etc.) and energy-efficient appliances;

(d) Water and Forestry: climate change vulnerability studies regarding water availability, forest protection, afforestation, participation in the international debate on the implementation of the land use change and forestry provisions of the UNFCCC and the Kyoto Protocol;

(e) Transport: improvement of fuel efficiency in transport, promotion of public transport, involvement in the international debate on emissions from aviation and shipping;

(f) Science and Technology: building of capacity for climate-change-related research, increase of funding for research, development and demonstration of climate-friendly technologies;

(g) Housing: energy-efficient housing, incentives and regulations to encourage solar water heating and solar electricity;

(h) Agriculture: vulnerability and adaptation of crops to climate change; resilience of crops against drought;

(i) Environment: waste minimization and waste utilization, integration of climate change with other environmental policies;

(j) LMS: understanding the climate system and climate variability and monitoring the climate, linking of climate change to desertification, biodiversity and ozone layer protection, environmental information management.

## VII. ACKNOWLEDGEMENTS

66. During the visit, the consultant was kindly assisted by officials of the Lesotho Meteorological Service (LMS). Thanks are due to Mr B. Sekoli, the Director of LMS and Ms Joalane Mphethi of LMS, who were responsible for taking the consultant to the offices of the stakeholders around Maseru. It is important to mention that the week of the visit coincided with the start of the festive season in southern Africa. Therefore, a number of stakeholders were not available for interviews.

Annex I

List of persons interviewed in Maseru, 11-14 December 2000

Principal Secretary, Ministry of Natural Resources

Ms Dduzile Chandiwana, Deputy Resident Representative, UNDP

Mr Jobo Molapo, Environment and Land Management, SADC

Mr Bruno Tseliso Sekoli, Project Manager and Director of the Lesotho Meteorological Service

Ms Joalane Mphethi, meteorologist, LMS

Mr Thabang Phuroe, Department of Energy

Mr L Mokhutsoane, Department of Energy

Mr Lehlohonolo Moeti, National University of Lesotho

Mr M.V. Marake, National University of Lesotho

Mr Sechocha Makhoalibe, Water Supply and Sewerage Agency

Ms L.K. Mdee, Sustainable Development Adviser, UNDP

Mr Nchemo Maile, Forestry Division

Dr M Mokhothu, National University of Lesotho.

## Annex II

### References

Lesotho National Report on Climate Change (First national communication to UNFCCC)

Project document for Phase I, GF/2200-96-16

Project document for Phase II, GF/2010-00

Six-monthly project progress reports

Quarterly expenditure reports

GEF — Report on country visit, Lesotho, 27 April 2000

UNEP Project Formulation, Approval, Monitoring and Evaluation Manual, December 1997

Energy Policy Framework for the Kingdom of Lesotho, 20 November 2000

National Forestry Policy and Objectives

Vulnerability Assessment Report

GHG Emissions Inventory Report for 1994

Mitigation Report, 1994.

## Annex III

### Terms of reference of the evaluation

The tasks entrusted to the consultant responsible for the evaluation were as follows:

To determine the relevance and appropriateness of the project to the objectives of UNFCCC, GEF and UNEP and the needs in the area of reporting on climate change in Lesotho.

To determine how the project activities have or have not assisted the country in responding to its contractual commitment under the UNFCCC.

To measure the impact of the results of the project activities, in terms of both positive and negative effects, distinguishing between short-term and long-term impacts.

To analyse and determine to what extent the project objectives identified in the project document have been reached, and give an assessment of whether the project activities were sufficient to realize those objectives.

To evaluate whether the actual results of the project compare with the expected long-term and short-term results identified in the project document.

To assess the level of stakeholder involvement in the implementation of the various project components, identify the lessons learned and provide recommendations on how such involvement could be improved in future projects.

To assess the role played by the project in building the capacity of the participating national institutions in the area of reporting to the UNFCCC secretariat, and assess the long-term sustainability of the benefits of this capacity-building.

To evaluate the gender aspects of the project and determine the extent to which gender considerations were incorporated into the various technical and operational aspects of the project. However, as the project document does not mention the gender issue as an objective, the evaluation of the gender aspects should take the form of screening of the national communication (activity 7) and the public awareness campaign (activity 1).

To determine the effectiveness of the assistance provided by UNEP, identify the lessons learned and provide recommendations that might improve the delivery of similar assistance in similar projects.

To review the adequacy of the monitoring and evaluation systems developed to supervise and implement the project and, on the basis of the lessons learned, provide recommendations that could improve current procedures relating to monitoring and evaluation.

To review the effectiveness of the organizational structure and management and financial systems which affected the implementation of the project; to investigate staffing, administrative arrangements and operational mechanisms, with an emphasis on coordination within and outside UNEP; and to solicit the views of UNEP and GEF staff members on the usefulness of the project in enhancing both UNEP's and GEF's work in the area of climate change.

To identify and list any technical or operational constraints encountered during project implementation, including those that contributed to delays in implementing the approved work plan; and to examine the actions taken by UNEP and the national executing agency to overcome those constraints, the lessons learned and any appropriate alternative measures that could have been taken.

To identify and assess any measures that national institutions have initiated to integrate the results and recommendations of the initial national communications into national policy-making or planning, and to make specific recommendations regarding potential follow-up evaluation measures that would enable UNEP and GEF to gauge the longer-term benefits and sustainability of project activities.

To determine the potential contribution of the project to furthering the objectives of the relevant global, regional and national environmental assessments, policy frameworks and action plans and to strengthen the UNFCCC.

To make concrete suggestions or recommendations which may benefit future UNEP or GEF projects.

#### Format

The consultant was invited to present the evaluation in the form of:

(a) A concise *summary of no more than 4 pages* with background, major findings and conclusions, lessons learned and recommendations. Each major finding must be followed by the relevant recommendation.

(b) A detailed *evaluation report of no more than 30 pages* addressing the 15 tasks listed above. The report should include an introduction; a description of the setting in which the project was implemented (e.g. in terms of geography and institutional framework); a description of the planning and implementation of the project (e.g. objectives, financing and management); main conclusions based on overall assessments, including efficiency, effectiveness, impact, relevance and appropriateness and sustainability; and lessons learned.

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