

Chapter 1

Overview of the Environmental Management Plan and Volume 1

1.0 EXPLANATORY NOTES

Hereafter in this Environmental Management Plan (EMP), the following terms apply:

- Chad Export Project: Represents the combination of the Cameroon and Chad portions of a project for the production and transportation of crude from the oil fields in southern Chad (Permit H Zone) through the TOTCO Transportation System and the Cameroon Transportation System.
- Project: Refers to the Cameroon portion of the Chad Export Project only.
- BP/SE/H or Environmental: Represents “biophysical, socioeconomic, and health”.
- Operations Phase: Refers to that phase of the Project that entails operating and maintenance activities.
- FCFA: Represents the legal currency of the Republic of Cameroon. For the purposes of this document, it is assumed that the exchange rate is \$1 US = 600 FCFA.

1.1 ENVIRONMENTAL MANAGEMENT PLAN OBJECTIVE

It is the objective of this Environmental Management Plan to describe measures and actions that will be implemented by the Republic of Cameroon and COTCO (i.e., the Cameroon Oil Transportation Company, S.A.) during the construction and operation/maintenance of the Project to eliminate or reduce key potential biophysical, socioeconomic, and health impacts identified in the Cameroon Environmental Assessment (EA) to acceptable levels. Successful execution of this EMP requires that the specific actions presented in Chapters 2, 3, and 4 of this Base Document (i.e., Volume 1) of the EMP as well as in the other EMP Volumes are committed to be undertaken by the responsible Project parties (i.e., the Republic of Cameroon and COTCO).

1.1.1 Project Philosophy

The Project will be engineered, constructed, operated/maintained, and decommissioned in accordance with applicable Republic of Cameroon legislation in force. The Project will also be undertaken in a manner that is in harmony with recognized, appropriate international engineering, construction, and operations/maintenance practices and standards for crude oil developments. Moreover, the Project will be brought to fruition in a manner that balances its environmental and economic aspects.

In keeping with this overall philosophy, the Project will avoid, where and when practical, those situations or incidents that could cause unacceptable, adverse biophysical, socioeconomic, or health impacts. For those environmental situations or impacts that cannot be avoided, however, the Project will undertake appropriate mitigation measures.

1.2 COMPOSITION OF THE ENVIRONMENTAL MANAGEMENT PLAN FOR THE CAMEROON PORTION OF THE CHAD EXPORT PROJECT

The Environmental Management Plan for the Cameroon portion of the Chad Export Project is comprised of six volumes according to the following scheme:

Environmental Management Plan - Cameroon Portion

VOLUME 1

- Base Document
- Induced Access Management Plan
- Management Plan for Cultural Properties
- Handbook for Site-Specific Environmental Mitigation Actions
- Environmental Monitoring Plan

VOLUME 2

- Biophysical/Socioeconomic/Health Technical Requirements and Specifications

VOLUME 3

- Compensation Plan

VOLUME 4

- Environmental Foundation Plan
- Offsite Environmental Enhancement Program
- Indigenous Peoples Plan

VOLUME 5

- Waste Management Plan

VOLUME 6

- Environmental Line List
- Environmental Alignment Sheets

Figure 1.1 The Composition of the Environmental Management Plan for the Cameroon Portion of the Chad Export Project

1.2.1 Volume 1

Volume 1 comprises the **Base Document** of the EMP and also contains several of the Project's topic-specific environmental management tools. This volume contains the following elements:

- A listing of key biophysical, socioeconomic, and health-related topics related to the Project and their associated potential impacts;
- A summary of features that have been incorporated into the design of the Project to avoid or reduce these impacts to acceptable levels;
- A summary of environmental mitigation and monitoring actions that are the responsibility of COTCO;
- A summary of environmental mitigation and monitoring actions that are the responsibility of the Republic of Cameroon;
- An overview of COTCO's environmental monitoring organization for the Project;
- An overview of the environmental monitoring approach to be adopted by the Republic of Cameroon for the construction phase of the Project;
- An outline of the institutional strengthening requirements within the Republic of Cameroon necessitated by the Project;
- A discussion of the environmental management framework that will be utilized by COTCO for the Project;
- An overview of the Change Management Process that COTCO will follow for the Project;
- A summary of environmental management-related costs associated with the Project;
- A timeline for key construction phase environmental management/mitigation actions;
- The Project's plan related to the management of induced access at specific locations along the easement of the Cameroon Transportation System;
- The Project's plan related to the management of cultural properties;
- A handbook for the site-specific environmental mitigation actions that are planned along the Cameroon Transportation System during the construction phase of the Project; and
- COTCO's environmental monitoring plan for the construction phase of the Project.

A draft version of this Base Document of the EMP was issued by the Republic of Cameroon in February 1998 for public review and comment.¹

1.2.2 Volume 2

The Project's biophysical, socioeconomic, and health technical requirements and specifications are presented in Volume 2 of the EMP. The following requirements/specifications can be found in this Volume:

- Selected **Job Specification Coordination Procedures** (JSCP):
 - JSCP 19 Changes in Work / Deviations from Job Specifications
 - JSCP 22 Project Safety Practices
 - JSCP 23 Occupational Health, Medical Facilities, and Sanitation
 - JSCP 27 Training
 - JSCP 29 Socioeconomic Interactions
 - JSCP 30 Environmental Management
 - JSCP 31 Interface Management

- Selected **General Project Specifications** (GPS):
 - GPS-001 Camps and Facilities
 - GPS-002 Catering Services
 - GPS-003 Potable Water Treatment, Storage, and Distribution (Temporary)
 - GPS-004 Packaged Sewage Treatment System (Temporary)
 - GPS-005 Water Wells (Temporary)
 - GPS-006 Waste Incinerator (Temporary)
 - GPS-007 Non-Hazardous Solid Waste Landfill
 - GPS-008 Project Safety Requirements
 - GPS-010 Health Plan
 - GPS-011 Waste Management
 - GPS-012 Socioeconomic Action Plan
 - GPS-018 Septic Tank and Effluent Disposal into Drainage Field (Temporary)

¹ The February, 1998 version of the EMP for the Cameroon Portion of the Chad Export Project is included in the Project's suite of Reference Documents.

- GPS-020 Survey Camps and Facilities
- GPS-021 Survey Catering Services
- Selected **Cameroon/Chad Specifications** (CCS): {applicable to the Transportation System}
 - CCS 7-1-10 Waste Incinerator
 - CCS 11-10-1 Water Wells
 - CCS 11-10-2 Potable Water Treatment, Storage, and Distribution
 - CCS 11-11-1 Packaged Sewage Treatment System
 - CCS 13-4-1 Solid Waste Landfill
 - CCS 21-20-107 Soil Erosion Mitigation
 - CCS 21-20-108 Environmental Impact Mitigation

The above-listed BP/SE/H-related technical requirements and specifications form the basis for the information contained in the tables presented in Chapter 2 of the Base Document (i.e., Volume 1) of this EMP.

1.2.3 Volume 3

The **Compensation Plan** for the Project constitutes Volume 3 of this EMP. This Plan describes:

- Compensation to be paid by the Republic of Cameroon according to applicable Republic of Cameroon legislation in force at the time that the Plan was drafted; and
- Supplemental compensation to be paid by COTCO.²

The Compensation Plan includes the following:

- The goals and objectives of the compensation process associated with the Project;
- A summary of the Project's environmental and socioeconomic studies and public consultation process that support the contents of the Plan;
- A explanation of the Republic of Cameroon's and COTCO's respective obligations regarding the payment of compensation;
- A description of the legal property types in the Republic of Cameroon;

² The supplemental compensation to be paid by COTCO is defined in the Compensation Plan (see Volume 3 of this EMP) as the difference between the amount of compensation due under applicable Republic of Cameroon legislation and the amount of compensation required to meet the intent of the World Bank's compensation-focused directives.

- A summary of the Project's land needs that features the length of time that land will be needed for specific construction and operations activities in the Republic of Cameroon;
- A presentation of the framework under which the land required by the Project will be acquired and compensated;
- A summary of individuals, households, and communities affected by the Project that will be subject to the provisions of the Plan;
- Definitions of the types of resources for which individuals and households will be entitled to receive compensation for;
- A definition of when/where community compensation is to be paid;
- An outline of the processes that have been/will be used to:
 - Identify individuals and households eligible for compensation;
 - Conduct public consultations regarding the Project's compensation process; and
 - Assess and pay appropriate compensation.
- A discussion of a process of interactive participatory consultation that will be implemented prior to the actual payment of compensation;
- Grievance procedures;
- A description of institutional responsibilities that will ensure implementation of the Plan;
- An overview of the monitoring process associated with the Project's compensation process, including monitoring variables;
- The Plan's budget and timeline; and
- A change management procedure.

The Cameroon Transportation System has been designed an engineered so as avoid involuntary resettlement.³ Nevertheless, the Compensation Plan also defines circumstances that may trigger involuntary resettlement.

1.2.4 Volume 4

Volume 4 of the EMP contains the following three plans:

³ Based on data from the land survey associated with the recently completed Transportation System Centerline Survey, several families along the route of the Cameroon Transportation System may be potentially eligible for relocation grants and assistance because of Project land needs. These families will be treated by the Project in accordance with World Bank Operational Directive 4.30.

- **Part I : Environmental Foundation Plan** - In conjunction with the Project's Offsite Environmental Enhancement Program and Indigenous Peoples Plan (see below), COTCO will make a \$US 3.5 million (2100 million FCFA) contribution to an Environmental Foundation in order to:
 - Provide defined long-term financial support for environmental enhancement activities in the following areas:
 - + The Mbam-Djerem area; and
 - + The Campo Reserve area.
 - Provide defined long-term financial support for Bakola Pygmy-related development activities in the region of the Atlantic Littoral forest in the vicinity of the easement of the Cameroon Transportation System's pipeline between Lolodorf and Kribi.

The Environmental Foundation Plan outlines:

- The objectives of the Foundation;
- Its organizational and logistical nature; and
- The management and fund disbursement details pertaining to COTCO's capital contribution to the Foundation.

In addition, proposed Articles of Association, By-Laws, and an implementation plan for the Foundation are provided in the Plan.

- **Part II : Offsite Environmental Enhancement Program** - In order to mitigate for low-level residual impacts to biodiversity and natural habitat value resulting from the construction and operation of the Cameroon Transportation System, COTCO will undertake an offsite environmental enhancement program. Central to this program is COTCO's partial funding (*via* a capital contribution to the above-mentioned Environmental Foundation) of conservation projects in the following two areas:
 - The Mbam-Djerem area; and
 - The Campo Reserve area.

The Project's Offsite Environmental Enhancement Program features the following:

- Background information on the Mbam-Djerem and Campo Reserve areas, including a discussion as to why these two areas were selected for incorporation into the Project's offsite environmental enhancement program;
- An outline of the types and chronology of the ecological studies and conservation activities that are envisioned for the Mbam-Djerem and Campo Reserve areas;

- The manner in which \$US 2.9 million (1740 million FCFA) of COTCO's \$US 3.5 million (2100 million FCFA) capital contribution to the Environmental Foundation will be specifically earmarked and managed to provide monies for ecological studies and long-term conservation activities in the Mbam-Djerem and Campo Reserve areas;
 - An overview of the conservation educational program proposed for the Campo Reserve area; and
 - The protective mitigation measures and the administrative and financial commitments of the Republic of Cameroon with regard to the Mbam-Djerem and Campo Reserve areas.
- **Part III : Indigenous Peoples Plan** - In order to mitigate any potential long-term indirect adverse impacts associated with constructing and operating the Cameroon Transportation System's pipeline in Pygmy/Bantu-inhabited areas between Lolodorf and Kribi, an Indigenous Peoples Plan (IPP) has been developed. The measures in this Plan are in addition to those listed in the Compensation Plan and in the Socioeconomic Table that appears in Chapter 2 of this Base Volume of the EMP. Overall, it is the objective of the IPP to provide long-term benefits to the Project-affected Pygmy population *via* assistance to programs/projects that address Pygmy health, education, and agriculture in the region. In addition, due to the Bantu's historical association with the Bakola Pygmies in the Atlantic Littoral forest between Lolodorf and Kribi, the IPP addresses some health issues of Bantu groups.

The IPP contains the following:

- A summary of available background information on the Bakola Pygmies and the interdependent Bantu communities in the immediate vicinity of the Cameroon Transportation System's easement between Lolodorf and Kribi;
- Results of the Project's consultation with Bakola Pygmy communities and interdependent Bantu communities between 1997 and 1999 and an evaluation of the Project's potential impacts on these populations;
- A description of the results of an intensive consultation program in March-April 1999 involving a draft version of the IPP that included the participation of Pygmy individuals and communities, local representatives of the Republic of Cameroon, and NGOs;
- A description of a potential organizational framework for developing and implementing IPP programs;
- Descriptions of potential IPP programs such as basic literacy and education initiatives, hygiene assistance, improved water supplies, and agriculture; and
- The manner in which \$US 600,000 (360 million FCFA) of COTCO's \$US 3.5 million (2100 million FCFA) capital contribution to the Environmental Foundation will be specifically earmarked and managed to provide monies for IPP-related programs.

1.2.5 Volume 5

The Project's **Waste Management Plan** embodies Volume 5 of the EMP. This plan addresses the following topics:

- Identification and classification of waste types/streams;
- Avoidance of the use of specific materials and substances in order to reduce or eliminate the hazardous/toxic characteristics of certain wastes;
- Source reduction/recycling/reuse guidelines for selected wastes;
- Disposal requirements for non-recyclable/non-reusable waste types/streams;
- Handling, transportation, and storage requirements for each major waste type/stream;
- Waste tracking procedures;
- Locations of waste management facilities (e.g., the Project's engineered solid waste landfills, municipal landfills, etc.); and
- Design features, operating procedures, and monitoring programs for the Project's waste management facilities.

1.2.6 Volume 6

Volume 6 of this EMP presents a series of **Environmental Alignment Sheets** and an **Environmental Line List** for the easement of the Cameroon Transportation System. These Environmental Alignment Sheets and their associated Environmental Line List are tools for highlighting the locations along the Cameroon Transportation System where site-specific environmental management requirements are to be implemented prior to, during, and/or after construction of the pipeline.

1.3 STRUCTURE OF VOLUME 1 OF THE ENVIRONMENTAL MANAGEMENT PLAN

Volume 1 of the Environmental Management Plan for the Cameroon portion of the Chad Export Project is structured in the following manner:

Chapter 1	Overview of the Environmental Management Plan and Volume 1
Chapter 2	Environmental Management Actions
Chapter 3	The COTCO Environmental Monitoring Organization for the Project
Chapter 4	Role of the Republic of Cameroon and Its Administrative Supervision and Technical Inspection Organization
Chapter 5	Summary of Environmental Management Costs
Chapter 6	Timeline for Key Environmental Management Actions

Chapter 7	Additional Environmental Management Tools
Appendix A	List of Contributors to Volume 1 of the Environmental Management Plan
Appendix B	List of Acronyms Appearing in Volume 1 of the Environmental Management Plan
Appendix C	Republic of Cameroon - Health Risk Matrix
Appendix D	Induced Access Management Plan
Appendix E	Management Plan for Cultural Properties
Appendix F	Handbook for Site-Specific Environmental Mitigation Actions
Appendix G	Environmental Monitoring Plan

Chapter 1 is intended to:

- Describe the objective and composition of the EMP for the Cameroon portion of the Chad Export Project; and
- Outline the format and contents of Volume 1 of the EMP.

Chapter 2 presents a summary of the:

- Key biophysical, socioeconomic, and health-related topics related to the construction and operation of the Cameroon Transportation System and their associated issues/impacts;
- Items incorporated into the design of the Cameroon Transportation System to avoid or mitigate environmental issues/impacts;
- Environmental mitigation and monitoring actions for the construction and operations phases of the Project that are the responsibility of COTCO; and
- Environmental mitigation and monitoring actions for the construction and operations phases of the Project that are the responsibility of the Republic of Cameroon.

Chapter 3 outlines:

- The manner in which Environment, Procurement, and Construction (EPC) Contractors will monitor environmental performance during the construction phase of the Project;
- The manner in which COTCO will monitor the environmental aspects of the Project; and
- The overall environmental management framework to be utilized by COTCO.

Chapter 3 also features an overview of the Change Management Process that COTCO will follow for the Project.

Chapter 4 is focused on Project-related matters regarding the Republic of Cameroon. This chapter outlines three topics:

- The Republic of Cameroon's areas of responsibility regarding potential environmental impacts;
- The Republic of Cameroon's administrative supervision and technical inspection organization during the construction and operations phases of the Project, especially regarding environmental matters; and
- The manner in which the Republic of Cameroon intends to fulfill its administrative supervision and technical inspection obligations regarding environmental matters.

A brief discussion of the institutional strengthening requirements within the Republic of Cameroon's administrative supervision and technical inspection organization necessitated by the Project is also included in Chapter 4.

Chapter 5 provides a summary of the environmental management costs associated with the Project. These costs are presented in two tables:

- A table that lists those environmental management costs that apply to the Chad Export Project in its entirety and/or those environmental management costs that were not specifically stewarded by country. Consequently, these costs have not been apportioned to either the Cameroon and/or Chad portions of the Chad Export Project; and
- A table that lists those environmental management costs that only apply to the Cameroon portion of the Chad Export Project.

Chapter 6 presents a timeline for the key environmental management actions associated with the construction phase of the Project.

Chapter 7 presents and outlines a number of additional environmental management tools that are associated with the Project. These include:

- Induced Access Management Plan;
- Management Plan for Cultural Properties;
- Environmental Alignment Sheets, the Environmental Line List, and the Handbook that is associated with them;
- COTCO's Environmental Monitoring Plan for the construction phase of the Project;
- Biophysical/socioeconomic/health technical requirements and specifications;
- Compensation Plan;
- Environmental Foundation Plan;

- Offsite Environmental Enhancement Program;
- Indigenous Peoples Plan;
- Waste Management Plan;
- Oil spill response;
- The Project's intentions regarding decommissioning; and
- Community health outreach program.

Finally, a number of documents and data compilations that support the contents of Volume 1 and the other Volumes of the EMP are provided as **Appendices**. Featured in this Base Document's appendices are:

- List of Acronyms appearing in Volume 1 of the Environmental Management Plan;
- Health Risk Matrix that applies to the Republic of Cameroon;
- Induced Access Management Plan;
- Management Plan for Cultural Properties;
- Handbook for the Environmental Alignment Sheets and Environmental Line List that apply to the Cameroon portion of the Chad Export Project (i.e., site-specific environmental mitigation actions); and
- COTCO's Environmental Monitoring Plan for the construction phase of the Project.

1.4 PREPARATION OF VOLUME 1 OF THE EMP

Exxon Production Research Company developed Volume 1 of the Environmental Management Plan for the Cameroon portion of the Chad Export Project and functioned as the editor of the entire EMP. A multi-disciplinary team featuring Esso/Exxon environmental specialists, environmental, socioeconomic, and health specialists from Dames & Moore, and a number of independent environmental and socioeconomic scientists/consultants was assembled to prepare Volume 1. In addition, representatives of the Republic of Cameroon were involved in drafting Chapter 4 of Volume 1 of this EMP as well as in reviews of all the EMP's other texts.

The October, 1997 version of the Environmental Assessment report for the Cameroon portion of the Chad Export Project was used as a starting point for drafting this Base Document of the EMP. In addition to various World Bank directives and the BP/SE/H-related requirements and specifications that are contained in Volume 2 of this EMP, a host of documents, most notably those that comprise the environmental documentation for the Chad Export Project, was consulted extensively during the preparation of Volume 1 of the EMP. A complete listing of all the studies/reports/references associated with the Chad Export Project's environmental

documentation can be found in the document entitled "Project Description" in the Supporting Documents component of the Project's environmental documentation.

1.5 ACCURACY/APPLICABILITY OF INFORMATION AND STATEMENTS CONTAINED IN THE ENVIRONMENTAL MANAGEMENT PLAN

The information and statements contained in the Environmental Management Plan are considered to be accurate and applicable to the Cameroon portion of the Chad Export Project in its current form. However, as the Project progresses through detailed engineering, construction, and into its operations phase, changes in its scope are bound to occur. Accordingly, it may be necessary to modify or delete some of the environmental management measures and actions contained in this EMP to properly reflect Project changes. Similarly, it may be necessary to add new environmental management measures and actions to appropriately address new or unforeseen Project situations. In either case, all modifications or augmentations of the Project's environmental management strategies, measures, and actions will be accomplished by adhering to a rigorous, systematic process to steward such changes. The Management of Change Process that will be utilized by COTCO during the construction phase of the Project is outlined in Chapter 3 of Volume 1.

With regard to this EMP, it is not expected that there will be need to change the intent of the commitments made herein. However, the means specified to achieve certain levels of protection might be subject to correction or amendment via the process specified above. Changes that would materially adversely affect the level of protection afforded by this EMP will be reviewed and approved in collaboration with the Republic of Cameroon.