

**Advisory review of the
General Oil Spill Plan**

22 February 2000

033-503



commission for environmental impact assessment

Ministry of Foreign Affairs
Attn of Ms G. Dommerholt
Sub-Saharan Africa Department
Western Africa Division
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your reference
DAF 99/804

your letter of
21 June 1999

our reference
U00/Po/sg/033-502

subject
Advisory review of the General Oil Spill
Plan

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Utrecht,
23 February 2000

Dear Ms Dommerholt,

The Dutch Commission for Environmental Impact Assessment (EIA) was invited by letter dated 21 June 1999 to carry out an advisory review of the EA-study and other relevant documents on the Chad Export Project.

I therefore submit the advisory review prepared by a working group of the EIA Commission on the General Oil Spill Response Plan (GOSRP) for the Chad Export Project.

I would like to draw your special attention to the following issues.

- 1) The GOSRP is an excellent manual for preparing the operational area-specific oil spill plans (ASORPS). The ASORPS describe what resources will, concretely, be available for oil spill preparedness and response. These ASORPS are scheduled to be prepared in a later stage. Oil spills and their environmental and social consequences being a major issue of controversy, I would like to recommend to have the ASORPS externally and independently reviewed once they have been prepared.
- 2) The GOSRP mainly addresses the private company's arrangements for oil spill preparedness and response. I would like to suggest to elaborate Governmental responsibilities and arrangements for oil spill preparedness and response under the capacity building projects that are prepared for both Chad and Cameroon.
- 3) Oil companies and UNEP are working together on marine and coastal pollution control in the so-called WACAF regional project. In order to avoid duplication and promote coherence, I would like to suggest that the proponents of the Chad Export Project join forces with WACAF in controlling marine and coastal pollution.

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The Commission would appreciate being kept informed about the use that is made of this advice and offers to assist in reviewing the ASORPS and additional information on the Capacity Building projects.



Dick de Zeeuw,
Chairman of the working group on
the Chad Export Project,
Chad and Cameroon

cc: Ms A. Wevers, Environment and Development Department, Ministry of Foreign Affairs of The Netherlands

Advisory review of the General Oil Spill Plan

Advice submitted to the Minister for Development Cooperation, by a working group of the Commission for Environmental Impact Assessment in the Netherlands.

the technical secretary



Mr R.A.M. Post

the chairman



Mr D. de Zeeuw

Utrecht (The Netherlands), 22 February 2000

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1. Letter from DGIS dated 21 June 1999 requesting the Commission to submit an advisory review
2. Project information
3. Detailed observations and comments on the GOSRP

1. INTRODUCTION

1.1 The Chad Export Project

The government of Chad intends to exploit its natural oil resources and stimulate national development by investing the oil revenues in education, health and infrastructure. A consortium of oil companies¹ is considering developing the Komé, Bolobo and Miandoum oil fields and transporting the crude oil to Kribi, Cameroon. These oil fields are expected to produce 225,000 barrels per year at peak production (production years 2–6), gradually falling to 25,000 barrels in production year 30. The fields are expected to produce a total of 924 million barrels over the 30-year exploitation period.

A private company, ESSO Exploration and Production Chad Inc. (EECPI), has been appointed by the consortium to operate the Doba oil fields. Two private companies, Chad Oil Transportation Company (TOTCO) and Cameroon Oil Transportation Company (COTCO), intend to transport the crude by pipeline to an offshore loading facility. The total length of this pipeline is 1070 km, of which 170 km will be in Chad. The pipeline in Chad will be exploited by - TOTCO, in which the consortium and the government of Chad participate. The pipeline and offshore loading facility in Cameroon will be exploited by COTCO, in which the consortium and the governments of Cameroon and Chad participate.

The consortium will provide the majority (about 97%) of the investment capital needed. The International Finance Corporation (IFC) has been requested by both TOTCO and COTCO to provide loans. Loans from the International Bank for Reconstruction and Development (IBRD) have been requested by the Chad and Cameroon governments. According to the World Bank's Operational Directive OP 4.01, the project, which includes exploitation of the fields and the construction and operation of the oil pipeline and offshore facilities, is a Category A project and requires a full environmental impact assessment to be prepared by the borrowers, the governments of Chad and Cameroon, COTCO and TOTCO.

1.2 Reasons and objectives for this advisory review

To assist identification of possible benchmarks for discussion by the Board of the World Bank – should such a discussion be held – the Dutch minister for development cooperation invited the independent Dutch Commission for Environmental Impact Assessment to provide advice based on the draft version of the environmental impact statements of March 1998. The Commission published this advisory review in July 1998 (ISBN 90-421-0397-3). The final version of the environmental impact assessment for the Chad Export Project was published in June 1999. By letter of 21 June 1999 (see

¹ This consortium currently (since 1993) comprises Esso Exploration and Production Chad (40% and operator), Société Shell Tchadienne de Recherche et d'Exploitation (40%) and Elf Hydrocarbures Chad (20%).

Appendix 1) the Dutch minister for development cooperation invited the Commission to review this final version and related documents. The Commission published its advisory review of these documents on 22 October 1999 (ISBN 90-421-0607-7).

The General Oil Spill Response Plan (GOSRP) was made available in November 1999 and is related to the Environmental Assessment. The working group formed to carry out its review (see Appendix 2) represents the Commission, and is referred to in this paper as 'the Commission'. Its members represent the following disciplines: oil exploration engineering, soil - quality management, oil production and transport (including subcontracting), environmental aspects of oil exploration, and oil spill response in aquatic and terrestrial environments.

1.3 Method of review

The review was performed according to the World Bank's Environmental - Source Book, Operational Directives 4.01 (Environmental Impact Assessment) and the Environmental Source Book Updates on Environmental Management Plans, on International Agreements on Environment and Natural Resources, and on Environmental Hazard and Risk Assessment.

Further, the Commission took into consideration the International Convention on Oil Pollution Preparedness Response and Cooperation 1990 (OPRC Convention) and other regulations (e.g. OCIMF²), developments in oil pollution emergency preparedness and response, and the agreed international regional cooperation between developing countries, the UN International Maritime Organisation (IMO) and the Oil industry cooperation under IPIECA³, especially the Global Initiative Programme of IMO and the Oil Industry in the West African Region, the WACAF Regional Project⁴.

In addition, the Commission drew upon its advisory reviews dated July 1998 and October 1999. Observations presented in the main text of this advisory review address the essential issues; detailed observations are made in Appendix 3.

² Oil Companies International Marine Forum

³ International Petroleum Industry Environmental Conservation Association

⁴ Assessment and Control of Pollution in the Coastal and Marine Environment of the West and Central Africa Region (UNEP)

2. MAIN FINDINGS

- The Commission considers that the GOSRP meets the standard required as a contribution to the Environmental Assessment. It provides valuable information required for an understanding of the consequences of oil spills for the environment and the possibilities for mitigation.⁵ It provides an excellent basis for formulating a final operational Oil Spill Response Plan that addresses the needs of the operational Area Specific Oil Spill Response Plans (ASORPS) in terms of organisational structure, staffing, equipment, training, monitoring and budgets.
- The budget for oil spill response actions foreseen in the Environmental Assessment (a maximum amount for investment in oil spill response equipment for the two countries of USD 800.000⁶) does not reflect the needs in terms of equipment, operation and maintenance costs and staff costs resulting from this GOSRP (a rapid assessment by the Commission on the basis of the GOSRP indicates an investment of USD 29 million in equipment in addition to annual operation and maintenance costs of USD 4.5 million).

The GOSRP does not contain clear objectives for oil spill preparedness and response. These are to be defined in the operational ASORPS, which will be prepared at a later stage. The Commission recommends that these ASORPS include:

- An inventory of likely oil spill scenarios (Environmental Sourcebook Update 21, basic question 1).
- An assessment of the (quantitative) risk of a typical oil spill scenario occurring (Environmental Sourcebook Update 21, basic question 3). The Commission emphasises the importance of an independent external review of such assessments, specifically of the arrangements for the communication of the Chad Export Project.
 - Having regard to the socio-political situation in both Chad and Cameroon and considering past experiences of acts of sabotage on oil pipelines in the Niger delta and, more recently, in Ecuador and Sudan, the Commission would welcome the opportunity to review (on a confidential basis) a quantitative assessment of the risk of oil spills caused by acts of sabotage.
 - Considering that Cameroon has not signed MARPOL⁷, the OPRC Convention and most other international treaties and conventions providing guarantees for prevention of marine pollution, the

⁵ The information on the fate of oil in soil and surface water in particular is detailed and of a good standard

⁶ See pages 5-3 of Volume 1 of both EMPs

⁷ International Convention for the Prevention of Pollution from Ships 1973, as modified by the Protocol of 1978 (MARPOL 73/78)

Commission would welcome the opportunity to review a quantitative assessment of the risk of a marine oil spill occurring.

- A clear definition of the responsibilities of the respective governments for oil spill preparedness and response (the GOSRP addresses future oils spill preparedness and response capacities of the private companies only).
- An inventory of the existing capacity for oil spill preparedness and response at the national and regional levels (the GOSRP does not include such an assessment).

The Commission considers the GOSRP to be part of the Environmental Management Plan. As the document rightfully indicates, the GOSRP does not yet present the oil spill response system as it will be established in the field. The Commission considers that the GOSRP does provide adequate information for developing such a system, but it does not provide an adequate basis for legal agreement on oil spill preparedness and response. In failing to do so, the GOSRP might not be in compliance with the World Bank requirements for an Environmental Management Plan (Environmental Sourcebook Update 25).

The Commission is concerned that in a situation in which the loans have been agreed, the World Bank will not be in a position to insist that the private and governmental partners in the project adopt the proper contractual conditions for oils spill preparedness and response. Moreover, the Commission is concerned that at a later stage information on the operational systems for oil spill preparedness and response may not be submitted for external independent review. This would make all parties involved susceptible to allegations that their actions lack transparency and that they have ignored an opportunity to alleviate the controversy surrounding the project.

3. CONSIDERATIONS UNDERLYING THE RECOMMENDATIONS

3.1 Spill scenarios, risk assessment and vulnerable areas

- To identify the level of preparedness required for responding to oil spills we need to know the character of the possible incidents (the quantities of oil spilled, the fate of specific types of oil in the environment) and the frequency of occurrence of these incidents.

It is also advisable to pay special attention to the identification of coastal areas that are highly vulnerable to pollution, taking into account possible movements of spills under the influence of local winds and currents. A straightforward oil spill response policy can be obtained this way.

3.2 Spill response organisation

- According to the OPRC Convention, a national body should be responsible for oils spill response for both the local and national levels. This body may be a ministerial department, the coastguard service or a national committee.

The Commission considers it likely that various government agencies, organisations or parties will be responsible for the different aspects of oil spill response actions at sea and on shore. The Commission is of the opinion that placing overall coordination in the hands of a single authority or lead agency is essential for successful spill response.

- The Commission considers it important to understand the need for and nature of the relationship between local, national and regional response systems and the international oil spill preparedness and response arrangements currently in existence.

There are two planning approaches that exist side by side in the international arena: a) the international industry's concept of tiered response and b) governmental arrangements at local, national and regional levels.

- Tiered response is a widely accepted operational concept that provides a convenient categorisation of response levels and a practical basis for planning. Tiered response recognises three levels:
 - Tier 1 is concerned with preparedness and response to a small spill within the capabilities of an individual facility; 700 tonnes is often cited as the upper limit of 'tier 1'.
 - Tier 2 is concerned with preparedness and response to an oil spill that requires the cooperation of more than one source of equipment and personnel; 700 to 2-3000 tonnes is mentioned as the scope of 'tier 2'.
 - Tier 3 is concerned with a major spill requiring the mobilisation of all available national resources and, depending on the circumstances, regional and/or international systems. In this tier of response positive advance arrangements with e.g. customs and contractors are critical in creating a successful effort.
- Governmental oil spill preparedness and response arrangements encompass the entire national system and consist of any bilateral or multilateral regional response plans or cooperation agreements. (See the above mentioned WACAF regional cooperation initiative.)

The Commission is of the opinion that both the tiered approach, which determines quantitative preparedness for response, and the governmental arrangements for response management must be developed.

- The contingency plan procedures at the government level (at sea and on shore) require several levels of preparedness and response at the national and local levels (terminals, handling stations, sea ports, etc.).
- In addition, an established response system and a corresponding oil pollution emergency plan should be in place for those entities that may be the source of a pollution incident.⁸
- The Commission considers a cooperative approach with the oil and shipping industry to be the key factor in establishing and maintaining an effective oil spill response system. It is the role of government to establish the legal and organisational framework for this relationship. The governmental structures and the international oil industry have the duty to follow international guidance and regulations.⁹ Whatever relationship is established, the role of government (and regional cooperation) and industry should be clearly defined.
- The organisational aspects of the companies' oil spill preparedness and response as presented in the GOSRP fit into the organisational framework for the project as presented in the Environmental Assessment. They are detailed and based mainly on the US principles of oil company management. The critical aspect to this rather theoretical approach, though, is its practical enforcement in African circumstances. In Nigeria, oil spills have in some cases had considerable environmental and social impact because oil spill response actions could not be executed for political reasons.¹⁰
- Sometimes there is no link between the theoretical background information and the recommended approach to oil spill response. For example, the ESI classification¹¹ of the coastal areas is an important and detailed piece of work, but it is not linked to response activities. To complete the response plan, incidents must be linked to tiered action plans. For example, a tier 2 or 3 action plan must be proposed in case of any oil spill affecting vulnerable coastal areas.

⁸ Esso Exploration and Production Chad Inc, the TOTCO (EECPI), Chad Oil Transportation Company SA (TOTCO) and the Cameroon Oil Transportation Company SA (COTCO).

⁹ International guidelines and regulations/resolutions on oil pollution prevention/preparedness and oil pollution emergency plans have been developed, particularly for pipeline construction, oil transfer systems, single point mooring devices, oil storage vessels/tankers, oil handling facilities and offshore units to guide governments and the oil industry when developing contingency plans.

¹⁰ Sabotage is easy, even with a new pipeline buried under 1 metre of soil, as has recently been demonstrated in Ecuador and Sudan.

¹¹ Shoretype Classification, Environmental Sensitivity Index (ESI)

4. RECOMMENDATIONS

4.1 General

Oil spill response is costly. Spill prevention is relatively cheap and avoids damage to the social and natural environment. The Commission recommends devoting a great deal of effort towards preventing spills occurring in the first place. In this respect, the Commission refers to its recommendations made in previous advisory reviews.

4.2 Spill scenarios and risk assessment

The Commission recommends that a detailed inventory of spill scenarios be drawn up and that a detailed risk assessment be carried out on each of these scenarios, based on international regulations and guidelines (taking into account the fate of the oil). The Commission recommends that the inventory and assessment form the basis for the oil spill response capabilities and capacity. Drawing on information in the existing general oil spill response plan (September 1999), the following parameters may be considered for use in the risk assessment:

- * An annual production of 6.5 million tonnes, a daily oil transportation of 18,000 tonnes, partly through a system for submerged transportation, and a floating storage capacity of 300,000 tonnes, including the oil handling procedure (ship to ship loading), could realistically result in regular operational spills (several tonnes) and an incidental spill of 2–3000 tonnes once in five to ten years. Major spills will occur occasionally.

4.3 Spill response organisation

The Commission recommends:

- Drawing up an inventory of oil spill preparedness and response capacities in the respective countries and in the region.
- Developing to international standards both the government oil spill response system and those of private companies.

Taking into account the present situations regarding local and regional oil spill preparedness and cooperation, the Commission recommends that a Tier 1 and Tier 2 approach to spill response be taken up by the oil industry. Local capacity should be developed to deal with spills up to 2000 tonnes. The measures should include a capacity for counter pollution measures at sea and on shore.

- Including the minimum requirements (in operational terms) for private companies' oil spill preparedness and response systems in contracts under the various loan agreements with these private parties.

- Including the development of government capacity for oil spill preparedness and response in the capacity building projects for Chad (project TDPE 48202) and Cameroon (CMPE 48204).
- Providing detailed information in the final (operational) Area Specific Oil Spill Response Plans on arrangements with government authorities in the relevant countries giving responsibility for oil pollution preparedness and response to other organisations.
- Contacting IPIECA (including ITOPF London¹² and IMO) for information on developments in regional cooperation within the WACAF regional initiative, and incorporating this information in the final oil spill response plan.

4.4 Oil spill response actions

The Commission recommends:

- Developing the mitigating measures to a stage at which they can be put into practice. The ESI maps could be translated into different response plans for sensitive and less sensitive areas.
- Gaining experience with concepts of natural attenuation and vegetative landfarming under African circumstances for onshore oil spills. Research into ecosystem recovery after oil spills could contribute to improving oil spill response actions and to better applied decision-making models, such as NEBA.¹³
- Adapting the proposed actions to fit local circumstances and developing a site-specific approach to environmental mitigating actions, using local resources and opportunities for cost-effective solutions.

4.5 Budgeting

- Reconsidering and recalculating the budgets for oil spill response equipment.

¹² The International Tanker Owners Pollution Federation Limited

¹³ Net Environmental Benefit Analysis

- Further considering the budgets required for onshore oil spill response. In a thumbnail exercise, the Commission filled out forms 11.2.1., 11.2.2. and 11.3.1 using information from the GOSRP, from previous experience in the Netherlands and some African countries (Nigeria and Gabon). Rough calculations gave the following budgets:

Unit		Reference table	Unit price (USD)	Total (USD)
Offshore unit	1	11.2.1	20.000.000	20.000.000
Onshore unit	4	11.2.2	2.000.000	8.000.000
River crossing unit	4	11.2.3	200.000	800.000
Tier 2 equipment (land)	1	11.3.1	600.000	600.000
Total Investment				29.400.000 *
E&M per year				4.500.000

- * In view of the information on the characteristics of the oil to be processed in the project, the use of dispersants and in-situ burning cannot be considered the best offshore counter pollution solution. Mechanical systems are recommended. For sea operations, booms (at least 400 meter of ocean boom), skimmer-mop systems (heavy duty), storage capacity (of at least 1000 tonnes), a combating vessel, at least two assisting vessels and a barge should be considered. The investment required is estimated at USD 1–20 million.¹⁴ Annual operating costs are estimated to be USD 1–2 million.

4.6 Independent external review

An independent external review of the risk of and preparedness for oil spills will help to settle the controversy surrounding the communication of the Chad Export Project. The Commission is aware of the fact that risk assessments include very sensitive and confidential information, and recommends a confidential, independent external review be carried out on the risk assessments and the operational plans for oil spill preparedness and response (ASORPS).

¹⁴ The availability of a maintenance vessel and tugboats on location (near the FSO) could be used for combating operations, and will reduce the total investment (on the condition that the vessel has storage capacity).