

In Whose Interest?

The Lom Pangar Dam and Energy Sector Development in Cameroon



*A report based on field work prepared by Global Village Cameroon,
Bank Information Center and International Rivers Network
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Top left: the ALUCAM aluminum smelter. All other photos were taken from meetings with communities in the Lom Pangar region.

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EXECUTIVE SUMMARY

There is little dispute that Cameroon needs to develop more energy. But just how much energy is required, for whom, and how it should be generated, remain contested issues. Although no comprehensive national energy demand and options assessment has been conducted and no energy sector development strategy has been published, the government of Cameroon has identified the construction of the Lom Pangar Dam on the Sanaga River basin in eastern Cameroon as a top solution to the country's energy crisis.

While most of Cameroon's population (over 80% in rural areas) does not have access to electricity, the urban and rural poor do not appear to be the primary beneficiaries of the Lom Pangar project. Instead, the dam is designed to regulate the flow of the Sanaga River in order to increase energy production from existing and proposed downstream hydropower plants serving the southern electricity grid and the country's single largest electricity consumer, the Alucam aluminum smelter.

Jointly owned by the government of Cameroon and the Canadian-based company Alcan, Alucam plans to more than double its production and needs new sources of cheap energy to do so. In October of 2005, Alcan publicly stated that the company's future in Cameroon rests on the construction of the Lom Pangar Dam.¹ This demand provides the government with a strong incentive to push the Lom Pangar project forward. Recent support from the French and German development agencies for new environmental impact studies and technical assistance from the World Bank, are helping the government to prepare the \$200 million project for financing.

As proposed, the Lom Pangar project will flood over 319 square kilometers (nearly 32,000 hectares) of some of the last remaining hardwood forests in Central Africa, including portions of the protected Deng Deng reserve which provides refuge to threatened primates.² The project will also endanger biodiversity in the surrounding forests, due to the creation of new access routes into the project area. The dam's reservoir will submerge sections of the Chad-Cameroon oil pipeline, generating new safety and environmental risks, and will displace hundreds of farmers and herders in one of Cameroon's poorest regions.

Project proponents claim that these impacts can be mitigated, despite Cameroon's poor track record of implementing environmental and social impact mitigation measures in the past. However, even if the dam's effects on residents and forests are minimized, the increased energy output expected as a result of Lom Pangar will not benefit the majority of Cameroonians who currently lack access to the country's electricity grid. Furthermore, Cameroon already relies upon hydropower for nearly 95% of its energy supply, making it particularly vulnerable to climate change and rainfall variations.³ By using scarce resources to invest in Lom Pangar rather than in alternative energy sources and smaller-scale, off-grid electricity generation projects, the government of Cameroon risks continuing the country's over-reliance on hydropower and neglecting the energy needs of the poor.

¹ See the Alcan press release at:

<http://www.alcan.com/web/publishing.nsf/Content/Alcan+and+Cameroon+Government+sign+Letter+of+Intent+for+Potential+Further+Development+of+Joint-Venture+>

² The figure representing the amount of forest to be flooded was derived from data available in the Lom Pangar EIA documentation. The total surface area of the reservoir is expected to be 590 km², of which 54.1% (approximately 319 km² or nearly 32,000 hectares) is forest. ISL-Oreade-Breche-Sogreah "Etude Environnementale du Barrage de Lom Pangar: Note de Présentation de l'étude," October 21, 2005 pp. 3-4.

³ World Bank, Country Assistance Strategy for the Republic of Cameroon, August 14, 2003, p. 20.

Due to early concerns about the Lom Pangar Dam, the non-governmental organization Global Village Cameroon hosted a mission by Bank Information Center and International Rivers Network in October 2005. The trip included a visit to the proposed site of the Lom Pangar Dam and the surrounding East Province, as well as meetings and interviews with project stakeholders. The following report summarizes the findings of the visit and presents the chief concerns that emerged from this research. The report's main conclusions can be grouped under the following topics:

Poor Energy Sector Planning: Although the government claims that the construction of Lom Pangar is necessary to resolve Cameroon's energy crisis, there has been no sector-wide energy needs and options assessment to demonstrate that Lom Pangar represents the best solution to the electricity shortage or the best use of scarce resources for energy development. The increased energy output expected from Lom Pangar is not intended to expand supply to surrounding, rural populations, which currently lack access to electricity, but will increase electricity to existing urban grids in the South, and in particular, Cameroon's largest energy consumer, the Alucam aluminum smelter. Giving priority to industry's needs over those of the rural and urban poor reflects significant weaknesses in the energy sector planning process. Furthermore, Lom Pangar's economic viability and anticipated contribution to energy production is predicated on an assumption that it is developed together with Nachtigal, a proposed hydropower dam downstream of Lom Pangar. However, the project documentation for Lom Pangar does not include a detailed assessment of Nachtigal's design or impacts. As a result, any decisions taken regarding Lom Pangar rest on incomplete information.

Unclear Benefits and Significant Risks: Residents in the project-affected East Province are sorely in need of the development benefits and infrastructure improvements that the dam's proponents claim will accompany the investment. However, communities are extremely wary of such promises after their experience with the Chad-Cameroon oil pipeline, which left unfulfilled expectations and unmitigated harms in its wake. The dam is unlikely to generate many new jobs and may deprive people of their current sources of livelihood, in a region that has few formal sector employment opportunities. Its reservoir will displace villages, flood farmland and pastoral zones, and bury gold ore that is said to provide a source of income to about 2,000 artisanal miners in the area today. Many local communities insist that, if the project is to proceed, compensation should be paid and resettlement completed before construction begins. Given the extent of deprivation in East Province, local expressions of support for Lom Pangar must be understood in the context of a lack of any alternative proposals for the region's development.

Degradation of the Deng Deng Reserve and Biodiversity Losses: As currently designed, the Lom Pangar Dam will threaten the survival of the Deng Deng forest and the biodiversity it houses. The World Bank worked with the sponsors of the Chad-Cameroon oil project to reroute the pipeline in order to avoid degradation of the Deng Deng forest and to help protect the area's biodiversity. The construction of the Lom Pangar Dam threatens to undermine these efforts by inundating a portion of the Deng Deng reserve, precipitating a heavy influx of population and creating new access routes into an already sensitive area where forests are illegally exploited and farmland is scarce. None of the cost estimates for the Lom Pangar project have taken into account the value of biodiversity losses in eastern Cameroon or assessed the tradeoff between those losses and expected energy gains.

Risks associated with the Chad-Cameroon Pipeline Project: As designed, the reservoir created by the Lom Pangar Dam will submerge at least several kilometers of the Chad-Cameroon oil pipeline, which will compound its social and ecological impacts in the area and create new safety

risks.⁴ The interaction of the two infrastructure installations has not yet been comprehensively studied.⁵ In addition, the poor implementation of a World Bank capacity building program designed to strengthen Cameroon's environmental regulatory framework (undertaken as part of the pipeline project), failed to equip the government to manage Lom Pangar and other large projects with far-reaching environmental impacts.⁶

Lack of Transparency and Disclosure: The Lom Pangar project and associated energy sector developments are characterized by a general lack of transparency and failure to publicly disclose information in a timely fashion. Final feasibility studies for the dam and the associated Nachtigal hydropower project are not complete and a timetable for project-related decisions is not available. While the publication of the Environmental Impact Assessment (EIA) on December 31, 2005 was welcome, the two month delay in the study's release and the failure to provide complete information to the public at consultations during its two-year preparation is cause for close monitoring of project transparency in the future. Details on how environmental and social mitigation plans will be financed and executed have not been provided, leaving significant uncertainty about the minimization of project-related harms. Important documents containing expert commentary and reviews of the proposed project have also been kept confidential, depriving the public of technical information essential to an informed debate about Lom Pangar. Furthermore, information about the economic, social, and environmental impacts of Cameroon's aluminum sector, which stands to benefit from the Lom Pangar project, is not publicly available.

Recommendations:

In absence of transparent energy sector needs and options studies and without an understanding of the full costs and benefits of the Lom Pangar Dam at the local and national levels, any decision to approve construction or provide funding for the dam would be premature. The World Commission on Dams (WCD) recommends that energy developments should be "selected through a participatory multi-criteria assessment that gives the same significance to social and environmental aspects as to technical, economic and financial aspects and covers the full range of policy, programme, and project options."⁷ In order to assess whether the Lom Pangar Dam is the best energy development option to meet the needs of the people of Cameroon, and to guarantee transparency and public participation in the selection and review of proposed projects, we

⁴ "In the Chad Cameroon case, Exxon was informed in 1998 that the government's 50m-high Lom-Pangar hydrodam was under active consideration to be sited at the confluence of these two rivers. As the terrain is rather flat, the 590 km² reservoir will extend long distances up both rivers impacting far more forest and biodiversity than the oil pipeline... The December 2003 International Advisory Group... pointed out that much of the Deng Deng forest will be inundated, as well as a segment of the pipeline. The cumulative or regional EA sections of the pipeline EA should have compared the impacts of the two projects especially on people and biodiversity, and seek to optimize with the reservoir," Robert Goodland, ed. "Oil and Gas Pipelines Social and Environmental Impact Assessment: State of the Art," May 2005, p. 13.

⁵ Volume 20 of the EIA released in December 2005 discussed the interaction between Lom Pangar and the Chad-Cameroon pipeline, but the assessment was deemed inadequate by external reviewers and donors (e.g. the World Bank and AFD) and additional studies are underway.

⁶ In conjunction with its support for the construction of the 1070 kilometer oil pipeline from southern Chad to Cameroon's coast, the World Bank provided a \$5.77 million loan to the government of Cameroon for the Petroleum Environment Capacity Enhancement Project (CAPECE). The International Advisory Group (IAG) for the Chad-Cameroon pipeline has repeatedly documented the delays plaguing the implementation of the CAPECE project. In its most recent report (Mission 10, September 25-October 18, 2005), the IAG notes that there has been almost no progress on the implementation of a legal framework on environmental management, and describes CAPECE's "failure to meet all its institutional capacity-building objectives." (Report of mission 10 to Chad and Cameroon, September 25-October 18, 2005, pp. 30-31)

⁷ WCD. 2000. Dams and Development: A New Framework for Decision-Making, p. 262. Available at www.dams.org.

recommend the following steps be undertaken before any final decision on the construction or financing of the Lom Pangar Dam:

- **National energy planning process:** A participatory national energy needs and options assessment and a strategic environmental assessment for the energy sector should be conducted before a final decision is taken on Lom Pangar. Future decisions on energy options should be based upon these assessments. The government should engage in a national energy dialogue in which energy needs and priorities are debated publicly, through a decentralized consultation process which addresses local and national demands. As a first step in this dialogue, the draft “Horizon 2030” national energy plan should be immediately disclosed for public comment and debate, and the document revised on the basis of input received.
- **Disclosure of Lom Pangar documents:** All available documents related to Lom Pangar should be publicly released immediately and the government and project sponsors should commit to disclose future documents in a timely manner, hold consultations on them at the project level, and allow public comment, before a final decision is taken on Lom Pangar. Documents to be disclosed include, but are not limited to:
 - a clear project calendar and timeline for all project-related decisions;
 - the comments provided to date by the Panel of Experts and the World Bank on the environmental impact assessment (EIA) for Lom Pangar;
 - supplemental environmental studies, including the study of the cumulative impacts resulting from the interaction of the Chad-Cameroon Pipeline and Lom Pangar Dam and of project alternatives;
 - project feasibility studies; and
 - financing agreements for the construction of the Lom Pangar Dam and implementation of social and environmental mitigation measures.
- **Nachtigal studies:** Because the cost-benefit analysis of Lom Pangar is linked to the presence of the future Nachtigal Dam, a feasibility study and environmental impact assessment for Nachtigal Dam should be completed and published prior to a final decision on the construction of the Lom Pangar Dam.
- **Aluminum sector impact studies:** A cumulative environmental and social impact assessment for the proposed aluminum sector expansion should be completed and published, addressing the potential impacts of the Lom Pangar Dam, Nachtigal Dam, anticipated bauxite mining activities, the expansion of the Alucam smelter, and any additional infrastructure that will be required for this industrial development scheme.
- **Aluminum sector economic/financial analysis:** An aluminum sector economic and financial analysis should be completed and published, including at least 10 years of annual revenue data, and the government of Cameroon should mandate the public release of Alucam’s financial reporting, including publication of its annual report. Such an analysis should clearly reflect what the Cameroonian government earns from the operations of Alucam and what it can expect to gain from the company’s planned expansion.
- **Regional development planning:** A regional development and land use management plan for the East Province should be drafted through a consultative process and disclosed for public comment. The plan should address needs for physical and social infrastructure, including electricity and transportation, as well as land for agriculture and herding.

- **Legally binding agreements and grievance mechanism for affected communities:** Should a decision be taken to construct Lom Pangar Dam, all project sponsors' commitments to resettlement, compensation and social investment for persons and communities affected by the project should be made legally binding and payments and relocation satisfactorily completed prior to project construction. An independent mechanism for handling grievances of and providing legal recourse to members of the affected communities should be established before construction begins and should operate for the duration of the project.
- **Forest protection studies and commitments:** An evaluation of previous attempts to protect forest areas in Cameroon with "eco-guards" or similar measures should be conducted to inform the design and implementation of measures to protect forests in the Lom Pangar project area. A clear mechanism should be established to monitor implementation of forest protection measures and redress grievances should mitigation efforts prove unsuccessful. The Government of Cameroon and the World Bank should issue written statements clarifying their existing commitments to protecting the Deng Deng forest.

1.0 Introduction

In recent years, Cameroon has experienced energy shortages due to seasonal river fluctuations and growing demand for electricity. The Sanaga, Cameroon's largest river, is subject to severe variations in flow, affecting the water supply to its many dams. Since the 1990s, the Government of Cameroon has expressed interest in constructing a large reservoir dam near the confluence of the Lom and Pangar rivers, tributaries of the Sanaga River in the East Province, to address these problems.⁸ The stated purpose of the proposed Lom Pangar Dam is to regulate the flow of the Sanaga in order to increase and secure constant power output from the two downstream dams, the Song Loulou Dam and the Edea Dam, which supply 90% of the electricity to the country's southern grid.⁹ According to project consultants, the new dam would create a reservoir covering an estimated area of 590 square kilometers, expected to increase power generation from the southern grid by 125 MW, and is designed to include an on-site electricity generating capacity of approximately 51MW.¹⁰

Financing for the project, which is expected to cost approximately \$200 million, has not yet been secured, but sources suggest that the government is seeking funds from the World Bank, the *Agence Française de Développement* (AFD), and other foreign donors, potentially including the African Development Bank and China.

Proponents of the Lom Pangar Dam present it as a solution to the country's energy crisis. However, the project will not address the energy crisis facing the majority of Cameroonians, who live outside of the country's cities and off the electricity grid. At present, less than 20% of rural households have access to electricity at all.¹¹ Rather than increase their access, the regulating function of Lom Pangar is designed to increase hydropower supply to the southern power grid and Cameroon's largest existing energy consumer, the Alucam aluminum smelter. On October 26, 2005, Alucam's majority owner, Alcan, announced plans to spend almost US \$1 billion to expand its production to 2.5 times the current level, indicating that it requires Lom Pangar (and a related downstream dam, Nachtigal) to do so. A lack of transparency in the aluminum sector, however, makes it impossible to determine the economic benefits that Cameroon currently receives from Alucam or would receive from this proposed expansion.

In 2000, the Government of Cameroon announced plans to turn the area between the Lom and Pangar rivers into a national park, but with increasing momentum behind the Lom Pangar Dam, these plans have since stalled. Instead, the government has taken steps to prepare the dam for financing. In 2003, the Government of Cameroon hired a consortium of three French companies

⁸ According to ARSEL, the Lom Pangar Dam project was first identified during an inventory of hydropower potential in Cameroon conducted in the 1980s.

⁹ Société Nationale des Eaux du Cameroun. http://www.sneec-cameroun.com/article_fr.php?idac=2

¹⁰ There is some debate over the size of the reservoir needed to fulfill the purpose of the dam. Some, such as AFD, reportedly maintain that the same amount of regulatory capacity could be obtained from a 500 km² reservoir as from a 700 km² reservoir. The fact that the current design does not aim to minimize the impact area raises questions about what economic benefits may be gained from the flooded area, particularly timber and gold resources.

¹¹ OECD African Economic Outlook 2005-2006; <http://www.oecd.org/dataoecd/37/2/36735844.pdf>. Data from 1987 found that 77% of Cameroon households did not have access to electricity (45% of households in urban areas and 96% of households in rural areas did not have access). "Gender, Poverty and Environmental Indicators on African Countries 2005," African Development Bank. A 2004 report states that one objective of the Government's privatization of the electricity sector was to increase access to electricity to 31% by 1999 and to 49% in 2019. However, it is impossible to measure because data is not collected. Pineau, Pierre-Olivier. 2004. "Transparency in the Dark – An Assessment of the Cameroonian Electricity Sector Reform."

to conduct a new Environmental Impact Assessment (EIA) for the proposed Lom Pangar Dam. Although the consultants delivered the completed EIA to the Ministry of Energy and Water at a public meeting in October 2005, the document was not made available to the public until more than two months later. Following an initial review by an inter-ministerial committee, the EIA is currently awaiting final approval from the Ministry of Environment and Nature Protection, pending completion of revisions and supplemental studies. The Lom Pangar Dam is the first major project to be subject to the new EIA legislation, adopted in February 2005, and as such, is exposing many of the law's weaknesses.¹²

A three-member "Panel of Experts" (PoE) charged with reviewing the consistency of the EIA with international standards, including those set forth by the World Commission on Dams (WCD), provided comments during the drafting of the study, but these comments have not been disclosed. Similarly, the Cameroonian government asked the World Bank to assess the consistency of the EIA with the Bank's policies. However, the Bank's assessment has not been made public, despite reports that it raised serious concerns about the project design and impact mitigation.

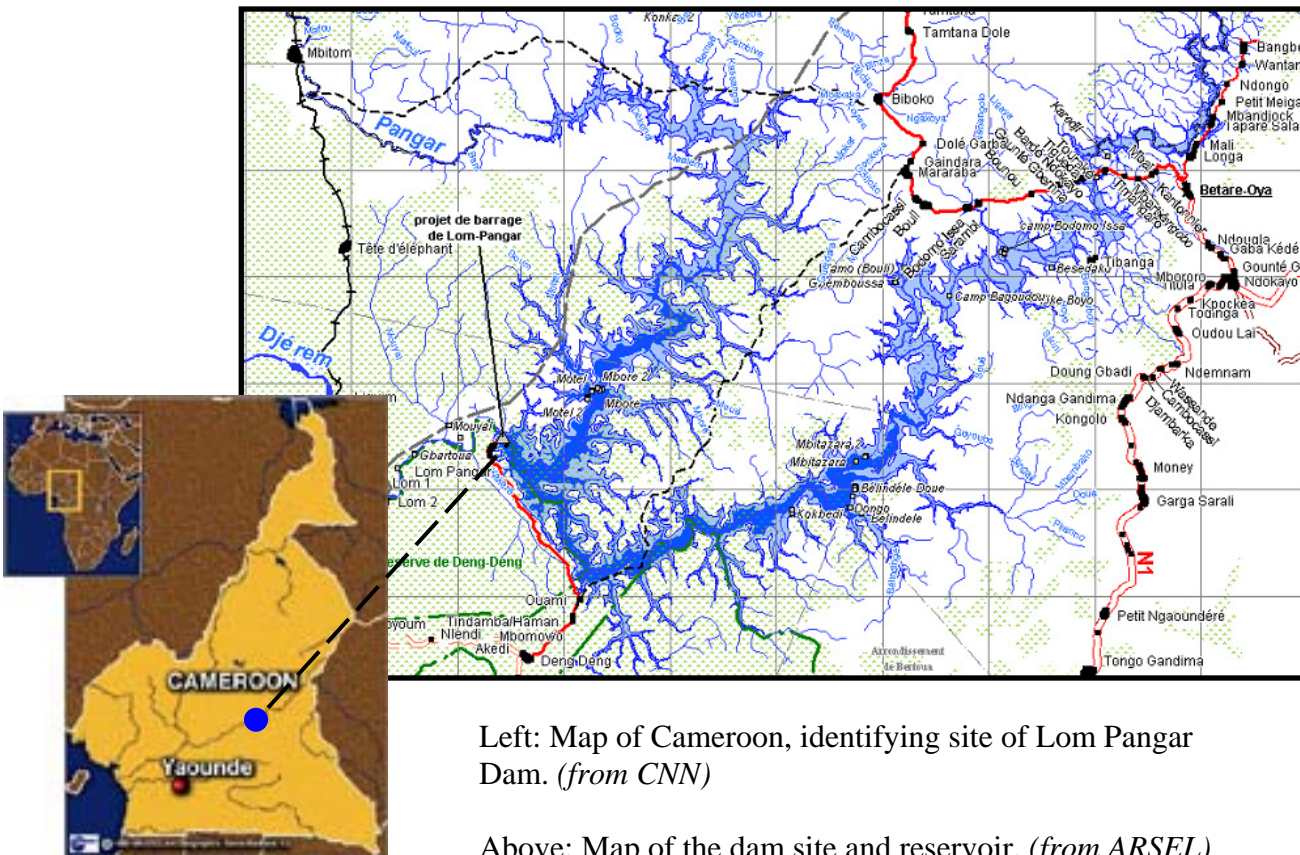
The decision-making process surrounding the selection and preparation of the proposed Lom Pangar Dam, and its potential environmental, social and economic impacts have aroused significant concerns. Key issues include the following:

- **A flawed approach to energy sector development in Cameroon including**
 - lack of a comprehensive assessment of Cameroon's energy needs and options at the strategic planning stage;¹³
 - prioritization of energy supply to the expanding aluminum sector without analysis of the costs and benefits of the aluminum industry to Cameroon;
 - disproportionate attention to (southern) grid supply over electricity grid extension or off-grid alternatives to meet the energy needs of the vast majority of the population without access to (affordable) electricity; and
 - inadequate assessment of alternatives to Lom Pangar.
- **Impacts on the people and environment in the East Province such as**
 - lack of alternative development options for the province, constraining the ability of local communities to challenge or reject the project;

¹² In February 2005, the Government of Cameroon issued Decree No. 2005/0577/PM, establishing a new legal framework for the drafting and validation of environmental impact assessments (EIA). The Lom Pangar Dam will be the first large-scale project to be implemented under the new EIA process. Conversation with different government officials revealed that there is not yet a consistent understanding of the process and timeline for EIA approval required by the new decree. According to local environmental experts, the new EIA decree suffers from several weaknesses. The principal problem is that the language of the new EIA decree is vague, leaving open a possible interpretation that the text only requires a minimum of 20 days for the EIA validation process. The lack of precision regarding the sequence of various steps laid out in the decree allows for differing interpretations and creates confusion about what the public's rights are. Furthermore, the decree does not indicate any differences in procedure based on the size or potential impacts of a proposed project. The non-objection basis for EIA validation makes it possible for high-impact projects to proceed without proper due diligence.

¹³ The AFD official in charge of the Lom Pangar Dam project in Cameroon stated that the World Bank has asked for a long-term energy sector study and plan to be carried out. This is a completion requirement under Cameroon's heavily indebted poor country (HIPC) debt relief package. According to AFD, the energy sector study should have been completed in December 2005. Such a study has not yet been made public.

- flooding of protected forests, farmland, and pastoral zones;
 - anticipated strains on resources, health, and livelihoods, particularly due to population influx; and
 - unclear benefits to affected communities and widespread wariness of more broken “development” promises.
- **Interaction with the World Bank sponsored Chad-Cameroon Oil Pipeline Project and impacts on the Deng Deng forest, including**
 - submergence of a portion of the oil pipeline, not built to withstand the pressure of the reservoir, and the potential impacts and safety risks associated with alterations to the pipeline structure or route.
 - anticipated degradation of the Deng Deng forest reserve, a critical biodiversity habitat which was to be protected under Cameroonian law and as a condition of World Bank financing for the Chad-Cameroon project;
 - **Lack of transparency including**
 - failure to disclose key project documentation in a timely manner, in particular the EIA and environmental action plan (EAP), resettlement action plan and information on social impact mitigation measures;
 - failure to disclose the comments and reports of independent EIA reviewers, such as the Panel of Experts and the World Bank;
 - lack of information about recourse mechanisms and proper grievance procedures for affected populations;
 - absence of public information on the decision-making process for the project, including the lack of a publicly available project timeline.



Left: Map of Cameroon, identifying site of Lom Pangar Dam. (from CNN)

Above: Map of the dam site and reservoir. (from ARSEL)

Cameroon's Lom Pangar Hydropower Project: Overview

Location: On the Lom River in Cameroon's East Province, 4 km downstream from the confluence of the Lom River and Pangar River, and 13 km upstream from the Sanaga River.

Purpose: While the dam would provide 51 MW of hydropower capacity to the Eastern Province of Cameroon, its main purpose is to regulate the flow of the Sanaga River to allow maximum year-round power generation from existing and planned downstream hydropower plants.

Dam height: 50 meters

Reservoir size: 590 square kilometers

Total cost: US \$200 million

Estimated energy boost to Southern grid: 125 MW

On-site generation capacity: 51 MW

Revised construction timeline: 2006-2009

Documents

A 24 volume EIA, completed by French consortium ISL-Sogreah-Oreade, was released in December 2005.

Comments on the EIA have been prepared both by a Panel of Experts and by the World Bank. These comments have not been publicly released.

The feasibility study and study of cumulative impacts of the Lom Pangar Dam and the Chad-Cameroon Pipeline are being conducted by French consultancy, Coyne & Bellier. It is unclear when these will be completed, and if they will be publicly released.

Beneficiaries

ALUCAM aluminum smelter is the largest energy consumer in Cameroon. The smelter is backed by Canadian-based Alcan, which is staking its future in Cameroon on the construction of Lom Pangar.

Chief concerns

Flawed approach to energy sector development:

No sector strategy; no needs or options assessment; continuing over-reliance on hydropower (currently 95% of country's energy supply)

Prioritization of ALUCAM energy needs without justification

No study of costs and benefits of aluminum sector to Cameroon
No attention to supplying electricity to those without access currently

Threats to protected forests and primates

Flooding, population influx and induced access expose Deng Deng forest and wildlife to risks

Lack of transparency and incomplete information

Delayed release of EIA and non-disclosure of studies on which EIA is based
Failure to disclose World Bank and Panel of Experts comments on EIA

2.0 Project Background: Interests and Preparation

2.1 EIA Process

The current environmental assessment process for Lom Pangar began in 2003, following a series of studies that started in the early 1990s and were first published in 1998. The environmental impact assessment (EIA) published in December 2005 was financed jointly by the Government of Cameroon, which covered 63% of the overall costs, and AFD, which contributed the remaining 37%.

ARSEL, Cameroon's electricity regulating agency under the Ministry of Energy and Water, was mandated to oversee completion of the EIA for the Lom Pangar Dam, which was prepared by a consortium of French firms, ISL-Sogreah-Oreade. The consortium released a 24-volume environmental impact assessment for Lom Pangar on December 31, 2005, after two years of preparation. During this period, civil society organizations struggled to obtain any information about the project—including the final draft document itself. ARSEL says that all draft intermediary EIA studies were shared regularly with the government, AFD, and the World Bank. While ARSEL claims to have solicited and collected comments from development partners *and the public* throughout the preparation of the EIA, unlike government and financial partners, the public had no access to draft documents.

ARSEL maintains that the studies respect Cameroonian EIA laws, as well as standards for large hydropower projects put forth by the WCD and the World Bank. However, both the World Bank and the AFD have indicated that the EIA released in December 2005 is inadequate and that supplementary studies are required in order for it to comply with World Bank policies on EIAs.¹⁴

The decision-making process for the approval of the Lom Pangar EIA, and the overall project, has not been fully communicated to the public. There is no calendar currently available explaining the order, requirements, or schedule, either for the EIA process, or overall project approval. Even project partners have complained that poor circulation of information has been a consistent problem.

2.1.1 Panel of Experts

Due to donor pressure, the government of Cameroon created a three-member Panel of Experts (PoE) to advise it on the quality of the EIA studies and the design and implementation of the environmental management plan, and to ensure compliance with international standards such as those laid out in the WCD and World Bank policies.¹⁵ The Panel was partially financed by the German development agency, GTZ, and housed within the Central Africa regional office of the International Union for the Conservation of Nature (IUCN), in Cameroon. IUCN was contracted as a facilitator to serve as the liaison between the ARSEL and the PoE, and to manage the majority of the PoE's activities and publications.

ARSEL describes the PoE as a contractor to the Ministry of Energy and Water, and states that the Panel worked independently without government interference. However, questions have been raised about whether the fact that the PoE's communication with the Government was

¹⁴ IUCN (BRAC) website, Note de Presentation des EIE, http://www.iucn.org/places/brac/programme/lompangar/docs_EIE/note_de_presentation.pdf.

¹⁵ See a description of the mandate and responsibilities of the Panel and IUCN at: <http://www.iucn.org/places/brac/programme/lompangar/lompangar.htm>.

“facilitated” through IUCN may have compromised its ability to present objective and critical findings. At an October 2005 workshop, IUCN publicly announced its interest in playing an active role in the future of the Lom Pangar project, although there had been no final decision taken on the project yet. These remarks call into question the objectivity of IUCN as it hedges to secure future project contracts.

*The PoE’s comments on the EIA – provided through three separate reports and two field mission summaries submitted to ARSEL -- have not yet been made public. It is unclear what standards were used to review the EIA, or whether government compliance with the Panel’s comments and recommendations will be mandatory.*¹⁶ Only the PoE’s first field report was released via the IUCN website. None of the subsequent comments on the draft EIA and two field mission summaries reportedly submitted to ARSEL have been released, despite IUCN’s statement in December 2005 that the PoE’s comments would be released in full. The EIA consultants reportedly compiled a 73 page document identifying how the PoE’s comments were incorporated into the EIA, but this, too, has been kept confidential. Thus, there is currently no mechanism of public accountability to ensure the quality of the PoE’s work and the consideration of its findings in the final project documents.

2.1.2 EIA Revisions and Additional Studies

According to AFD, the consortium of ISL-Sogreah-Oreade will receive a contract extension for completion of the EIA in order to complete revisions to the document originally submitted to the Ministry of Energy and Water in October 2005. The contracts for the Independent PoE will reportedly also be extended, although one member will step down and two new members, a civil engineer and an economist, will be added. In conjunction with this extension, the contract for IUCN as facilitator of the PoE will also be prolonged.

According to ARSEL, detailed engineering studies are not yet complete, and the feasibility study, now underway, is expected to take six months. A pre-feasibility study (*etude d’avant projet actualisé sommaire*) on Lom Pangar, completed in 1998 by the French firm Coyne & Bellier, is the basis for current project information. Coyne & Bellier is now contracted to complete the current feasibility study.¹⁷ ARSEL expects the construction phase of the Lom Pangar Dam to begin by the end of November 2006, but some have questioned whether revised studies will be completed and approved and financing secured by then.

2.1.3 Public Workshops

Public workshops related to the Lom Pangar EIA were organized by ARSEL on three occasions: January 2003, May 2005, and October 2005. While ARSEL stated that the meetings were organized to solicit and address public concerns, little documentation was provided to affected

¹⁶ The Panel of Experts’ first field report was released via the IUCN website. However, none of the two subsequent reports on the draft EIA and two field mission summaries reportedly submitted to ARSEL have been made public. ARSEL has stated that it has a 73 page document, prepared by the EIA consultants identifying how the Panel’s comments were taken into account in the EIA, but, this too has been kept confidential. On 27 December 2005, IUCN stated that the Panel’s comments will be released in full on the IUCN website along with the EIA. As of January 29, 2006, they were not available.

¹⁷ ARSEL stated that EDF also bid, and has experience in hydro in Cameroon, but Coyne & Bellier’s bid and knowledge of the project were more attractive. It is unclear how competitive the procurement process was for the feasibility study. Coyne & Bellier has been contracted to conduct various studies by almost all of the parties interested in the Lom Pangar dam. In 2002, Coyne & Bellier prepared an energy demand study called « Moyens Energétiques pour le développement Durable a l'Horizon 2007/2015” on behalf of Alucam. Coyne & Bellier is also reported to be preparing the study on the cumulative impacts between the Lom Pangar Dam and the Chad-Cameroon Pipeline.

communities. In May 2005, only a short summary (about 20 pages) of a synthesis of the EIA was provided, and it was not made widely available or disclosed in local languages.¹⁸

A meeting identified as the “Final Restitution Workshop” on the Lom Pangar Dam EIA was held in Yaoundé, the capital of Cameroon, on the 21st of October 2005, to mark the delivery of the EIA to the Minister of Energy and Water. Less than two weeks notice of the meeting was provided and, in some places, there was only a few days notice, if any at all. The final draft EIA, the subject of the meeting, was not disclosed. Workshop participants received only an 11 page summary of the assessment, a brief presentation of the consultant’s work, and a brochure published by the Ministry of Energy and Water, which incorrectly listed a number of NGOs as having been critical of the EIA study despite the fact that the document had never been released.¹⁹ A delay of over two hours to the start of the meeting curtailed discussion; only 20 minutes were left for questions and comments from the audience, and at least one prominent NGO representative was refused the floor.

EIA documents have only recently been made public and are not yet widely distributed. For several months after the October 2005 workshop, NGOs were given verbal assurances by officials at ARSEL that copies of the draft EIA would be made publicly available. Promises of its release were consistently broken. A CD copy was first made available via the IUCN office in late December 2005, and then placed on IUCN’s website in January, nearly three months after the workshop.

2.1.4 Options/Alternatives

According to the presentation of the EIA provided at the October workshop, the only alternatives to Lom Pangar considered were the extension of thermal power production at Kribi and the construction of one other large dam. Claims by project proponents that Lom Pangar is economically viable and less greenhouse-gas intensive than alternative developments are based upon its assumed interaction with another proposed downstream dam, Nachtigal. According to the consultants who conducted the EIA, Lom Pangar is the preferred and most cost effective option if it is accompanied by further development of the Sanaga river system downstream of Lom Pangar.²⁰ *However, the EIA for Lom Pangar does not contain any detailed analysis of Nachtigal’s design or likely impacts—or the cumulative impacts of Lom Pangar and Nachtigal on the river basin.*

The alternative hydroelectric option considered was the development of the Bankum-Mape/Nyanson Dam. Although the consultants estimated that the energy output of the dam would be equivalent to that of Lom Pangar, they claimed that it would cause greater environmental harm and entail more work, since the environmental assessments for Lom Pangar were already much further advanced. Simply because more studies have been (and are being)

¹⁸ Concerns were also raised about the persistent lack of participation by local women throughout the EIA process. Although ARSEL claims to have addressed this deficiency through a complementary study on women’s issues and perspectives, the ten page document presents a relatively cursory account of perspectives shared during four meetings in the project area. The presence of male community members at all of the consultations with women raises questions about the reliability and comprehensiveness of the study’s findings, given the frequent reluctance of women to communicate frankly in front of men.

¹⁹ Over half of the 16 NGOs listed in the brochure had not heard of Lom Pangar Dam. Letters were sent to ARSEL and IUCN regarding the misuse of NGO names and the implication that they have criticized studies not yet released. A brief response from IUCN was received on November 7, 2005. ARSEL did not respond.

²⁰ ISL-Oreade-Breche-Sogreah, «Etude Environnementale du Barrage de Lom Pangar: Note de présentation de l’étude » 21 octobre 2005, p. 3-4 ; ISL-Oreade-Breche-Sogreah, « Étude d’Alternatives » p. 21, p. 65.

conducted on Lom Pangar, does not make it a better or less costly energy project than others, in the long-run. *The “sunk” costs of research invested in Lom Pangar should not be among the primary justifications for pursuing the project above others.* Key donors to Cameroon, including the World Bank and AFD, have expressed dissatisfaction with the consideration of alternatives and suggested that they be revised in a final EIA document. While a revised alternatives assessment is important, a more ideal method would be to choose from options based upon a national needs assessment and sector-wide strategic environmental study.

2.1.5 Mitigation Measures

The EIA consultants have proposed that mitigation measures for the project be implemented through two primary plans:

- An Environmental Action Plan (EAP)
- A development action support program (*Le Programme D’appui aux Actions d’encadrement et de Développement*, or PAD), including the implementation of an employee recruitment plan aimed at ensuring that 50% of project employees are from the local area. (The implementation of the PAD is supposed to start before the construction of the Lom Pangar Dam commences, but financing for the PAD has not yet been secured.)

Concerns have been raised that the plans do not include a strong compliance mechanism to ensure proper implementation of mitigation measures, and that financing for the construction and for the mitigation measures may be sought separately, introducing a risk that the dam’s construction may proceed while mitigation measures lag behind because of lack of funding.

Furthermore, the relatively low estimated cost of the PAD (see below) suggests that project proponents may not have foreseen or captured the full costs of the measures needed to comprehensively address Lom Pangar’s potential social impacts on the region’s development.

2.2 Project Cost and Financing

According to the EIA, the total duration of project will be eight years, while dam construction will take 44 months, or almost four years. The estimated project cost is US \$197.4 million, divided as follows:

- Construction of the dam: \$113.3 million (58% of total project cost)
- EAP: \$ 28.3 million USD (14%)
- PAD: \$ 16.4 million USD (8%)
- Others: \$ 38.9 million USD (20%)

At this time, there is no official financier for the Lom Pangar Dam. AFD has expressed interest in financing the dam if a revised EIA is validated. ARSEL and others have also suggested that funding may be sought from the World Bank. ARSEL confirmed that according to its original concession agreement, AES-Sonel, the privatized electricity company, was obliged to construct Lom Pangar Dam, but the contract was recently renegotiated and this clause was removed.²¹ However, another financing mechanism is reportedly planned to create a revenue stream from the

²¹IFC documentation viewed by the report’s authors confirms that the obligation to construct Lom Pangar has been removed from the revised AES-Sonel concession agreement. However, AES-Sonel has financed travel costs for one of its staff to participate in a field visit to study the Lom Pangar project, and is reportedly obliged to cover some of the financial costs for the project’s feasibility studies.

Lom Pangar Dam: AES-Sonel would pay royalties for the use of water from the Lom Pangar reservoir, covering 60% of the cost of the dam.

2.3 Role of Alcan/Alucam

Alucam is the single largest consumer of energy in Cameroon and has significant influence on the country's energy sector priorities. In October 2005, Alcan announced plans to nearly triple the smelter's production and indicated that it requires the construction of Lom Pangar in order to do so. If Lom Pangar is not constructed, Alcan is clear that it will eventually leave the country. Alcan's "double or nothing" strategy is arguably the most powerful factor in the decision to build the Lom Pangar Dam.

Lom Pangar is the first step in a series of projects to expand Cameroon's aluminum industry and would pave the way for a major investment (of about US \$900 million) by Alcan. The expansion includes the construction of Nachtigal Hydropower Dam (to be financed and operated by Alcan), the introduction of bauxite mining in Cameroon, a 2-3 fold increase in aluminum smelter production, and the development of associated infrastructure. The cumulative impact of this industrial development scheme will likely be considerable, and will undoubtedly be significantly greater than the consequences attributed to each individual part.

The Lom Pangar EIA documentation makes it quite clear in whose interest the project is being developed. When comparing Lom Pangar to potential alternative energy sources, section 1 of the EIA states: "The other alternative ... that could also respond economically to Alucam's demand is actually the hydroelectric complex of Bankim (originating from the Mapé river) and Nyanzom..."²² This statement suggests that the studies aim to find the most economical way to meet Alucam's needs, which are not necessarily consistent with those of the Cameroonian population.

Alucam has been granted a highly subsidized rate for its electricity consumption through the end of 2009. While new negotiations are underway with AES-Sonel for Alucam's electricity rates, it is unlikely that the new agreement will be made public. *No records of Alucam's contribution to Cameroon's national budget are publicly available, making it impossible to trace the historical economic benefit or predict future benefits. It remains unclear whether or how the Cameroonian public will benefit from the Lom Pangar Dam or from the planned expansion of the country's aluminum industry.*

2.4 Role of Agence Française du Développement (AFD)

In 1999, AFD financed an update of the Lom Pangar pre-feasibility study, prepared by Coyne & Bellier. In 2000, the AFD recommended that supplementary studies be done and agreed to cover a significant portion of the costs, namely the EIA. Although AFD has not yet committed to financing the construction of the dam, AFD representatives have suggested that such support is likely, noting that when it finances environmental studies, it is usually with the intent of financing the project itself.

The reasons for AFD's strong interest in this project remain unclear, aside from its long-standing involvement in Cameroon, first as colonizer then as donor. Before its 2003 merger with Alcan, the French company, Pechiney, owned and operated Alucam, and there may still be significant French shareholder involvement. In meetings with NGOs in Cameroon, AFD has reportedly stated that it owns a small number of shares in Alucam (approximately 5%) and the French

²² Theme 1: Étude des Alternatives, available at : http://www.iucn.org/places/brac/programme/lompangar/lompangar_EIE.htm

Embassy's website indicates that AFD has provided direct financing for Alucam.²³ There may also be French designs on dam construction and logging contracts for the flooded area, but this is not confirmed.

2.5 Role of the World Bank

The World Bank's interest in the Lom Pangar project is at least two-fold: as an advisor to the government of Cameroon on the energy sector, and as a party to the Chad-Cameroon oil pipeline project. First, the Bank is involved in advising and supporting the development of Cameroon's energy sector, having identified energy development as a priority for its program in Cameroon. With regard to the development of reliable and affordable energy, the World Bank's Country Assistance Strategy for Cameroon (2003) states that the Bank will "continue to play a catalytic role in this process, to ensure that an investment plan to address the short-, medium-, and long-term need is agreed upon, complying with World Bank Group safeguard policies and government commitments under the current portfolio, and is properly financed."²⁴

Second, the Lom Pangar Dam, as proposed, will flood portions of the World Bank-backed Chad-Cameroon oil pipeline, submerge sections of the Deng Deng forest reserve and increase access to the remaining sections of the Deng Deng and nearby Mbam Djerem forest, for which specific protections were introduced as part of the pipeline project. The World Bank's own documents and the International Advisory Group (IAG) for the Chad-Cameroon pipeline have cautioned against proceeding rapidly with Lom Pangar, given these impacts and what they have called "*surprising ongoing confusion and lack of dialogue around the Lom-Pangar dam project.*"²⁵

In April 2004, the World Bank agreed to the government's request that it carry out an independent review of the EIA documentation to assess its alignment with Bank social and environmental policies and procedures.²⁶ As part of this review, Bank staff have conducted at least three field visits since late 2004.²⁷ *The Bank reportedly submitted its written comments on the EIA to the Government of Cameroon in December 2005, but (like the comments of the PoE) they have not been disclosed to the public.* NGOs continue to seek the public release of these comments as one of the only expert-level reviews of the EIA.

3.0 Field Visit to Lom Pangar and the East Province

The authors conducted a field visit to the proposed Lom Pangar project site and affected areas in the East Province between October 18 and 23, 2005. Eight individual interviews and four community meetings were held.

The Lom Pangar project zone covers some 59,000 hectares in the East Province. While the reservoir is expected to physically displace only about 350 people, thousands more in the project

²³ See: http://www.ambafrance-cm.org/article-imprim.php?id_article=384

²⁴ Country Assistance Strategy (2003) p. 20. Available at http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2003/11/13/000160016_20031113163100/Rendred/PDF/26555rev0CM.pdf

²⁵ International Advisory Group, *Report of Mission 9 to Chad and Cameroon, May 15 to June 6, 2005*, p.30. Available at http://www.gic-iag.org/doc/IAG_Report_Mission_9.pdf.

²⁶ When approached in April 2003, the World Bank declined to comment on the terms of reference for the EIA. It subsequently agreed to review the EIA in light of Bank policies. It is unclear what explains the Bank's "change of heart" regarding engagement on the project.

²⁷ IUCN stated they did not have a direct exchange of information with the World Bank. However, they were asked by ARSEL to accompany the World Bank to the field. The Ministries of Energy and Water and the Ministry of Environment and Nature Protection also accompanied the Bank on field visits.

area will be greatly affected by the flooding of forest, agricultural, and grazing lands. Of the 590 square kilometers that the dam's reservoir is expected to cover, approximately 310 km² are forest, containing between 400,000 and 450, 000 cubic meters of commercially exploitable timber.²⁸ The associated strains on land use are expected to create greater conflicts in the area, where resources are already overtaxed.²⁹ Currently, the main sources of livelihood are small-scale agriculture, animal rearing, artisanal gold mining, fishing, and forest exploitation. The majority of inhabitants of this zone are poor, living on less than a dollar per day, and there is a low level of formal employment. According to officials in the provincial capital, only 3% of the local population has access to electricity.

Several central issues arose during the field visit. They can be summarized as follows:

1. Apart from the measures promised to accompany Lom Pangar, few if any alternative plans are being offered for the development of badly-needed infrastructure in the East Province.
2. Community concerns about Lom Pangar's potential impacts and compensation procedures are heightened by their negative experience in recent years with the World Bank-financed Chad-Cameroon oil pipeline project.
3. The affected local populations are not adequately informed about the decision-making process and overall timeline for the project, including its provisions for compensation, resettlement, and employment of community members, exploitation of gold and forest products in areas to be flooded, and grievance recourse mechanisms.

3.1 Few Development Alternatives for East Province

There are massive development needs in the East Province, ranging from employment to improved roads and water supply systems, from rural electrification to accessible health care. Conversations with residents of the Province suggest that these needs have been neglected both by the government of Cameroon and by non-governmental organizations, of which very few are active in the region. It is in this context that the Lom Pangar project has been presented as a vehicle for regional development, and that community expressions of support, despite concerns about the project's negative impacts, must be understood.³⁰

During the field visit, communities frequently stated that the Lom Pangar Dam project is in the national interest, and that they do not want to stand against a project that is in the interest of the nation. One chief stated that he feels the dam is the government's project and that the local population has no ability to stop it or to have a voice in the matter. Several government officials expressed hope that the benefits will bring positive changes to the region, but shared concerns about how the realization of benefits will be ensured.

²⁸ ISL-Oreade-Breche-Sogreah, "Note de présentation de l'étude", 21 October 2005, p. 4.

²⁹ It is estimated that the dam's reservoir will flood approximately 310 Km² of forest, which represents one million m³ of locally used wood.

³⁰ A few gave enthusiastic predictions that the project would help catalyze development and bring several positive impacts in the region, including new employment, an influx of capital, fishing and commerce around the dam, health centers and schools. Whether the predictions are optimistic or not, it is clear that at this time there are no guarantees that project benefits will be realized for communities in the East Province, that impacts will be identified and mitigated in an ongoing manner, or that any and all promises to communities will be wholly fulfilled.

No other medium or large-scale development projects appear to be planned or in process for the East Province. Other than the benefits promised as compensation for communities affected by Lom Pangar, local representatives and officials with whom we spoke did not identify any initiatives intended to provide the roads, bridges, and other infrastructure needed for the region's development. Thus, the communities have little choice but to accept the Lom Pangar project because it is the only opportunity presented for development of infrastructure in the isolated region.

3.1.1 Electricity

Several of the largest towns in the East Province, including, Bertoua, the provincial capital, Betare Oya, and Belabo, have electricity. However, they rely upon diesel generators which provide an irregular energy supply. The majority of the province continues to live without electricity or other modern energy services. Firewood and other biomass remain the primary sources of fuel for cooking and heating throughout the province.

The electricity to be generated on-site by the Lom Pangar Dam would be sent to the provincial capital and other large towns nearby, but there does not appear to be a plan to expand the electricity distribution grid in the region. Residents of villages further from Bertoua, including the village of Deng Deng, stated that ARSEL representatives and other officials have informed them that they will not receive electricity from this project. In interviews with ARSEL on October 14, 2005 and with AFD on November 3, 2005, representatives of the agencies confirmed that the Lom Pangar Dam is not a project for rural electrification because it is too costly to extend the distribution grid to rural areas. They maintained that the Rural Electrification Agency will take care of the electricity needs of rural people.

3.1.2 Roads

With the notable exception of the road from Bertoua to Betare-Oya, most of the roads in the East Province are not tarred and are poorly maintained. Local communities persistently complain that poor or non-existent roads inhibit the transport of their agricultural goods and other products to market and limit their access to essential services, such as health care and education. Representatives of the village of Goyoum, for example, stated that the closest health center is currently 17 km away in Deng Deng and that poor road conditions have prevented timely access to treatment and cost lives.³¹

Communities have been informed that some roads, bridges, and other transportation infrastructure will be built as part of the dam project. As proposed, the Lom Pangar project will entail the construction or rehabilitation of several roads, including the routes between: Bertoua and Deng Deng; Deng Deng and the Lom Pangar site; Deng Deng and Goyoum; and Mbitom, Mararaba and the district capital in that part of the province, Betare-Oya. According to community members in Mbitom, a village that is presently only accessible by train and foot, the planned road from Mbitom to Betare-Oya is welcome. However, this and other promised infrastructure improvements do not entirely satisfy their needs. Community members have expressed frustration over changes from previous plans and their lack of negotiating power.³² Furthermore, the

³¹ The chief reiterated that because of this distance and lack of regular vehicle, a pregnant woman had died the week before because of labor complications, and could not get help from the health center.

³² Originally, project authorities wanted to build the road from Mbitom to the dam site, but this has been excluded from project plans because of the precedent set by the pipeline project. They said ARSEL has promised a road from Mbitom to Betare Oya, electrification of the village (although the population currently gets some electricity from a generator that is already in place to provide electricity to the CAMRAIL train and its workers), and strengthening of the existing health center. The village also

rehabilitation of roads to and from Deng Deng and into areas north of the dam site raises concerns about the facilitation of access to forest areas, including the Deng Deng reserve, and the likely impacts on the gorilla populations and other potential biodiversity losses. The project quarry is currently slated to be located near Tete d'Elephant, northwest of the dam site. Because roads will have to be built linking the quarry, the dam site, and the workers' camp at Deng Deng, there are serious concerns about the potential impacts of this infrastructure on the surrounding forests.

3.1.3 Land Use

Recent years have seen a rise in agro-pastoral conflicts in the project area, as the demand for grazing lands has increased with the influx of refugee herders from the neighboring Central African Republic (CAR). This trend could be a predictor of the likely impact that in-migration to the project area will have on land use management, already a challenging issue given the complex nature of land tenure in Cameroon. There does not, however, appear to be an existing land-use management plan, nor is the development of such a plan foreseen during the preparation of the Lom Pangar project.

3.2 Experience of the Chad-Cameroon Pipeline

This is not the first time that the communities of the East Province will feel the impact of a large-scale development project. Many of the same communities likely to be affected by the Lom Pangar Dam have already experienced several negative consequences associated with the World Bank-sponsored Chad-Cameroon oil pipeline project (CCP), a project built to transport crude oil from the Doba region of Chad to the Atlantic coast in Cameroon. The 1,070 km pipeline, completed in 2003, crosses many of the villages and land that will be within the Lom Pangar project area. In fact, the dam's reservoir will inundate several kilometers of the oil pipeline. (A feasibility study is reportedly being prepared by Coyne & Bellier to review the interaction between the two projects, but aside from section 20 of the EIA disclosed in December 2005, no additional documents addressing the Chad Cameroon Pipeline have been made public.)

Since it was not built to withstand the pressure of a reservoir, the portions of the Chad-Cameroon pipeline that may be flooded by the Lom Pangar Dam will have to be reinforced or re-located to areas outside the flood zone. This re-engineering will require significant work in the project zone—affecting people who have already experienced the negative impacts of the Chad-Cameroon pipeline and who are extremely wary of further large infrastructure projects with the risk of more broken development promises and hardships for which they will not be compensated. The Lom Pangar project could jeopardize the fragile social accord which was achieved during protracted negotiations around the pipeline project. Furthermore, questions have been raised about the accuracy and reliability of predictions regarding the length of the pipeline segments that will be flooded by Lom Pangar. The December 2005 EIA indicated that less than 10 kilometers of the pipeline will be submerged by the dam's reservoir. However, history shows that sedimentation frequently decreases the depth, and consequently increases the surface area, of reservoirs. As a result, flooded areas are often much more extensive than predicted, raising concerns that a larger portion of the Chad-Cameroon oil pipeline could be vulnerable to submergence and associated safety risks.

Local communities have drawn a number of lessons from their experience with the CCP that are directly relevant to the Lom Pangar Dam project. These include:

requested a "chefferie" (chiefdom building) and cultural center, but ARSEL responded that these things are not included in the project.

- The failure to realize anticipated economic gains from the pipeline has left communities wary of promised benefits from Lom Pangar and hesitant to invest their time into suggested activities (e.g., increasing agricultural production to supply project workers) which may not bring economic returns.³³
- The dissatisfaction with compensation under the CCP and the prevalence of unfulfilled promises has led communities to demand legally binding contracts regarding compensation and protective measures, and to insist that compensation should be completed prior to project construction.
- The lack of adequate consultation with local people and authorities throughout the preparation and construction of the CCP has led them to recognize the need for more information, better consultation, and protection of community rights in the context of decision-making.³⁴ Following the experience with the CCP, the local population now relies more heavily on NGOs to help facilitate these processes.
- The significant health consequences resulting from the CCP that were not adequately anticipated or mitigated have led some local authorities to recognize that the health impacts of Lom Pangar will likely be greater than anticipated, and will strain existing (as well as any planned) health resources.³⁵

3.3 Anticipated Project Impacts

3.3.1 Impact Assessment and Compensation

The majority of local residents and authorities with whom we spoke acknowledged that environmental and social studies cannot anticipate all project impacts, and that all losses (including of livelihood, natural resources, and cultural property) cannot be compensated. Several people expressed concern that Lom Pangar would likely take a greater toll on the province than project proponents expected and would exact costs for which there is no compensation. For example, in Mbitom (located 47km from the dam site), the reservoir will inundate tombs and cultural sites, medicinal plants, and frequented footpaths, such as that between Mbitom and Betare Oya. A one kilometer bridge is planned to be built at Touraké as part of the project's compensation for the inconvenience caused by the flooding of some pasture land (transhumance routes) and footpaths.³⁶ Some government officials expressed concern that social impacts, such as increased criminalization and prevalence of communicable diseases, could not be fully predicted and thus were not fully addressed in planned mitigation measures; others expressed doubt that losses to residents' economic livelihoods would be fully made up through mitigation efforts.

³³One of the economic benefits expected during the CCP was an increased demand for local food supply. Villagers in Deng Deng and Goyoum said that during sensitization meetings for the CCP, they were encouraged to produce more food for the project construction workers. They increased their production, but to their dismay, food was imported from outside the region, thus frustrating their efforts and leaving a surplus of the local food to rot. Villagers in Deng Deng stated they are concerned this may happen again under the Lom Pangar project. Other promises of benefits such as compensatory infrastructure, including improved roads, were broken. For example, the dirt road between Belabo and Lom II was supposed to be improved. It was well-maintained during the CCP construction phase but has since returned to a state of poor quality.

³⁴ One government official complained that the CCP did not involve local council and this was a mistake to learn from in upcoming projects in the region.

³⁵ An official in Belabo stated that the city has experienced a massive increase in HIV/AIDS rates due to the CCP (caused by the presence of transitory project employees during construction and the increase in sex workers during this time), and stressed that early sensitization about diseases that will accompany the dam (such as STDs and malaria) is needed to avoid past health disasters from occurring.

³⁶ According to ARSEL, the bridge alone will cost approximately 6 billion FCFA.

In discussing the anticipated benefits of the project, local communities and officials shared their views on the issue of direct compensation. Villagers in Deng Deng noted that the existing laws on compensation rates for property loss are inadequate and should not apply. Many stated that they want more information about how compensation will be carried out, and insisted that compensation should be provided before dam construction starts. One official agreed that necessary measures need to be taken, such as the construction of health centers, schools, and the empowerment of local people, before the project construction starts.

3.3.2 Impact on Resources

Fishing: Villages both upstream and downstream of the dam site expressed concerns about its potential impact on their current fishing practices. In Mbitom, villagers stated that they currently fish at the site of a waterfall/rapids on the Pangar River, 10 km upstream of the dam site. This waterfall will disappear under the reservoir disturbing their fishing activities. In Lom II, a village located a few kilometers downstream of the dam site that is slated for resettlement due to dam safety concerns, the chief stated that the population depends on fishing and is concerned that the dam will exacerbate the decline in fish population triggered by the passage of the CCP across the Lom River. In Goyoum, a village 7 km downstream of the proposed dam site, residents were told by ARSEL that the dam will attract more fish to the area, but that the population would need fishing permits to fish in the reservoir area. One local government official also expressed concerns about the potential disappearance of some fish species as a result of changes in hydrology.

Water: There are local concerns about how Lom Pangar Dam will affect water supplies and water quality. According to village leaders in Goyoum, there are no water boreholes in the village; villagers get their drinking water (as well as water for gardens and agriculture) primarily from the Sanaga River. Consequently, they are concerned about the dam's impact on water flow and quality for their village.

Land Impacts: Village residents and traditional authorities expressed concern about impacts on land and land use. The chief of Mararaba explained that the primary impact on his district would be the flooding of land used for farming and herding, and of forested zones. Similarly, the village of Mbitom is concerned about land that will be flooded, including herding grounds, agricultural fields, and forest land. Some 100 community members who reside close to the banks of the Pangar river will be forced to resettle because they will no longer be able to carry out their economic activities. Residents of Mbitom also expressed concerns about such issues as: how compensation will be provided for lost forest resources; who will receive permits to exploit the forest which will be flooded; and how they will benefit as a community. The chief of the district of Lai stated that his district will be the most negatively affected by the dam because the majority of land to be flooded along the Lom River is located there. Farming land and herding paths along the Lom will also be lost to flooding by the reservoir.

3.3.3 Forest Issues and the Deng Deng Reserve

The region around Lom Pangar is home to the Deng Deng forest, which includes the protected Deng Deng reserve, a known biodiversity hotspot.³⁷ This area contains one of Africa's last hardwood forests and is a critical natural habitat for endangered lowland gorillas and chimpanzees. The Deng Deng forest in the region of Lom Pangar received significant attention and protection under the CCP. There are concerns that measures taken to protect this region of

³⁷ The Deng Deng Reserve was created under decree N°71/182 on October 8, 1971.

great biodiversity will now be undermined by the Lom Pangar Dam, as a result of direct flooding by the dam's reservoir and, perhaps more significantly, due to greater access to forest areas, which will facilitate further exploitation of forest resources. The potential acceleration of illegal logging and poaching poses a significant threat to the future of the forests in East Province.³⁸

Currently, protections of the forest and its resources are not enforced and the Ministry of Forestry and Wildlife does not have the capacity or means to control access to the area. There is one staff person from the Ministry managing the forestry post in Deng Deng.³⁹ Upgrades to the 32 kilometer road between Deng Deng (where the Lom Pangar worker's camp will be located) and the dam site will run along the northeastern edge of the Deng Deng reserve. When asked about protection of the reserve, the community of Deng Deng and ARSEL both insist that the project will help to protect the forest. Proposed measures to protect the Deng Deng include the establishment of "ecoguards" – a "solution" that has failed to prevent illegal exploitation of other forests in Cameroon, such as the Campo Ma'an reserve. Villagers insisted that ecoguards be locally recruited because the local population has great knowledge of the forest and will be better placed to enhance conservation.

Despite concerns expressed by various officials and external observers about impacts on the surrounding forest, residents in the village of Deng Deng have expressed keen interest in hosting the workers' camp for the dam construction. The impression given in the community meeting at Deng Deng (which was notably dominated by the chief and one of his assistants/advisors) is that the villagers feels it is their right to host the construction workers' camp because of their proximity to the dam site.⁴⁰ The chief of Deng Deng argued that the workers' camp will bring many benefits to the village, including an expanded health center for project employees, which is slated to be built in conjunction with the workers' camp, and economic opportunities.⁴¹

Project proponents are reportedly considering proposals to create a primate sanctuary, but it is unclear what measures would be taken to ensure that the sanctuary would be effective against poaching. Furthermore, a baseline survey of the current primate population needs to include all areas in the forest ecosystem; it cannot be limited by the artificial demarcations between sections of the Deng Deng forest indicated on maps. Since the primate populations travel between the different areas, any impact on one zone will affect others.

³⁸ Logging is arguably the most lucrative industry in Cameroon, and timber remains one of the country's top two exports. Illegal logging remains a significant issue in the sustainability and transparency of the timber industry.

³⁹ We were also informed that the current forestry staff post in Deng Deng has been there for only one year and is not well informed about the project or the area. This is a disadvantage to the government transfer system of civil servants because it can diminish the continuity of work in key positions. In addition, the former staff person informed us that the office is lacking in materials and information. For example, the office does not have a copy of the national decree which created the reserve, nor a map demarcating the official boundaries of the reserve.

⁴⁰ The village insisted that the workers' camp for the dam be located in Deng Deng, not in the small village of Ouami (located on the road between Deng Deng and Lom Pangar). The chief and several villagers cited four primary reasons for wanting the camp in Deng Deng. They argued that hosting the workers' camp 1.) will bring honor to the village; 2.) will help to enlarge the village (quickly); 3.) will leave structures/housing that can be permanently used as administrative buildings by the village after the dam is completed; and 4.) will bring economic benefits to the village, in the form of increased demand for food supplies and services in Deng Deng, and employment opportunities.

⁴¹ Villagers of Deng Deng have insisted to project authorities that the hospital be located there for long-term operation and benefits to the village, not just for the workers' camp (though it remains unclear what financing for long-term use will be provided).

The village of Mararaba currently receives some revenues from the logging activities of a company called Tagne Djodom, reportedly exploiting wood resources between Mararaba and Lom Pangar.⁴² Because a portion of this forest land will be flooded, the community will no longer receive the corresponding forest royalties. It is not clear whether or on what basis compensation will be provided for this lost revenue.

3.3.4 Health Impacts

Local residents provided varying information about what baseline health data were collected; some villages reported visitors collecting health data, others did not. There are concerns about increases in HIV and other sexually transmitted infections due to an influx of temporary workers as well as a more permanent in-migration of people to the region. There are also concerns about increased rates of malaria and other water-borne diseases due to the presence of the reservoir and a subsequent proliferation of mosquitoes in the area.

3.3.5 Livelihood Impacts

Gold Exploitation: Gold is found in a zone that will be flooded near the town of Betare Oya. In the District of Lai, the District chief complained that although gold is among the principal sources of revenue for the district's population, compensation for the population has not been fully addressed. The outstanding questions raised regarding gold mining include:

- How will the population be compensated for this loss?
- To whom will the compensation be paid (and how will compensation be allocated)?; and
- Will local artisanal miners be involved in the extraction of gold before flooding occurs?

The project has proposed the creation of 9 or 10 *Groupes d'Initiative Commune* (Common Initiative Groups – GICAMINES) to mine the gold, following recommendations made at the May 2005 “restitution” workshops. However, some residents interviewed think that these groups will not be able to involve everyone nor have the means or capacity to exploit the gold effectively.

Employment: Employment is a major concern for many villagers. In Deng Deng, the villagers insist that they must receive a list of all available project employment opportunities before the project begins, in order to prepare themselves and their family members to apply for and obtain project employment. One official in Belabo stated that although ARSEL promised to favor local recruits when hiring, there are concerns about the absence of a plan for training locals to better enable them to qualify for available positions. Recognizing that not everyone will be able to get jobs from Lom Pangar, leaders in Goyoum said it remains unclear how the rest of the population will benefit from the project.

3.3.6 Displacement

The Lom Pangar Dam is expected to physically displace approximately 350 people, but officials interviewed had varying information about the magnitude of resettlement. The complicated land tenure situation in the area has raised concerns that displaced people who do not have title to the land they occupy will not receive adequate compensation or resettlement benefits. It is unclear how much economic displacement the project may cause because of the loss of livelihood resources. The approach to resettlement outlined by the project authorities does not appear consistent with international standards of development agencies, that hold that the living

⁴² The current forestry law shares forest royalties as follows: 40% to the local council in the area of exploitation; 10% to local populations; 50% to the Government of Cameroon.

standards of displaced communities should be improved, not simply restored, and that local populations should directly benefit from projects.

Lom Pangar will be the largest village to be physically resettled, with approximately 100 residents. The village of Lom II, just downstream from the proposed dam, is also slated for resettlement.⁴³ According to the chief, the village has been there for at least 70 years. Residents are specifically concerned about compensation for their houses, fruit trees, and tombs. They are also concerned about the quality of the houses to be constructed at the new village site. They stressed that the houses for resettlement should be constructed and compensation paid before the dam work begins.

3.3.7 Dam Safety

Some people expressed concerns about dam safety. In Goyoum, 7 km downstream of the dam site and situated less than 1 km from the river, concerns were raised about safety if the dam were to burst. In Deng Deng, concerns regarding dam safety were also raised. The villagers stated that consultants conducting studies on Lom Pangar proposed the installation of an alert system using satellite radio phones, but the villagers suggested that a community radio system would be more desirable, as it would also facilitate regular communication in the region.

3.4 Understanding of the Project Process

No one that we met seemed to have a clear understanding of the decision-making process, next steps, or timeline for the Lom Pangar Dam project. Most people did not have any prior knowledge about the EIA restitution workshop, scheduled for October 21, 2005 (which occurred during our field visit). For example, the District Chief of Deng Deng received his invitation to the event during our visit there on 19 October, two days before it occurred. His participation would require a ten hour journey by car to Yaoundé where the meetings would be held.

The level of consultation and satisfaction of the local population varied throughout the project area. In the District of Lai, the chief stated that neither he nor the local population was ever consulted with the exception of the restitution meeting he attended in May 2005 in Betare Oya. He also said that administrative and political authorities neglected to include traditional authorities in project-related discussions. In Goyoum, however, residents stated they had received visits by several teams, including expatriates. According to their records, the last visit was approximately eight months ago (approximately February 2005). The chief of Mararaba has also kept a detailed record of all visits to the village regarding Lom Pangar.

In the districts of Lai, Deng Deng, and Mararaba, the chiefs all had large maps of the project and several handouts assembled by the EIA consultants regarding the anticipated project impacts. However, it was unclear how much of the information the people understood, especially the map-based information.

⁴³ Lom II is located just downstream of the proposed dam site and was not initially slated for resettlement. When we spoke with the village Chief in October 2005, he stated that he had been informed only recently that they will be resettled. It was unclear why, how, or by whom this decision was made.

4.0 Key Issues and Recommendations

Following is a summary analysis of the five key issues posed by the project and recommendations for future action.

Poor Energy Sector Planning in Cameroon:

The government of Cameroon appears to have selected the Lom Pangar project before conducting a full evaluation of the country's energy needs and options. While the government launched part of a National Energy Action Plan late in 2005, the available document does not address both urban/industrial and rural energy needs, but only discusses rural electrification. More recently, the government has drafted but not publicly released another national energy plan known as "Horizon 2030," which reportedly addresses industrial and urban, grid-based electricity supply. While the public has had no access to the document, the AFD and the World Bank have reportedly received copies.

To date, the government of Cameroon appears to be prioritizing the energy needs of the Alucam smelter and Alcan's desired expansion of its operations, over the needs of the majority of the country's population. This decision has been made without an assessment of the costs and benefits of the aluminum sector's expansion or the industry's contribution to the Cameroonian economy. Through its support for the Lom Pangar project, the government appears to be placing greater priority on increasing grid-based energy supply than seeking investments to extend the electricity grid or promote off-grid alternatives to meet the energy needs of the vast portion of the population without access to electricity. The government also does not appear to be considering the risks to its economy of continuing its almost exclusive reliance on hydropower -- an increasingly vulnerable source of energy given the impacts of climate change on hydrological patterns.

Despite the government's claims that the project is being developed in compliance with international standards such as those of the World Commission on Dams, there has been a consistent lack of opportunities for public input into the selection and design of Lom Pangar as a solution to the country's energy needs. Thus, the planning and preparation of the Lom Pangar project do not appear to conform with at least two of the World Commission on Dams' five core values: *participatory decision-making* and *accountability*.

The World Commission on Dams identifies an energy *needs assessment* as the first critical step in a decision-making process for potential project. Such a needs assessment should be carried out through a decentralized consultation process and should reflect local and national needs adequately.⁴⁴ The Commission also states that, "The preferred development plan is selected through a participatory multi-criteria assessment that gives the same significance to social and environmental aspects as to technical, economic and financial aspects and covers the full range of policy, programme, and project options."⁴⁵

Unclear Benefits and Significant Risks to the people of the East Province:

The Lom Pangar Dam has been presented to the local population of the East Province as a project of national interest, implying that any challenges to the project would be unpatriotic. In addition, it appears to be the development option currently proposed for this area. The East Province clearly needs improvements in infrastructure and social services. However, absent any government efforts to make these improvements to date and given the virtual lack of NGO

⁴⁴ WCD. 2000. Dams and Development: A New Framework for Decision-Making, p. 262. Available at www.dams.org.

⁴⁵ *ibid.*

activity in the zone, the Lom Pangar project appears to be a “one-choice option” for local communities. Given the magnitude and urgency of its needs, the local population is not in a position to turn down an offer of infrastructure development, even one accompanied by the environmental and social costs that the hydropower project may bring. The population’s free, prior informed consent to the project would only be possible in a context in which residents were presented with alternative ways of meeting their development needs.

After their negative experience with the Chad-Cameroon Pipeline, communities are wary of another large infrastructure project and the promises of development that accompany it. The pipeline left broken promises and damage to local property and resources in its wake, such as unrealized economic benefits for local small businesses and farmers, degraded roads and surface water sources, and livestock lost to road accidents. As a result, communities are insistent that compensation be paid and promised benefits guaranteed *before* construction of another large project begins, to ensure that adequate measures are taken and that the sponsors of Lom Pangar can be held accountable. Demanding their compensation payments up-front, many villagers seem to be saying, “We’ve been fooled once, but we won’t be fooled again.”

The World Commission on Dams identifies “Gaining Public Acceptance” as the first of seven strategic priorities. The Commission states that, “acceptance emerges from recognising rights, addressing risks, and safeguarding the entitlements of all groups of affected people, particularly indigenous and tribal peoples, women and other vulnerable groups.” The Commission identifies the need for decision making processes and mechanisms that will enable informed participation and result in the demonstrable acceptance of key decisions. This should include public acceptance of binding formal agreements among the interested parties with clear, implementable institutional arrangements for monitoring compliance and redressing grievances.⁴⁶

Degradation of the Deng Deng Reserve and Biodiversity Losses:

As currently designed, the Lom Pangar Dam will threaten the survival of the Deng Deng forest and the biodiversity it houses. The Deng Deng forest (part of the greater Guinea Forest) not only has one of the highest levels of biodiversity in Africa, it is also one of the last remaining dense hardwood forests on the continent. The planned approach to the dam’s construction would potentially maximize the project’s environmental and social footprint, precipitating a heavy influx of population into the project area adjacent to the Deng Deng, and creating new access routes into an already sensitive area where forests are already illegally exploited and farmland is scarce.

Given plans to locate the employees’ housing close to the village of Deng Deng, routes will have to be constructed or refurbished to accommodate travel between the dam site, the quarry, and the workers’ camp, virtually tracing the Deng Deng reserve. With some 3,000 formal job opportunities, the EIA for Lom Pangar estimates that there will be an influx of approximately 8,000 people during the construction period, with the heaviest concentration of population in and around Deng Deng. There is already encroachment into the Deng Deng, due to demand for bushmeat and forest products, as well as scarcity of farmland. Regardless of efforts to deter illegal use of the forest areas, by prompting an inflow of people into this already crowded area, the Lom Pangar project poses a risk to the survival of the forests and the animals living within them.

The EIA published in December 2005 notes the significant risks that the project poses to the Deng Deng forest, particularly to the gorillas and other large primates living there. As mitigation, it proposes to create a “primate sanctuary” covering virtually the same area currently marked as reserve, and to install a dozen eco-guards to protect against incursion into and illegal exploitation

⁴⁶ *ibid*, p. 215 – 220.

of this area. However, given Cameroon's poor track record of enforcement of existing protections for forests and biodiversity and the failure of "ecoguards" to prevent illegal exploitation of reserves elsewhere in the country, there is little reason to believe that the measures planned for Lom Pangar will be any more successful than those of the past.

The World Commission on Dams recommends that project options and decision-making around river development prioritize the avoidance of ecological impacts, followed by minimization and mitigation of impacts. Avoiding impacts through good site selection and project design is a priority.⁴⁷

Risks Associated with the Chad-Cameroon Pipeline Project:

The reservoir created by the Lom Pangar Dam would flood at least several kilometers of the Chad-Cameroon oil pipeline, which traverses the East Province on its way to Cameroon's Atlantic coast. In addition to compounding the social harms that accompanied the construction of the pipeline, the development of the Lom Pangar Dam will pose new safety risks and further disrupt local communities and ecosystems, since the portions of the pipeline in areas that will be submerged will have to be reinforced or re-routed. The cumulative impact of the interaction of these two large infrastructure developments is only now under study, and therefore not yet fully anticipated. These potential consequences were not comprehensively analyzed in the EIA, although the problem was identified as one of the 24 themes in the EIA.

Furthermore, Lom Pangar's likely impact on the Deng Deng call into question commitments made by the World Bank, the Government of Cameroon and other pipeline supporters that the area's biodiversity would be protected. Under pressure from local and international civil society activists, proponents of the Chad-Cameroon pipeline, including the World Bank, took pains to reduce damage to forests in eastern Cameroon, rerouting the pipeline around a large portion of the Deng Deng. Lom Pangar's construction would essentially undo that work. Destroying these protected areas will result in a serious violation of trust for all those involved in ensuring that environmental safeguards were respected for the Chad-Cameroon Pipeline.

In addition to the physical interaction with the CCP, the project interacts with Lom Pangar in another important way. A key benefit for Cameroon under the CCP was supposed to be the strengthening of the country's environmental policies and capacity, including the provision of a new EIA regulatory framework. However, the World Bank's capacity building efforts failed to improve Cameroon's ability to manage the environmental implications of infrastructure developments like Lom Pangar. The unfulfilled components of the capacity building program include measures that should have supported the development of stronger EIA legislation.⁴⁸

Lack of transparency and disclosure about Lom Pangar:

Decision-making around the Lom Pangar Dam has been characterized by a lack of transparency. Without a clear timeline for project preparation or access to studies and comments on the EIA, sector strategies, cumulative impact assessments, and analyses of costs and benefits of the aluminum sector for Cameroon, the public cannot contribute to an informed decision-making process. None of the local residents or authorities with whom IRN, BIC and GVC met during their October 2005 field visit to the project area seemed to have a clear understanding of the

⁴⁷ Ibid, p. 234.

⁴⁸ The adoption of a new EIA Decree was to be one of the activities undertaken as part of the World Bank funded capacity building project (CAPECE) related to the Chad-Cameroon Pipeline project. However, the consultant paid from CAPECE funds to draft an EIA decree for the government of Cameroon did not finalize the work as scheduled. Eventually, the government of Cameroon wrote and adopted its own version, Decree 577, passed into law in February 2005.

decision-making process, timeline, next steps, or grievance recourse mechanisms in place for the Lom Pangar Dam project.

Because Lom Pangar is the first major project to test Cameroon's new EIA decree, the weaknesses in the new process are emerging. There is not yet a consistent understanding within government about the timeline for public comment required by the new decree. The public was provided with less than 60 days to respond to the EIA documents (posted on December 31, 2005) before public hearings (held in mid-February, 2006). It remains unclear whether a revised EIA, including supplemental studies, will be released for public comment before final approval.

Recommendations:

In absence of transparent energy sector needs and options studies and without an understanding of the full costs and benefits of the Lom Pangar Dam at the local and national levels, any decision to approve construction or provide funding for the dam would be premature. The World Commission on Dams (WCD) recommends that energy developments should be "selected through a participatory multi-criteria assessment that gives the same significance to social and environmental aspects as to technical, economic and financial aspects and covers the full range of policy, programme, and project options."⁴⁹ In order to assess whether the Lom Pangar Dam is the best energy development option to meet the needs of the people of Cameroon, and to guarantee transparency and public participation in the selection and review of proposed projects, we recommend the following steps be undertaken before any final decision on the construction or financing of the Lom Pangar Dam:

- **National energy planning process:** A participatory national energy needs and options assessment and a strategic environmental assessment for the energy sector should be conducted before a final decision is taken on Lom Pangar. Future decisions on energy options should be based upon these assessments. The government should engage in a national energy dialogue in which energy needs and priorities are debated publicly, through a decentralized consultation process which addresses local and national demands. As a first step in this dialogue, the draft "Horizon 2030" national energy plan should be immediately disclosed for public comment and debate, and the document revised on the basis of input received.
- **Disclosure of Lom Pangar documents:** All available documents related to Lom Pangar should be publicly released immediately and the government and project sponsors should commit to disclose future documents in a timely manner, hold consultations on them at the project level, and allow public comment, before a final decision is taken on Lom Pangar. Documents to be disclosed include, but are not limited to:
 - a clear project calendar and timeline for all project-related decisions;
 - the comments provided to date by the Panel of Experts and the World Bank on the environmental impact assessment (EIA) for Lom Pangar;
 - supplemental environmental studies, including the study of the cumulative impacts resulting from the interaction of the Chad-Cameroon Pipeline and Lom Pangar Dam and of project alternatives;
 - project feasibility studies; and
 - financing agreements for the construction of the Lom Pangar Dam and implementation of social and environmental mitigation measures.

⁴⁹ WCD. 2000. Dams and Development: A New Framework for Decision-Making, p. 262. Available at www.dams.org.

- **Nachtigal studies:** Because the cost-benefit analysis of Lom Pangar is linked to the presence of the future Nachtigal Dam, a feasibility study and environmental impact assessment for Nachtigal Dam should be completed and published prior to a final decision on the construction of the Lom Pangar Dam.
- **Aluminum sector impact studies:** A cumulative environmental and social impact assessment for the proposed aluminum sector expansion should be completed and published, addressing the potential impacts of the Lom Pangar Dam, Nachtigal Dam, anticipated bauxite mining activities, the expansion of the Alucam smelter, and any additional infrastructure that will be required for this industrial development scheme.
- **Aluminum sector economic/financial analysis:** An aluminum sector economic and financial analysis should be completed and published, including at least 10 years of annual revenue data, and the government of Cameroon should mandate the public release of Alucam’s financial reporting, including publication of its annual report. Such an analysis should clearly reflect what the Cameroonian government earns from the operations of Alucam and what it can expect to gain from the company’s planned expansion.
- **Regional development planning:** A regional development and land use management plan for the East Province should be drafted through a consultative process and disclosed for public comment. The plan should address needs for physical and social infrastructure, including electricity and transportation, as well as land for agriculture and herding.
- **Legally binding agreements and grievance mechanism for affected communities:** Should a decision be taken to construct Lom Pangar Dam, all project sponsors’ commitments to resettlement, compensation and social investment for persons and communities affected by the project should be made legally binding and payments and relocation satisfactorily completed prior to project construction. An independent mechanism for handling grievances of and providing legal recourse to members of the affected communities should be established before construction begins and should operate for the duration of the project.
- **Forest protection studies and commitments:** An evaluation of previous attempts to protect forest areas in Cameroon with “eco-guards” or similar measures should be conducted to inform the design and implementation of measures to protect forests in the Lom Pangar project area. A clear mechanism should be established to monitor implementation of forest protection measures and redress grievances should mitigation efforts prove unsuccessful. The Government of Cameroon and the World Bank should issue written statements clarifying their existing commitments to protecting the Deng Deng forest.

Global Village Cameroon, Bank Information Center, and International Rivers Network recommend that no decisions on the construction or financing of Lom Pangar Dam be taken until the above issues are addressed.

APPENDIX A METHODOLOGY

The following is a description of the methodology used to gather information for this report. Interviews were carried out with policy makers, administrators and with experts from other walks of life. Meetings were organized with communities that will be affected by the Lom Pangar Dam project to sensitize them on the impact of dams on their livelihoods and how they could protect their interest and rights in the course of the EIA consultation meetings with them. During the meetings we listened to their concerns regarding the dam.

Field Visit

The field visit to the East Province region was conducted October 18 – 23, 2005, by:

- Wirsiy Emmanuel Binyuy, Energy & Climate Change Campaigner, Global Village Cameroon (GVC), Cameroon;
- Firmin Semboung Lang, Project Manager, Fondation Camerounaise d'Actions Rationalisees et de Formation sur l'Environnement (FOCARFE), Cameroon;
- Nikki Reisch, Africa Program Manager, Bank Information Center (BIC) USA;
- Terri Hathaway, Africa Campaigner, International Rivers Network (IRN) USA.

The following locations were visited: Belabo, Bertoua, Betare Oya, Deng Deng, Goyoum, Lom II, Lom Pangar, Mararaba, and Mbitom. Meetings and interviews were conducted with government administration, traditional Canton (district) and village chiefs, and community members. Observations from the field are supplemented by information obtained from meetings with project proponents and other relevant sources in Yaoundé, Douala, and Washington, DC.

Information gathered from additional agencies

Most meetings and interviews were conducted by Wirsiy Emmanuel Binyuy, Nikki Reisch, and Terri Hathaway from October 12 – 30, 2005, with key agencies in Yaoundé. These agencies include:

- ARSEL
- IUCN
- Ministry of Environment and Nature Protection
- Ministry of Forestry and Wildlife
- Agence Française de Developpement (AFD)

Because of scheduling delays, no meeting was held with the Ministry of Energy and Water during October and November 2005.

An initial meeting with Alucam and a representative of Canadian-based Alcan took place December 13, 2005. The meeting included representatives of Global Village Cameroon; Centre for Environment and Development; Community Watershed Development Alliance Cameroon; Publish What You Pay Cameroon; International Rivers Network; and Friends of the Earth US.

A second meeting with AFD was held December 20, 2005, and attended by Global Village Cameroon, Centre for Environment and Development, International Rivers Network, and Friends of the Earth US.

Follow-up meetings were held by GVC staff in May 2006 with the Ministry of Energy and Water, Ministry of Environment and Nature Protection, and AFD.

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