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Interaction of Chinese institutions with host governments in dam construction: the Bui dam in Ghana

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Discussion Paper 3/2011

Interaction of Chinese Institutions with Host Governments in Dam Construction

The Bui dam in Ghana

Oliver Hensengerth

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Foreword

The African continent is a promising investment market for hydroelectricity generation projects. Currently, African countries are tapping only about 7 per cent of their technical hydropower potential (compared with 33 per cent in South America, 69 per cent in North America and 75 per cent in Europe). As a fifth of African households are not electrified and more than 30 countries suffer from frequent power cuts, the African Ministerial Conference on Hydropower, the Ministerial Conference on Water for Agriculture and Energy and the African Union's African Hydropower 2020 Initiative agree that hydropower has a key role to play in Africa's development. According to the World Bank, Africa must develop an additional 7,000 megawatts (MW) per year of new electricity generation capacity in order to overcome the deficit, which is perceived as a serious impediment to the continent's economic and social development.

It is this gap which China has been filling. By 2008 it had become the largest financier of infrastructure projects on the African continent, and Chinese construction companies have meanwhile taken the lead in the international construction business, even where dams are concerned. Of the top ten international construction firms, five are now Chinese.

Because of its strategy of non-interference in African countries' domestic affairs, China's activities have been accused of leading to environmental degradation and of lacking respect for the right of people to be resettled where dams are constructed. In most cases, Chinese actors abide by the host country's rather low standards of environmental protection. Representatives of the German construction industry, and US companies even more so, fear that Chinese firms will distort competition by ignoring the environmental standards defined in the OECD's Common Approaches. However, studies show that the OECD's environmental standards are not the only cause of unequal conditions of competition: Chinese firms base their calculations on low wage costs, below-market interest rates, easy repayment terms, narrow profit margins and other such factors.

Interestingly, China has strengthened and improved its domestic regulations on both the protection of the environment and resettlement planning following internal opposition and criticism (Hensengerth 2010). Tougher environmental safeguards and the recognition of the growing social impact of hydropower dams make it more difficult to launch large-scale hydropower projects designed to exploit China's huge potential (at present, its generating capacity amounts to 197,000 MW, a third of its total potential, and it intends to speed up investment to add a further 300 gigawatts by the end of 2020).

Fortunately, the Chinese Ministry of Environmental Protection is in the process of developing guidelines for Chinese companies and banks that will require them to apply domestic environmental standards in their overseas projects. As things stand, Chinese companies comply with international standards if they win, say, a World Bank project. Chen et al. report that, of forty-four companies surveyed, seventeen applied international standards as required by the financing entity, fifteen applied local standards, nine Chinese standards and only three freely chose the standards they applied (Chen / Goldstein / Orr 2009, 86).

However, China is not committed to the OECD's Common Approaches, since it is not a member of the OECD and so not obliged to play by the OECD's rules. If the OECD

countries want China to play by their rules, the OECD needs to create incentives and, more importantly, to establish an arena in which negotiations can take place.

While it is recognised that Chinese actors involved in overseas operations adapt international standards as and when they see fit and that Chinese domestic policy is changing, it is essential to judge Chinese engagement on evidence obtained in the field and not simply to endorse universal prejudices.

The present study of the Bui Dam, Ghana, thus investigates the role Chinese construction companies play in hydropower investment. It focuses on the collaboration between Sinohydro and China Exim Bank and Ghana's government departments and regulatory bodies during planning and implementation in order to identify the processes over which the Ghanaian government retains control, the areas of responsibility delegated to the company and the mechanisms for ensuring the its compliance with national legislation and international standards.

In the case of the Bui Dam, the study shows that the contractor, Sinohydro, was not involved in any of the planning (environmental impact assessment, resettlement and dam design). Deficiencies in these respects are the Ghanaian government's responsibility – and it is these practices which need to be changed and improved.[1]

Bonn, February 2011 Waltina Scheumann

1 Further DIE Discussion Papers on environmental and social planning for dam construction are Hensengerth, Oliver (2010), Sustainable dam development in China between global norms and local practices, 4/2010; Choudhury, Nirmalya (2010), Sustainable dam development in India between global norms and local practices, 10/2010; Da Costa, Agnes M. (2010), Sustainable dam development in Brazil between global norms and local practices, 14/2010.

Abstract

The study analyses the role of Chinese companies and financing institutions and Ghanaian governmental agencies in planning and constructing the Bui Dam. The analysis focuses on the division of responsibilities between Sinohydro and China Exim Bank on the one side and the Ghanaian government on the other side. The findings show that environmental and resettlement planning for Bui was commissioned and financed by the Government of Ghana without Sinohydro's involvement. The obligation of the firm is to abide by the environmental regulations that are monitored by the regulatory authorities. The role of Sinohydro consists in building the dam, maintaining the construction site, contracting workers, and providing for workers' health and safety. The firm has no role in resettlement, which is carried out by the Bui Power Authority. While there is clear evidence that the Bui Power Authority does not follow the recommendations of the Resettlement Planning Framework, Sinohydro appears to abide largely by the conditions set out in the Environmental Impact Assessment study whose implementation is monitored by the Ghanaian Environmental Protection Agency and the Ghanaian Water Resources Commission.

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Abbreviations

BOT	Build Operate Transfer
CEO	Chief Executive Officer
CIRR	Commercial Interest Reference Rate
ECA	Export Credit Agencies
EIA	Environmental Impact Assessment
EPC	Engineering-procurement-construction
ERM	Environmental Resources Management
ESIA	Environmental and Social Impact Assessment
ECA	Export Credit Agencies
GB/T	guobiao tuijian, Chinese for „recommended national standards“ as issued by the Standardization Administration of China
GH¢	Ghana cedis
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GWh	Gigawatt hours
ICOLD	International Commission of Large Dams
IFC	International Finance Corporation
ISO	International Organisation for Standardisation
IWMI	International Water Management Institute
kWh	Kilowatt hours
LIBOR	London Inter-Bank Offered Rate
MoU	Memorandum of Understanding
MW	Megawatt
NGO	Non-governmental organisation
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
RBC	Review Board of Consultants
RPF	Resettlement Planning Framework
SASAC	State Assets Supervision and Administration Commission
ToR	Terms of Reference
VBDF	Volta Basin Development Foundation

Introduction

The launch of China's Going Out Strategy in 2003 marked the beginning of concerted and large-scale Chinese government assistance for investment by Chinese firms in developing countries in Latin America, Africa and Southeast Asia. The OECD (Organisation for Economic Co-operation and Development) world reacted negatively and fearfully to this owing to a mix of three interrelated concerns: that cheap Chinese competition would be unfair, that Chinese companies would eat away at markets hitherto dominated by Western companies (many of the Europeans among them being very active in their former colonies), and that Chinese companies and financiers would operate without regard for the social and environmental effects of infrastructure investment.

While the academic discourse has become highly diversified, the 'fear of China' discourse has remained a favourite theme in political and NGO (non-governmental organisation) circles. However, in an apparent change of strategy, some NGOs such as International Rivers have now begun to highlight the positive effects of Chinese investment and the environmental reform processes that are going on in China and also affect Chinese companies with a sizeable foreign presence (such as Sinohydro).

Avoiding the futile question whether Chinese investment is good or bad, the present study seeks to examine the role of Chinese companies in foreign hydropower investment, focusing particularly on the division of responsibilities between companies and government agencies in the planning (technical design, environmental impact assessment and resettlement) and construction of a hydropower dam. The specific case studied is the Bui Dam in Ghana.

Examining the processes that occur in the collaboration between foreign entities (here: Sinohydro and the China Export Import Bank) and national government agencies (here: Ghana's government departments and regulatory bodies) during planning and implementation makes it possible to identify the processes over which a government retains control, the areas of responsibility delegated to the company and the mechanisms for ensuring the company's compliance with national legislation and international standards.

The first part of the study provides a short and general overview of reasons for and forms of Chinese foreign operations. The second part then examines the planning and construction of the Bui Dam against the backdrop of Ghana's energy situation.

Data for this study were gathered during a two-week field study in Ghana's capital, Accra, and in the Bui Dam area. The field study was made possible by the support of the following people and organisations: Cathleen Seeger and Kirsten Nyman of the Project of the GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) "Policy Advice for Sustainable Hydropower"; Harriet Ludwig, the Head of Cooperation at the German Embassy in Accra; the GIZ Office in Accra; Liqa Raschid of the International Water Management Institute (IWMI) in Accra; Richard Twum of the Volta Basin Development Foundation (VBDF); the following official Ghanaian institutions: the Ministry of Finance and Economic Planning; the Ministry of Energy; the Environmental Protection Agency; the Energy Commission; the Water Resources Commission; Volkmar Hartje at the Technical University Berlin; and Waltina Scheumann and Ines Dombrowsky at the German Development Institute (Deutsches Institut für Entwicklungspolitik) in Bonn.

Part I: Chinese Companies in Africa's Hydropower and Infrastructure Sectors: Reasons for and Forms of Engagement

China's economic engagement abroad is informed by a set of insecurities: in 1993 China became a net oil importer, forcing it to search abroad for sufficient energy supplies to sustain economic growth and so maintain economic, social and political stability. Economic progress is crucial, because a satisfactory economic, social and, increasingly, environmental performance forms the basis of the Chinese Communist Party's (CCP) legitimacy.

The energy situation is directly linked to the employment situation. In 2009 the official urban unemployment rate stood at 4.3 per cent, equivalent to 9.21 million registered unemployed. In 2010 the government is attempting to prevent the urban unemployment rate from exceeding 4.6 per cent (Xinhua 2010). When rural areas are added, the government's task becomes even more difficult: the White Paper entitled *China's Employment Situation and Policies* reports that during the 10th Five-Year Plan (2001–2005) the number of people reaching working age grew by 13.6 million annually. They are joined by 150 million migrant workers and 11 million unemployed or laid off. The White Paper estimates that by 2020 the number of people of working age will reach 940 million, with 840 million in employment (Government of China 2004, Part VI).

Aside from the strategic considerations of energy security and employment creation, other economic arguments apply. The Chinese government has been encouraging labour- and energy-intensive Chinese companies in particular to move abroad: companies at home are meant to move up the value chain, pollution laws are becoming stricter, and labour costs are on the rise in the booming coastal provinces (Brautigam 2010). Furthermore, growing competition within the Chinese market is prompting companies to go abroad to look for further shares of international markets. Consequently, winning a project outside China is, from the company's point of view a strategic step in improving its revenue and international competitiveness and opening up new markets. Importantly, as Chen and Orr argue in a survey of Chinese construction companies, Chinese firms are looking for long-term engagement in foreign markets (Chen / Orr 2009, 1207–1209).

Forms of China's overseas engagement

Since the inception of the Going Out Strategy, China's government has functioned as a lobby organisation, trying to ease market access for Chinese companies.[2]

China has adopted a two-pronged approach: loans provided by the China Export Import Bank (China Exim Bank), which may be repaid in natural resources, and Special Economic Zones that focus on attracting foreign direct investment and manufacturing for export. Both prongs follow China's own development experience: the mobilisation of natural resources (loan-backed, if necessary) and the construction of Special Economic Zones since the late 1970s/early 1980s:

> *"In the late 1970s, eager for modern technology and infrastructure but with almost no foreign exchange, China leveraged its natural resources – ample supplies of oil,*

2 For details of the institutional arrangements involved in enabling overseas investment see Chen / Orr (2009, 1203–1205).

> *coal, and other minerals – to attract a market-rate US$ 10 billion loan from Japan. China was to get new infrastructure and technology from Japan and repay it with shipments of oil and coal. In 1980, Japan began to finance six major railway, port, and hydropower projects, the first of many projects that used Japanese firms to help build China's transport corridors, coal mines, and power grids"* (Brautigam 2010).

In 2004 China began to apply this approach to its own outward investment in Africa. Angola received three oil-backed loans, against which Chinese companies built roads, railways, hospitals, schools and water systems. Since then, resource-backed loans have been known as 'Angola Model' loans (Brautigam 2010). When discussing Chinese investment in African hydropower, the *Water Power Magazine* argues that Chinese companies have often been unable to compete with established Western companies in oil and mining, but *"by tying infrastructural investment to raw materials concessions, they are able to offer something beyond the deals provided by their Western competitors"* (International Water Power and Dam Construction 2009).

For project financing, the Chinese government combines commercial and concessional loans in a financial package. Concessional loans are provided through the China Exim Bank, but they are subsidised from the foreign aid budget of the Ministry of Commerce. Within the Ministry of Commerce, the Department of Aid to Foreign Countries is in charge of aid and so negotiates concessional loans with foreign governments. The China Exim Bank then executes the terms of the agreement (Brautigam 2009, 174).[3] To obtain a concessional loan, the government of the borrowing country applies to the Exim Bank, which submits a recommendation to the Ministry of Commerce. If the Ministry accepts the recommendation, the government of the borrowing country signs a framework agreement with the Chinese government. The loan is then disbursed by the Exim Bank during project implementation (Hubbard 2007, 4).

Quoting a China Exim Bank official, Brautigam explains that the Bank lends money in a mixed package mode consisting of *"concessional loans, seller's and buyer's credits in support of large overseas engineering projects, particularly in developing countries"* (Brautigam 2009, 174). While concessional loans are government-financed, buyer's credits are extended at 'competitive' rates based on the OECD's Commercial Interest Reference Rates (CIRRs)[4] or the London Inter-Bank Offered Rate (LIBOR)[5] (Brautigam 2009, 176). As we shall see, the Bui Dam is financed by a mixed package comprising a concessional loan and a buyer's credit.

Consequently, Chinese firms have managed to gain a foothold in Africa through semi-commercial projects. Increasingly, however, Chinese companies are competing successfully for international contracts. In a survey Chen, Goldstein and Orr found that, of the

3 For more details on the Chinese aid system see Brautigam (2008), Davies (2008) and Lancaster (2007).

4 Commercial Interest Reference Rates. CIRRs are minimum interest rates for export credit agencies and are determined monthly by the OECD. At the time the Bui Dam contract was signed, the CIRR was 5.53 per cent for US dollar loans with a maturity of at least 8.5 years. It is likely, however, that the rate used was the one current at the time the loan agreement was finalised and submitted to parliament. For historical CIRR data see the OECD data at http://www.oecd.org/dataoecd/21/52/39085945.xls.

5 LIBOR is a daily reference rate at which banks can borrow money from other banks in the London interbank market. LIBOR is determined by the British Bankers' Association. For detailed definitions see the LIBOR website at http://www.bbalibor.com.

Chinese construction companies surveyed, 40 per cent won contracts through international bidding, 40 per cent through bidding among Chinese contractors for projects funded by Chinese agencies and 11 per cent through sole-source negotiation (Chen / Goldstein / Orr 2009, 80). As we shall see, the Bui Dam is a case of sole-source negotiation. The Chinese International Contractors Association reported in 2005 that Chinese construction companies had become the sixth largest group of engineering contractors, with a 2005 turnover of US$ 21.8 billion. In 2005 alone Chinese contractors signed forty-nine contracts worth more than US$ 100 million each (Chen / Goldstein / Orr 2009, 76).[6]

While Chinese construction companies are increasingly able to win open contracts, they are accused of being able to do so because their environmental and social standards are much lower than those of their OECD competitors, enabling them to deliver projects at lower cost (Chen / Goldstein / Orr 2009, 76–77; Bosshard 2010). Bosshard reports that Sinohydro has applied for a guarantee from the Multilateral Investment Guarantee Agency *"to learn more about how international financial institutions are applying their safeguard policies"* (Bosshard 2010). This would indicate that Chinese companies, particularly those with a prominent international profile, are attempting to become more attractive by acknowledging international norms. Sinohydro Bureau 8, a subsidiary of the Sinohydro Corporation and the company constructing the Bui Dam, is in possession of the ISO9001-2000 Management System, ISO14001-2004 Environment Management System and GB/T28001-2001 Occupational Health and Safety certificates.[7] Sinohydro also joined the International Hydropower Association in 2010. Neither Sinohydro Bureau 8 nor its parent company, the Sinohydro Corporation, yet has an environmental policy. The Chinese Ministry of Environmental Protection is developing a guideline for Chinese companies that will require them to apply domestic environmental standards in their overseas projects (Bosshard 2010).

The Sinohydro Corporation has been repeatedly reprimanded at home for environmental neglect in its domestic operations. According to the *South China Morning Post*, a 2004 National Audit Office report prompted the Chinese government to fine the company for low-quality flood control structures along the River Yangtze. Two years later, the State Assets Supervision and Administration Commission (SASAC), which is responsible for managing state-owned enterprises, gave Sinohydro a D rating (A being the best and E the worst) following a SASAC review of safety and environmental pollution safeguards. Executives of D-rated firms may face 'salary cuts, transfers or dismissals.' In February 2010, Sinohydro's Managing Director Liu Qitao acknowledged that Sinohydro had an inefficient internal disciplinary system and a problem with corruption (Toh 2010).

Chinese construction companies have argued that they do not always have control over standards applied in overseas projects. For example, when they win World Bank projects, they need to abide by World Bank standards. If a project is financed by an international organisation, that organisation also commissions the feasibility study – and the Environmental Impact Assessment (EIA) study forms an integral part of the project feasibility study. Furthermore, many project designs in Africa are drawn up by European consulting

6 An updated list of dams with Chinese participation can be found at International Rivers, http://www.internationalrivers.org/files/PUBLICChineseOverseasDams1210.xls.

7 Sinohydro Bureau 8 introduces itself at http://www.baju.com.cn/js.aspx (for Chinese) and http://www.bajuintl.com/English/Web/About.aspx?Banben=baju (for English).

firms, including those funded by international organisations. When they win an international contract where the design already exists, Chinese companies must adhere to that design and any associated standards, although they sometimes make recommendations to the consulting company. Of forty-four companies surveyed, Chen, Goldstein and Orr report that seventeen applied international standards as required by the financing entity, fifteen applied local standards, nine applied Chinese standards, and only three were free to choose the standards applied (Chen / Goldstein / Orr 2009, 86).

Like Chinese companies, Chinese banks have been drawn into the debate on international environmental standards. International banks outside China have urged Chinese banks to adopt international norms in their project financing, and particularly the Equator Principles *"in order to avoid a 'race to the bottom' between banks"* (Matisoff / Chan 2008, 34). While the China Exim Bank has decided against the Equator Principles, it has adopted its own guidelines (Matisoff / Chan 2008, 34): it published its first environmental guidelines in 2004 and updated and expanded them in 2007 (China Exim Bank 2007). The Exim Bank is reported as having suspended an iron ore mining project in Gabon because of environmental concerns (Bosshard 2010).

In May 2007 the China Exim Bank signed a Memorandum of Understanding with the International Finance Corporation (IFC) to 'jointly support environmentally and socially sustainable Chinese investment in emerging markets.' The cooperation has focused on capacity-building and knowledge-sharing. The first workshop, sponsored by the IFC, was held in December 2007 and introduced the IFC's environment and social investment standards and case studies on how the IFC applies them in its projects (Matisoff / Chan 2008, 14).

Suzuki argued that Western export credit agencies (ECA) long steered clear of the norms to which official development assistance (ODA) is subject (such as the safeguards required by multilateral development banks and international financial institutions). The first standards applicable to ECAs were the 2007 OECD Common Approaches, which were developed to avoid a race to the bottom when it came to environmental and social protection in investment projects. Given that ECAs are as much government institutions as bilateral and multilateral development aid agencies, state-supported investment financing through ECAs has been slow to comply with development financing standards. The question now is how to include non-OECD ECAs in these frameworks (Suzuki 2007).

It is essential to judge Chinese engagement on evidence obtained in the field. Not only are Chinese financiers and construction companies active in countries with governance systems of varying regulatory quality, but Chinese construction companies also operate under a variety of contractual arrangements. In the case of hydroelectric dams, these contractual arrangements range from the supply of materials (as in the case of Ethiopia's Gibe 3 Dam) to turnkey projects (like Ghana's Bui Dam) and build-operate-transfer (BOT) projects (such as all of Cambodia's dams). Under material supply arrangements, the company merely delivers materials or machinery used to construct the dam. Under turnkey arrangements, the construction company builds the dam and immediately hands it over to the recipient government. Whether or not it is also involved in dam planning depends on the specific case.

The type of contract and the recipient country's regulatory strength largely determine the construction company's environmental and social performance. In addition, Chinese companies increasingly differ in the policies – concerning social responsibility and the environment, for example – they adopt and implement and in the international environmental management certificates they hold.

Moreover, if one takes the governmental responsibility for the management of the environmental and social impact for granted, the question remains, as the NGO's have demanded, whether the financing organisation (along with the construction company) has the responsibility to make sure that the government performs its functions (well) and if it should not refrain from funding the project.[8]

In Bui's case, as we shall see, Sinohydro, the contractor, was not involved in any of the planning (Environmental Impact Assessment, resettlement and dam design). It is important to remember that the owner in turnkey projects is the government and the contractor hands over the project when it is operational. As for BOT projects, the company builds and operates the project (and may also plan it). It operates the dam for a specified period in order to recover its investment, then hands it over to the host government. During operation, the government tends to act as the regulator and also as the consumer of the product (electricity in the case of a hydropower project).

In this context an interviewee in Ghana argued that, as the Bui Dam is a turnkey project and Ghanaian government regulation is strong, many of the problems arising in concessionary BOT projects have not occurred in Bui's case. Negative press reports on such projects as the Merowe Dam in Sudan are not always sensationalist, especially when the project is concessionary and when governmental institutions are weak.[9]

We shall consider throughout the study how applicable this claim is to the Bui Dam.

8 Thank to Volkmar Hartje for emphasising this point.

9 Interviews A23062010-2 and A28062010-2.

Part II: The Bui Dam in Ghana

The following sections discuss the history, planning and implementation of the Bui Dam. The first section outlines Ghana's present energy situation and the Bui Dam's role in the country's energy and economic development. The second section briefly reviews the history of the Bui dam project. This is followed by an analysis of the financing, planning and implementation processes with a particular focus on the sharing of responsibilities between the Chinese contractor, Sinohydro, and Ghanaian government agencies and on the role of participatory procedures in the environmental and resettlement planning and implementation processes.

1 The Role of Hydropower in Ghana's Energy/Electricity Sector

Ghana's electricity supply is highly dependent on hydropower. Ghana currently has two large hydroelectric dams: Akosombo, which was commissioned in 1965 and has a capacity of 1,012MW, and Kpong, which was commissioned in 1982 and has a capacity of 160MW. Bui will be its third large hydroelectric dam. The Strategic National Energy Plan for the period 2005–2025 refers to four hydroelectric projects: Bui (to be built by 2012), Hemand and Juale (to be built by 2015) and Pwalugu (to be built by 2020). The Strategic National Energy Plan also proposes an increase in generation capacity at Akosombo and Kpong 'by a combined 160MW' (International Water Power and Dam Construction 2006). In addition, a further hydro project on the Pra River is under discussion (International Water Power and Dam Construction 2006).

Table 1: Installed capacity (current and under development) in Ghana

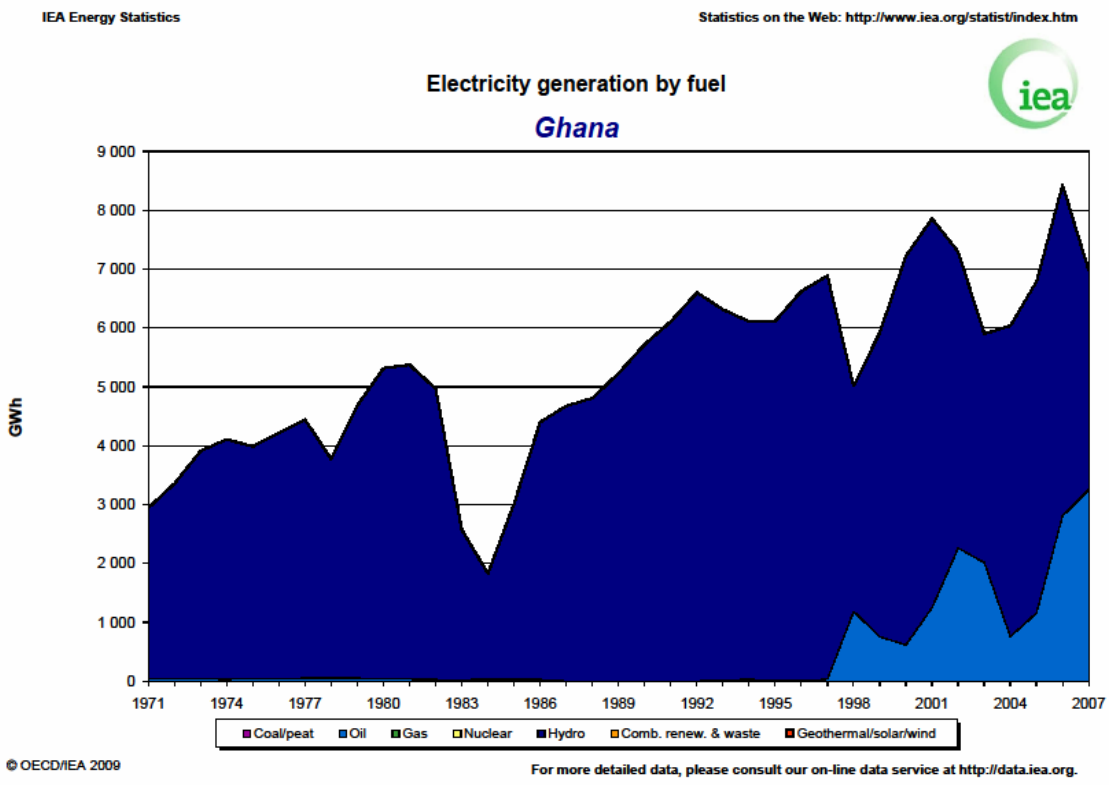
Plant	Type	Owner	Installed capacity in MW
Currently installed			
Akosombo	Hydro	Volta River Authority	1,020
Kpong	Hydro	Volta River Authority	160
Takoradi	Thermal	Volta River Authority	330
Takoradi II	Thermal	TAQA and Volta River Authority	220
Tema I	Thermal	Volta River Authority	110
Mines Reserve Plant	Thermal	Volta River Authority	80
Currently under development			
Bui	Hydro	Bui Power Authority	440
Takoradi Expansion Project T3	Thermal	Volta River Authority	132
Tema II	Thermal	Volta River Authority	49,5
Kpone	Thermal	Volta River Authority	220

Source: Malgas (2008, 9, Table 1); Volta River Authority (s. a.)

Hydropower is supplemented by thermal power. The most important thermal power plants are the 330MW Takoradi plant at Aboadze, which became operational in 1997, and the 220MW Takoradi II plant run by the Takoradi International Company (TICO), which has been in operation since 2000. Ninety per cent of Takoradi II was initially owned by the US energy company CMS Energy and 10 percent by the Volta River Authority. In 2007 CMS sold its shares to Abu Dhabi's TAQA (Malgas 2008, 8–9 and p. 9, note 7). The governments of Ghana and Canada have also begun work on a 132MW plant, the Takoradi Expansion Project T3. The Volta River Authority also operates thermal plants at Tema. These include Tema I (110MW) and the Mines Reserve Plant (80MW), both commissioned in 2008; Tema II (49.5MW), to be commissioned by the end of 2010; and a plant at Kpone, near Tema (220MW), which is currently being developed (Volta River Authority s. a.). Table 1 summarises currently installed capacity and capacity under development.

Before the Takoradi thermal plant was commissioned, electricity generation was almost exclusively by hydropower, as Figure 1 shows:

Figure 1: Electricity generation by fuel



Source: IEA (2009)

The installation of thermal power plants from 1997 must be seen against the backdrop of two severe droughts in 1983/1984 and 1998, which seriously affected hydropower generation at the Akosombo and Kpong dams (for the 1998 drought see also section 2 below on 'Planning and Construction of Bui'). In addition, electrification in Ghana is unevenly distributed, with a focus on the southern parts of the country (International Water Power and Dam Construction 2008). Bui will also be equipped with a facility designed to irrigate 30,000 ha of land. Table 2 summarises the main project characteristics of the Bui Dam.

Table 2: Summary of the project characteristics of the Bui Dam						
Purpose	Reservoir volume at full supply level	Dam height	Installed capacity	Average annual output	Number of relocatees	Beginning of construction
Multi-purpose	12.57 billion m^3	108m	400MW	969GWh	1,216	December 2008 (river diversion)
Source: Bui Power Authority (s. a. g)						

2 Planning of the Bui Dam

The history of the planning of the Bui Dam begins in 1925, when Albert Kitson discovered the Bui Gorge and found it suitable for a hydroelectric dam. For decades, Bui has seen its fortunes rise and fall. After the construction of two dams, Akosombo in the 1960s and Kpong in the 1980s, both of which are run by the Volta River Authority, energy demands continued to rise sharply and new power plants were debated. By 1978 plans for Bui had reached an advanced planning stage, with Australian and World Bank involvement. However, four coups d'état in Ghana made implementation impossible, and Bui remained dormant until 1992 (Fink 2005, 69).[10]

In 1992, with demand for energy surging, the project was revived and the Ghanaian government commissioned the French consulting company Coyne et Bellier to draw up a feasibility study. In 1998 droughts and the subsequent decline in water levels in the Akosombo and Kpong reservoirs caused a power crisis. The water level in the Akosomobo reservoir fell by 74 metres, reducing power generation capacity from 912MW to 300MW (International Water Power and Dam Construction 2006). In response, the Ghanaian government decided to import electricity from Ivory Coast, to construct new thermal power plants in the longer term, to improve generation capacity at Akosombo and Kpong and to construct new hydropower projects (International Water Power and Dam Construction 2006 and 2008).

In 1999 the government set up a Bui Development Committee along with a Bui Development Secretariat to look for suitable candidates for the development of the Bui project. Later that year the Committee announced that its search had been successful, and the government, represented by the Volta River Authority, signed a Memorandum of Understanding with Halliburton Brown & Root. The Volta River Authority then commissioned consulting firm BKS Acres in 2001 to conduct an Environmental Impact Assessment. This, however, was never completed. Again in 2001, the government cancelled the Memorandum of Understanding with Halliburton Brown & Root *"for reasons that remain unclear"* (Fink 2005, 71–72). In the same year, the government cancelled plans for Bui and dissolved the Bui Development Committee, announcing that it would be less expensive to opt for such thermal power sources as natural gas.

10 Unless otherwise indicated, this historical account follows the PhD thesis of Michael Fink (Fink 2005, 69–72).

Map 1: Location of the Bui Dam

Source: ERM (2007a, 7)

Then, in 2002, the government set up a new Bui Development Committee, and the search began anew with the issue of an international call for tenders for the preparation and implementation of the Bui project. However, only one company submitted a bid. As a consequence of the unsuccessful tendering procedure, President Kufuor then asked China

and Russia for assistance. In 2004 Ghana's Energy Commission published the Strategic National Energy Plan for the period 2005–2025, which stated that an 'investment decision for Bui hydro project will be taken before the end of 2006' and that construction would take five years.

In 2005 the Energy Commission suggested that the government should invest US$ 2–3 million in a feasibility study 'which would make the project bankable and enable BDS [Bui Development Secretariat] to obtain firm commitment from developers for the project' (Fink 2005, 71). Subsequently, Coyne et Bellier updated their earlier feasibility study. In 2005 the National Development Planning Commission approved Bui 'as compliant with overall Ghanaian development policies.' Later that year the Ministry of Energy commissioned UK consulting firm Environmental Resources Management (ERM) to undertake a new Environmental Impact Assessment. Ghana's Environmental Protection Agency commented that a new scoping study would be necessary before the actual EIA process could be started (Fink 2005, 71).

Even later in 2005 the government announced that the Chinese government had expressed willingness to extend funding for Bui and that Sinohydro had agreed to build the dam. The World Bank reported that the Ghanaian government had *"accepted an unsolicited bid from the Sinohydro Corporation of China to finance and construct"* the Bui hydroelectric scheme (World Bank 2008, 108). The Ministry of Energy and Sinohydro then signed a Memorandum of Understanding on the construction of Bui; funding was expected to come from the China Exim Bank (Fink 2005, 71). During the 2006 summit of the Forum on China-Africa Cooperation in Beijing, Prime Minister Hu Jintao announced the Chinese government's commitment to fund the Bui Dam. In 2007 the Ghanaian parliament passed Act 740 establishing the Bui Power Authority and dissolving the Bui Development Committee and Bui Development Secretariat. The Bui Power Authority set to work and was given full responsibility for planning, executing and managing the Bui project (Zigah 2009, 25). As a result, the Volta River Authority lost its responsibility for the Bui Dam and was reduced to overseeing the Akosombo and Kpong Dams and managing the Volta Lake. Henceforth, the Bui Power Authority was to be the Bui project owner.

Since the Ghanaian government managed to obtain an agreement in principle on construction and financing from Chinese agencies in 2005 and 2006, the planning and construction of the Bui Dam have been governed by five key documents. Three of them govern the relationship between Ghanaian and Chinese organisations:

- the 2005 Memorandum of Understanding (MoU) between the Ministry of Energy and Sinohydro,
- the 2007 Engineering, Procurement and Construction (EPC) turnkey contract between the Ministry of Energy and Sinohydro and
- the 2007 and 2008 loan agreements between the Ministry of Finance and Economic Planning and the China Exim Bank.

Two further documents, contracted by Ghanaian institutions, guide the governmental decision-making process and also contain norms and procedures with which Sinohydro as contractor has to comply:

- the 2006 feasibility study by French consulting company Coyne et Bellier and

— the 2007 Environmental and Social Impact Assessment by UK-based consulting firm Environmental Resources Management

Table 3 reviews the main steps in the planning and construction of Bui:

Table 3: Timeline of Bui Dam reports and developments

Year	Events / Reports	Actors / Report Authors
1925	'The possibility of Bui Gorge as the site of hydro-electric station', in Gold Coast Geological Survey Bulletin No. 1.	Albert E. Kitson
1964	Bui Hydroelectric Station on the Black Volta River, Republic of Ghana (Moscow: USSR State Committee on Power Engineering and Electrification).	S. J. Zhuk Hydroproject (Moscow)
1966	Bui Resettlement Study: A Report for the Ministry of Fuel and Power (Kumasi: Faculty of Architecture, University of Science and Technology).	D. Butcher and L. Huszar
1976	Bui Hydroelectric Project, Feasibility Study	Snowy Mountains Engineering Corporation
1985	Ghana Generation Planning Study	BKS Acres International Limited
1995	Bui Hydroelectric Development Feasibility Study Update	Coyne et Bellier
1999	Establishment of first Bui Development Committee along with Bui Development Secretariat	Government of Ghana
1999	Memorandum of Understanding	Halliburton Brown & Root
2001	Bui Hydroelectric Power Project, Environmental Impact Assessment, Scoping Report	BKS Acres and Volta River Authority
2001, November	Constitution of second Bui Development Committee	Government of Ghana
2005, October	Memorandum of Understanding	Ministry of Energy and Sinohydro
2005	Inclusion of Bui in the 2006–2009 planning cycle	National Development Planning Commission
2005, December	Contract for EIA study concluded with Environmental Resources Management	Ministry of Energy
2006, October	Bui Hydroelectric Power Project Feasibility Study Update	Coyne et Bellier
2007, January	Environmental and Social Impact Assessment of the Bui Hydropower Project: Final Report	Environmental Resources Management and Bui Development Secretariat
2007, February	Letter of approval of ESIA study to Bui Development Secretariat	Environmental Protection Agency
2007, April 19	EPC contract signed	Ministry of Energy and Sinohydro
2007, July 30	Approval of US$ 622 million financing package	Parliament

Table 3 continued		
2007, August	Bui Power Authority created, Bui Development Committee and Bui Development Secretariat dissolved. Volta River Authority loses responsibility for the Bui project	Government of Ghana
2007, October	Beginning of field investigations for construction at dam site	Sinohydro
2007, November	Construction of basic infrastructure (roads, camps etc.)	Sinohydro and Bui Power Authority
2008, May	Beginning of Resettlement Phase A	Bui Power Authority
2008, September 4	Concessional loan agreement signed	Ministry of Finance and Economic Planning and Ministry of Commerce through China Exim Bank
2008, December	River closure and river diversion with diversion channels and coffer dams completed	Sinohydro
2009, January–November	River bed excavation and foundations	Sinohydro
2009, December	Beginning of construction of main dam	Sinohydro
2010, June	Beginning of Resettlement Phase B	Bui Power Authority
Source: ERM (2007b); Bui Power Authority (s. a. a); Bui Power Authority (s. a. b); Bui Power Authority (s. a. c); Bui Power Authority (s. a. d); Bui Power Authority (s. a. e); Ghana News Agency (2007); Fink (2005) and own compilation		

3 Project Planning and Clearance Procedures

Step one: Inclusion of Bui in national development planning

The planning of dams officially begins at the National Development Planning Commission. The Commission includes hydropower projects in its planning cycle by identifying demand and supply gaps in the energy sector. So far, the National Development Planning Commission has been responsible for three planning cycles: from 2003–2005 (Medium-Term Development Plan under the Growth and Poverty Reduction Strategy, or GPRS I), 2006–2009 (Medium-Term Development Plan under the Growth and Poverty Reduction Strategy, or GPRS II) and the current Medium-Term Development Plan for the period 2010–2013. The Commission included Bui in the 2006–2009 planning cycle.[11]

The identification of a demand-supply gap in the energy sector is followed by the formulation of a policy for addressing it. If it is decided to build a dam, then the policy must indicate why a dam is necessary and how much energy it is to generate. There can be no dam construction without that specific justification. In Bui's case, the Commission decided that the dam should be built to increase power generation and so overcome power shortages.[12]

11 Interview A02072010.

12 Interview A02072010.

However, it seems that the question was not if Bui should be built to redress Ghana's energy shortages. After decades of unsuccessful attempts to fund the dam and temporary decisions in favour of thermal power, the government of President John Agyekum Kufuor (2001–2009) again prioritised the project. Therefore, the National Development Planning Commission's decision to include Bui in its planning cycle was based on a dominant government policy that has been continued by current President John Atta-Mills (since 2009).

The National Development Planning Commission monitors adherence to the plan. Once included in the planning cycle, the dam – like any other project endorsed by the Commission – is followed up by annual monitoring and evaluation reports on its progress. In monitoring Bui's progress, the Commission conducts pre-implementation, mid-term and post-implementation evaluation as well as impact evaluation. However, the focus is on the implementation of planned activities (with particular importance attached to the timetable). Other problems concerning delays in wage payments or service delivery, for example, are not the Commission's responsibility.[13]

Step two: Environmental clearance

The first regulatory hurdle the Bui Power Authority as project owner had to overcome was to obtain the Environmental Permit required by the Environmental Protection Agency. Before an Environmental Permit can be issued, an Environmental and Social Impact Assessment (ESIA) must be carried out. The ESIA was commissioned and paid for by the Government of Ghana on behalf of the Bui Development Secretariat (the predecessor of the Bui Power Authority), because the Environmental Protection Agency requires the Environmental Permit to be issued before the loan agreement with the China Exim Bank can be signed.[14] This conforms to the Exim Bank's *Guidelines for Environmental and Social Impact Assessments of the China Export Import Bank's Loan Projects* of August 2007. Article 13 of the *Guidelines* requires the project owner to submit government approval documents, including environmental and social impact assessments, to the Bank before the loan agreement can be signed. The environmental approval documents then become part of the loan application that is reviewed by the China Exim Bank (China Exim Bank 2007). This is indeed what happened, as the loan procedure above has shown. It was claimed that this procedure, i. e. environmental clearance before the loan agreement, is also used for World Bank-financed projects[15] and that the Exim Bank would not have given its approval for the loan if the Environmental Protection Agency had not issued the Environmental Permit.[16] It was in fact confirmed in an interview that the Environmental Permit was issued to the Bui Power Authority during the loan negotiations, but the loan agreements were signed only after the Environmental Permit had been issued.[17]

13 Interview A02072010.

14 Interview A21062010-3.

15 Interview A21062010-3.

16 Interview A30062010-2.

17 Interview A14072010.

Step three: Licensing and permitting process

When the Environmental Permit is issued, the Energy Commission convenes a Siting Clearance Committee to approve the dam site.[18] In Bui's case, this process appears to have been nothing more than a formality, given that the planning process for Bui has essentially been in place since the 1960s, when the Bui Gorge was certified as a site for power generation.[19] Consequently, even though the Environmental Protection Agency is not yet represented on the Siting Clearance Committee, it probably would not have made any difference to the outcome of the Siting Clearance process.[20]

After the Energy Commission had approved the site, the permit and licensing process continued. As with the Environmental Permit, it was the Bui Power Authority which had to apply for all the permits and licences described in the following, and it is responsible for monitoring Sinohydro's compliance with the permit and licence conditions.

To begin the river works, the Bui Power Authority had to apply to the Water Resources Commission for a permit, which is needed by anyone wanting to use, divert, store or abstract water. It issues three permits: Diversion Permits, Construction Permits and Water Use Permits. This means that, when the project proponent wishes to begin building the dam, the river must be blocked and diverted (the diversion channel will later be turned into a spillway[21]). Before the river can be diverted, a Diversion Permit is needed. Once actual construction is due to begin, the project proponent needs a Construction Permit. When the dam is completed, but before it is commissioned, the project proponent needs a Water Use Permit. Project proponents may apply for all three permits at the same time, or for one after the other as required while the building of the dam proceeds.[22]

The Water Resources Commission is normally invited by the Environmental Protection Agency to form part of the technical review team for the ESIA study, but this did not happen in the case of Bui.[23] Furthermore,

> *"the government sometimes jumps steps. They may inform the Water Resources Commission that certain works have began, but they do not wait for the Commission's approval. Instead, the government just goes ahead. For Bui, the river had already begun to be diverted when the Bui Power Authority applied for the Diversion Permit. What's more, parliament had already approved the EPC contract with Sinohydro and the loan agreement with China Exim Bank, and so there was nothing anymore that we could do. This is a government project, and negotiations are between two governments. The plan was already there and so the permits couldn't be refused. Therefore for Bui, the Commission addressed its concerns in the Permit conditions. The Bui Power Authority already has permits for diversion and construction, but not yet for water use. Only when construction of the dam is finished will the Bui Power Authority apply for a Water Use Permit."*[24]

18 Interview A14072010 and Energy Commission (s. a.).

19 Interview A14072010.

20 Interview A14072010.

21 Gocking (2008, 7) and interviews A23062010-3 and A29062010.

22 Interviews A23062010-3 and A29062010.

23 Interviews A23062010-3 and A29062010.

24 Interviews A23062010-3 and A29062010.

Interestingly, the contention that Ghana's regulatory authorities cannot refuse permits was strongly confirmed in an interview with a government agency official. The interviewee claimed that,

> *"had it not been a government project, the dam probably would not even have gotten the Environmental Permit. There were concerns, particularly related to the Bui National Park and the hippopotamus population. […] Also, there was the issue of the transboundary nature of the river: although the medium-size wall height was chosen from the various dam designs, there is still danger that when it rains a lot the river might flood into Ivory Coast. Had it been a private project, the government probably would not have allowed it. In Ghana it is difficult to regulate projects completely."*[25]

Since permits for Bui could not be refused, they were issued with mitigation requirements. The permit conditions applied by the Water Resources Commission concern water availability, flooding, regulated flows downstream or water pollution during construction. For Bui, the Diversion Permit required:

- a specific daily downstream flow to be recorded and reported daily;
- the relocation of the dam a short distance from the original site to prevent chips of rocks brought in for the construction of the dam and then broken up from falling into the water and so making the channel too shallow (this condition was also included in the Construction Permit);
- mitigation measures for sedimentation;
- an assurance that there would be no upstream flooding during rainfall;
- the construction of a diversion channel the same size as the original river.[26]

As procedures now stand, the Water Resources Commission becomes involved after the Environmental Protection Agency issues the Environmental Permit and when the project proponent wants to begin diverting the river. This will change once the National Dams Safety Unit is installed. This Unit is designed to ensure that dams operate to certain standards, the aim being to prevent dam breaks, for example. As it will have the authority to examine dam design, it will oversee the planning process from the design stage onwards. The National Dams Safety Unit will include representatives of all the major agencies concerned with dam planning: the Bui Power Authority, the Volta River Authority, the Ghana Water Company, the Ghana Irrigation Development Authority, the Water Resources Commission, the Environmental Protection Agency and the Ministries of Justice, Local Government and Water Resources, Works and Housing. However, the relevant legislation has not yet been passed.[27]

As for monitoring, the Water Resources Commission has limited capacity and is unable to lay down a tight timetable that would allow frequent visits to the dam site. While the Commission has confirmed that the Bui Power Authority and Sinohydro seem to be observing the permit conditions whenever Water Resources Commission staff make unan-

25 Interview A29062010. On a related topic see also the section on resettlement below for information on the non-implementation of resettlement recommendations contained in the ESIA study and the Resettlement Planning Framework.

26 Interviews A23062010-3 and A29062010.

27 Interviews A23062010-3 and A29062010.

nounced site visits, it is far from certain that that is the case between visits. Furthermore, the Water Resources Commission has been in operation for only a few years and is not yet fully staffed.[28]

The Energy Commission, Ghana's regulatory body for the energy industry, then steps in. Apart from being responsible for the Siting Clearance process, it issues licences for the operation of energy facilities, including the wholesale supply licence for the installation and operation of energy facilities to produce electricity (Energy Commission 2006, 12).

To approve the licence application for Bui, the Energy Commission needed an Environmental Permit from the Environmental Protection Agency, Diversion and Construction Permits from the Water Resources Commission (it is unclear if the Energy Commission also needs a Water Use Permit, which has not yet been issued, or if this step can be conveniently skipped), the MoU between the China Exim Bank and the Ministry of Finance and Economic Planning, the EPC contract between Sinohydro and the Ministry of Energy and the Power Purchase Agreement between the Ministry of Energy and the Electricity Company of Ghana. According to the Energy Commission, it has not yet issued licences for Bui, but they are ready and will be issued once the Bui Power Authority pays the licence fees. Licences are granted for a maximum of 25 years. They can be revoked and are issued under conditions which are monitored by the Energy Commission.[29]

For monitoring, the Energy Commission's Inspectorate liaises with the relevant departments of the Energy Commission. For instance, when micro, mini, small and medium-sized hydropower stations are to be monitored, the Inspectorate works with the Renewables Division. When a large hydroelectric dam is to be monitored, it cooperates with the Power Division. It was claimed by one interviewee that, because of this separation of responsibilities, the Energy Commission does not regard large hydropower stations as generating renewable energy.[30] However, the author could not confirm whether this view is generally held in the Energy Commission or in the Ghanaian government. Asked what thresholds are applied to determine what qualifies as a large dam, the Volta River Authority responded that it applied the definition of the International Commission of Large Dams (ICOLD), which defines a large dam as being 15 metres or higher or between 10 and 15 metres if it meets at least one of the following conditions: a crest length of not less than 500 meters; a spillway discharge potential of at least 2,000m^3 per second; and a reservoir volume of not less than one million cubic meters.[31]

All licences must be granted before construction may begin.[32] Figure 2 summarises the planning and licensing processes.

28 Interviews A23062010-3 and A29062010.

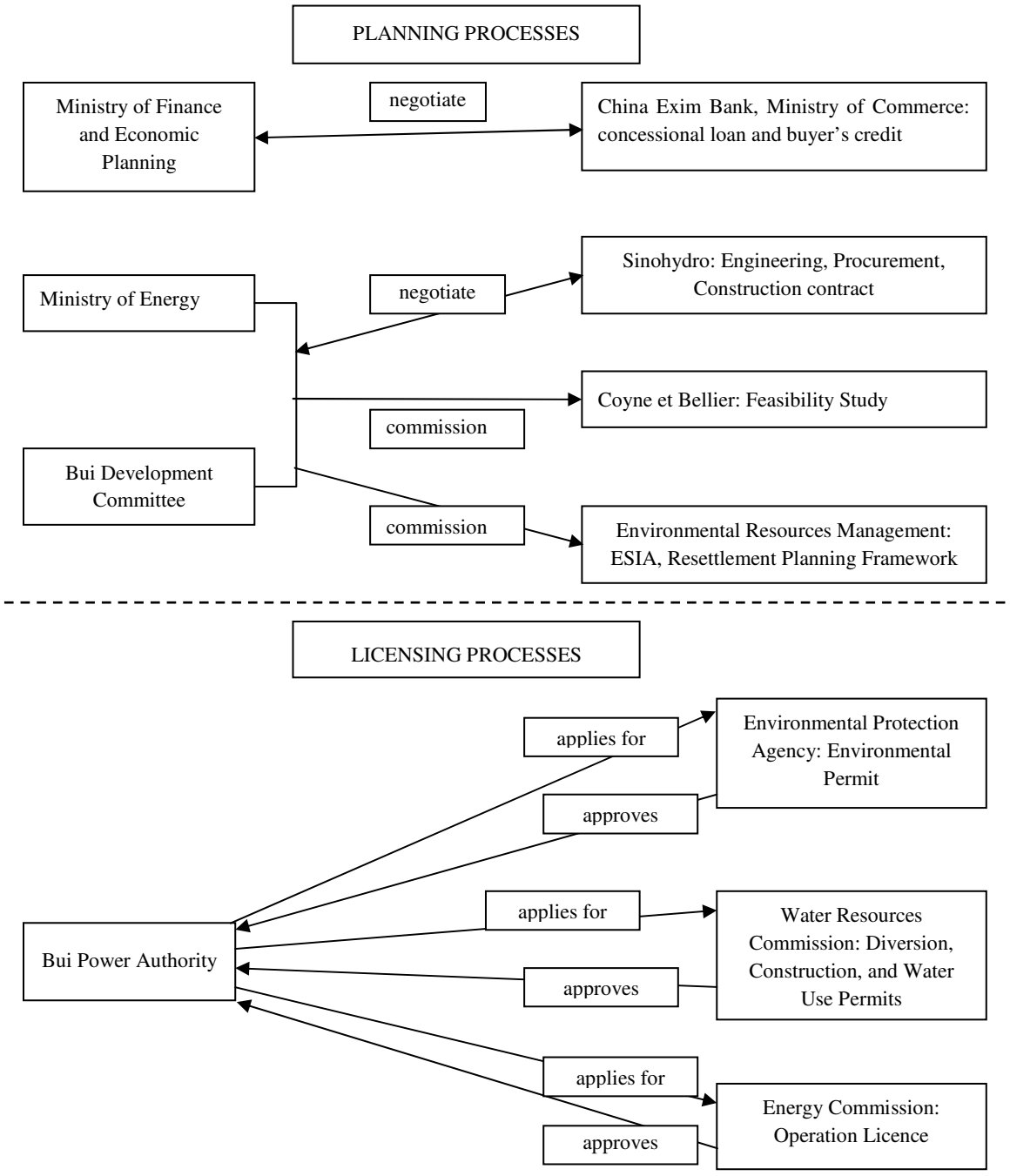
29 Interview A24062010-3.

30 Interview A24062010-2.

31 Personal communication, 26 July 2010.

32 Interview A24062010-3.

Figure 2: Planning and licensing processes



Source: Own data

4 Ghanaian Environmental Impact Assessment Regulations

Role of international norms in Ghana's Environmental Impact Assessment process

Government discourse in Ghana on environmental issues began with the 1972 Stockholm Conference on the Human Environment. In 1973 the government set up the Environmental

Protection Council, which advised on how to improve environmental protection. However, it took until 1985 for the Council to set up a committee to examine ways of introducing an EIA system in Ghana. In 1989 the Council established the National Environmental Action Plan with the aim of forming an EIA regime for all new projects that might harm the environment (Appiah-Opoku 2001, 60–61).

Around the same time, a series of environmental hazards attracted public and media attention. They consisted specifically in epidemics following the toxic pollution of rivers by gold-mining operations in the Ashanti Region. In the Western Region, villagers took up arms and threatened to take action against polluting mining operations near their village, which had destroyed crops and caused houses to collapse following the use of dynamite (Ofori 1991 and Graham 1993 quoted in Appiah-Opoku 2001, 61).

These developments eventually led to the 1994 Environmental Protection Agency Act, which set up the Environmental Protection Agency in succession to the Environmental Protection Council (Appiah-Opoku 2001, 61). The Environmental Protection Agency was tasked with the development of an EIA regime, which came into effect in 1999 as the *Environmental Assessment Regulations*. These *Regulations* have since formed the legal basis of environmental planning in Ghana.

The *Regulations* specify two main project schedules: Schedule 1 projects must be registered with the Environmental Protection Agency and an Environmental Permit must be obtained before construction, but an ESIA is not mandatory. Schedule 2 projects are required to undergo an ESIA process before the Environmental Permit can be granted. Schedule 2 covers 'power generation and transmission' projects, which specifically include 'dams and hydroelectric power schemes' (Environmental Protection Agency 1999). Whether these actually need to undergo ESIA depends, however, on the size of the dam. A medium-sized hydroelectric dam, for example, may need no more than a preliminary ESIA. It is 'at the discretion of the Environmental Protection Agency' to make this categorisation.[33]

The Environmental Protection Agency is also the main authority for setting environmental protection standards in Ghana.[34] These standards are established 'in conformity with international standards.'[35] This was confirmed by a Ghanaian regulatory authority official, who claimed that standards set by the Environmental Protection Agency are based on international standards, particularly those developed by the World Bank, and standards of the International Organisation for Standardisation (ISO).[36] Water resources engineers confirmed that the technical standards they apply in their work include those of funding agencies, e.g. the World Bank and IFC, plus those of ICOLD, the International Hydropower Association, and ISO 14001.[37]

33 Interview A21062010-3. At the time of writing (July 2010) there was a draft EIA guideline on the energy sector with specific reference to dams. The final version was said to be published before September. The draft guideline had been reviewed by the International Association for Impact Assessment. Its comments were being incorporated at the time of writing (interview A21062010-3).

34 Personal communication with Ghanaian water resources engineers in July 2010.

35 Personal communication with Ghanaian water resources engineers in July 2010.

36 Interviews A23062010-3 and A29062010.

37 Personal communication with Ghanaian water resources engineers in July 2010.

The Bui ESIA study specifically refers to World Bank and Ghanaian regulations:

> *"Ghanaian Environmental Impact Assessment Procedures require that a project proponent prepares an environmental impact statement that presents a clear assessment of the impacts of the proposed undertaking on the environment, and set out four steps to be followed in the conduct of an Environmental Impact Assessment: Project Registration, Project Screening, Scoping Report, and Environmental Impact Statement. This report is intended to fulfil the final step 'Environmental Impact Statement'.*
>
> *In addition, the ESIA of the Bui Hydroelectric Power Project has been carried out in accordance with international standards, as reflected in the policies, safeguard procedures, and guidance of the World Bank Group"* (ERM 2007a, i).

The ESIA further states that:

> *"The World Bank screens projects based in [sic] their possible environmental impacts, in order to classify them as A, B or C. A hydroelectric power development is normally classified as a Category A project, owing to the potentially significant adverse environmental and social impacts, and this triggers a full environmental assessment. Detailed advice and guidance on the conduct of environmental assessment is provided publicly by the World Bank in its Environmental Assessment Sourcebook. […] During project preparation, the World Bank examines the implications of the proposed project for a series of 'safeguard' policies. These are: Environmental Assessment; Natural Habitats; Forestry; Pest Management; Cultural Property; Indigenous Peoples; Involuntary Resettlement; Safety of Dams; Projects in International Waters; Projects in Disputed Areas.*
>
> *As part of the ESIA report, we will review any implications of the Bui Project for each of these areas of international best practice, and where relevant will identify recommendations for further study"* (ERM 2007a, 4).

As regards public consultation, the ESIA states that it observes Ghanaian regulations and the consultation guidelines of 'international financing institutions, specifically the World Bank Group'. Ghanaian regulations contained in the 1999 *Environmental Impact Assessment Regulations* are:

- First, 'advertisement of the scoping notice': to 'relevant ministries'; 'in at least one national and one local newspaper if there is any'; and 'copies of the scoping report available for inspection by the general public in the locality of the proposed project'.
- Second, the 'Environmental Impact Statement must be made available to the general public, relevant public agencies, organisations, NGOs, metropolitan, Municipal and District Assemblies and local communities [… so that] they may make any comments and suggestions on any matters therein'.
- Third, the 'Environmental Protection Agency must conduct a public hearing if there appears to be an adverse public reaction to the project; the undertaking will involve resettlement; the undertaking could have extensive effects on the environment' (ERM 2007a, 149–150).

Writing in 2001, Appiah-Opoku comments that a 'lack of public input' is a constraint on the realisation of environmental regulation in Ghana (2001, 65). We will consider throughout the study whether this is still relevant or whether the ten years or so that have passed since then have led to proper account being taken of affected people's concerns in the ESIA procedure.

Status of Social and Environmental Impact Assessment in the project cycle

Within the project cycle, ESIA forms part of the feasibility study. In Bui's case, however, this was not so, because Coyne et Bellier simply had to update the 1976 and 1995 feasibility study reports.[38] This means that the feasibility study and ESIA were separate processes. The company tasked with the ESIA was the UK-based environmental consulting firm Environmental Resources Management. It submitted the ESIA study in January 2007.

Specifically, the environmental planning procedure follows the steps outlined below:

First, project proponents must register their dam projects with the Environmental Protection Agency by completing an EIA registration form. This must include a map of the dam. In the case of Bui, the proponent is the Bui Power Authority. Sinohydro is only the contractor.[39]

Second, the Environmental Protection Agency requests a scoping exercise, which includes preliminary consultations with interested and affected parties. The scoping report with the draft Terms of Reference (ToR) was submitted by the Bui Power Authority to the Environmental Protection Agency.[40] The ToR are reprinted in the Appendix Volume to the ESIA study. The ToR called for the development of a Resettlement Planning Framework and a Monitoring Plan, for a comprehensive assessment of impacts (physical, biological, social, public health, cultural, cumulative and international), for the discussion of alternatives, for the establishment of a Mitigation and Environmental Management Plan and for public consultations (ERM 2007b, A3–A17).

The ToR also identified stakeholders to be interviewed and the methodology to be applied in the ESIA study. It appears that Environmental Resources Management did not hold public consultations for the scoping phase since they had already been held by BKS Acres. Indeed, the introduction to the ToR states specifically that the ToR are 'essentially the same' as those drawn up by BKS Acres for their Scoping Report, which was drafted in 2001 but never submitted (ERM 2007b, A1). The 2007 ESIA is therefore largely based on the 2001 Scoping Report.

Third, the Environmental Protection Agency set up a technical review committee, that is, a special cross-sectoral team made up of representatives of – among others – the Centre for Scientific and Industrial Research, the Wildlife Division of the Forestry Commission, the Hydropower Division of the Ministry of Works and Housing and the Environmental Protection Agency itself. This committee was asked to consider whether consultations for the scoping report had been conducted appropriately and would be adequate for the ESIA. The review committee was also asked to determine whether the impacts of the dam on wildlife and the Bui National Park were fully understood. Importantly, one interviewee explained that the scoping study needed to focus on certain key points: the impact on downstream communities and downstream flows to the Akosombo and Kpong Dams,

38 Interview A21062010-3.

39 Interview A21062010-3.

40 Interview A21062010-3.

resettlement issues and other impacts on such things as public health. When the review committee found the scoping study acceptable, the ESIA study was allowed to go ahead.[41]

The ESIA study was required to present comprehensive baseline data on social conditions, natural resources, cultural and economic factors and the land tenure situation. The project description was required to include such details as the design, construction schedule, location of facilities and material requirements and an assessment of alternatives. In Bui's case, there was a reference to earlier studies of the effects of differences in dam height on power capacity, the communities and the Bui National Park and of the extension of the reservoir into Ivory Coast. Eventually, the decision was made to opt for medium wall height to prevent the reservoir from extending into Ivory Coast. The ESIA was also to include an assessment of key impacts and an evaluation of their significance. The study had to provide a plan for mitigating and monitoring significant impacts. A provisional environmental management plan covering available resources and capacities, costs, the reporting regime and institutional arrangements was also required, as was a decommissioning proposal. Finally, the ESIA study had to specify levels of consultation, who was consulted and how, and if and how the comments were considered in the report.[42]

All these issues were incorporated in the ESIA study submitted by Environmental Resources Management along with the Resettlement Planning Framework and the Environmental Management Plan in January 2007. The Appendix Volume to the ESIA describes the Social Survey Tools and contains the results of the Social Survey and health baseline data (ERM 2007b, Annexes I, J and K).

In compliance with the public participation requirements, hearings were held in Accra in April 2006 and in Bamboi, Banda Nkwanta, Banda Ahenkro and Bungasi in August 2006. The Accra meeting was organised by the Bui Development Committee and the Environmental Protection Agency, the local hearings by the local offices of the Environmental Protection Agency with the assistance of Environmental Resources Management, and the persons invited to the August meetings were selected by the local offices of the Environmental Protection Agency (ERM 2007a, 151; ERM 2007c, 112). Key themes of the consultation rounds and the concerns expressed by the people attending are summarised in the ESIA. They relate mainly to compensation and losses of livelihood (ERM 2007a, 151–156). Detailed minutes of the hearings are published in the Annex Volume to the ESIA study (ERM 2007b, Annex N). On the question of how these comments were incorporated in the ESIA study, the latter states that *"All comments raised during the consultation carried out during preparation of this ESIA have been fully taken into account in preparing the Environmental and Social Management Plan and the Resettlement Planning Framework that have been prepared as companion volumes to this ESIA, and issued in January 2007"* (ERM 2007a, 156). We will return to this point when discussing resettlement below.

As all the hearings were held in Accra and other larger towns and none at the dam site, the choice of location drew criticism from NGOs, given that current road conditions make it difficult to travel from the villages and that the meeting held in Accra was of no interest to

41 Interview A21062010-3.

42 Interview A21062010-3.

and beyond the control of affected people.[43] The fact that people from neighbouring villages not affected by the dam were allowed to attend the local meetings was also criticised on the ground that the involvement of non-affected people might dilute the strength of criticism voiced by the affected communities and might be used by the project proponents as an excuse for ignoring affected peoples' concerns.[44] However, the results of hearings are not legally binding and hearings were 'rather like public forums: everybody in the project area is allowed to attend.'[45] Interestingly, the national-level hearing in Accra was attended by 121 individuals, among them representatives of Sinohydro, government agencies, local chapters of international NGOs, academia and the media (ERM 2007b, Annex N).

The contents of the ESIA submitted in January 2007 were then evaluated by the Environmental Protection Agency. It began by setting up a technical review committee. Simultaneously, the report was opened to public inspection for 21 working days in the Agency's library, on its website, at its regional offices in Northern and Brong Ahafo regions, in the affected districts of Tain and Bole and at other, similar locations. The availability of the report was advertised in national newspapers.

As mentioned above and as pointed out by one of the interviewees, the 1999 *Environmental Impact Assessment Regulations* require hearings to be held on ESIAs in three cases: first, if the project entails the resettlement and relocation of peasants; second, where there are serious environmental concerns (this being determined at the discretion of the Environmental Protection Agency); third, if the project arouses intense public concern.[46] The Bui project met all three requirements.[47]

For the hearings on the ESIA report, the Environmental Protection Agency put together an independent panel consisting of the presiding members of the district assembly, a member of the Ghana Institute of Engineers and a member of the Wildlife Division of the Forestry Commission. First, it was the panel's responsibility to have the Bui Power Authority, as project proponent, present the project in the local language, explaining what it was planning to do and how, what the impact on communities and the environment would be and how it intended to manage this. Second, the panel asked the general public to voice their concerns. Questions were collected (four to five at a time) and then answered by the proponent. The panel then summarised the issues and presented them to the Environmental Protection Agency as input into the technical review.[48]

Next, the Environmental Protection Agency sent the technical and public review comments to the Bui Power Authority and asked it to have Environmental Resources Management revise the ESIA study: as regards the impact on the Bui National Park, the Environmental Protection Agency stressed the need to compensate for the loss of 21 % of the Park; it also required the Bui Power Authority to add a management plan for the Park

43 Interviews A22062010-1 and A22062010-2.

44 Interviews A22062010-1 and A22062010-2.

45 Interview A21062010-3.

46 Interview A21062010-3 and ERM (2007a, 149–150).

47 Interview A21062010-3.

48 Interview A21062010-3.

and a rescue plan for the hippopotamus population and to detail how resettlement was to be managed and what impact Bui would have on the Akosombo Dam downstream.[49]

In line with these comments, the Bui Power Authority revised the study and returned it to the technical review committee. The committee then accepted the revised ESIA study, and the Environmental Protection Agency issued the Environmental Permit to the Bui Power Authority, on the basis of predictions of the environmental effects outlined in the revised ESIA study. The Environmental Permit was issued subject to a number of conditions to be observed by the Bui Power Authority:

- the submission of a schedule of reports on water quality, resettlement, etc.;
- the submission of an annual environmental report to the Environmental Protection Agency;
- the presentation of an Environmental Management Plan within eighteen months of the commencement of construction (the interviewee remarked that this time had come for Bui, and that he therefore had to check whether the Environmental Management Plan had already arrived at the Environmental Protection Agency);
- the fulfilment of the commitments outlined by the Bui Power Authority in the ESIA report, regarding, for example, the management plan for Bui National Park;
- the reporting of changes (to construction, flow regime, etc.);
- the beginning of construction within eighteen months of the Environmental Permit being issued. The Environmental Permit expires if construction does not begin within eighteen months of its issue;
- an Environmental Certificate must then be obtained; it replaces the Environmental Permit and is based on actual performance. It must be renewed and the Environmental Management Plan must be revised every three years.[50]

To monitor compliance, the regional offices of the Environmental Protection Agency visit the site.[51]

5 Ghanaian Regulations on Compensation and Resettlement

Resettlement is carried out under a Resettlement Action Plan, which is based on the Resettlement Planning Framework submitted by Environmental Resources Management along with the ESIA study in January 2007.[52] According to one interviewee, the Resettlement Action Plan was drawn up by a Ghanaian agency contracted by the Bui Power Authority.[53]

While the Resettlement Action Plan is not accessible, the Resettlement Planning Framework is. From this and the situation of the Gyama Resettlement Site – the only

49 Interview A21062010-3.

50 Interview A21062010-3.

51 Interview A21062010-3.

52 Interview A08072010.

53 Interview A14072010.

resettlement site so far – this section will draw some conclusions regarding the implementation of recommendations for public participation and livelihood reconstruction spelt out in the Resettlement Planning Framework.

A total of eight villages have to be resettled. Four have so far been relocated. Table 4 shows the current state of resettlement.

Table 4: Bui resettlement as at June 2010

Affected communities	Number of households	Number of people	Status
Brewohodi	10	48	Resettled
Dam Site	6	36	Resettled
Agbegikuro	22	107	Resettled
Lucene	4	26	Resettled
Bui Village	42	297	Ongoing
Bator Akanyakrom	63	437	Ongoing
Dokokyina	36	165	Ongoing
Bui National Camp	36	100	Not yet begun
Total	219	1216	

Source: Bui Power Authority (2010)

Numbers of affected communities given in the ESIA study differ significantly and are more detailed (see ERM 2007a, 52, Table 4.2). The first difference concerns the numbers of people and households in villages that will be inundated. Here, the table compiled by Environmental Resources Management shows 1,710 people to be resettled (Bui Camp is not included) as against 1,216 people in the table compiled by the Bui Power Authority. The second difference is that, while the Bui Power Authority table lists only villages that have to be resettled, the table by Environmental Resources Management shows in greater detail how villages that will not be resettled are affected: some will lose some of their farmland; others are situated along proposed transmission lines and therefore will at least be affected by the noise and air pollution due to the erection of those lines; thirdly, some villages will be affected by changes in the flow regime of the Black Volta River due to upstream electricity generation and will therefore be subject to a flow that depends on the Bui Dam operation schedule.

Resettlement is divided into three phases: A, B and C. During Phase A, which began in May 2008, four dam site villages were resettled: the villages of Brewohodi, Agbegikuro, Dam Site and Lucene were relocated to Gyama Resettlement Township. Phase B began in June 2010, The inhabitants of Bui Village, Bator Akanyakrom and Dokokyina are being resettled at a location between Bongase and the dam site (Bui Power Authority [s. a. a and s. a. b]). Phase C has not yet commenced.

Legal basis and planning recommendations

To identify compensation and resettlement procedures for Bui, the Resettlement Planning Framework uses World Bank guidelines and Ghanaian law as points of reference: the World Bank Operational Policy on Involuntary Resettlement (O.P. 4.12 and its Annex A), the World Bank Involuntary Resettlement Sourcebook and Ghana's 1992 Constitution, 1986 Land Title Registration Act, 1962 State Lands Act, 1962 Administration of Lands Act, 1960 State Property and Contracts Act and 1965 Public Conveyancing Act. Of these, the State Lands Act is the main body of legislation governing compulsory land acquisition. It requires the authority wishing to acquire land to apply to the Regional Minister, who refers the claim to the Site Advisory Committee, which includes the District Chief Executive and representatives of the Ministries of Lands, Forestry and Mines, Health and Water Resources, Works and Housing, the Town and Country Planning Department, the Ghana Water Company, the Electricity Company of Ghana, the acquiring authority and the Lands Commission. The Site Advisory Committee makes a recommendation to the Regional Minister. The Regional Minister then refers the case to the Lands Commission, which prepares an Executive Instrument for acquisition and sends it to the Ministry of Lands, Forestry and Mines for execution. There the Executive Instrument is signed, and the acquisition is publicised in newspapers and the government Gazette. The acquiring authority then applies for a lease, while the former owners can submit claims for compensation to the Land Valuation Board at the Lands Commission within six months of the publication of the Executive Instrument. The Land Valuation Board determines and pays compensation and resolves conflicting claims. Compensation is also governed by the State Lands Act and by the State Property and Contracts Act: it is paid for land at the market value, for damages suffered as a result of the acquisition of the land and for reasonable expenses caused by relocation elsewhere. According to the State Lands Act, the Land Valuation Board or an agency designated by the President is responsible for relocating those who need to be resettled on suitable alternative land that supports the economic well-being and the social and cultural values of the community (ERM 2007c, 56–61).

As Environmental Resources Management applied World Bank standards and Ghanaian law as guidelines for establishing a proper resettlement procedure, the Resettlement Planning Framework identifies disparities between the World Bank standards and the Ghanaian legislation. Many of these have to do with a lack of clarity of Ghanaian law regarding eligibility for compensation, supplementary assistance for vulnerable individuals, the basis of evaluation of assets or timing and location selection (ERM 2007c, 62–79). However, the most striking difference is that Ghanaian legislation does not require public participation in expropriation or the development of resettlement sites; however, Ghanaian ESIA regulations require public consultations during which resettlement issues may be raised (ERM 2007c, 67 and 70). Minutes of local consultations held during the ESIA phase and lists of stakeholders included in the ESIA study are annexed to the Resettlement Planning Framework (ERM 2007c, Annex E and F).

To reconcile these stark differences, the Resettlement Planning Framework recommends public participation:

> *"Public participation in the process of land acquisition and proposed resettlement must be promoted. Procedures or guidelines for such public consultation ought also to be clearly spelt out"* (ERM 2007c, 78).

For the development of resettlement areas, the Resettlement Planning Framework suggests that:

> *"New resettlement sites or host communities must be provided with basic infrastructure and public services to ensure that basic levels of amenities are accessible to the displaced persons and host communities. The provisions of the 1992 Constitution which requires that resettlement sites must be 'suitable' having due regard for their economic well-being and social and cultural values should be adhered to"* (ERM 2007c, 79).

According to the World Bank Involuntary Resettlement Sourcebook, the following criteria should be observed in the selection of resettlement sites: they should be 'acceptable to the resettlers; have the capacity to support the incomes and living standards of the people to be resettled; provide for population growth; supply infrastructure and services better than, or at least similar to those available before resettlement; and be incorporated into the jurisdiction of local government agencies before completion of the resettlement programme' (ERM 2007c, 101 and ibid., Box 10.1). In addition, according to Ghanaian and World Bank standards, resettlement villages must be equivalent to or better than the original settlements (ERM 2007c, 101).

The Resettlement Planning Framework identifies three groups of affected persons eligible for compensation:

- Group 1, households requiring resettlement are entitled to full rehabilitation measures based on the assets and crop inventory;
- Group 2, households that lose land but do not need to be resettled will receive compensation for land (should they own it), crops, trees, grazing and forest products. Households that lose more than 20 per cent of their land will be captured by a Livelihood Enhancement Programme that is designed to produce livelihoods of at least the same level as before relocation;
- Group 3, host communities will receive rehabilitation measures in relation to 'pressure on natural resources, public infrastructure, and social services.'
- In addition, households 'with limited resources' will receive additional help with relocation; households 'unable to restore or improve their livelihoods' after relocation will be classified as vulnerable and will receive special assistance (ERM 2007c, 83–84, 90, Table 9.3).

Compensation is of four types: cash, in-kind ('land, houses, other structures, building materials, seedlings, agricultural inputs and financial credits for equipment'), assistance (such as a 'transition allowance, transportation and labour') and replacement ('of public services, infrastructure and productive assets such as fish ponds') (ERM 2007c, 90, Table 9.2 and 96).

Implementation of planning recommendations

Organisational responsibilities

For effective resettlement implementation, the Resettlement Planning Framework had suggested an institutional setup to address livelihood issues. Most importantly, this setup would have created a Steering Committee composed of official representatives of the Bui

Power Authority, district officials, chiefs, the Land Valuation Board and NGOs. The Steering Committee would have cooperated with a Working Group made up of a Resettlement Coordinator, village representatives, NGOs (including one specifically appointed to monitor implementation) and technical personnel in charge of host site preparation (architects, agricultural experts, etc.). The Working Group would have been responsible for implementing resettlement, including pre-resettlement consultation and overseeing the process of relocation – which would have involved regular coordination with the construction contractor. After resettlement, the Working Group would have been responsible for implementing and monitoring rehabilitation measures and responding to grievances. The Working Group would have received input from relevant authorities on all levels of government and from specialised NGOs. For grievance procedures, a special mechanism would have been put in place, including a grievance officer (ERM 2007c, 122–133).

This institutional setup was to have been rounded off with an internal and external monitoring and evaluation procedure: internal monitoring and evaluation would have been conducted as part of the daily resettlement process, and progress would have been measured against a set of indicators. External monitoring would have been carried out by an independent agency applying a set of indicators three to sixth months, eighteen months and again thirty-six months after resettlement. The results would have been reported to the Steering Committee and the Working Group (ERM 2007c, 141–146).

This arrangement was entirely ignored, except that the Bui Power Authority has appointed a Resettlement Officer, who is in charge of resettlement coordination. The Resettlement Officer cooperates with government agencies, and most importantly with the Land Valuation Board, which is responsible for valuing the assets of affected people before their relocation (ERM 2007c, 81).

The main problem seems to be that there is no legal requirement for the monitoring of resettlement – just as there is no legal requirement for public participation in resettlement planning. Whereas hearings can be conducted as part of the ESIA process, Ghanaian EIA regulations make no mention of resettlement monitoring (Otu-Tei 2009, 118). There is no institutionalised inclusion in the resettlement process of paramount and village chiefs, village representatives appointed by the chiefs, district and regional authorities, relevant ministries and service-delivery NGOs in such sectors as health, education and agriculture. Rather, the impression is that the Bui Power Authority management has difficulties cooperating with NGOs, since NGO criticism of the resettlement process in general and the Bui Power Authority in particular is often perceived as wholesale opposition to the dam-building process.

It should be noted that the Resettlement Planning Framework did not allocate a particular role to the construction company, Sinohydro. It was apparently to be largely uninvolved in relocation, but would be affected by resettlement insofar as the progress of construction depends on the relocation of communities. Consequently, the Bui Power Authority has to coordinate with Sinohydro when relocation is in progress.

Information politics

Bui Dam resettlement is rife with rumours. Few people outside the key governmental agencies know anything definite. Not only are local chiefs and resettlement communities

uncertain about exact proceedings, such as who builds the infrastructure in resettlement townships, but the affected communities have no knowledge at all of the resettlement timelines and key actors. Some affected communities claimed that the Chinese had constructed their houses,[54] while others pointed to the Volta River Authority.[55] A local community leader maintained that the Bui Power Authority had contracted local companies to do the work.[56] Ministerial officials argued that the EPC contract also contains a resettlement plan,[57] while others said that resettlement has been subcontracted to local contractors.[58] One interviewee, who is involved in land management, said that resettlement is contained in the Ghanaian contribution of US$ 60 million.[59] If correct, this would mean that not only the implementation but also the financing of resettlement is an exclusively Ghanaian responsibility.

A point of contention and much confusion is the construction of Bui City. Bui City is meant to be an entirely new city, where all resettlers are to be eventually moved. All resettlement prior to Bui City was intended to be temporary to enable dam construction and allow time for the construction of the City. However, there is no time schedule for Bui City, which so far exists only on the drawing board. People from NGOs and land planning circles described Bui City as a 'myth' and a 'dream' that has so far failed to materialise.[60]

In February 2007, before the signing of the EPC and loan agreements, the Ghanaian newspaper *The Statesman* ran an article saying that the construction of Bui City would involve Chinese and Ghanaian private-sector firms. Of the overall amount of US$ 622 million, US$ 25 million was said to have been estimated as resettlement costs (Benjamin 2007). However, this information could not be verified. The major document, the Resettlement Planning Framework, calculates total compensation costs at slightly over US$ 4 million (ERM 2007c, 136–140).

The National Development Planning Commission explicitly refers to Bui City in Appendix II of its *Draft Medium-Term National Development Policy Framework* for the period 2010–2013. Under 'Section 2: Special Development Areas' of 'Chapter VII: Reducing Poverty and Income Inequalities' Bui City is mentioned in connection with issues pertaining to 'Uncoordinated demands for special development areas [and] lack of coordination of ongoing and emerging national development opportunities and challenges.' As a consequence, the National Development Planning Commission recommends action to 'Coordinate the selection and development of special development areas' by enhancing 'planning and coordination of the development of […] Bui City' and other special development areas (National Development Planning Commission 2009, 73).

Another issue here is the release of information during local consultation. Claire Sutcliffe, who conducted extensive interviews in affected villages, has said that the recommenda-

54 Interview J01072010-2.

55 Interview W01072010-1.

56 Interview W01072010-1.

57 Interview A30062010-2.

58 Interview A30062010-1.

59 Interview A08072010.

60 Interviews A22062010-1, A22062010-2 and A08072010.

tions in the Resettlement Planning Framework for addressing villagers' concerns about their livelihoods[61] have not been taken up during resettlement. In particular, villagers were not given a timeframe for resettlement or for compensation payments, and they were not informed of appropriate channels of communication 'to make their grievances known.' As a consequence, authorities ignored the Consultation Objectives in the Resettlement Planning Framework (Sutcliffe 2009, 2–3), especially in respect of the following:

> *"Stakeholders should be publicly informed by the relevant authorities of the details of the resettlement activities. The information made public and provided to each household will include cut-off dates for each affected group (if the cut-off date differs), entitlements, eligibility criteria, modes of compensation, complaints and grievance redress procedures"* (ERM 2007c, 111, quoted in Sutcliffe 2009, 2).

An interviewee involved in land management claimed that the Resettlement Planning Framework processes had not been adopted in the Resettlement Action Plan and that the two documents were very different.[62] Affected communities claimed that they were not consulted, but merely given certain information. They were what they called 'partially consulted' in that they were promised that Gyama would be temporary (followed by relocation to Bui City) while rocks were being blasted and that their situation would improve significantly in the Bui City settlement, with new houses and infrastructure. Information on negative impacts was not disclosed[63] (Ghana News Agency 2009b).

Rehabilitation of livelihoods

Indeed, when the recommendations in the Resettlement Planning Framework are compared with what has actually happened, a rather bleak picture emerges. To ensure the reconstruction of livelihoods after relocation, the Resettlement Planning Framework advocates the implementation of a Livelihood Enhancement Programme. This Programme adopts a two-pronged approach: the targeting of vulnerable households and the enhancement of livelihoods in resettler communities in general. The focus is on the major livelihood activities of the villages: agriculture; fishing; trading; and grazing, hunting and collection of forest products. The Resettlement Planning Framework provides for a monitoring body consisting of an NGO appointed to implement the Programme, while a committee oversees implementation. The committee is to consist of representatives of traditional authorities, the Ministry of Food and Agriculture, the project owner's resettlement coordinator, i. e. the Bui Power Authority's Resettlement Officer, and the NGO appointed to implement the Programme. Quarterly monitoring reports are to ensure the success of the Programme (ERM 2007c, 96).

A glance at the fishing section of the Livelihood Enhancement Programme soon shows that the recommendations it contains have not been put into effect for the relocated fishing community at Gyama Resettlement Township:

> *"The key principle with respect to rehabilitation of fishermen and women is to ensure that they are given access to equivalent or improved fishing grounds. The measures*

61 For details on issues raised by stakeholders and how they are addressed in the Resettlement Planning Framework see ERM (2007c, 115–116, Table 13.1).

62 Interview A08072010.

63 Interview A08072010 and Interview J01072010-2.

> *[…] will aim to improve fishing livelihoods to levels over and above pre-resettlement levels"* (ERM 2007c, 97).

The measures specifically comprise the allocation of equivalent fishing grounds, the development of fishing opportunities (i. e. the establishment of fishing associations, business planning, micro-credit support, as well as storage, transport and processing refrigeration facilities) and the development of alternative livelihoods (i. e. agriculture, small service enterprises and artisan workshops and training for other livelihoods to be identified and for which there is demand) (ERM 2007c, 98). In addition, to compensate for lost fishing grounds, the Resettlement Planning Framework suggests providing a *"transportation allowance for fishing equipment (boats etc.)"* and a *"transition allowance until fishing livelihood is restored"* (ERM 2007c, 94, Table 9.6).

The main problem here is the identification of suitable alternative fishing grounds. According to the Resettlement Planning Framework, the Gyama Chief suggested that the fishing village of Agbegikuro, populated by members of the Ewe tribe, should be resettled on his land because, though of different tribes, the two communities have known each other for a long time and because Gyama Village is close to the river. The Resettlement Planning Framework also states that the Resettlement Action Plan must *"ensure the viability for fishing in the light of changes in river flows during construction and subsequent operation"* (ERM 2007c, 103 and 104, Table 10.1).

The resettled fishing community had been fishing in the river near the dam site for several generations. As the Gyama Chief had suggested, it was resettled on dry land next to Gyama Village when construction began. It was claimed that, when they were resettled, they did not receive any seeds (having to buy them at the market instead), tools or training in farming, which prompted the Gyama Chief to provide them with seeds, cassava and technical farming know-how.[64]

It was also claimed that the Bui Power Authority was slow to pay compensation. Communities and people involved in land management mentioned that compensation had not been paid, except for the construction of houses (house to house compensation).[65] But no compensation had been received for crops, economic trees or land at the time the interviews were conducted in Ghana in June and July 2010 – although the basis for the claim that compensation for land had not been received is unclear, because resettlers had been given land to cultivate. However, it was claimed that the land was not fertile.

Resettlers were given three types of cash compensation: first, a one-off payment of GH¢100.00 per person regardless of age; second, a farm grant of GH¢50.00 per household to enable initial crop cultivation on the land the Bui Power Authority had acquired from the Gyama Chief (two acres per household); and third, a monthly allowance for one year from May 2008 to April 2009 per household as temporary income support.[66] This monthly allowance was meant to assist resettlers – some of whom were farmers, some fishermen –

64 Interviews J01072010-3 and J01072010-2.

65 Interview A08072010.

66 According to the Bui Power Authority, the calculation of the monthly allowance of GH¢100.00 was based on a study of alternative livelihoods conducted by the Faculty of Human Settlement of Kwame Nkrumah University of Science and Technology in Kumasi (Zigah 2009, 29).

to travel back to their fields, 4.5km from their new settlement, to harvest their produce while simultaneously developing their new fields at Gyama Resettlement Township (Zigah 2009, 28–29; Bui Power Authority s. a. f.). There is also hope that once the reservoir is filled, fishing opportunities will re-emerge and improve for the fishing communities at Gyama and possibly include the establishment of aquaculture (Otu-Tei 2009, 107–108). So far, however, Otu-Tei says that resettlers had to spend a larger portion of the monthly allowance on food than on travel, because they *"were unable to access their old farms"* (2009, 113). Indeed, resettlers claimed that even though they had been told that they could return to harvest their mangoes, they were not in fact allowed to do so.[67] They also claimed that the Land Valuation Board of the Lands Commission had made mistakes when valuing the properties in the four villages and that these mistakes had not been rectified.[68]

Otu-Tei also argues that timing was the crucial mistake during the Bui resettlement, since the resettlement process was not attuned to the agricultural cycle. The Gyama resettlement occurred 'immediately after the main season for planting maize and yam, the main staple foods in the area, because the resettlement was determined by the pace of the dam construction,' even though the Resettlement Planning Framework had provided information on the growing seasons for all crops grown in the area (2009, 110–112). He concludes that, because of this timing criterion, *"critical issues"* in resettlement implementation, such as *"compensation, preparation of resettlement site, relocation, implementation of livelihood programs, and monitoring were ignored […]. Completion of the dam was prioritized at the expense of sustainably restoring or improving the living conditions of the affected people"* (Otu-Tei 2009, 116).

It can therefore be said that none of the recommendations of the Livelihood Enhancement Programme for fishing communities has so far been implemented, with the exception of some initial help with farming. Being part of resettlement Group 1, the fishing community is entitled to full compensation and may also be classified as vulnerable and therefore entitled to additional support for income restoration. The Bui Power Authority may well argue that monthly cash payments fulfil this requirement and the recommendation for a transition allowance. However, it is uncertain whether suitable new fishing grounds can be found. It is also clear that, with the expiration of the one-year financial assistance and without their key source of food and income and thorough training for alternative livelihoods, the fishing community is finding it hard to sustain acceptable levels of livelihood comparable with or better than pre-resettlement conditions.

Gyama Resettlement Township does provide certain improvements in infrastructure: stone houses and boreholes provide secure shelter and drinking water. Overall, however, the township appeared to be in a dilapidated state, with muddy roads and a run-down structure that was featured as a community centre. Furthermore, as mentioned above, it was meant to be temporary until Bui City was completed. But at present it is unclear when Bui City will be built and how it will look. Indeed, the Bui Power Authority has reportedly found re-relocation to be too expensive and has therefore promised to improve living conditions

67 Interview J01072010-2.

68 Interview J01072010-2.

in the Gyama Resettlement Township, where rooms are very small and roofs are already leaking. But this has not yet happened.[69]

It is a matter of interpretation whether Gyama Resettlement Township meets the constitutional requirement of suitability for a resettlement site. Certainly, the recommendation in the Resettlement Planning Framework that resettlement sites should provide basic infrastructure has been put into effect, but whether public services have been provided as recommended is questionable. A similar assessment can be made on the basis of the requirements set out in the World Bank Involuntary Resettlement Sourcebook: Gyama Resettlement Township does 'supply infrastructure and services better than, or at least similar to those available before resettlement.' However, the location is clearly not 'acceptable to the resettlers,' and given that no alternative fishing grounds have been demarcated, the farmland is allegedly poor, and no thorough training in farming techniques has been provided, it must be doubtful that the settlement has *"the capacity to support the incomes and living standards of the people to be resettled"* (ERM 2007c, 101 and ibid., Box 10.1).

For resettlement Phase B, houses are already being built, and according to a local community representative, eleven local contractors have been engaged.[70] Representatives of the communities mentioned that they had been shown construction plans of houses and had subsequently been to the construction site to measure for themselves whether the houses matched the plans. And they did.[71] One community chief said that his village, which is to be resettled during Phase B, would receive compensation for crops, infrastructure and land. No compensation had been paid by the time of the interview, but he said that the Land Valuation Board had been to his village and valued everything.[72] The Phase B resettlements may turn out to be an improvement on the Phase A resettlements, given that Bui City is a long way from realisation.

It seems that the Gyama resettlement is a case where villagers ignorant of their legal rights and overwhelmed by official rhetoric and the power of a large bureaucracy found themselves at the mercy of a government organisation. Affected communities that are still to be resettled therefore maintained that the Gyama resettlement case, made known to them largely through the Ghana Dams Dialogue (see Box 1 below), which also covered the negative experience of the Akosombo Dam resettlement communities, helped, as a test case, to show them how to improve their own fate.[73] Importantly, there were no indications that the Bui Power Authority had set up the monitoring body recommended by the Resettlement Planning Framework to allow an independent and transparent review of the resettlement programme.

69 Interviews J01072010-2, A22062010-2, A22062010-1 and A08072010.

70 Interview W01072010-1.

71 Interview W01072010-1.

72 Interview W01072010-1.

73 Interview W01072010-1.

Box 1: The Ghana Dams Dialogue

It should be noted that the dilapidated state of Gyama Resettlement Township is at least partly due to the fact that it was meant to be a temporary solution. Overall, even critics of the Bui Dam acknowledge that resettlement for Bui has so far proceeded rather better than the Akosombo resettlement; but they contend there is considerable room for improvement in local consultation, the transparency of decision-making and the time it takes to pay compensation.[74]

The improvement in the resettlement process seems to be the result of two factors: lessons learnt from the Akosombo Dam and the establishment of the Ghana Dams Dialogue. This Dialogue is funded by the GIZ and hosted by the International Water Management Institute (IWMI) and the Volta Basin Development Foundation (VBDF) in Accra. It has increased the awareness of the affected communities and has acted as a confidence-building platform for all major pro- and anti-Bui Dam stakeholders in government, affected communities, research organisations and civil society. During interviews with Dialogue and non-Dialogue members, government and non-government agencies acknowledged the usefulness of the Dialogue;[75] only the Bui Power Authority management was vehemently opposed to it, arguing that the importance of the Dialogue had been greatly exaggerated and that the Bui resettlement had been an improvement on the Akosombo resettlement because lessons had been learnt from the disastrous Akosombo experience and not because of the Dialogue.[76] The Ghana Dams Dialogue was not universally known, however: interviews at the Ministry of Finance and Economic Planning and the National Development Planning Commission showed that people there had not heard about it.

Asked about the immediate effects of the Ghana Dams Dialogue, one interviewee said that one of the Akosombo resettlement communities had had a problem with electricity payments: the community refused to pay the tariffs, but the Volta River Authority demanded payment. A delegation from the Ghana Dams Dialogue went to the community to mediate and solved the problem.[77]

6 The Role of Chinese Agencies: Financing and Construction under EPC Contract Arrangements

China's involvement in the above procedures takes the form of the financing and construction of the Bui Dam under the Engineering, Procurement and Construction (EPC) contract between Sinohydro and Ghana's Ministry of Energy and the loan agreements between the China Exim Bank and the Ghanaian Ministry of Finance and Economic Planning. Planning was the Ghanaian government's responsibility. The dam design was prepared by Coyne et Bellier in the feasibility study commissioned by the Ministry of Energy and the Bui Development Committee. According to Sylvester Zigah, the Development Programs Officer of the Bui Power Authority, Coyne et Bellier continue to act as consultants to Sinohydro, the contractor (Zigah 2009, 26). The Environmental and Social Impact Assessment – which includes resettlement planning – was delivered by UK consulting firm Environmental Resources Management and commissioned by the Ministry of Energy and the Bui Development Committee.

74 Interviews A08072010, A22062010-2 and A22062010-1.

75 Interviews A22062010-2, A22062010-3, A23062010-3, A29062010, A25062010-1, W010720 10-1 and J01072010-2.

76 Interview A28062010-2.

77 Interview W01072010-1.

Sinohydro's responsibilities

Under the EPC contract Sinohydro is the contractor, and its role is in principle to execute the dam design, abiding by the conditions attached to the permits and licences issued by Ghana's regulatory authorities. As these permits and licences are granted to the Bui Power Authority as the project owner, it is its responsibility to monitor Sinohydro's adherence to the conditions. The EPC contract complies with the international standards for EPC contracts published in 1999 by the International Federation of Consulting Engineers (FIDIC). However, Sinohydro can request the Bui Power Authority's approval of changes to the design.[78]

Under the EPC contract, Sinohydro is responsible for

> *"civil construction, fabrication and installation of metal structures, installation of power transmission lines and unit installation. Contract duration is 56.5 months. Bui Hydroelectric Project includes a 114m high roller compacted concrete gravity dam, a 60-meter-high clay core rockfill dam, a homogeneous earth dam and a powerhouse at dam toe installed with three francis turbine-generator units having a total installed capacity of 400MW. Bui hydropower station will be the second largest hydropower station in Ghana after its completion.*
>
> *Quantities of main works for the project include 940,000m^3 RCC* (Roller-compacted concrete) *placement, 200,000m^3 conventional concrete placement, 1,500,000m^3 filling works of saddle dams, approximately 5,000 tons of metal structure (including penstocks and gates) fabrication and installation, 320km power transmission line, and two substations"* (Sinohydro Bureau 8 2009).

Sinohydro also employs the workers, but must abide by Ghanaian law, which means *inter alia* allowing the formation of a union under the 2003 Labour Act. The first attempt to form a union was met by the Chinese management with *"open intimidation and victimisation."* The Bui Power Authority's Resident Engineer tried to intervene and take up the workers' concerns with the Sinohydro management. However, this was seen by Sinohydro as *"unnecessary interference in their work."* Bui Power Authority management in Accra then ordered the Resident Engineer to *"stop interfering in the affairs of the Chinese."*[79] This was followed by mass resignations of workers, to the point where the timetable for the construction of Bui was affected. Eventually, the Bui Power Authority called on the Sinohydro management to permit the formation of a union. This process was then launched by the Brong Ahafo Regional Secretariat of the Ghana Trades Union Congress in Sunyani and the Industrial Relations Officer of the Construction and Building Materials Workers Union at the Ghana Trades Union Congress (Baah, Otoo / Ampratwurm 2009, 104–105).

Ghanaian law also specifies a minimum wage,[80] a maximum of eight hours' work per day or forty hours per week, voluntary overtime (which may be made compulsory where required to ensure profitability or project viability), fifteen days' paid annual leave, up to six

78 Interviews A23062010-2 and A28062010-2.

79 Baah / Otoo / Ampratwurm (2009, 104); Mohan (2009); interviews A21062010-3 and A14072010.

80 The daily minimum wage for 2008 was GH¢2.25. For 2009, it was raised to GH¢2.655. In February 2010, the daily minimum wage for 2010 was raised to GH¢3.11 (Ghana News Agency 2009a; Ghana News Agency 2010).

months' paid sick leave, maternity leave and insurance against occupational accidents and injuries, including up to six months' paid sick leave (Baah / Otoo / Ampratwurm 2009, 100–104). In addition, after six months' employment the status of Ghanaian workers must be changed from casual to permanent (Baah / Otoo / Ampratwurm 2009, 100).

Box 2: Sinohydro and disputes with workers

As Sinohydro employs the workers independently of Ghanaian government agencies, it is also required to deal with potential disputes over salary payments, working conditions, accommodation and health and safety issues.

The first disputes occurred in 2008, shortly after construction began. Ghanaian workers complained about cramped 14-bed dormitories and a lack of mattresses. They claimed that their wages were just above the required minimum and in fact lower than those they had signed up for; working hours were from 7am to 6pm; and Sinohydro would not allow workers to rest after hospital treatment, would not pay allowances during illness and treated them as casual labourers. In response, the Bui Power Authority and the Ministry of Energy called on the workers to 'exercise patience and be prepared to sacrifice a little' as the Chinese workers did until the camps were fully completed and to work as hard as the Chinese, thus learning lessons from their work ethic (Ghana Broadcasting Corporation 2008; Peace FM Online 2009; Ghana News Agency 2008a+b; Ghana News Agency 2009b; Baah / Otoo / Ampratwurm 2009, 100).

Workers were also unaware that they were entitled to paid annual leave and were insured against occupational injuries and that they had a right to six months' paid sick leave. Chinese doctors at the dam site sometimes refuse to grant sick leave (Baah / Otoo / Ampratwurm 2009, 102, 104).

Negotiations on the wage issue between the workers and Sinohydro began in August 2008, continued into 2009 and simmered on until April 2010. It appears that the reputational damage on the Chinese side was such that the Chinese Ambassador, Yu Wenzhe, visited the construction site in 2009 to check on the progress of the wage talks (Hall 2009). In 2010 it was reported that workers were still complaining about cramped accommodation, with five to ten people sharing one room. Workers also complained about sanitary conditions and about the fact that 80 to 100 workers are packed into one truck and transported between the work site and Gyama village. In addition, wages were at only GH¢2.50 for workers and GH¢3.00 for artisans. As regards the wage problem, the Chief Executive Officer (CEO) of the Bui Power Authority, Jabesh Amissah-Arthur, said that workers' welfare was the responsibility not of the Bui Power Authority but of Sinohydro and the Trades Union Congress. In late 2009 the Trades Union Congress and workers had agreed that wages should be at GH¢4.50 for labourers and GH¢5.00 for artisans, but Sinohydro management had allegedly failed to implement that decision (Appiah 2010). A compromise between Sinohydro and the Trades Union Congress was reached in April 2010 (Osei 2010).

The EPC contract stipulates that 3,000 semi-skilled and unskilled Ghanaian workers must be employed, along with around 1,000 Chinese workers.[81] As of June 2010, some 2,000 Ghanaians and fewer than 1,000 Chinese are working on the project.[82] Sixty Pakistani workers drive the heavy equipment: they count as Chinese for the purposes of the imported labour quota (Mohan 2009). Mohan / Tan-Mullins confirm that the Bui project employs 3,000 Ghanaian workers and only 700 Chinese expatriates. They conclude that, although Chinese firms *"sometimes bring low-cost labour from China […] the perception that they only employ Chinese labour is misleading"* (Mohan / Tan-Mullins 2009, 595).[83] Indeed, while research indicates that Chinese companies in Ghana have *"manipulated local laws regarding capital equipment and foreign exchange for overseas investors to earn additional foreign exchange […] Chinese businessmen in Ghana […] argued that Ghana is much stricter than other West African states in applying its investment code,*

81 Interview A30062010-2.

82 Interview A30062010-2.

83 See also Ghana News Agency 2007.

which sets a high minimum limit for investments and its immigration laws," thus delimiting labour importation (Mohan / Tan-Mullins 2009, 599–600).

Terms of the loan agreements

Funding for the construction of Bui consists of three parts. Of the total project costs of US$ 622 million, US$ 60 million has been contributed by the Government of Ghana. The remaining US$ 562 million has been extended by China through the China Exim Bank in the form of a mixed financing package: a concessional loan of US$ 263.5 million, subsidised by China's Ministry of Commerce, and a buyer's credit of US$ 298.5 million provided by the China Exim Bank alone. Table 5 shows details of the financing arrangements.

Table 5: China Exim Bank credits and Ghana's contribution to the construction of the Bui Dam

Type of credit	Amount	Interest rate	Amortisation period	Grace period
Buyer's credit	US$ 292 million	2 % over CIRR*	20 years*	5 years
Concessional loan	US$ 270 million	2 %	20 years	5 years
Ghanaian government loan	US$ 60 million	–	–	–

Source: Interview at the Ministry of Finance and Economic Planning in June 2010

Note: *Brautigam (2009, 349, note 30) reports the following numbers: interest rate of 0.75 per cent over CIRR and a maturity period of seventeen years.

While the concessional loan may qualify as ODA in OECD terms, Brautigam claims that Ghana's Ministry of Finance and Economic Planning calculated the grant element of the mixed credit at 22 per cent. For a concessional loan to qualify as ODA as defined by the OECD, it must contain a grant element of at least 25 per cent (Brautigam 2009, 349, note 30).

Anecdotal evidence suggests that the negotiations were rather tough. In November 2006 the *Ghana News Agency* reported that during the negotiations on the loan agreement the Chinese offered to make 50 per cent of the loan concessional, while the Ghanaian government pushed for 70 per cent (Kwaku Osei Bonsu 2006). In an article for the *Statesman* in February 2007, Benjamin reports that the Ministry of Finance and Economic Planning wanted the Chinese to increase their portion of the Bui financing from 85 per cent of the project costs to 90 per cent, with 42.5 per cent of the loan concessional. For the concessional part, according to Benjamin, the maximum interest rate would be 2 per cent with a repayment period of at least twenty years. However, the government then headed by President Kufuor wanted a 1 per cent interest rate and a 30-year repayment period. In the case of the buyer's credit, the Chinese offer was 1.1 per cent over CIRR – around 5.75 per cent at the time – with a 12-year repayment schedule and a grace period of five years. However, the then Ghanaian government pushed for a 15-year repayment schedule and an interest rate of 1.05 per cent over CIRR (Benjamin 2007). In an interview conducted by the author at the Ministry of Finance in June 2010, the interviewee reported that the Chinese offered a 17-year repayment schedule for the buyer's credit, which the Ghanaian negotiators managed to push to 20 years.

The financial arrangement is secured by cocoa as collateral.[84] According to the interviewee, the Chinese government guaranteed to purchase 30,000 tonnes of cocoa per year from the Ghanaian government at going world market prices – rather than a fixed price – until the dam was operational. The reason for this is that China wants to promote cocoa consumption in China. Until the Bui Dam becomes operational and begins generating revenue to service the loan (during the construction period there is a moratorium on the payment of the principal, which means that only interest has to be paid in that period), the proceeds from the sale of cocoa are placed in an escrow account, i. e. a trust account, held by the China Exim Bank as security for loan repayments. If not all the funds in the escrow account are needed to pay the interest, then the excess reverts to the Ghanaian government, i. e. the Ministry of Finance and the Central Bank. Once the dam is operational within five years of the signing of the loan agreement, the cocoa agreement lapses. By that time, the interviewee hoped, China will have developed a taste for cocoa and so become a new and important market for Ghanaian cocoa.[85]

When the Bui Dam is operational and the cocoa agreement expires, 85 per cent of the proceeds from sales of energy generated by the completed Bui Dam will be placed in an escrow account held by China Exim Bank to service the debt. The remaining 15 per cent will be used to meet the Bui Power Authority's administration costs. If not all the 85 per cent is needed for debt servicing, the excess will revert to the Government of Ghana, i. e. the Ministry of Finance and Economic Planning and the Central Bank. If Ghana decides not to withdraw the excess money from the escrow account, it will earn interest.[86]

The World Bank's view of the buyer's credit, and the associated repayment conditions, is that it is consistent with the Ghana Poverty Reduction Strategy II, which concluded that non-concessional funding is needed to finance the development plan:

> *"… following the October 2005 Consultative Group (CG) meeting the Government communicated to the Bank that it would seek additional financing from non-concessional sources to meet the country's growth targets and achieve the MDGs. […] This need became more pressing as the energy crisis deepened in late-2006 and early 2007. The decline in water levels at the Akosombo dam reduced power supply capacity by 25 to 30 percent, making even more urgent the need to scale up investments to restore power supply capacity to the levels prior to the crisis and ensure that energy supply would increase in lockstep with projected real GDP growth.*
>
> *More recently, the Government's intention to access international capital markets was discussed in February 2007 and incorporated in the joint Bank-Fund Debt Sustainability Analysis (DSA) completed in April 2007. The joint DSA included the government's intention to borrow about US$ 250 million per year non-concessionally between 2007 and 2009, and US$ 350 million per year thereafter, and concluded that Ghana faced as a result a moderate risk of debt distress, albeit on the low side. The main developments since that joint DSA was completed are the Government's decision to borrow the envisioned amount from international capital markets in one single tranche, rather than spreading it over a three year period, and to sign the financing agreement with the China ExImbank. […]*

84 Interview A30062010-1.

85 Interview A30062010-1.

86 Interview A30062010-1.

> *Moreover, the financing agreement with the China ExImbank for the construction of the hydro-electric power plant at the Bui Dam is part and parcel of the Government's efforts to keep the expansion of low cost electricity generation capacity in line with the country's projected real GDP growth"* (World Bank 2008, 6).

Procedures leading to the loan agreements

As far as procedure is concerned, the first step leading to the loan agreement was a letter of application from the Bui Development Committee to the Ministry of Finance and Economic Planning proposing the use of funds from the China Exim Bank. Second, the Ministry of Finance and Economic Planning formally applied to the China Exim Bank and the Government of China for two lines of credit.[87]

Next, the Ministry of Energy commissioned Coyne et Bellier to conduct a feasibility study. For this, Coyne et Bellier updated their earlier study on the Bui Dam. The Bui Development Committee and Sinohydro then entered into discussions on an EPC contract. Once the EPC contract and the feasibility study had been drawn up, they were sent to the China Exim Bank for evaluation.[88]

Following this, negotiations began between the Chinese government, represented by the China Exim Bank, and the Ghanaian government, which led to draft agreements on a concessional loan and a buyer's credit facility. The Exim Bank also requested a comprehensive EIA report.[89] This was in line with the Exim Bank's *Guidelines for Environmental and Social Impact Assessments of the China Export Import Bank's Loan Projects* of August 2007, Article 13 of which requires the project owner or borrower to submit the EIA study during loan negotiations so that the environmental and social impact may be evaluated and the construction proposal amended if necessary (China Exim Bank 2007). Article 14 of the *Guidelines* stipulates that the *"China EXIM Bank, if necessary, can require the inclusion of environmental and social responsibilities in the loan contract, in order to monitor and restrain the behaviour of borrowers"* (China Exim Bank 2007). The submission of the EIA report to the China Exim Bank was followed by a new round of negotiations between the two sides' lawyers concerning the details of the agreements.[90]

After an agreement between the Chinese and Ghanaian sides had been reached, the Ministry of Finance and Economic Planning presented a memorandum to the Cabinet for its approval. The memorandum contained the financial details of the concessional loan and the buyer's credit facility that had been negotiated between the China Exim Bank and the Ministry of Finance and Economic Planning. After receiving the Cabinet's approval, the loan agreements were sent to Parliament for its consent. The concessional loan agreement was signed in 2007 and the buyer's credit facility in 2008.[91] An interviewee at the Environmental Protection Agency said that the loan agreement had had to refer to World Bank guidelines and that the China Exim Bank had agreed. The loan agreement thus refers

87 Interview A30062010-1.

88 Interview A30062010-1.

89 Interview A30062010-1.

90 Interview A30062010-1.

91 Interview A30062010-1.

to international standards relating to dam safety, resettlement and forestry.[92] An official of the Ministry of Finance and Economic Planning interviewed in June 2010 was adamant that, as a consequence of this negotiation process, China 'did not impose any loans on the Government of Ghana.'[93]

To examine the financial implications for the government before the signing of the loan agreements, the Ministry of Finance and Economic Planning conducted a cost-revenue projection based on the sale of power at a certain rate and a generation capacity of 400MW. For the projection, the Ministry calculated 4.5 US cents per kWh (since the calculation, energy prices have risen to 7 US cents per kWh). One interviewee claimed that, once operational, the Bui project 'can pay for itself, even with the lower cost projection of 4.5 cents per kWh. The Bui Dam loan agreement therefore will not impact debt sustainability.' Currently, the government is paying interest and fees, but when energy generation begins, 'the Bui Power Authority has to reimburse the government.'[94]

According to the Bui Power Authority CEO, to monitor the spending of its money, the China Exim Bank keeps a check on loan disbursement. Articles 15 to 19 of the Exim Bank's environmental guidelines make Exim monitoring of its projects mandatory (China Exim Bank 2007). According to the Bui Power Authority, the China Exim Bank monitors like any other financial institution on the basis of reports submitted by the Bui Power Authority to the Exim Bank through the government (but the Bui Power Authority would not say whether the government was represented in this respect by the Ministry of Energy or the Ministry of Finance and Economic Planning). At any rate, there is no direct link between the Bui Power Authority and the China Exim Bank.[95] In June 2010 an Exim Bank team reportedly visited the Bui Dam site.[96] In the week beginning 21 June 2010 an International Review Board of Consultants (RBC) inspected the Bui Dam and briefed the Chief Executive Officer (CEO) of the Bui Power Authority on 25 June 2010. The Bui Power Authority management did not want to disclose any information on the composition of the RBC or the outcome of the review, stating only that inviting an RBC is 'standard international practice.' The only response to a request for information on the CEO's visit to China from 30 June 2010 for project meetings and manufacturing inspections was simply that the visit concerned the dam, no further details being forthcoming.[97]

Responsibilities of Sinohydro under a Construction Management Plan

The ESIA study suggests that during the construction phase Sinohydro, the contractor, should be required to implement a Construction Management Plan as part of the Environmental and Social Management Plan for Bui. The Construction Management Plan would have a direct effect on the company's work. It sets out the company's responsibilities and so distinguishes them from those of the Bui Power Authority and other Ghanaian

92 Interview A21062010-3.

93 Interview A30062010-1.

94 Interview A30062010-2.

95 Interview A28062010-2.

96 Interview A30062010-1.

97 Interview A28062010-2.

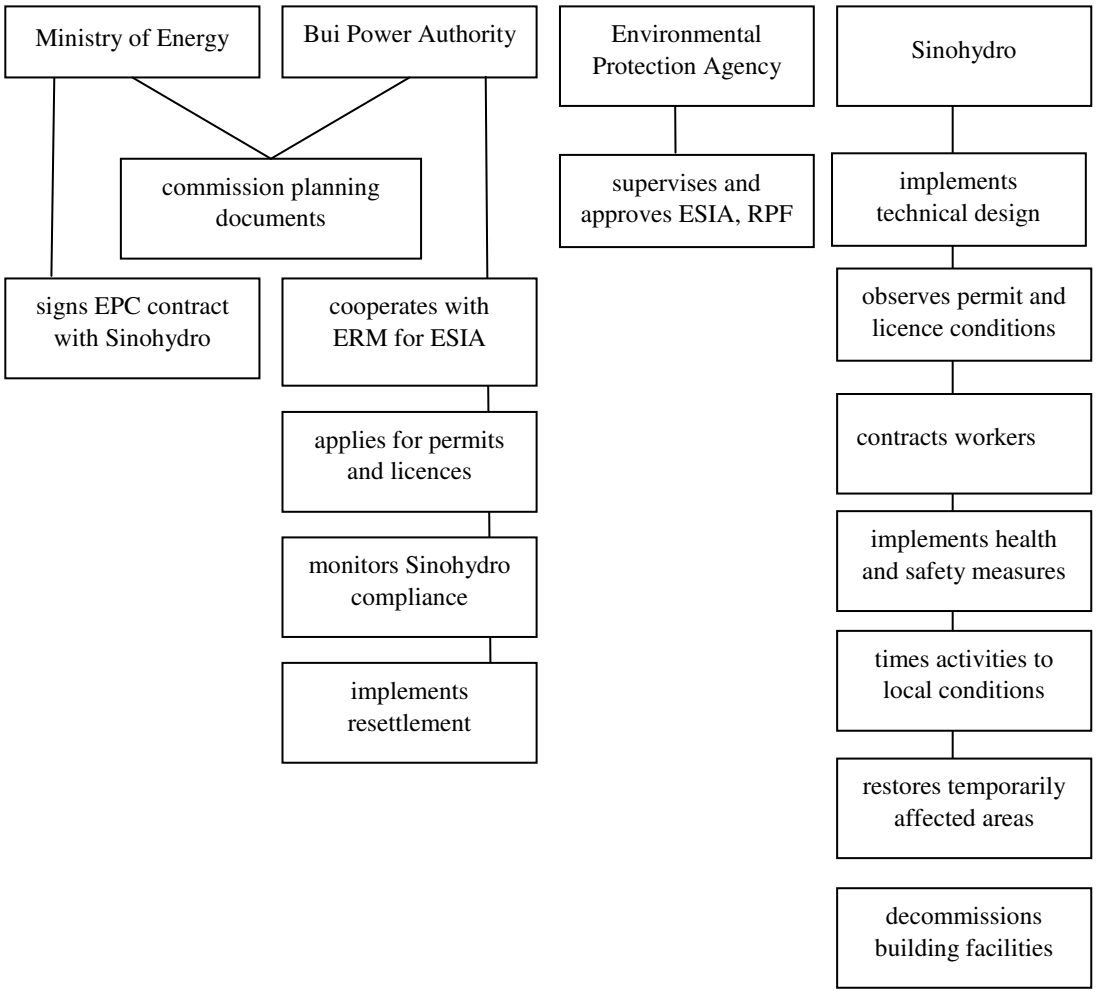
government agencies. According to the Construction Management Plan, Sinohydro is required to consider:

> *"Workforce and local residents' health and safety; 'good housekeeping' – site management practices (eg erosion control, materials storage, maintenance of silt traps and oil separators, waste management, etc); flow regimes during construction (particularly during diversion); emergency response to significant accidents/pollution incidents; site access; siting of temporary structures/work locations/materials sourcing (eg for sand dredging); timing of certain activities (e. g. to avoid the rainy season, or the breeding seasons or migratory movements of animals); site clean-up and restoration of all areas temporarily affected by construction activities, and decommissioning of all construction-related facilities"* (ERM 2007a, 163).

Sinohydro's responsibilities thus relate exclusively to the installation of the dam structures, including associated areas: observing permit conditions imposed on the Bui Power Authority by the regulatory authorities, contracting workers, implementing health and safety measures, timing activities according to local conditions, restoring temporarily affected areas and decommissioning construction facilities. Its responsibilities do not extend to resettlement. The ESIA study suggested that site preparation, which precedes construction, should be done by someone else: a professional logging company should be employed to clear vegetation, and wildlife officials should be responsible for rescuing the hippopotamus population from the inundation zone of the Bui National Park (ERM 2007a, 162–163). However, while the hippos naturally remained the responsibility of Ghana's Forestry Commission, affected villagers claimed that Chinese workers cleared away bush and also cashew farms on expropriated land.[98] Everything other than actual construction-related work, particularly resettlement, is a government responsibility. Figure 3 summarises the division of responsibilities between the Ghanaian government and Sinohydro.

98 Otu-Tei (2009, 83, 103); interview J01072010-2.

Figure 3: Lines of responsibility between the Ghanaian government and Sinohydro



Source: Author's own data and ERM (2007a, 132, 157–159 and 163)

7 Summary and Conclusion

This paper has examined the role of Chinese construction companies and financial institutions in the African dam business, taking the Bui Dam in Ghana as its example. African countries have been providing raw materials for the Chinese economy and investment markets for Chinese companies. The investment activities of these companies receive political support, as evidenced by high-profile meetings at which the investments are announced to the public. The Bui Dam agreement was announced at the 2006 summit of the Forum on China-Africa Cooperation in Beijing.

The problem is not Chinese activity per se, but the nature of Chinese investment and Chinese investment projects. As the Bui Dam was a contentious investment, the Ghanaian government had difficulty finding potential investors. However, as the project had political priority, alternatives for energy production that had previously been considered were cast aside in favour of hydroelectricity. Ghana is in urgent need of an increase in energy capacity, and Sinohydro's reputation for building dams under problematical environmental conditions eventually made it the ideal candidate for the construction of the dam.

Sinohydro has a good international standing as an engineering firm, but the question of environmental sensitivity arises. At least according to Ghana's Water Resources Commission and its Environmental Protection Agency, Sinohydro seems to be abiding by the conditions attached to the various permits issued by these regulatory bodies. However, as these regulatory bodies have a relatively low standing within Ghana's ministerial hierarchy, responsibility for ensuring that provisions concerning environmental supervision are upheld ultimately rests with the Ghanaian president and the Bui Power Authority. While employees of the Water Resources Commission and the Environmental Protection Agency were clearly eager to implement environmentally sound policies, the project, being political, prevented regulatory authorities from interfering or prolonging the planning and construction process.

Importantly, Sinohydro was not involved in the planning of the Bui Dam or in the resettlement. It is responsible for constructing the dam and for such associated aspects as the contracting of workers and the implementation of health and safety measures on the basis of the planning documents and Ghanaian law. Nor, as Bui is a turnkey project, is Sinohydro the project owner, but will hand the dam over to the Bui Power Authority when construction is completed.

However, planning, implementation and monitoring are strong only on paper. The Bui Power Authority, which is responsible for resettlement, has not complied with the recommendations of the Resettlement Planning Framework. This Framework suggested an institutional setup that would have ensured proper consultation processes, which would necessarily have taken a long time to complete. Instead, the Bui Power Authority seems to have opted for a quick resettlement process to prevent the construction of the dam from being impeded by protracted negotiations with affected communities.

To preclude problems associated with careless relocation processes, the Ghana Dams Dialogue was set up (it should be noted however that the Bui dam is only one objective of the Dialogue). The Ghana Dams Dialogue addresses the lack of public consultation by providing a cross-stakeholder platform that involves representatives of affected people,

government and NGOs. The Dialogue has faced the difficulty of overcoming the suspicion of the Bui Power Authority management that it is a preventive tool in the hands of non-governmental organisations. The Bui Power Authority CEO has accordingly denied its relevance to the improvement of resettlement practices, claiming that the comparative improvement in the Bui resettlement process has been due to the experience gained from the failings of the Akosombo resettlement. However, it appears that that improvement can be attributed to the Ghana Dams Dialogue, general pressure from civil society and lessons learnt from Akosombo.

As for the environment, the low standing of regulatory authorities in this sector is a threat to strict environmental supervision and leaves room for speculation as to how closely Sinohydro is adhering to the environmental conditions attached to the permits, given that the Bui Power Authority exercises overall control over Sinohydro's performance. If the Environmental Protection Agency and the Water Resources Commission were given an enhanced role, there would be less room for speculation and uncertainties concerning the strengths of Ghana's environmental policies and Sinohydro would be drawn more closely into a network of supervisory regulations. At the same time, this too points to the need for Sinohydro to improve its own business practices, particularly as there is a lack of Chinese regulations and compliance mechanisms regarding the approval and implementation of overseas investment by China Exim Bank and construction companies.

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