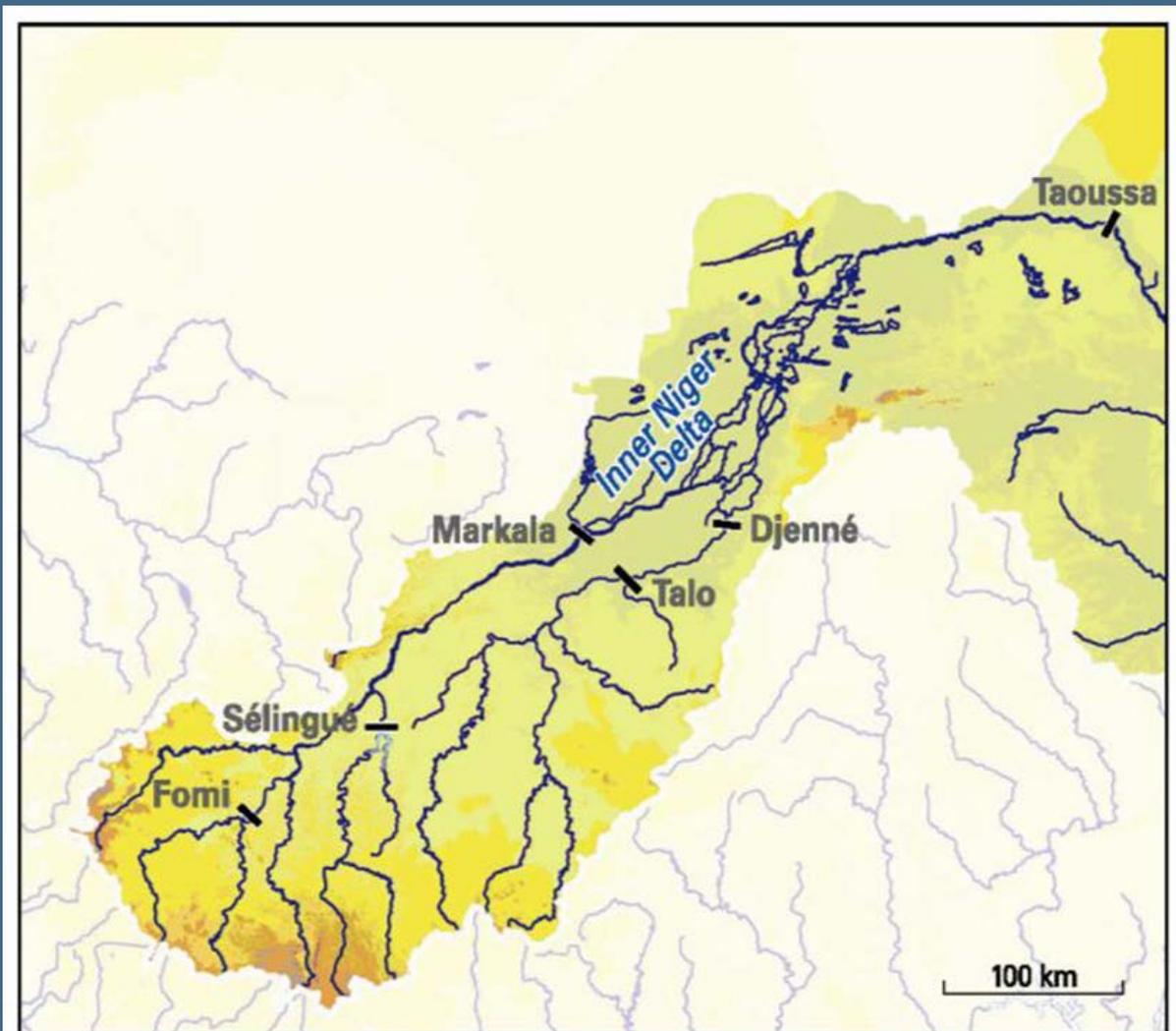


# Advice on Terms of Reference for the Environmental and Social Impact Assessment of the Fomi Project

## GUINEA



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## Advisory Report by the NCEA

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<b>Title</b>	<b>Advice on Terms of Reference for the Environmental and Social Impact Assessment of the Fomi Project – Guinea</b>
<b>To</b>	Ministry of Environment, Water and Forests
<b>Attn</b>	Secretary General Mr Seydou Bari Sidibe, PhD
<b>Request by</b>	Secretary General Mr Seydou Bari Sidibe, PhD
<b>Date</b>	19 December 2018
<b>From</b>	The Netherlands Commission for Environmental Assessment
<b>Members of the working group</b>	Ms M.W.J.A. van Gool (Tanya) – Chair Mr M.E. McClain (Michael) – ecology Mr M. De Bel (Mark) – social–economy Mr E. van Beek (Eelco) – hydrology Mr G. de Gooijer Gregorius) – water governance, Technical Secretary
<b>Resource person</b>	Mr K. Samoura (Karim)
<b>Quality control</b>	Mr A.J. KOLHOFF (Arend)/ Mr R.A.A. VERHEEM (Rob)
<b>Reference</b>	7261

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Contact:

w [www.eia.nl](http://www.eia.nl)

t +3130 234 76 60

e [ncea@eia.nl](mailto:ncea@eia.nl)



25<sup>years</sup> Netherlands Commission for  
**Environmental Assessment**

Ministry of Environment, Water and Forests  
Mr Seydou Bari SIDIBE  
BP 1396 Conakry  
République de Guinée

our reference  
7261  
enquiries to  
Mr Guilherme (Giel) Hendriks  
direct phone no.  
+31 30 234 76 56

Date: 19 November 2018

Subject: *Draft Advice on the Terms of Reference for the  
Environmental and Social Impact Assessment of the Fomi Project  
in Guinea*

Dear Secretary General, dear Dr. Sidibe,

By letters dated 19-1-2018 and 6-7-2018, you requested the Netherlands Commission for Environmental Assessment (the NCEA) to review the draft Advice on Terms of Reference for the Environmental and Social Impact Assessment of the Fomi Project.

It is my pleasure to submit herewith the draft advice for your comments. I am looking forward to receive your comments within a maximum two weeks as we will make the final advice publicly available on 4 December 2019.

I would like to draw your attention to the following point. The proposed new location of the dam at a location known as Folon differs from the earlier location, known as Fomi, that was studied earlier in the ESIA published in 2010. As a result of the newly proposed location, some additional studies need to be carried out and therefore, the new ESIA study is more than the intended update of the ESIA study published in 2010.

I would like to repeat once more that the NCEA is willing to offer you our services to review the draft ESIA report.

Yours sincerely,

[was signed]

Ms M.W.J.A. (Tanya) van Gool  
Chair of the Working Group



A. v. Schendelstraat 760  
3511 MK Utrecht  
The Netherlands

t +31 (0)30 2347660  
e [ncea@eia.nl](mailto:ncea@eia.nl)  
w [eia.nl](http://eia.nl)

IBAN NL30RABO0394334973  
CoC 41185216  
VAT NL8004.015.42.B.01

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## List of abbreviations

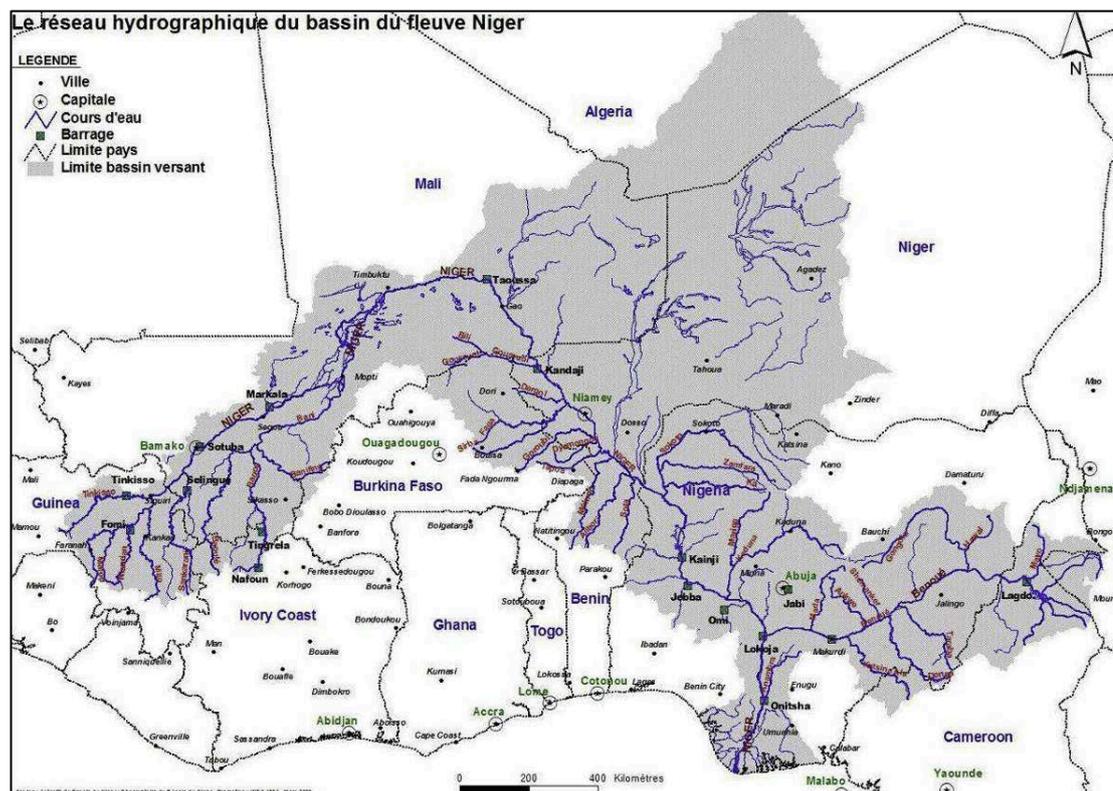
BGEEE	Bureau Guineen d'Etudes et d'Evaluation Environnementale
CIWA	Cooperation in International Waters in Africa
DOE	Débit Objectif d'Étiage, low waterflow target
EDF	Électricité de France
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan (PGES in French)
GoG	Government of Guinea
MCA	Multi-criteria analysis
NBA	Niger Basin Authority
OMVS	Organisation pour la mise en valeur du fleuve Sénégal, Organisation for the Development of the Senegal River
PADD	Plan d'Action de Développement Durable, Sustainable Development Action Plan
PDL	Local development plan
PMF	Probable Maximum Flood
PMP	Probable Maximum Precipitation
PRI	Plan de Réinstallation Involontaire, Involuntary Resettlement Plan
SCBA	Social Cost Benefit Analysis
SDAP	Sustainable Development Action Plan
ToR	Terms of Reference
YREC	Yellow River Engineering Consulting

# 1. Introduction

## 1.1 Setting of the Project

The initiative is a multi-purpose dam project located on the Niandan River in Guinea at a location known as Folon. The Project is known as the Fomi Dam. To better understand this initiative, first the geographic and institutional context will briefly be described.

The Niger River is the most important river of West Africa. Its source is in the Guinea Highlands in southeastern Guinea. It runs through Mali, Niger, on the border with Benin and then through Nigeria, discharging in the Niger Delta, into the Gulf of Guinea and Atlantic Ocean. The Niger River floods annually. This starts in September, peaks in November, and finishes by May. A geographic characteristic of the river is the Inner Niger Delta located in Mali. This is an area of braided streams, marshes, and lakes almost the size of the Netherlands. The seasonal floods make the Delta suitable for fishing and agriculture.



Map 1. The Niger River Basin. (Source: Niger River Basin Climate Risk Assessment, Final Report, Volume 1, Main Report, 2014).

In 1980, the Niger Basin Authority (NBA) was established to promote cooperation among the nine member countries and ensure integrated development of resources<sup>1</sup>. During a meeting of the board of ministers of the NBA in July 2007, the decision was made to manage the

<sup>1</sup> The NBA is an inter-governmental, sub-regional organisation and comprises of the following nine states: Benin, Burkina Faso, Cameroon, Chad, Ivory Coast, Guinea, Mali, Niger and Nigeria.

basin with a series of three dams: Fomi (Guinea), Taoussa (Mali) and Kandadji (Niger). In April 2008, to further coordinate their efforts, the NBA adopted the Charter for the Niger, as well as the Sustainable Development Action Plan (SDAP/PADD), a basin-wide strategic investment plan for the period 2008–2027. The Charter promotes Integrated Water Resources Management, defines procedures for the examination and approval of new projects, provides a framework for the allocation of water resources between sectors, commits to maintain the integrity of aquatic ecosystems and defines mechanisms for the settlement of disputes between countries and for user participation. The SDAP/PADD includes the construction of the three above mentioned major dams and the rehabilitation of dams in Nigeria (Kainji and Jebba) and in Cameroon (Lagdo). In 2010, the riparian countries agreed, during a meeting of the Heads of State in Abuja, that the ABN/NBA will be the project-manager ('maître d'oeuvre') for the ESIA's for projects with a transboundary impact.

Since the 1950s the upper parts of the Niger River in Guinea have been considered a potential location for a hydropower project. In the last decades this idea evolved into the initiative to develop a multi-purpose dam in the Niandan River. This resulted in a series of feasibility studies and an Environmental and Social Impact Assessment study (ESIA) published in 2010 (see table 1 for an overview of these initiatives and studies). These studies differ from each other concerning, the proponent (NBA or Government of Guinea), objectives and location of the dam (Fomi, Moussako and Folon).

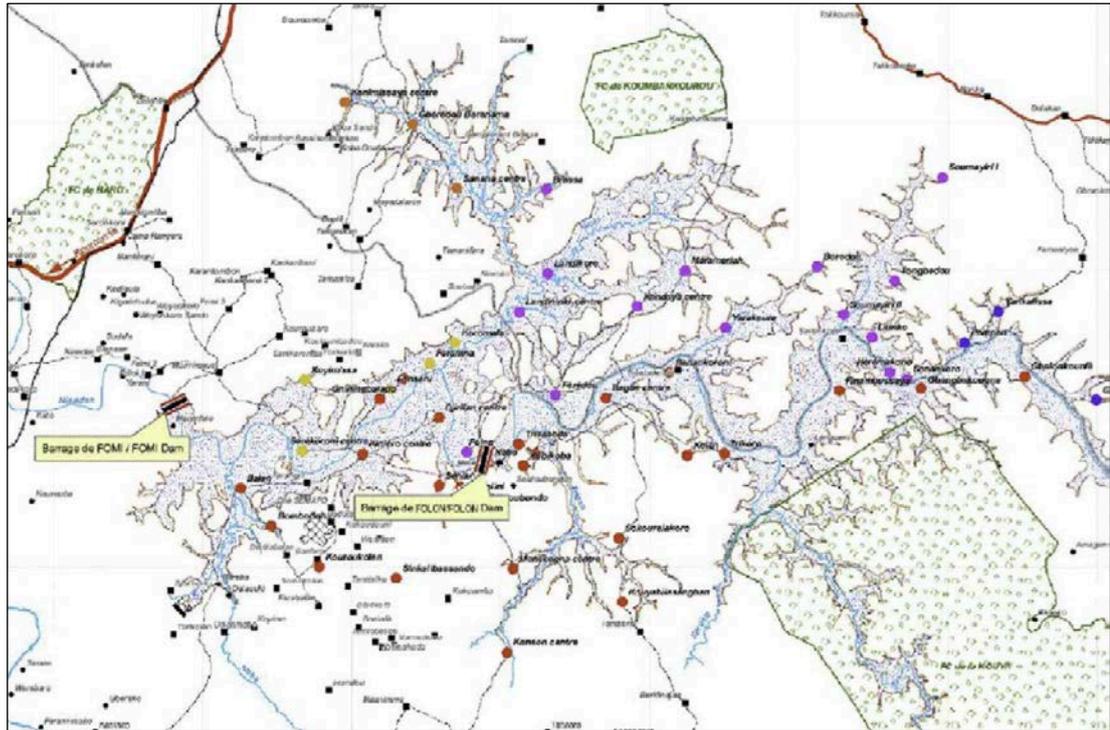
The following feasibility and ESIA studies were chronologically conducted since 2010:

1. In 2010 the NBA commissioned a feasibility study and an ESIA for the Fomi Dam at a location known as Fomi both prepared by Coyne et Bellie and funded by the European Union.
2. In 2013 a study initiated by SOBAFO ('Société du barrage hydroélectrique de Fomi Itée') executed and paid for by SNC Inc. was made to assess whether private development of the dam at the location Fomi could be feasible. It was concluded that this was not possible. SNC Inc. also conducted earlier feasibility studies in 1988 and 1999.
3. Through its representing agency in Guinea, the 'Directorat National pour le Genie Rural' (Ministry of Agriculture), the NBA started an update of their 2010 feasibility study in 2015. One of the reasons was that the initial location of the dam known as Fomi and identified in the 2010 feasibility study, required the displacement of a small town. The new feasibility study was executed by a consortium (TEF, led by Tractebel) and finalised in April 2018. The NBA also commissioned a scoping study for the update of the ESIA 2010 study. This scoping study for the ESIA has been finalised in April 2018 and was carried out by AECOM & Coyne et Bellie). In these new studies an alternative location, approximately 20 km upstream of the Fomi location was identified. This location known as Moussako would result in the displacement of fewer people. Drafts of the feasibility study and the scoping study were presented and discussed during a stakeholder workshop in December 2017 in Conakry.  
Both studies were funded by the World Bank. The World Bank stopped supporting this process, leading to an incomplete ESIA update (only the scoping study had been done).
4. Through the Ministry of Water and Energy, the Government of Guinea started a parallel process in 2016. A feasibility study was conducted and finalised in May 2017 by Yellow River Engineering Consulting (YREC) on building a dam at a location known as Folon. This Folon location is about 100 meters upstream of the Moussako location, identified and studied as described under number 3. The NCEA was informed that this feasibility study was conditionally approved by the Ministry of Water and Energy (conditions are the

geological and geo-technical aspects). The Guinea Ministry of Water and Energy prepared a draft ToR for the ESIA (June 2018) that still needs to be approved by the Ministry of Environment, Water and Forests of Guinea.

<b>Year</b>	<b>Proponent</b>	<b>Locations</b>	<b>Study/studies (by)</b>
1951	Électricité de France (EDF)	Fomi	Feasibility study (EDF)
1988	Ministry for Natural Resources and Environment, Government of Guinea	Fomi	Feasibility study (SNC Inc.)
1999	Ministry for Natural Resources and Environment, Government of Guinea	Fomi	Feasibility, update (SNC Lavalin Inc)
2010	Niger Basin Authority	Fomi	Feasibility study & ESIA study (Coyne et Bellie, 2010)
2013	SOBAFO	Fomi	Feasibility study (SNC Lavalin Inc, 2013)
2015–18	Niger Basin Authority, Funded by the World Bank.	Fomi & Moussako (=Folon)	Final feasibility study (TEF, April 2018).
	Niger Basin Authority, Funded by the World Bank.		Final scoping study for ESIA (AECOM & Coyne et Bellie, April 2018). Funding for the remainder of the ESIA study was not available.
2016–18	Ministry of Water and Energy, Government of Guinea	Folon (=Moussako)	Draft feasibility study (YREC, May 2017). Final feasibility study has been finalised in 2018 but was not provided to the NCEA.

Table 1: Overview of initiatives for a dam project at, or close to Fomi.



Map 2. Image showing the reservoirs linked to the old location of the Fomi Dam, known as location Fomi, and the reservoir in connection to Moussako/Folon location of the dam (Source: YREC, 2017).

## 1.2 The proposed project and ESIA

The proposed project is initiated by the Government of Guinea in 2016, it is the latter of the four initiatives described above and is known as the “Barrage à but multiples de Fomi sur le Niandan” (hereafter ‘the Project’). The characteristics of the Project are as follows:

- The location of the dam is not mentioned. However, the Director General responsible for Fomi at the Ministry of Water and Energy verbally explained that the location of the dam is known as Folon. The location Folon has been described and studied in the draft feasibility study prepared by YREC (May 2017) see Map 2 for the location;
- Construction of a rock-filled dam with a maximum height of 48 meters at the maximum level of 396 meters resulting in a reservoir of 4.911 billion m<sup>3</sup> with a regulation volume of about 3.6 billion m<sup>3</sup>;
- Construction of a hydroelectric plant of 90 MW nearby the dam site;
- Borrow pits for cement, boulders, gravel, sand, clay etc.;
- Connection to power grid, 20 km downstream of the dam site, to the interconnection point Linsan–Fomi;
- Additional infrastructure roads, workers camp etc.

The costs for the Project are not clear but the feasibility study conducted in 2010 estimated the costs for construction at US\$ 500 million.

The draft feasibility study for the Project was conducted by Yellow River Engineering Consulting (YREC) and was finished in May 2017. The GoG signed an agreement with YREC for the construction of the dam in September 2017. YREC has started preparatory works at the location of the dam such as preparing an access road to the proposed dam site, building

a village for the workers and identifying irrigation zones in Guinea downstream of the dam<sup>2</sup>. The decree 199/PRG/SGG/89 (GoG, November 1989) requires that this project is subject to an ESIA. The proponent for the ESIA is the Directorate General for the Fomi (DG Fomi), which is part of the Ministry of Water and Energy in Conakry. The competent authority for ESIA is the Minister for Environment, Water and Forests. This minister must approve the terms of reference for the ESIA, review the quality of the ESIA report and provide a 'certificat de conformité'. According to the decree 199/PRG/SGG/89, a 'certificat de conformité' is a condition for the start of the construction of this project.

### 1.3 Request for advice and approach by the NCEA

The Secretary General of the Ministry of Environment, Water and Forests in Conakry requested the Netherlands Commission for Environmental Assessment (NCEA) in two consecutive letters dated 19<sup>th</sup> January 2018 and 6<sup>th</sup> July 2018, to provide an advice on the draft Terms of Reference (ToR) for the ESIA for the Project, see Appendix 1 for the two letters. These draft ToR have been prepared by the Ministry of Water and Energy.

The purpose of this advice is to review the quality of the draft ToR for the ESIA of the Project against the IFC performance standards and general good practice and provide recommendations to adjust the ToR in order to meet these standards.

This advice is prepared by a working group of experts. For more information on the working group and the resource person see the colophon.

On 19<sup>th</sup> November 2018 a draft of this advisory report has been sent to the requesting authority for comments. No comments have been received.

In order to collect additional information two preparatory visits by respectively the technical secretary and a resource person of the NCEA have been made to Conakry in April and August 2018. A site visit has not been conducted for the preparation of this advisory report but is foreseen when the Ministry of Environment, Water and Forests will request the NCEA to review the draft ESIA study.

The following guidelines and standards have been used as a reference framework for the review of the draft ToR:

- Government of Guinea; The decree 199/PRG/SGG/89 (November 1989);
- The World Bank Environmental and Social framework (October 2018);
- The World Bank IFC performance standards (2012);
- The standard to be applied by the World Bank for ESIA; OP/BP 4.01 Environmental Assessment and OP/BP 4.37 Safety of Dams (2013);
- International good practice such as the criteria described in: World Bank; Latin America and Caribbean Region Sustainable Development Working Paper 16; Good Dams and Bad Dams: Environmental Criteria for Site Selection of Hydroelectric Projects (November 2003);
- ECOWAS (June 2017) *Directive on the development of hydraulic infrastructures in West Africa*;

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<sup>2</sup> Information from DG Fomi.

- Niger Basin Authority (October 2017); Quality assurance guide for environmental and social impact assessment (ESIA) studies for projects with a transboundary impact in the Niger Basin (Under preparation);
- World Bank Group (February 2018) Good Practice Handbook. Environmental Flows for Hydropower Projects Guidance for the Private Sector in Emerging Markets;
- IFC (March 2018) Good Practice Note. Environmental, Health, and Safety Approaches for Hydropower Projects.

The use of these guidelines and standards was confirmed by the Director General of the Bureau Guineen d'Etudes et d'Evaluation Environnementale (BGEEE) in a meeting on 20 August 2018.

The NCEA has reviewed the following document: Draft ToR, 'Termes de Reference Actualisation de l'etude d'impact environnemental et social du barrage a buts multiples de Fomi en Guinee' (no date, received on 6 July 2018).

In addition, the NCEA has taken notice of the following documents (in chronological order):

- ABN (August 2018) Rapport circonstantie sur les études de faisabilité du projet de barrage a buts multiples de Fomi;
- AECOM (April 2018) Scoping study Fomi, final version;
- Tractebel (April 2018) Feasibility study Fomi, final version;
- Niger Basin Authority (October 2017); Quality assurance guide for environmental and social impact assessment (ESIA) studies for projects with a transboundary impact in the Niger Basin (Under preparation);
- YREC (May 2017) Feasibility study main report;
- European Geosciences Union General Assembly 2016, EGU Division Energy, Resources & Environment, ERE Regional assessment of the hydropower potential of rivers in West Africa Harald Klinga, Philipp Stanzela, Martin Fuchsa, Energy Procedia 97 (2016) 286 – 293;
- Ministry of Agriculture (2015) PV Réunion SG;
- NBA (2014) Niger River Basin Climate Risk Assessment, Final Report, Volume 1, Main Report;
- Tractebel e.a. (2014) Etude sur le développement de l'hydroelectricité de petite et moyenne puissance en Afrique Subsaharienne;
- Protocole d'Accord entre le gouvernement de la republique de Guinée et le gouvernement de la republique de Mali, portant Création du Comité Interministériel de Concertation pour la mise en oeuvre du projet de barrage à buts multiples de Fomi (March 2014);
- GWI (2013) Étude sur la faisabilité d'une convention entre l'état et les populations affectées par le barrage de Fomi en République de Guinee;
- GWI (2013) Etude sur le partage des recettes issues de la vente de l'électricité du barrage de Fomi avec les populations affectées (2013);
- Wymenga e.a. (2012) Water sharing in the Upper Niger Basin;
- ABN (2011) Annex No1 à la Charte de l'Eau du Bassin du Niger Relative à la Protection de l'Environnement;
- Groupement Coyne et Bellier (March 2010) Projet d'aménagement du barrage de Fomi, etude d'impact environnemental et social;
- ABN (Janvier 2010) Étude relative à la maîtrise d'ouvrage des projets et programmes dans le bassin du Niger, Rapport final;

- ABN (January 2010) Study on the management of dams in the Niger River Basin – proposed Terms of Reference;
- ABN (April 2008) Niger Basin Water Charter;
- ABN (2007) Élaboration du plan d'action de développement durable du bassin du Niger, Phase II: Schéma directeur d'aménagement et de gestion, Rapport définitif.

Parallel to the preparation of the Project by the Guinea Ministry of Water and Energy, the NBA is developing practically the same project at practically the same location. The NBA initiated project started earlier and already resulted in a feasibility study (Tractebel, April 2018) and a scoping study for the ESIA has been finalised (AECOM, April 2018). The Project initiated by the Guinea Ministry of Water and Energy did not yet deliver these studies. The NCEA has been informed that a revised feasibility study by YREC for the Project has been finalised in 2018 but the study has not been made available. Because of the similarities between these two projects the NCEA used the scoping study for the ESIA (AECOM, April 2018) as input for the review of the draft ToR for the Project.

## 2. Findings and recommendations

### 2.1 Main conclusion

The NCEA has reviewed the draft Terms of Reference for the ESIA for the Project and has studied a large number of additional documents. The NCEA would like to draw the attention to the following main observations:

- The Project will have significant transboundary effects. Guinea has signed agreements with the NBA and Mali on how to co-operate in this type of projects, including the option of shared operation and ownership of the dam. The draft ToR states that the task as mentioned in the agreements the Government of Guinea (GoG) has signed with NBA, will be carried out. However, it is not yet clear what will be the precise role of the NBA and the GoG in the ESIA procedure and process. The bilateral agreement<sup>3</sup> between Guinea and Mali is not addressed in the draft ToR, nor is the issue of shared ownership and management of the dam.

In section 2.2 the NCEA will provide some recommendations to be incorporated in the ToR and subsequently the planned ESIA study.

- The NCEA is of the opinion that the following issues need to be further elaborated in the ToR and subsequently in the planned ESIA study and recommends:
  - Objectives and alternatives;
  - Management and operation of the dam;
  - Social Cost Benefit Analysis;
  - Safety of the dam;
  - IFC Performance standards.

These issues are further elaborated in the sections 2.3 to 2.7 and recommendations are provided. This means that issues that are not mentioned in this advisory report are considered to meet good practice ESIA standards such as the proposed RAP.

### 2.2 International cooperation and governance

The NCEA took note of the international agreements that are in place for transboundary projects in the Niger Basin. The relevant agreements and the consequences for the ESIA for the Project are briefly described.

- In 2008 the Water Charter for the Niger Basin was agreed between the Heads of State of the Niger Basin. This document defines the Niger Basin as an international water and it contains a set of procedures for cooperation between the riparian countries in a strategic plan that was signed by the member states. The member states agreed that the Fomi

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<sup>3</sup> Protocole d'Accord entre le gouvernement de la republique de Guinée et le gouvernement de la republique de Mali, portant Création du Comité Interministériel de Concertation pour la mise en oeuvre du projet de barrage à buts multiples de Fomi, 12 March 2014.

Dam will be constructed in the framework of integrated water resources management. The strategic plan 2008–2027 contains a hierarchy of goals for the use of the Fomi Dam.

- During the 2010 summit of Heads of State<sup>4</sup>, the NBA was mandated to conduct the following elements of the project management for transboundary projects:
  - in consultation with the countries involved, execution of the ESIA for transboundary projects and if needed technical and social studies, as well researching their financing and the M&E of new projects and programmes<sup>5</sup>.
  - the set up and monitoring of the management of transboundary hydraulic projects. See annex 2 for the official text.
- In 2014 an agreement was signed between the ministers of water and energy from Guinea and Mali. The purpose of the cooperation was to identify funding for the Project and for studies and works related to the Project.

The NCEA assessed to what extent these agreements have been translated in the draft ToR and noticed that:

- The NBA gets a role in (i) quality assurance of the ESIA process during three moments in time and (ii) facilitation of international consultation meetings. The role of the NBA (see annex 2) to conduct the ESIA is not acknowledged;
- Consultation or cooperation with Mali is not addressed.

In addition, the NCEA has been informed that:

- The NBA is presently not involved in the development of the Project nor in the development of the ESIA. This is not in accordance with the above described agreement of the Water Charter (2008) and Heads of State summit (2010).
- Since December 2017 the ministry responsible for water in Mali has not been informed about the development of the Project.
- In 2014 a study was proposed to analyse the possible institutional arrangements for projects of common interest (ToR were validated by Guinea and Mali in August 2014).
- A protocol is currently being developed by the NBA for ESIA procedures for projects with a transboundary importance.
- The Charter for the Niger will be complemented with an Annex 5 on the operation and ownership of infrastructure. For this purpose a project will be started soon, financed by Germany. This project and its outcomes are relevant for the future status and operation of the Fomi dam.

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<sup>4</sup> 9me sommet des chefs de gouvernement, Abuja, décisions du sommet, ABN, 2010.

<sup>5</sup> Niger Basin Authority (October 2017); Quality assurance guide for environmental and social impact assessment (ESIA) studies for projects with a transboundary impact in the Niger Basin. This guideline is under preparation and not yet formally adopted.

The NCEA concludes that this situation is not in accordance with the agreements as described above, but that there is a broad willingness and potential to correct this, with the main elements already prepared.

The NCEA advises the Government of Guinea to jointly elaborate with the NBA a detailed procedure for the entire ESIA process in which the roles and responsibilities of the involved countries/authorities are clear and agreed upon, making use of the protocol that the NBA is developing for this purpose.

- The NCEA advises the Government of Guinea to establish consultation with Mali through the NBA in order to avoid a parallel process in which the NBA and other relevant countries are not represented.
- The NCEA is of the opinion that the arrangements with regard to operation, financing and ownership of the dam can benefit from the following two studies that are scheduled and need to be implemented (i) the study on possible institutional arrangement for projects of common interest and (ii) Annex 5 of the Charter for the Niger on operation and ownership of infrastructure. In order to optimally benefit of these studies for the ESIA, the NCEA recommends giving priority to the finalisation of these studies.

## 2.3 Objectives and alternatives

The NCEA noticed that a hierarchy of objectives of the Project is presented in the draft ToR, which is based on the goals for the Fomi Project as identified, adopted and presented in the PADD (2008), namely:

- Contribute to satisfying the Niger's low water flow and thus ensure the essential needs of water supply and livestock watering;
- Guarantee the good ecological status of the water course;
- Develop irrigated agriculture, particularly in periods when water is a limit, particularly at the Office du Niger, in Mali;
- Develop fishing;
- Improve navigation conditions;
- Produce hydroelectricity, as a by-product of the earlier uses.

The NCEA would like to make two comments concerning these objectives (of the dam) and their hierarchy as these are relevant for the assessment of the alternatives:

- In the draft ToR on page 27, activity 19, "irrigation" is mentioned as the primary reason for constructing the dam. The NCEA has understood 'primary reason' as 'the main reason'. This is not in accordance with the approved hierarchy of the six objectives.
- The objectives have not been operationalised in the draft ToR. Operationalisation is necessary to be able to assess in the ESIA to what extent these objectives can be achieved or whether they are complementary and/or conflicting.

In the draft ToR (par. 2.3.1.) it is stated that alternatives must be examined at two different levels and at two different points in the study. First, there should be an analysis of the design options of the Project. Secondly, there should be an analysis of the alternatives of implementation of the Project for the selected design option. Analysis of implementation alternatives will be done based on (1) the livelihoods of the project-affected populations (whether physically displaced or not), (2) the flow options to be released according to

ecological and socio-economic requirements, and (3) design and implementation of the various direct and indirect project sites.

The NCEA is of the opinion that the alternatives as mentioned in the draft ToR are incomplete, unclear and not well structured. There is no explanation as to what is meant by design alternatives. In our view, the analysis of implementation alternatives is a combination of (1) alternatives for mitigation and compensation, (2) alternatives for operation and management of the dam and (3) it is not clear what is meant with direct and indirect project sites.

Climate change possibly will have an effect on the discharge of the Niandan and Niger River. As a consequence, it might have an effect on the attainment of the objectives and alternatives. In the draft ToR these possible causal effects are insufficiently addressed.

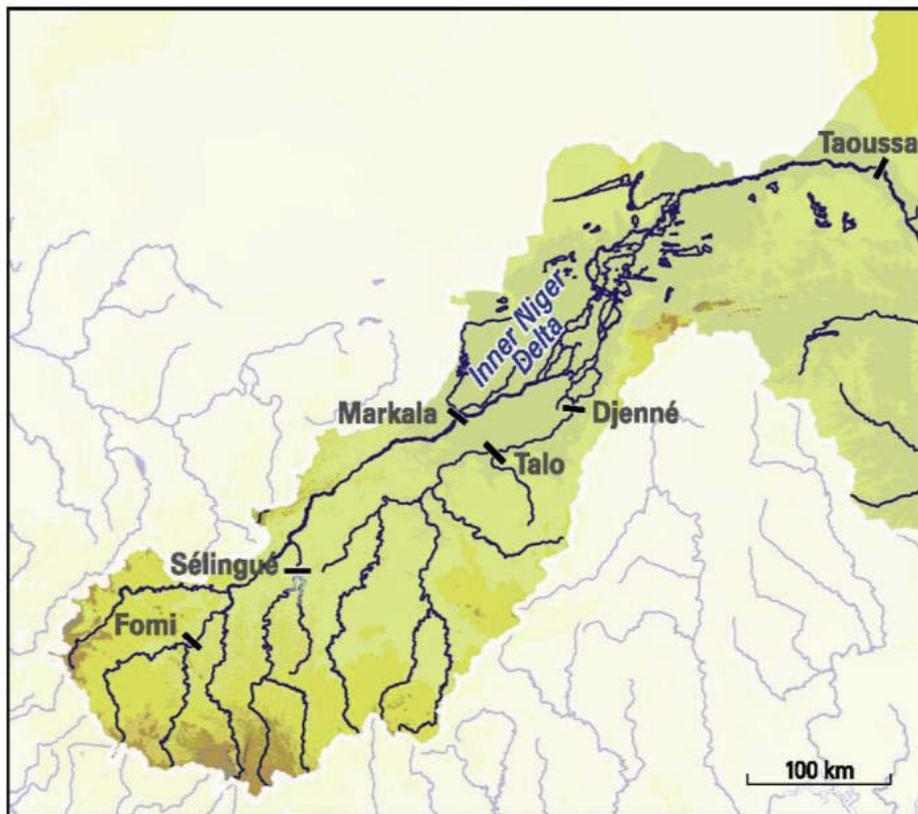
The NCEA supports the recommendation made in the report of the December 2017 workshop, where the findings of the draft scoping study (AECOM, December 2017) have been presented, that in addition to the proposed dam height of 396 meters, two alternative maximum heights of 402 and 388 meters need to be included in the final ToR and elaborated in the ESIA. For each of the three alternatives the following is required: Operationalising of the six objectives is necessary to be able to assess in the ESIA (i) to what extent these objectives can be achieved and whether they are complementary and/or conflicting and (ii) the assessment of the impacts. Further guidance for assessing impacts is provided in section 2.5:

- Optimise the achievement of the hierarchy of objectives for the following situations: a dry, average and wet year as well as for the climate change projections for the year 2050 (also known as a climate change risk assessment);
- Assess to what extent objectives are complementary and or conflicting.

The NCEA recommends determining the impacts of the specific outlet facility on the environment, in particular on fish and sediment. Alternatives to be considered are location (high, low), type and operation (will this outlet be used for sediment flushing?).

## 2.4 Management and operation of the dam

The first four out of the six objectives of the dam, mentioned in the draft ToR, will benefit from a so-called "*artificial flood*" that is planned to be part of the management of the proposed dam. The draft ToR provides good guidelines for modelling of this artificial flood. The model can be used to assess the pros and cons. To what extent these first four objectives of the dam will be achieved is for a large part determined by the operation and management of the proposed dam. However, the effect of the operation and management of the proposed dam on the Inner Delta in particular, is to a large extent determined by the operation and management of the proposed dam in combination with the other dam in the upper part of the basin: the Sélingué dam in Mali.



Map 3. Dams in the Upper Niger Basin (operational Markala, Sélingué and planned Fomi, Talo and Djenné) From: *Water sharing in the Upper Niger Basin*, Wymenga e.a., 2012.

The NCEA noticed that in the draft ToR the importance of a combined operation of the proposed dam, Sélingué dams and the works at Markala in the upper part of the basin is recognised but the development of a joint management plan is not foreseen nor is shared ownership considered.

The NCEA is of the opinion that to achieve the objectives through effective management of the water by the proposed dam, the Sélingué and the Markala works in the upper basin, one can think of two main options:

- No shared ownership by the governments of both countries but one integrated management plan;
- Shared ownership by the governments of both countries and one integrated management plan.

The latter option has proven to be successful in the management of the Senegal River via the Organisation for the Development of the Senegal River (OMVS), a structure in which both Guinea and Mali participate.

The NCEA noticed that the NBA already carried out two studies focusing on (i) the management and ownership of projects and programmes in the Niger River<sup>6</sup> and (ii) the management of the Fomi Dam jointly with other dams in the upper part of the Niger Basin<sup>7</sup>. In the framework of the NBA, a study has been proposed to look specifically at the possibility of shared ownership and the ways in which integrated management of the Fomi Dam and

<sup>6</sup> ABN, 2010: Asset management & ownership responsibility for the projects & programmes in the Niger River Basin.

<sup>7</sup> ABN, 2013: Study on the coordinated operation of large regulating dams.

other dams could be organised. The study was planned to be executed with funding by the Cooperation in International Waters in Africa (CIWA), but so far, the study has not been carried out.

The draft ToR mentions cost–benefit sharing as an option: .... *the high cost of social and environmental measures (on the basis of available information), the role of Fomi in the electricity generation and sharing system in Guinea and the sub region, and considering that most of the expected benefits are in Mali (cost–sharing and benefit–sharing issue).*

To operationalise cost–benefit sharing, the suggested Social Cost Benefit Analysis (see section 2.6) can provide the necessary guidance.

The NCEA recommends that as part of the ESIA, a study needs to be executed in which the pros and cons of the following two options will be compared:

- No shared ownership by the governments of both countries but the development of an integrated management plan for the proposed dam, the Sélingué dam and the works at Markala;
- Shared ownership by the governments of Guinea and Mali and the development of an integrated management plan for the two dams and the Markala works.

This study can build upon the existing studies and the preparatory documents of the study that was intended to be funded by CIWA and is recommended to be conducted under the responsibility of the NBA.

## 2.5 Social Cost–Benefit Analysis

In the draft ToR the execution of a multi–criteria analysis (MCA) as part of the ESIA is foreseen and aims to support strategic decision making. Although an MCA is a very useful instrument to assess impact of a project along a very diverse set of criteria for a very diverse group of stakeholders and environmental aspects, the MCA itself is often compromised by implementers who may not have the same opinion or interest as the stakeholders affected by the specific project. Furthermore, the MCA does not provide a comparison of the Project in a transparent, univocal and easy to understand set of indicators, as would be the case in an economic analysis where all effects are translated into a monetary effect. Additionally, an MCA does not take into account time discounting in identified effects. Therefore, in the opinion of the NCEA, the appraisal of the project alternatives should be supplemented with a (social) economic cost–benefit analysis in which distributional effect over the different stakeholders should be adequately addressed, especially the effects, positive as well as negative, on the Inner Delta of the Niger in Mali. It should be noted that in this particular case important effects from the Project fall outside the national borders of Guinea. While these negative project effects should be included in the evaluation (as these are a direct effect of the Project), it should exclude benefits from future interventions that are not actually part of the current investments (e.g. future developments in irrigation infrastructure in Mali, as these are not within the current project).

The NCEA recommends to make use of a Social Cost Benefit Analysis, in addition to the Financial Cost Benefit Analysis<sup>8</sup>. In a Social CBA, (SCBA) the wider social and economic

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<sup>8</sup> A financial CBA typically analyses the direct cash flows of costs and revenues related to the proposed project alternative and financial investment decision for those directly responsible implementing the project.

welfare implications of the investment decision to all relevant parties in society (not only the party implementing the Project) are taken into consideration in Guinea and Mali. Very important here are the spatial and temporal dimensions underlying all the impacts, which may (and usually do) fall outside the project area and time frame. The construction of the dam causes direct effects on downstream water users. Care should be taken that some social and economic impacts typically fall outside existing economic market systems and have no market price with which the impacts can be valued and hence be made comparable in money terms. Examples of such wider social and economic impacts include, for instance, the change in employment conditions in a relatively underdeveloped and poor area or the impacts on the natural capital resources in an area like land and water, from which also other stakeholders (e.g. fishermen, cattle owners) benefit. For some of the project effects, like the various water ecosystem services, it may be relatively easy to value these with the help of production functions (residential water supply, crop farming, livestock, fishery etc.). However, for other services it will be difficult to place a monetary value, for example on the biodiversity and the function of the inner delta for migratory birds. These aspects can be easier dealt with in the MCA, providing adequate input from the relevant stakeholders will be catered for.

In conclusion, besides the planned execution of a MCA the NCEA recommends carrying out a SCBA. The NCEA is of the opinion that given the objectives of 'the Project' the execution of a SCBA as part of the ESIA is an appropriate tool to integrate socio-economic concerns with the relevant ecological aspects and inform the involved parties on all the costs and benefits. The SCBA also provides important information with regard to developing and agreeing on cost-benefit sharing mechanisms that are already planned to be elaborated in the ESIA according to the draft ToR. In particular, it is mentioned in the draft ToR that the evaluation of costs of the ESMP (PGES), PRI and PDL and cost-benefit sharing mechanisms securing the long-term payment of royalties to communities, resettled due to the Project, should be taken into account. In this respect, reference is made to the IUCN / GWI Consortium Cost-Benefit Sharing Study Report<sup>9</sup>.

The NCEA would like to emphasise the importance of the following issues in the SCBA that should be part of the ESIA:

- For each of the three alternative heights of the dam a SCBA needs to be made. The present situation without a dam can be used as a reference situation;
- Geographical; demarcation of the areas that will be influenced by the Project. In section 2.4.2 in the draft ToR all relevant areas have been identified;
- Identification of main groups of users; The size of each of these groups needs to be estimated and other relevant groups, if present, would need to be identified and taken into consideration in the ESIA study. It is important to realise that the identified stakeholder groups may not be homogeneous groups. The scale and impact of activities may be different for people with different socio-economic status. Also, women and men in the same socio-economic or stakeholder group may undertake different tasks and thus experience impacts differently. Different people within the same stakeholder group may therefore be affected differently by the Project or its alternatives.

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alternative. This is what seems to have been the prime instrument to assess and support decision making regarding the financial efficiency of, for example, the new dam.

<sup>9</sup> Etude sur le partage des recettes issues de la vente de l'électricité du barrage de Fomi avec les populations affectées, 2013 GWI/IIED.

- Ecosystem services; In section 2.3.6 point 46 of the draft ToR, it is stated that in parallel to the ESIA, a study of framing, hydrodynamic modelling and development of a valuation model of ecosystem services and subsistence in the Inner Niger Delta will be carried out. The NCEA is of the opinion that the output of this study can be used as an input for an SCBA that is part of the ESIA.
- To enable the development of cost–benefit sharing mechanisms, the SCBA needs to make a distinction between the cost and benefits for Mali and Guinea, and if relevant, also for other downstream located countries as well.

## 2.6 Safety of the dam

The safety of a dam and the population living downstream of the dam is determined by the following main factors: design, construction and management of the dam, geological conditions (leakage), seismicity (risk and magnitude of earthquakes) and the risk of a collapse of the dam (e.g. by erosion of the dam or the dam foundation as a result of overtopping).

The proposed dam is a rock fill dam. Serious overtopping can result in bursting of the dam. To avoid overtopping, it is therefore important to know the Probable Maximum Flood (PMF) value that needs to be used as a design criterion for the construction of the dam (height and robustness) and the spillway.

Management of the dam requires skilled management and clear protocols. The management of the dam needs to be elaborated in the operation, maintenance and surveillance manual for the dam.

Spatial planning of the flood plain area downstream of the dam is required because people tend to encroach the river when the peak flow disappears. However, the risk of extreme flooding or release of water might cause risks to the people encroaching the river and an early warning system needs to be developed.

The NCEA recommends:

- To include in the ToR that the consultant should check if sufficient attention is given to dam safety and that the investigations and analysis carried out during feasibility and design are done according to international standards.
- To justify the PMF by making use of internationally accepted method of calculation and justify the relevant base data (e.g. the rainfall stations used for it, the Probable Maximum Precipitation (PMP) and the shape of the PMF hydrograph).
- To describe what influence this PMF has on the height, the robustness of the dam and the design of the spillway. Possible adjustments to the dam design and spillway need to be described and presented in the ESIA;
- To describe the impacts of a worst–case scenario in case of a complete dam burst for the entire down–stream study area;
- To identify mechanisms to minimise risks due to extreme flooding or dam release such as the set–up of an early warning system and / or the preparation (including enforcement) of land use planning in and along the floodplain downstream of the dam;
- To develop an early warning system to inform the possible affected people timely.

## 2.7 IFC – Performance standards

The IFC performance standards 2 – 8 have not yet been addressed in the draft ToR.

The NCEA recommends elaborating all these standards as far as relevant in the final ToR/ESIA.

# Annex 1: Request for support (2 letters)

REPUBLIQUE DE GUINEE  
Travail-Justice-Solidarité

Conakry, le 19 JAN 2018

*Le Ministre*

  
MINISTRE DE L'ENVIRONNEMENT,  
DES EAUX ET FORÊTS

Réf: N° 140058 /MEEF/CAB/.....20

A Monsieur Rob Verheem,  
Directeur de la Commission Néerlandaise de  
L'Evaluation Environnementale (CNEE)

Pays-Bas

**Objet :** Demande d'appui technique pour l'examen des termes de référence (TdR)  
et du rapport de l'étude d'impact environnemental et social du Barrage de Fomi.

**Monsieur le Directeur,**

Dans le cadre du processus de l'Etude d'Impact Environnemental et Social (EIES) du projet de Barrage de Fomi, le Ministère de l'Environnement des Eaux et Forêts (MEEF) sollicite l'expertise de la Commission Néerlandaise d'Evaluation Environnementale (CNEE) pour l'amendement des Termes de Référence élaborés à la suite d'une étude de cadrage et pour l'examen du rapport de ladite EIES.

En effet, le barrage de Fomi, est un aménagement à but multiple (production hydroélectrique, régularisation, agriculture irriguée, production piscicole, gestion écologique, navigabilité, qualité de l'eau et renforcement du réseau électrique). Il prend en compte aussi bien les besoins de la Guinée, que ceux des pays voisins à l'aval du barrage. Il s'agit donc d'un projet complexe, qui présente de multiples enjeux d'ordre, scientifique et technique, transfrontalier, écologique, social et culturel, économique, etc. Les caractéristiques techniques et les composantes du projet sont présentées dans les documents du projet, qui sont joints à cette correspondance.

La procédure étant encore à l'étape du cadrage, les contributions de la CNEE, si possible pour vous, consisteraient à analyser les TdR de l'EIES afin de les amender, accompagner le Bureau Guinéen d'Etudes et d'Evaluation Environnementale (BGEEE) dans l'analyse du rapport d'EIES et, si possible, appuyer le contrôle de la mise en œuvre du Plan de Gestion Environnementale et Sociale (PGES) découlant de l'EIES.

Le conseil de la CNEE sera approprié et intégré aux observations et recommandations du BGEEE. Les résultats de votre analyse seront accessibles en Guinée et publié sur le site de la CNEE. Nous vous tiendrons au courant de l'évolution du dossier, tout au long du processus.

L'apport de la CNEE permettra de mieux concilier les dimensions environnementales, sociales, économiques et de gouvernance dans ce projet fort important pour la Guinée et le Mali, contribuant ainsi à la protection de l'environnement, à la prévention de conflits et à la lutte contre la pauvreté. C'est pourquoi nous sommes convaincus d'avance que cette requête retiendra votre attention.

Nous assurerons faciliter l'équipe proposée par vous, pour rencontrer tous les acteurs impliqués dans le dossier Fomi. Pour notre Ministère la personne de contact est Monsieur Sidiki CONDE, Directeur Général du BGEEE dont les contacts sont les suivants : E.mail : sidickonde@yahoo.fr -Tél : +224 448066.

Dans l'attente d'une suite favorable, nous restons disponibles pour toute information complémentaire.

P/LE MINISTRE/P.O.  
Le Secrétaire Général

  
Seydou Bari SIDIBE



BP 1396 Conakry -Rép. de Guinée- Siège Coléah Lanséboungni, Commune de Matam  
Téléphone Secrétariat Central 30.46.81.22 E-mail : mdeefguinee@yahoo.fr



MINISTRE DE L'ENVIRONNEMENT,  
DES EAUX ET FORÊTS

Conakry, le 06 JUIL 2018

*Le Ministre d'Etat*

Réf: N° 0504 /MEEF/CAB/.....20

A Monsieur Gregorius de GOIJER  
Commission Néerlandaise de l'évaluation  
Environnementale

CONAKRY

**Objet** : Demande d'analyse et d'observations sur les  
termes de référence de l'EIES du projet Fomi.

**Monsieur,**

J'ai l'honneur de vous informer que dans le cadre de la réalisation de l'Etude d'Impact Environnemental et Social du projet à but multiple du barrage hydroagricole de Fomi en Guinée, des termes de référence ont été préparés et mis à notre disposition par la Coordination nationale du projet.

Une copie de ces termes de référence vous a été transmise et je vous prie de bien vouloir y apporter votre expertise en vue d'améliorer et de perfectionner davantage ce document en raison de des enjeux qui encadrent cet important projet.

Vous souhaitant bonne réception, veuillez agréer, les assurances de notre franche collaboration.

P.O/LE MINISTRE/P.O.  
Le Secrétaire Général

*Seydou Bari SIDIBE*  
**Seydou Bari SIDIBE**



## Annex 2: Decisions taken at the 2010 Summit Heads of State in Abuja ABN

### **Décision N° 1 : Relative au transfert de certaines fonctions de la maîtrise d'ouvrage à l'ABN**

Le 9<sup>ème</sup> Sommet des Chefs d'Etat et de Gouvernement de l'Autorité du Bassin du Niger, réuni le 16 septembre 2010 au State House (Aso Villa), à Abuja, République Fédérale du Nigeria,

#### **VU :**

- L'article 4 de la Convention révisée de 1987 portant création de l'ABN lui conférant le mandat de « promouvoir et de participer à la conception et à l'exécution des projets et des ouvrages d'intérêt commun » ;
- La Décision N° 1 du 8<sup>ème</sup> Sommet des Chefs d'Etat et de Gouvernement des Etats membres de l'ABN tenu le 30 avril 2008 à Niamey relative à l'approbation du Programme d'Investissement 2008 - 2027 du bassin du Niger ;
- La Décision N° 2 du 8<sup>ème</sup> Sommet des Chefs d'Etat et de Gouvernement des Etats membres de l'ABN tenu le 30 avril 2008 à Niamey relative à l'approbation de la Charte de l'Eau du Bassin du Niger.

#### **CONSIDERANT :**

- Les résultats de l'étude sur la maîtrise d'ouvrage des projets et programmes du Programme d'Investissement de l'Autorité du Bassin du Niger ;
- Que l'ABN présente un avantage comparatif pour la maîtrise d'ouvrage des actions relatives à une problématique environnementale transfrontalière ou à une problématique environnementale majeure qui concerne plusieurs portions nationales du bassin ;
- Que l'ABN a développé des outils d'aide à la décision lui conférant l'aptitude à coordonner la gestion stratégique des ouvrages hydrauliques à impact transfrontalier que leur interdépendance rend nécessaires.

#### **DECIDE :**

Que soient confiées à l'ABN les fonctions de la maîtrise d'ouvrage suivantes :

- l'établissement et le suivi du respect des règles générales de gestion stratégique des ouvrages hydrauliques à impact transfrontalier ;
- la conduite, en liaison avec les pays concernés, des études d'impact environnemental et social, et éventuellement des études techniques et socioéconomiques des projets d'ouvrages structurants à impact transfrontalier, de la recherche de leur financement et du suivi-évaluation des nouveaux projets et programmes.

**Fait à Abuja, le 16 septembre 2010**

**Pour le Sommet**

**Le Président**

*Please find below an unauthorised translation of the above text:*

The ninth Summit of Heads of State and Government of the Niger Basin Authority, assembled 16 September 2010 at State House (Aso Villa), in Abuja, Federal Republic of Nigeria,

HAVING REGARD TO:

- Article 4 of the Revised Convention of 1987 establishing the NBA assigning it the mandate of 'promoting and participating in designing and implementing projects and facilities of common interest';
- Decision no. 1 of the eighth Summit of Heads of State and Government of the NBA's Member States held 30 April 2008 in Niamey relating to the approval of the 2008 - 2027 Investment Programme for the Niger Basin;
- Decision no. 2 of the eighth Summit of Heads of State and Government of the NBA's Member States held 30 April 2008 in Niamey relating to the approval of the Niger Basin Water Charter.

CONSIDERING:

- The results of the study on the ownership of the projects and programmes of the Niger Basin Authority Investment Programme;
- That the NBA represents a comparative advantage for owning actions relating to major environmental or transboundary problems which affect several national portions of the basin;
- That the NBA has developed tools to support decision-making giving it the ability to coordinate the strategic management of water works with a transboundary impact that renders their interdependence necessary.

DECIDES:

The following project owner functions are entrusted to the NBA:

- the establishment and monitoring of compliance with the general rules of strategic management of water facilities with a transboundary impact;
- conducting, together with the countries affected, environmental and social impact assessments and potentially technical and socio-economic assessments for construction projects with a structuring transboundary impact, researching their financing and follow-up assessment of new projects and programmes.