WATER INTEGRITY IN ACTION
FIGHTING CORRUPTION IN THE CONSTRUCTION OF LARGE DAMS: THE ZIGA DAM EXPERIENCE
BURKINA-FASO
Mamadou Lamine Kouate is a Burkinabe hydrogeological engineer. A water and sanitation sector expert, he has held senior positions within both the Burkinabe administration and abroad. He has been, successively, Director General for Hydraulics and Rural Facilities, General Secretary of the Ministry of Water, Director General of the National Office of Dams and Hydro-Agricultural Facilities (ONBAH), Chair of the Board of Directors of ONEA, Technical Advisor to the Ministry of Water, Head of Clean Water and Sanitation Section, Managing Director of ONEA during the Ziga dam construction, President of the African Water Association (AAE) and President of the National Water Council of Burkina Faso.

Mamadou Lamine Kouate is the author of a number of publications on water and sanitation.
WATER INTEGRITY IN ACTION

FIGHTING CORRUPTION IN THE CONSTRUCTION OF LARGE DAMS:
THE ZIGA DAM EXPERIENCE, BURKINA FASO

Mamadou Lamine Kouate
WATER INTEGRITY IN ACTION
FIGHTING CORRUPTION IN THE CONSTRUCTION OF LARGE DAMS:
THE ZIGA DAM EXPERIENCE, BURKINA FASO

Disclaimer:

Every effort has been made to verify the accuracy of the information contained in this document. Nonetheless, it is possible that inaccuracies or errors have involuntarily slipped in to the text. WIN, the UNDP Water Governance Facility at SIWI and the ONEA cannot guarantee the validity of all the information contained here and regret any possible inaccuracy. They cannot accept responsibility for the consequences of the use of this document for other purposes and in other contexts.

This document was originally published in French as L’intégrité de l’eau en action : Endiguer la corruption dans la construction de grands barrages – l’expérience du barrage de Ziga. In case of discrepancies, the original language will govern.

This publication is a joint work by WIN, ONEA and the UNDP Water Governance Facility at SIWI. It was developed with the financial support of the Swedish International Development Agency (SIDA).

Author: Mamadou Lamine Kouate
Review: Françoise Nicole Ndoume, Sam Pope and Claire Grandadam
Translation from French: Harun Salah
Design: Sarita Singh
Cover photo: The Ziga Dam, © ONEA
Photos: Office National de l’Eau et de l’Assainissement (ONEA)
Publisher: Water Integrity Network, Alt Moabit 91b, 10559 Berlin, Germany


This publication may be reproduced in part or in full, and in any format, for non-commercial and educational purposes, without prior authorisation of the owner of the copyright and on the condition that the source is mentioned. This publication cannot be sold or used for commercial purposes without the prior written authorisation from WIN, SIWI and ONEA.
CONTENTS

ACRONYM LIST ................................................................. 5

ACKNOWLEDGEMENTS .................................................... 6

PREFACE ........................................................................... 7

INTRODUCTION .................................................................. 8

1. BACKGROUND ............................................................... 11
   1.1 Clean Water Supply for Ouagadougou, Capital of Burkina Faso: Project Context ......................... 10
   1.2 Choosing the Ziga Dam Option ....................................................................................... 11
   1.3 Technical Specifications of the Project ............................................................................. 11
       1.3.1 Dam ......................................................................................................................... 11
       1.3.2 Treatment plant ........................................................................................................ 12
       1.3.3 Water supply system ............................................................................................... 12
       1.3.4 Ps3 Pumping station ............................................................................................... 12
       1.3.5 Primary distribution network ................................................................................... 13
       1.3.6 Secondary and tertiary distribution networks and connections ................................... 13
   1.4 Government Environmental Impact Mitigation Plan (PGAIE) ............................................ 13

2. PROJECT FINANCING PLAN ........................................... 14
   2.1 Division into Lots ............................................................................................................. 14
   2.2 Donor Financing ............................................................................................................. 16
   2.3 Procedures and Mechanisms .......................................................................................... 17
       2.3.1 Implementation timeframe ....................................................................................... 17
       2.3.2 Donor procedures and mechanisms ......................................................................... 18
       2.3.3 Project contracting authority .................................................................................. 20

3. BACKGROUND AND STRUCTURE OF ONEA .............. 21
   3.1 Reorganisation ............................................................................................................... 21
   3.2 Onea’s Activities .......................................................................................................... 23
   3.3 Wastewater and Sewage Disposal ................................................................................. 23
4. PROCESS ........................................................................................................................................... 28
4.1 Coordination and Monitoring/Evaluation of Project Implementation ........................................... 25
4.2 Procedures and Provisions to Prevent Corruption ................................................................. 26
   4.2.1 Examples of anti-corruption measures in place for contract awards ............................... 26
   4.2.2 Examples of anti-corruption measures during implementation ........................................ 28
4.3 Methodology .................................................................................................................................. 31

5. LESSONS LEARNED .......................................................................................................................... 29

6. CONCLUSION ...................................................................................................................................... 30

ANNEXES ............................................................................................................................................... 31

REFERENCES ......................................................................................................................................... 35

DELFT STATEMENT ON WATER INTEGRITY .................................................................................... 36
# ACRONYM LIST

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAE</td>
<td>African Water Association (Association Africaine de l’Eau)</td>
</tr>
<tr>
<td>ADF</td>
<td>African Development Fund</td>
</tr>
<tr>
<td>Admin.</td>
<td>Administration</td>
</tr>
<tr>
<td>AFD</td>
<td>French development agency (Agence française de développement)</td>
</tr>
<tr>
<td>AFDB</td>
<td>African Development Bank Group</td>
</tr>
<tr>
<td>BADEA</td>
<td>Arab Bank for Economic Development in Africa (Banque Arabe pour le développement en Afrique)</td>
</tr>
<tr>
<td>CFA</td>
<td>African Financial Community (Communauté financière d’Afrique)</td>
</tr>
<tr>
<td>DCA</td>
<td>Office for the Auxiliary Centres (Direction des Centres Auxiliaires)</td>
</tr>
<tr>
<td>DCMP</td>
<td>Central Department for Public Contracts (Direction Centrale des Marchés Publics)</td>
</tr>
<tr>
<td>DDB</td>
<td>Office for Bobo Dioulasso Department (Direction du Département de Bobo Dioulasso)</td>
</tr>
<tr>
<td>DDO</td>
<td>Office for Ouagadougou Department (Direction du Département de Ouagadougou)</td>
</tr>
<tr>
<td>EDF</td>
<td>European Development Fund</td>
</tr>
<tr>
<td>EIA</td>
<td>Environmental Impact Assessment</td>
</tr>
<tr>
<td>EIB</td>
<td>European Investment Bank</td>
</tr>
<tr>
<td>F CFA</td>
<td>Francs CFA (currency)</td>
</tr>
<tr>
<td>Fonds-Belge</td>
<td>Belgian cooperation</td>
</tr>
<tr>
<td>IDA</td>
<td>International Development Association (World Bank)</td>
</tr>
<tr>
<td>IDB</td>
<td>Islamic Development Bank</td>
</tr>
<tr>
<td>IWRM</td>
<td>Integrated Water Resource Management</td>
</tr>
<tr>
<td>KFAED</td>
<td>Kuwait Fund for Arab Economic Development</td>
</tr>
<tr>
<td>KFW</td>
<td>Kreditanstalt für Wiederaufbau - German Bank for Reconstruction and Development</td>
</tr>
<tr>
<td>MOZ</td>
<td>Ziga Contracting Authority (Maitrise d’Ouvrage de Ziga)</td>
</tr>
</tbody>
</table>
ONBAH : National Office for Dams and Hydro-Agricultural Development (Office National des Barrages et Aménagements hydro-agricoles)
ONE : National Water Board (Office National de l’Eau)
OPEC : Organisation of Oil-exporting Countries
PEA : Standalone water supply point (Poste d’Eau Autonome)
PGAIE : Government environmental impact mitigation plan (Plan gouvernemental d’atténuation des impacts sur l’environnement)
PS1/PS2/PS3 : Pumping station 1.2.3
PSAO : Ouagadougou Strategic Sanitation Plan (Plan Stratégique d’Assainissement de Ouagadougou)
PVC : Polyvinylchloride
SDOI : Organisational and IT Master Plan (Schéma Directeur Organisationnel et Informatique)
SIWI : Stockholm International Water Institute
SNE : National Water Company (Société Nationale des Eaux)
SOPAE : Environmental Master Plan (Schéma Organisationnel du Plan d’Assurance Environnement)
WADB : West African Development Bank
WIN : Water Integrity Network
I would like to thank the Water Integrity Network (WIN) and its team, which, under the direction of its former Managing Director and now Special Advisor for Strategy Mr Teun Bastemeijer, and in order to capitalise on best anti-corruption practices, supported the development of this publication on the experience of the National Water and Sanitation Office of Burkina Faso (ONEA). I was ONEA’s Managing Director at the time of the design and implementation of this project for the supply of clean water to Ouagadougou and thus a major player in this regard.

My thanks go also to:

ONEA, for its cooperation in the preparation of this text.

The Swedish International Development Agency (SIDA), whose funding enabled its production.

The Stockholm International Water Institute (SIWI), WIN’s implementing partner in the capacity-building programme for water-sector actors in sub-Saharan Africa, one of the outcomes of which is this publication.

I would particularly like to thank Mrs Françoise Nicole Ndoume, Programme Officer at WIN, for her help in the design and coordination of the draft publication and its proofreading.

Finally, I would like to thank all those involved in the Ziga Dam construction project whose dedication enabled this project to become an example of best practice in Africa in terms of large-scale hydraulic construction projects.

I would also like to thank all those who, near and far, were involved in this publication.

Mamadou LAMINE KOUATE
Burkina Faso’s National Water and Sanitation Office (ONEA), is the state-run company responsible for producing and distributing clean water and sanitation services. Its experience in conducting large-scale infrastructure projects is an example to capitalise on as a good practice in fighting corruption, which would otherwise threaten, or even destroy, efforts to achieve lasting social and economic development.

This publication focuses on the decisive political choices that emerged from the development of a government vision aimed at vigorously promoting the water sector. The design and implementation of the project to supply clean water to Ouagadougou, known as the “Ziga project”, was an important turning point in Burkina Faso’s efforts to engage in more relevant and effective water governance. It paved the way for the development of a water policy and strategy (1998), of legislation – the Framework Act on Water Management (2001), and of a clear definition of integrated water resource management (IWRM) with an associated action plan (2003).

The project was developed in an environment favourable to the development of appropriate water-sector management skills, and to the establishment of transparency and integrity measures necessary to eradicate corruption in the project implementation process. This led to a transparent and fair contract awarding process to qualified service providers, who abided by anti-corruption rules and provisions.

The positive effects can be seen clearly by:
- The completion of structural works within contractual deadlines: dam, raw-water treatment plant, storage facilities (tower and above-ground tanks);
- The quality of the infrastructure produced, in accordance and compliance with the prescribed technical standards;
- The overall savings achieved, a consequence of keeping to the forecasted budgets for project components;
- The early launch of production and distribution of water to customers, through the provision of 50,000 subsidised connections, which significantly reduced water shortages.

The project enabled a significant increase in access to clean water, while also enabling higher levels of consumption per person. It also offered the prospect of continued, sustainable water service.

In appreciation of the overall good project management, the World Bank awarded ONEA a Prize for Excellence for leading one of the 10 best World Bank projects in Africa in 2008.

Yamba Harouna OUIBIGA,
Managing Director of ONEA
Burkina Faso is a West-African country situated in the Niger meander, bordered by Mali to the west and north, Niger to the east, and the Ivory Coast, Togo, Ghana and Benin to the south. It has no coastline. It covers an area of 274,122 km² and has a relatively flat surface essentially formed of a crystalline bedrock covering two-thirds of its area.

The climate is tropical Sudano-Sahelian, and characterised by two unequal and alternating seasons:
- A short rainy season (winter), lasting three to four months from June to September, during which the average rainfall is 800 mm per year, unequally distributed over the territory and ranging from 400 mm in the North to 1,200 mm in the South-West.
- A dry season of eight to nine months (October to June) when there is virtually no precipitation.

Temperatures vary between 16 and 45 degrees Celsius.

The country is characterised by its lack of potential water resources, and the difficulty and cost of exploiting these. There is only one permanent river with no town located on it. Groundwater, where it exists, is captured in the fissures and fractures of the Precambrian granite crystalline bedrock, which makes up 90% of the territory. Flow from the wells is low to very low (0–30 m³/h).

The Ziga project was designed to primarily supply clean water to Ouagadougou, the capital city through the construction of a large-scale dam on the Nakambé river. The project was justified by almost constant water shortages due to poor harnessing of water resources (12 million m³/year available, to be contrasted with a need for 18 million m³/year). These shortages were exacerbated by an urban population growing at around 3% per year. It was rarely possible to maintain 60% coverage of the city’s water needs in the years preceding the project.

The project objectives were:
- To mobilise the required water resources to cover long-term needs, by means of appropriate infrastructure
- To make rational and appropriate use of funds
- To maintain the sector’s financial equilibrium, by using better management tools to control employment and costs and by engaging in more promotional activities, while maintaining tariffs at an acceptable level.

The project was made feasible by the investment of 12 donors and the Burkinabe State.

Still, the project faced major financial challenges. A reform process was therefore undertaken within the National Water and Sanitation Office (ONEA) — the main body responsible for project implementation — to establish mechanisms and safeguards that would ensure that fraud was prevented and that the risk of corruption was reduced at all stages of project implementation. The large-scale dam project is now regarded as an example of best practice in the construction of works of this kind in Africa.

This publication documents the experience of its implementation. It is divided into five chapters:
- The first chapter provides general background on the Ziga project, outlining and explaining the project’s technical specifications.
- The second chapter considers the donor financing plan, the division of the project into lots — each forming part of specific invitations to tender — and the technical and financial provisions established by the donors to ensure that transparency and accountability requirements were met for disbursements.
- The third chapter looks at the implementing agency, ONEA, which acted as the contracting authority. It is important to consider this institution in detail, as the project was
implemented at a time when ONEA was facing important challenges in terms of management transparency and efficient delivery of service. Additionally, the organisation was undergoing an internal restructuring process during the implementation of the Ziga project.

- The fourth chapter focuses on the implementation process and the mechanisms established to counter any financial misappropriation, to ensure adherence to technical standards, and to reduce the risk of corruption. The many donors involved, the size of the budget, and the complexity of project management meant that appropriate anti-corruption actions were necessary, including: the coordination and monitoring/evaluation of the project’s implementation; letters of commitment to anti-fraud and corruption; technical and financial audits; systematic re-examination and adaptation of all tender documents; detailed updating of technical specifications and standards; and the establishment of detailed conditions to be agreed on by tenderers, regarding fraudulent operations.

- The fifth and final chapter focuses on lessons learned in the process of implementing the Ziga project. These may hopefully inspire actors involved in similar processes in other countries.

Source: Internal ONEA documents
1. BACKGROUND

1.1 Clean Water Supply for Ouagadougou, Capital of Burkina Faso: Project Context

Before the construction of the Ziga dam, Ouagadougou’s drinking water was supplied by wells and dams in and around the city. Most of the water was supplied by the Loumbila dam, 20 km to the north of the town, and was heavily polluted. The annual water production capacity was 14.9 million m³, an amount insufficient to supply the long-term needs of the city’s then 775,000 inhabitants (in 1996). With a 5% growth rate, the population was expected to reach 1.5 million by 2010, and demand for water was projected to increase to 42.5 million m³ per year. The table below shows the trend in clean water production (per 1,000 m³) for the area under ONEA’s responsibility.

Table 1: Trend in Clean Water Production (1,000 m³), 1990 - 1995

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DDO</td>
<td>9,485</td>
<td>9,618</td>
<td>10,297</td>
<td>11,491</td>
<td>11,437</td>
<td>14,900</td>
</tr>
<tr>
<td>DDB</td>
<td>6,382</td>
<td>6,550</td>
<td>6,758</td>
<td>6,456</td>
<td>6,189</td>
<td>6,231</td>
</tr>
<tr>
<td>DCA</td>
<td>3,297</td>
<td>3,283</td>
<td>3,339</td>
<td>3,565</td>
<td>4,060</td>
<td>3,728</td>
</tr>
<tr>
<td>TOTAL</td>
<td>19,164</td>
<td>19,451</td>
<td>20,394</td>
<td>21,512</td>
<td>21,686</td>
<td>24,949*</td>
</tr>
</tbody>
</table>

Source: Internal ONEA documents.
*Figure delivered as such. Actual total is 24,859.

Water shortages were a regular feature in the daily life of the urban population. Given the limited nature of local water supplies and the ever-expanding needs, the authorities decided to seek other sources of supply. Extensive feasibility studies demonstrated that the only viable solution that would enable the crisis to be resolved for the coming decades would be to make use of the country’s main river, the Nakambé (previously the White Volta) which flows some 50 kms to the north-east of Ouagadougou (see Annexes, Table 4). The Nakambé drains the central part of the northern Mossi Plateau to the centre of Burkina Faso and only flows during the rainy season. Its flow is constant in July and August, reaching an average of 65.4 m³/s in July and 106.7 m³/s in September as it leaves the catchment area, before dropping to zero from November. To meet clean water demand over the next decades, the key was to store this surface water. The Ziga dam was therefore planned with an internal storage capacity of 200 million m³ per year, which could be extended by raising the central spillway according to needs.

As of 2014 the city’s population is around 2.1 million, and the need for water is estimated at approximately 50 million m³ per year. Very long-term projections suggest drawing from the Bagré dam, the storage capacity of which is currently 1.5 billion m³ per year.

1.2 Choosing the Ziga Dam Option

After evaluating the different options available to meet Ouagadougou’s clean water requirements (see annexes, Table 4), it was decided that the building of the Ziga dam would provide a lasting solution for the city’s water shortages.
The construction of Ziga dam was planned in two phases:
The first phase aimed to meet the water supply requirements of 2005, estimated at 30.8 million m³. This first phase was conducted in two stages:
- The first stage, built for a production capacity of 3,000 m³/h, was commissioned in 2006. This first stage comprised the following works:
  - Dam on the Nakambé river, near Ziga village
  - Raw water pumping station (called PS1) integrated with the dam
  - Treatment plant and a treated water pumping station (PS2)
  - Supply pipeline and intermediate storage facilities
  - Pumping station (PS3) at the entrance to Ouagadougou
  - Primary distribution network with booster stations and eight water towers
  - Extensions to the secondary and tertiary networks, and the provision of 50,000 water connections

- The second stage, built for an additional capacity of 1,500 m³/h, was constructed in the following years.

The second phase of the full project is still to be implemented. Preparations are underway to double the treatment and supply of water with a 4,500 m³/h station and an additional supply pipeline as from 2015.

1.3 Technical Specifications of the Project

The technical specifications for the different project components were as follows:

1.3.1 Dam
The dam, the primary component of the project, comprised the following main works:
- The construction of a homogeneous dyke in laterite refill, with a total length of 2,730 m and a maximum height of 24.80 m. This necessitated the removal of around 415,000 m² of excavated earth and its replacement with around 620,000 m³ of backfill.
- The construction and maintenance of a worksite access road approximately 19.6 km long.
- The sealing of the foundations with approx. 10,000 m² of sealing apron.
- The construction of the central structure (using a volume of concrete of about 39,000 m³ — not including blinding concrete) and formed of:
  - Spillway and bridge
  - Bottom discharge unit
  - Water intake
  - Pumping station.
- The provision, assembly and commissioning of the dam’s hydro-mechanical equipment
- The completion of related works (operating buildings, landscaping).

1.3.2 Treatment plant
The treatment plant, located 2,200 m from the dam, has two treatment modules of 1,500 m³/h. The water leaving the plant is stored in two storage facilities of 3,000 m³ each and pumped out by a pumping station equipped with five 750 m³/h pumps into the intermediary storage facility at Boudtenga, with a capacity of 5,400 m³.

1.3.3 Water supply system
The water supply pipeline consists of:
- A 2,200 metre-long raw water outlet pipe with a diameter of 1,000 mm, taking the water from the dam’s raw water pumping station to the treatment plant.
- A 17.3 km-long treated water outlet pipe with a diameter of 1,000 mm, between the treatment plant and the Boudtenga intermediary storage facility.
- The Boudtenga intermediary storage facility, with a capacity of 5,400 m³, built in concrete.
- A 23.9 metre-long gravity-fed pipe with a diameter of 1,000 mm, taking the water to Ouagadougou.

1.3.4 Ps3 pumping station
At the entrance to Ouagadougou, the water arrives at the main pumping station which comprises three groups of pumps, enabling the water to be taken to the three (north, centre and south) branches of the primary network. The three sub-stations
Figure 2: Diagram of the Ziga Dam

Source: Internal ONEA documents
have the following capacities:

- North: 1,288 m³/h (three pumps of 720 m³/h including one emergency)
- Centre: 432 m³/h (two pumps of 432 m³/h including one emergency)
- South: 3,038 m³/h (five pumps of 720 m³/h including one emergency)

1.3.5 Primary distribution network

The primary distribution network comprises three branches:

- Northern branch: 23.6 km long, pipes with diameters of 600 mm and 150 mm
- Central branch: 8.8 km long, pipes with diameters of 600 mm and 150 mm
- Southern branch: 21.8 km long, pipes with diameters of 900 mm and 350 mm

The branches feed the eight underground storage tanks, with capacities of 1,000 and 2,000 m³. From these tanks, the water is pumped by booster stations with capacities ranging from 220 m³/h to 820 m³/h, to variable heights between 20 and 30 m, in order to feed eight water towers with a capacity of 2,000 m³.

1.3.6 Secondary and tertiary distribution networks and connections

The secondary network built by 2005 comprised around 220 km
of cast iron and PVC piping with a diameter ranging from 100 mm to 800 mm.

Fifty thousand new connections were in place by 2007.

1.4 Government Environmental Impact Mitigation Plan (PGAIE)

The size and nature of the Ziga project involved the displacement of several thousands of people and had a biophysical impact on the environment.

A government environmental impact mitigation plan (PGAIE) was implemented to minimise negative impacts of the project. The two main components of the plan are:

Resettling the Local Population and Restoring its Livelihood
This component related to the displacement and relocation of people affected by the work and the flooding in the dam basin and the restoration of their livelihoods. It is estimated that 6,850 people were affected by the construction of the dam, from diverse backgrounds - agricultural and livestock farmers, schoolchildren, etc. The impact studies and impact mitigation measures were subject to an independent public inquiry: the documents were open to public inspection, comments and written proposals for amendments were gathered and considered, and a public meeting with representatives of those affected was held on the envisaged plans and provisions. Information about the project was also translated to the national languages.

Biophysical Impact Mitigation
This comprised a series of measures aimed at preserving biodiversity, reproducing the natural resources being exploited and limiting contamination of sources around the dam site. Other sub-components related to the reconstruction of affected infrastructure, health structures, etc.

The implementation of the government environmental impact mitigation plan formed an integral part of the project and was undertaken alongside the implementation of the main works (more information on this point is available in chapter 4).
2. PROJECT FINANCING PLAN

The Ziga project required large financial investments. Twelve international donors contributed, including: the International Reconstruction and Development Bank (IRDB), the Caisse Française de Développement (CFD), Kreditanstalt für Wiederaufbau (the German Bank for Reconstruction – KfW), the European Investment Bank (EIB), the European Union (EU), Arab Funds, the West African Development Bank (WADB), the African Development Bank (ADB) and the Burkinabe State. The total project costs amounted to 149,695,934 million Francs CFA. The largest contributions came from the:

- World Bank group, with 75,000,000 million FCFA
- European Development Fund (EDF) with 19,678,709 million FCFA
- French Development Agency (AFD) with 19,088,639 million FCFA
- KfW; with 12,744,630 million FCFA.

Each donor financed one or more specific lots (see paragraph 2.2).

2.1 Division into Lots

The project was divided into 11 lots, nine of which are related to supplies and works. Some lots were divided into further sub-lots, according to the source of funding, as follows:

Lot 1: Dam and Related Structures
This lot comprised the:
- Access road, which follows the route of the supply pipeline and runs past the site of the treatment plant. At the end of the works, it will be re-profiled to serve as a permanent access road to the works in order to facilitate their monitoring and upkeep, and that of the pipeline.
- Sealing apron
- Earth dyke
- Hydraulic structures – sill, plunge basin and bottom drain – including the electromechanical and handling systems.
- Civil engineering for the PS1 raw water pumping station – including the screens, cofferdams and screen cleaners but not the pumping equipment.

Lot 2: Water Supply System
This lot comprised the whole water supply chain, from its exit from the raw water pumping station to the entrance to the PS3 treated water pumping station, located at the entrance to Ouagadougou. It also included the Boudtenga intermediary storage facility, including its hydraulic and electromechanical equipment and the emergency shut-off valve at the entrance to PS3.

Lot 3: Treatment Plant
This comprised all of the treatment plant, including the PS2 pumping station – civil engineering and hydro-mechanical and electronic equipment – attached to it. The hydro-mechanical and electrical equipment of the raw water pumping station was also included.

A performance-related bid was held to construct this lot. The criterion for judging the bids was the updated at cost price of treated water supplied to the Boudtenga storage facility.

Lot 4: Primary Network
This lot, later sub-divided into three sub-lots, included only the primary pipes that would take water from the PS3 treated water pumping station to the storage facilities and water towers to be built on the three system branches (north, centre and south) planned for Ouagadougou.

Lot 5: Storage Facilities and Pumping
This lot comprised the civil engineering and hydro-mechanical and electrical equipment for the PS3 pumping station, the intermediary booster stations for the north and south branches, the water towers and their pumping stations. These works were grouped into eight different and independent worksites.

It also comprised the remote control system for the whole
Three control centres were planned: one situated at the treatment plant to manage water supply, the second (main centre) at the PS3 pumping station to manage the whole of the Ouagadougou distribution network, and the last at the Paspanga treatment station. These were to function independently but the main centre at the PS3 pumping station would still receive information on water supply via a relay station to be built on the high point of the Boudtenga storage facility.

This component also comprised:
- 8 water towers of 2,000 m³ each
- 10 above-ground tanks
- 11 booster stations and two mini-boosters.

Lot 6.1: Secondary Network
This lot comprised the distribution network from the point where the water leaves the water towers to the users, not including the actual completion of connections.

Lot 6.2: Tertiary Network and Connections (1)
This lot consisted of extensions to the tertiary network and an additional 16,000 connections, to be built in small batches.

Lot 6.3: Tertiary Network and Connections (2)
This lot consisted of extensions to the tertiary and secondary networks, including an additional 34,000 connections to be built via different sub-lots of works.

Lot 7: Connections
This lot was for the supply of equipment for 16,000 user connections, of which 9,000 were to be fitted by the holder of Lot 6.2 above.

Lot 8: Electricity Supply
This lot related to the implementation of the medium-voltage electricity line to be built from the town of Ziniaré to supply the dam and its pumping station, as well as the treatment plant and its pumping station. The line was to pass by the Boudtenga storage facility to enable electricity to be provided for the remote transmission of messages.

2.2 Donor Financing
The high number of donors complicated fund management, posing a high risk of corruption and embezzlement. It was therefore essential to establish and follow clear financing mechanisms, in agreement with the different parties involved in the project. Various conditions were placed by the donors on financing the different components, which were to be respected by all project parties. Specific procedures and mechanisms were also put in place to ensure transparency in the project’s implementation.
Table 2: Contribution of Various Donors to Ziga Dam Lots (in Thousands of Monetary Units)

<table>
<thead>
<tr>
<th>Donors</th>
<th>Lots</th>
<th>Basic allocations /foreign currency</th>
<th>Basic allocations /FCFA</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFD</td>
<td>Lot 0 PGAIE</td>
<td>5,700 EURO</td>
<td>3,739,012</td>
</tr>
<tr>
<td></td>
<td>Lot 3 station</td>
<td>21,000 EURO</td>
<td>13,775,307</td>
</tr>
<tr>
<td></td>
<td>Lot 9 assistance</td>
<td>2,400 EURO</td>
<td>1,574,320</td>
</tr>
<tr>
<td>Total AFD</td>
<td></td>
<td>29,100 EURO</td>
<td>19,088,639</td>
</tr>
<tr>
<td>ADF</td>
<td>Lot 0 PGAIE</td>
<td>1,457 WAUA$^1$</td>
<td>1,189,024</td>
</tr>
<tr>
<td></td>
<td>Lot 6 network</td>
<td>1,912 WAUA</td>
<td>1,560,012</td>
</tr>
<tr>
<td></td>
<td>Lot 7 supplies</td>
<td>1,371 WAUA</td>
<td>1,118,364</td>
</tr>
<tr>
<td>Total ADF</td>
<td></td>
<td>4,740 WAUA$^1$</td>
<td>3,867,400</td>
</tr>
<tr>
<td>State</td>
<td>Lot 0 PGAIE</td>
<td>1,365,000 F CFA</td>
<td>1,365,000</td>
</tr>
<tr>
<td></td>
<td>Lot 1 dam</td>
<td>1,032,000 F CFA</td>
<td>1,032,000</td>
</tr>
<tr>
<td>Total State</td>
<td></td>
<td>2,397,000 F CFA</td>
<td>2,397,000</td>
</tr>
<tr>
<td>KfW</td>
<td>Lot 2 + generator</td>
<td>38,000 DM$^2$</td>
<td>12,744,630</td>
</tr>
<tr>
<td>Total KfW</td>
<td></td>
<td>38,000 DM$^2$</td>
<td>12,744,630</td>
</tr>
<tr>
<td>BADEA</td>
<td>Lot 1 dam</td>
<td>10,000 USD</td>
<td>6,165,649</td>
</tr>
<tr>
<td></td>
<td>wx secu dam + superv</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total BADEA</td>
<td></td>
<td>10,000 USD</td>
<td>6,165,649</td>
</tr>
<tr>
<td>OPEC</td>
<td>Lot 1 dam</td>
<td>6,700 USD</td>
<td>4,120,126</td>
</tr>
<tr>
<td></td>
<td>Lot 1a Infr. + cl</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total OPEC</td>
<td></td>
<td>6,700 USD</td>
<td>4,120,126</td>
</tr>
<tr>
<td>EIB</td>
<td>Lot 4, 3</td>
<td>14,000 EURO</td>
<td>7,478,280</td>
</tr>
<tr>
<td></td>
<td>Lot 5</td>
<td></td>
<td>1,705,118</td>
</tr>
<tr>
<td>Total EIB</td>
<td></td>
<td>14,000 EURO</td>
<td>9,183,398</td>
</tr>
<tr>
<td>IDA</td>
<td>Lot 2</td>
<td>7,195 USD</td>
<td>4,561,630</td>
</tr>
<tr>
<td></td>
<td>Lot 6</td>
<td>45,600 USD</td>
<td>28,910,400</td>
</tr>
<tr>
<td></td>
<td>Lot 9.2</td>
<td>6,410 USD</td>
<td>4,063,940</td>
</tr>
<tr>
<td></td>
<td>Lot 9.3</td>
<td>8,570 USD</td>
<td>5,433,380</td>
</tr>
<tr>
<td></td>
<td>Lot 9.5</td>
<td>8,570 USD</td>
<td>1,157,050</td>
</tr>
<tr>
<td></td>
<td>PPF</td>
<td>400 USD</td>
<td>253,600</td>
</tr>
<tr>
<td>Total IDA</td>
<td></td>
<td>70,000 USD</td>
<td>44,380,000</td>
</tr>
<tr>
<td>IDB</td>
<td>Lot 1 dam</td>
<td>3,650 ID$^3$</td>
<td>3,069,879</td>
</tr>
<tr>
<td></td>
<td>Lot 4, 1</td>
<td>3,170 ID$^3$</td>
<td>2,666,802</td>
</tr>
<tr>
<td>Total IDB</td>
<td></td>
<td>6,820 ID$^3$</td>
<td>5,736,681</td>
</tr>
</tbody>
</table>

Continued...
### 2.3 Procedures and Mechanisms

#### 2.3.1 Implementation timeframe

The timeframe for implementation of the first stage was established as six years. The different project components had to be completed within the following deadlines:

- **dam**: 24 months
- **treatment plant**: 36 months
- **water supply pipeline**: 24 months
- **primary, secondary network**: 36 months
- **connections (supply and completion)**: 48 months
- **Government Environmental Impact Mitigation Plan (PGAIE)**: 10 years (commencing before the project began and continuing until after the end of the water supply works).

---

<table>
<thead>
<tr>
<th>Donors</th>
<th>Lots</th>
<th>Basic allocations /foreign currency</th>
<th>Basic allocations /FCFA</th>
</tr>
</thead>
<tbody>
<tr>
<td>WADB</td>
<td>Lot 4, 2</td>
<td>3,688,160 F CFA</td>
<td>3,688,160</td>
</tr>
<tr>
<td></td>
<td>Lot 8</td>
<td>1,311,840 F CFA</td>
<td>1,311,840</td>
</tr>
<tr>
<td><strong>Total WADB</strong></td>
<td><strong>5,000,000 F CFA</strong></td>
<td><strong>5,000,000</strong></td>
<td></td>
</tr>
<tr>
<td>FDS BELGE</td>
<td>Lot 0 PGAIE</td>
<td>228.67 EURO</td>
<td>150,000</td>
</tr>
<tr>
<td><strong>Total FDS Belge</strong></td>
<td><strong>228.67 EURO</strong></td>
<td><strong>150,000</strong></td>
<td></td>
</tr>
<tr>
<td>EDF</td>
<td>Lot 5</td>
<td>25,000 EURO</td>
<td>16,398,925</td>
</tr>
<tr>
<td></td>
<td>Lot 9.3</td>
<td>3,000 EURO</td>
<td>1,967,870</td>
</tr>
<tr>
<td></td>
<td>Lot 9.5</td>
<td>2,000 EURO</td>
<td>1,311,914</td>
</tr>
<tr>
<td><strong>Total EDF</strong></td>
<td><strong>30,000 EURO</strong></td>
<td><strong>19,678,709</strong></td>
<td></td>
</tr>
<tr>
<td>KFAED</td>
<td>Lot 1 dam</td>
<td>3,144 KD¹</td>
<td>6,625,273</td>
</tr>
<tr>
<td></td>
<td>Hydr. inf.+cle</td>
<td>706 KD</td>
<td>1,487,737</td>
</tr>
<tr>
<td></td>
<td>Lot 9.1</td>
<td>150 KD</td>
<td>316,192</td>
</tr>
<tr>
<td></td>
<td>Lot 9.4</td>
<td>150 KD</td>
<td>316,192</td>
</tr>
<tr>
<td><strong>Total KFAED</strong></td>
<td><strong>4,000 KD</strong></td>
<td><strong>8,429,202</strong></td>
<td></td>
</tr>
<tr>
<td>ONEA</td>
<td>Lot 0</td>
<td>57,595 F CFA</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Lot 1 dam secu.</td>
<td>504,840 F CFA</td>
<td>504,840</td>
</tr>
<tr>
<td></td>
<td>Lot 2</td>
<td>266,414 F CFA</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Lot 3 generator</td>
<td>3,060,610 F CFA</td>
<td>3,060,610</td>
</tr>
<tr>
<td></td>
<td>Lot 6</td>
<td>89,050 F CFA</td>
<td>89,050</td>
</tr>
<tr>
<td></td>
<td>Lot 9.3</td>
<td>600,000 F CFA</td>
<td>600,000</td>
</tr>
<tr>
<td></td>
<td>Lot 9.4</td>
<td>4,500,000 F CFA</td>
<td>4,500,000</td>
</tr>
<tr>
<td><strong>Total ONEA</strong></td>
<td><em><em>8,754,500</em> F CFA</em>*</td>
<td><strong>8,754,500</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>149,695,934</strong></td>
<td></td>
</tr>
</tbody>
</table>

* Figures delivered as such. Actual total is 9,078,509

**Source:** ONEA.

1 WAUA: West African Unit of Account  2 DM Deutsche Mark  3 ID Islamic Dinar  4 KD Kuwaiti Dinar
2.3.2 Donor procedures and mechanisms

The procedures and mechanisms related to the contribution of the technical and financial partners was classified into two types – technical and financial – and were based on a "no prior objection notice" approach to all decisions regarding project implementation.

Donors defined clear pre-requisites and conditions for all proposals for project implementation and financing, related in particular to the organisation of ONEA, the certification of its annual accounts, the consideration of environmental and other aspects of the project (protection and reparation of damages) and other obligations for all Burkinabese parties involved in the execution of the project. In all, more than 50 conditions were defined by donors for ONEA, the Burkinabe State and all parties having submitted a proposal with regard to the handling, monitoring and implementation of the project. These conditions were related to, for example, organisation, certified accounts, environmental standards for the project...Verification was documented by means of reports and field visits.

---

**BOX 1: SELECTION OF CONDITIONS SET BY DONORS**

- Formulation of an action plan for the integrated management of the Nakambé basin water resources
- Establishment of an opening balance sheet for ONEA as of 1st January 1996
- Implementation of a social audit of the state company and communication of the results to donors
- Completion of a tariff study and the application of tariff increases to improve the sector’s financial stability on the basis of the approved financial model
- Agreement of the Burkinabe authorities for the PGAIE assessment report
- Donors’ prior authorisation to launch international invitations to tender; with “no objection notices” obtained
- Donors’ “no objection notices regarding the evaluation reports of the invitations to tender
- Certification of ONEA’s financial statements by an internationally recognised accountancy firm recruited via invitation to tender
- Confirmation of the project’s financial arrangements and communication of financing agreements to all donors
- Conditions for the cross-implementation of financing agreements.

---

**BOX 2: SPECIFIC DISBURSEMENT CONDITIONS OF EACH OF THE 12 DONORS**

**On a Technical Level**

The donors helped finalise the technical implementation files for all project components by carrying out supervisory visits and meetings to validate these files. A panel of international experts, composed of Professors Lafitte (Switzerland), Georges (France) and Di Melo (Brazil), was established to verify and validate the dam’s safety during the studies and works to construct the dam.

**On a Financial Level**

Each donor put in place specific procedures and mechanisms, depending on whether the project financing was in the form of a gift, a direct loan to ONEA, or a loan to the State with handover to ONEA. In all cases, the procedures for signing the financing agreements were bipartite, and the disbursement were direct donor payments to the providers (with the exception of the contributions from the State’s or ONEA’s own funds), which were authorised on presentation of detailed accounts and payment orders/authorisations, duly sent by the country’s competent departments (ONEA, Ministry of Finance departments), as designated in the financing agreements.
Box 3: Creation of a Group of Experts (Terms of Reference)

The dam itself is the main project structure. From the design stage onwards, a high-level panel of experts was formed to monitor, verify and conduct quality assurance for the dam works. The group was made up of eminent international experts, and its terms of reference were as follows:

**EXTRACT FROM THE EXPERT PANEL’S TERMS OF REFERENCE**

The Government of Burkina Faso is responsible for safety during the implementation of the Ziga dam project. To this end, it wishes to form a group of three experts to independently provide advice and recommendations on safety-related aspects, both during the dam’s construction and also during its subsequent operations, as well as in relation to technical aspects of the project. This group of consultative experts shall in no case be a substitute for the expertise, resources or responsibilities of the borrower or of the consultants responsible for the project’s preparation.

**i. Group Organisation**

The group will comprise three people who, between them, will have the following skills:
- Hydrology and hydraulics
- Geology and geotechnics (dam foundations)
- Study and construction of earth dams
- Management and operation of dams

**ii. Meetings**

The group will meet as often as possible according to need and, generally, once or twice a year during the study and construction phases of the dam. In particular, it is anticipated that an initial meeting should take place before the World Bank evaluates the project (estimated date June 1996) and again before the start of the loan (estimated date first quarter of 1997). A contract will be signed with each member of the group for these initial tasks. The group will plan visits to the dam during the construction period, according to conclusions made and in line with the main critical implementation phases.

**iii. Specific Actions**

The following points will be considered by the group (non-exhaustive list):

**Study phase**

- Studies conducted for project preparation:
- Design criteria report, LI/BERA March 1995
- Geotechnical survey report, LI/BERA May 1995 and November 1995
- Study of downstream discharge of the Ziga dam, LI/BERA to November 1995
- Detailed preliminary design, LI/BERA October 1995
- Calculation of stability of dam and related structures, LI/BERA December 1995
- Tender documents, lot L: dam and related structures, LI/BERA December 1995
- Pre-qualification dossier – Seureca January 1996

**Other points to be taken into consideration:**

- Criteria and methods for hydrological calculations and sizing of the spillway.
- Design criteria for the technical calculations, including the foundations and seismicity.
- Diversion of the water and closure of the river bed.
- Hydraulic structures: spillway, plunge basin, escape channel, bottom drain, water intake, including their electromechanical equipment.
- Reservoir management mechanisms.

Continued...
BOX 3 (CONTINUED)

- Stability of the reservoir embankments.
- Structural behaviour monitoring system: behaviour of the dam, hydraulic data, hydrology, stability, seismic events, internal and external and contrary pressures.
- Plan for initial filling of the reservoir.
- Quality control programme.

Construction phase

- Procedures for monitoring the works and their quality
- Possible requirements in terms of amending the foundations and treatment of soil under the dam, in light of foundation inspections
- Possible needs if significant amendments to the technical studies should be required during the works.
- Diversion of the water and closure of the river bed

- Plan for initial filling of the reservoir, including essential safety conditions
- Preparation of storage / dam maintenance and management manuals, and reservoir regulation plans
- Emergency plans in case of destruction of the dam, including maps of floodable zones and information and evacuation plans for the population
- Procedures for monitoring the dam’s behaviour, hydrology, hydraulic data, stability, seismic events, internal and external and contrary pressures.

iv. Reports

Reports will be prepared by the group and signed by all group members before the end of each visit.
2.3.3 Project contracting authority
The works were undertaken on behalf of the National Water and Sanitation Office (ONEA), a state-run company under the supervision of the Ministry of Environment and Water. ONEA acted on behalf of the State, when overseeing the government environmental impact mitigation plan (PGAIE), and the construction of the dam and access road, which were to be owned by the state. It acted on its own behalf for the other works.

ONEA was, to this end, endowed with an internal "project unit type" structure known as the "Ziga Project Contracting Authority (MOZ)", to which the project ownership was delegated. Its internal set-up included a project management team and operation departments responsible for technical and procurement issues. The contracting authority was given technical assistance from an international consultancy firm.

Project management was provided by a civil engineering consultancy firm recruited via international invitation to tender.
3. BACKGROUND AND STRUCTURE OF ONEA

The National Water Company (SNE), established on 1 January 1970, was nationalised in 1977 under the name of ONEA, the National Office for Water and Sanitation. ONEA’s mission is to supply clean water to and remove wastewater and sewage from urban and semi-urban areas of more than 10,000 inhabitants.

In 1985, institutional changes resulted in its legal transformation into a State company, with sanitation added to its responsibilities. Its capital, totalling 3.08 billion F CFA, is entirely State-held. (Decree No. 85 (387 / GR/PRE/Eau of 22 July 1985 and Decree No. 94 -391 /PRES/PM/MEE/MCIM/ of 17 May 1996). By the end of 1990, ONEA had accrued a deficit of 3 billion F CFA, which was threatening the company’s survival. Given the vital nature of its mission, the authorities decided ONEA needed restructuring.

Under the supervision of the Minister for Water, ONEA’s organisational set-up has evolved over time to address emerging challenges [see annexes, Figure 5 and Figure 6].

3.1 Reorganisation

In order to address ONEA’s worsening deficit, and to save the company from bankruptcy, a vigorous and multi-faceted action plan was implemented from 1990 onwards. The restructuring focused on a readjustment of the price of water, a reduction in staff costs, modernisation of the management tools, innovations in customer relations, better maintenance of equipment, etc. Above all, rigorous management methods were imposed, first and foremost to tackle the deficit of the previous five years. Internal control was established, fraud and fund diversions were punished, and those responsible were fired.

The company’s extravagances were reined in, costs were reduced by 29% and water tariffs were increased by 30%. Customer service and management, now computerised, was substantially improved and water-quality control was checked from 1994 on by a modern laboratory. “Link” laboratories and a mobile laboratory were also established. Optimal use of the available resources and an increase in production led to substantial reduction in water cuts.

Moreover, more than half of the capital’s population was provided with standalone sanitation facilities. To facilitate access to running water for a larger number of households, ONEA began offering a hire-purchase connection system. An awareness-raising campaign was launched to reduce water wastage and the use of “scorecards” brought in to enable customers to monitor their consumption.

Other long-term measures were implemented, starting with the implementation of an Organisational and IT Master Plan (SDOI), the first phase of which was completed in 1994. The introduction of a new organisational structure in 1993, with the creation of an operations department and a human resources department, led to a social audit. All staff was evaluated and social measures taken. The number of employees thus fell from 670 in 1992 to 570 in 1996.

Since its restructuring, and on the basis of action and investment plans, ONEA has undertaken activities aimed at improving the coverage of water supply and sanitation for the population within its area of responsibility. ONEA’s operating
regulations were approved by a decree from the Council of Ministers, dated September 17 2003, which unilaterally established the conditions for authorising or obtaining contracts. It was through these regulations that the state conferred the right to run the water and sanitation service on ONEA.

A framework contract governing relations between the State and ONEA was adopted at the end of 1993, as well as a maintenance plan and a self-financing development plan. Relations between the State and ONEA are now governed by three-year framework contracts that set out the parties’ obligations in terms of performance indicators (28 indicators on average). Twice a year, an inter-ministerial monitoring committee verifies the application of the framework contracts and the performance level attained (see Table 3). Drastic measures were implemented that enabled ONEA move into a position of financial growth from 1992, regaining the donor confidence, which enabled it to continue its water and sanitation projects.

3.2 ONEA’s Activities

At the same time as the implementation of the Ziga dam construction project, ONEA implemented a management system to work from its own funds. Customer management was strengthened in order to improve debt recovery and reduce technical and financial losses.

Performance indicators were set, with annual objectives such as 85% recovery and 84% network return on average. Organisational and technical tools were developed for:

- Metering, redefining meter reading visits, replacing and repairing old meters
- Design of a new customer policy
- Implementation of high-quality management processes aimed at achieving ISO-9001 certification.

A cost-reduction approach was developed through a more

Table 3: Objectives of Some Performance Indicators

<table>
<thead>
<tr>
<th></th>
<th>Number of indicators concerned</th>
<th>Number of indicators validated</th>
<th>% validated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2009</td>
<td>2010</td>
<td>2009</td>
</tr>
<tr>
<td>Operations</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Customer management</td>
<td>7</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Sanitation</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Finance</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Resources</td>
<td>5</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: ONEA internal documents
professional approach to supply management and strict procurement rules – for example, by verifying the quality of essential chemical products, which were ordered in advance to avoid stock shortages.

The company’s activities were conducted according to annual budgeting, including assets (operating expenditure, investment expenditure out of own or external funds) and liabilities (own or external funds, revenues and donations, grants and loans).

Investment expenditure constitutes a significant part of assets, and a lack of control in this regard can have disastrous consequences for a company’s existence due to an unviable financial situation, as was the case when the company reorganised, as described above.

### 3.3 Wastewater and Sewage Disposal

Since 1992, the implementation of the Ouagadougou Strategic Sanitation Plan [PSAO] has contributed to significantly improving wastewater and sewage disposal around Ouagadougou. The main achievements have been the:

- Construction of nearly 39,000 subsidised standalone sanitation facilities, which have contributed to a 24% increase in the rate of access to sanitation.
- Construction of nearly 83,000 soak pits for wastewater,
which contributed to improving the city’s sanitation.

- Construction of a public sewage system (40 km built and 48 km under construction) and a functional lagoon-based wastewater treatment plant, which has enabled the collection and treatment of wastewater from the two main industries (BRAKINA - a brewing company - and the slaughterhouse) and from large water consumers (hotels, hospitals, administration).
- Strengthening of the capacity of private operators, particularly artisanal masons.
- Strengthening of legal mechanisms, particularly in terms of public sanitation regulation.
- Creation of ONEA’s sanitation department.

However, wastewater and sewage disposal are still worrying issues and remain a challenge that ONEA is tackling. While defecating in the open air is now an uncommon practice in planned urban areas, according to the National Sanitation Survey’s results, it still is common in 21.5% of unplanned urban housing and 75.6% of rural households. In the city, 76.2% of households still use traditional unhygienic sanitation structures (inadequate slab latrines, which emit bad smells and attract flies, while at the same time polluting the water table).

Photo 6: AEP KAYA Water Tower
4. PROCESS

4.1 Coordination and Monitoring/Evaluation of Project Implementation

The implementation of the Ziga dam construction project required jointly agreed coordination and monitoring/evaluation systems, provided by the Burkinabe State, headed by the Minister of Finances and supported by the National Director of Cooperation and ONEA's Managing Director.

The World Bank — which provided the largest financial contribution — was assigned the role of “lead donor” to coordinate all 12 donors. To ensure a high level of efficiency, donor supervisory visits were conducted jointly, every quarter or semester. Visit reports were finalised and signed by all stakeholders at their next meeting. The validation process included monitoring the implementation of previous recommendations, highlighted separately in the monitoring and evaluation reports.

All project activities were implemented by providers selected via international invitations to tender. These were publicised widely in the international media, and included eligibility criteria defined by the donors: the French Development Agency (AFD), the African Development Bank (ADB), the Arab Bank for Economic Development in Africa (BADEA), the European Investment Bank (EIB), the Islamic Development Bank (IDB), the West African Development Bank (WADB), the Kuwait Fund for Arab Economic Development (KFAED), the Organisation of Oil-exporting Countries (OPEC), the International Development Association (IDA), Kreditanstalt für Wiederaufbau (KfW), the European Union (EU) and Belgian cooperation, etc.

Activities were sub-divided into 10 lots (see chapter 2.1), ranging from Lot 0, known as the government environmental impact mitigation plan (PGAIE), to Lot 9: technical assistance and engineering consultancy.

The works and supplies related to:
- Lot 1: dam and related structures: capacity 200 million m³
- Lot 2: water supply pipeline: diameter 1,000 mm, length 43.6 km
- Lot 3: water treatment plant
- Lot 4: primary pipelines (3 branches of 74 km)
- Lot 5: 8 water towers of 2,000 m³ capacity
- Lot 6: secondary network and connections: 1,052 km of pipeline and 50,000 connections
- Lot 7: connection equipment
- Lot 8: 16 km electricity power line.

The construction works for the different project structures had an impact on the human and physical environment of the rural area, including 26 nearby villages and the forests and facilities along the route of the pipeline. A government plan to mitigate the environmental impacts (PGAIE) was produced and implemented. It was drawn up on the basis of an environmental impact assessment (EIA) using a participatory regulatory/inventory approach: after a public survey, the plan was produced, evaluated by all actors and partners and validated before implementation.

This management plan covered a quarter of the area’s population (6,134 people and their concessions), who were displaced and relocated with recovery of their incomes and implementation of impact mitigation components: biophysical (impact of works, reforestation, etc.), health infrastructure (construction of infrastructure, screening for endemic illnesses and treatment), impact on local development (financial tools, specific women’s activities), transfer of populations and compensation.

In terms of the technical design of some of the works (the dam and treatment plant), in-depth and tense discussions with the technical partners were required to ensure that the most relevant technological options were chosen:
- For the dam: the choice of diaphragm walls to strengthen
the foundations (which guarantee the effective stability of
the structure), an increase in the length of the central
spillway and an option to increase its height.

- For the process of treating raw water: electrolysis (sodium
hypochlorite) was chosen for purification, at a lower cost
than calcium hypochlorite or chlorine gas.

More than 10 years after the acceptance and commissioning of
the major structures [dam, towers, wide-diameter pipeline], no
damage has appeared, attesting to the good quality (design and
implementation) and reliability of the monitoring and control
system established during the operational phase.

4.2 Procedures and Provisions to Prevent Corruption

In order to avoid manipulation and other fraudulent actions, a
wide range of anti-fraud and anti-corruption measures were
put in place at all phases of the project. Strict procedures for
awarding contracts were enforced and staff was trained
specifically to apply these procedures.

4.2.1 Examples of anti-corruption measures in place for
contract awards
A wide range of measures were put in place to prevent
fraudulent actions during project implementation, including:

Systematic re-examination and adaptation of all tender
documents to ensure they conformed with the donors’ typical
tender documents, wherever these existed:

In-depth Update of the Technical Specifications and Applicable
Standards
An update took place during the contract negotiations with the
winning company, and enabled technical omissions in the
tender documents and recent data from equipment
manufacturers selected in the bid to be taken into consideration
without changing the price.

Precise and Detailed Definition of the Conditions to be Met by
the Tenderers
The conditions to be met by the tenderers – eligibility criteria,
conflicts of interest, exclusion (not having been previously
excluded from tenders by one of the parties – donor or
contracting authority – for non-execution of contract), disputes,
20% of shares, certified financial situation, average turnover for
activities of a similar nature, specific experience of works, staff
(required qualifications, specific experience).

Publication of Invitations to Tender in Major International
Newspapers (Business Development, Jeune Afrique, Arab
newspapers)

Establishment of Detailed and Specific Forms to be Filled
in by the Tenderers, Including one Related to Fraud or
Corruption
Despite substantial efforts to counter corruption and fraud in

BOX 4: EXAMPLES OF RE-EXAMINED TENDER
DOCUMENTS

1. Lots financed by IDB (for example): Eligibility criteria
for applicant companies: “To be a native of the member
countries of the IDB or the Organisation of the Islamic
Conference (OIC)”.

2. Establishment of an organisational chart for the
environmental master plan (SOPAE), including the
environmental approach to be implemented, the
organisational set-up and human and material resources
forming part of the bid.

3. Arbitrator: The contracting authority proposes, in the
specific details of the invitation to tender, an arbitrator to
examine any misunderstandings or disagreements that
may arise during execution of the services.

4. Dam: The design of the dam and works is subject to
the approval of a panel of international independent
experts separate from the engineering consultancy firm
responsible for monitoring the works.
implementing the Ziga project, some fraudulent attempts were nonetheless uncovered, including the submission of curriculum vitae with incorrect information on the applicant’s work experience on a similar project.

4.2.2 Examples of anti-corruption measures during implementation

Financial Audits and Supervisory Missions
Financial audits were conducted during the implementation process. Experts made regular supervisory visits every quarter and verified the state of implementation and progress in the different areas (verification of the metering and minutes of worksite meetings, of the expenditure breakdowns and receipts justifying payment requests from the companies and project manager).

ONEA followed up the observations and recommendations, and explained its actions in biannual reports presented during coordination meetings organised in Ouagadougou, and including representatives of the government (ministerial level) and donors.

Technical Audit of Dam Construction
Specific technical audits were conducted on the dam’s construction twice a year by a panel of international independent experts. Contractors audited were required to take the recommendations into account. Implementation was monitored by the consultant engineer responsible for project supervision.

4.3 Methodology
Methodology here means the way in which the evaluation of bids and production of related reports was organised.

In the Ziga project case, the following was decided, in addition to established procedures:

- The consultant engineer and international technical assistants was to participate in assessing the bids and sign

---

**BOX 5: FINANCIAL SITUATION FORM GIVEN TO TENDERERS**

Name of tenderer  
Financial data for last five years  
- Balance sheet: Total assets  
- Total liabilities  
- Net assets  
- Cash assets  
- Commitments  

Profit and loss account  
- Total income  
- Pre-tax profit  
- Certification of financial statements by an approved expert

**BOX 6: SPECIFIC EXPERIENCE**

- Name of tenderer  
- Contract ID  
- Allocation date  
- Completion date  
- Role in the contract (contractor, sub-contractor)  
- Amount of contract  
- Name of contracting authority  
- Address – telephone – Email

**BOX 7: LETTER OF COMMITMENT TO ANTI-FRAUD AND ANTI-CORRUPTION**

“We undertake to prepare and present our bid (and if the contract is awarded to us to implement it) in strict observance of the anti-fraud and corruption laws in force in the country of the contracting authority, a list of which the contracting authority has included in the tender documents for this contract.”
to this effect. An international expert was to be specially recruited to participate in the work and produce an independent report.

- The national members of the awards committee (technicians) were to be appointed by the Managing Director of ONEA 30 minutes prior to public opening of the bids. The only permanent national members were to be those occupying positions of official responsibility.

- In accordance with national provisions, two reports were to be produced: one on the sub-committee’s analysis of the bids, signed by the technicians participating in the work; the other an analysis and deliberation report on the part of ONEA’s Contract Award Committee, signed by the permanent members and with the compulsory stamp of the consultant engineer, reporting to the contracting authority, and of the technical assistant, reporting to the project management.

Before being signed, the reports were to be verified and their compliance with the evaluation procedure established. They were then to be systematically passed for prior notice of compliance to the Central Public Contracts Department (DCMP) and then to the donors for their “no objection” notice.

The work of evaluating the bids took place with strict:

- Confidentiality
- Prohibition of contact with the tenderers
- Maintenance of all documents together in just one place (tender documents, bids and envelopes could not be moved elsewhere).

Assessing the bids was a thorough process, involving a detailed written examination in the form of an evaluation sheet listing the criteria to be noted, a verification of the eligibility of candidates and of the content of the completed forms (exhaustiveness, coherence).

Figure 4: Bid Evaluation Methodology

<table>
<thead>
<tr>
<th>Opening of bids</th>
<th>Technical and financial evaluation</th>
<th>Examination of technical and financial evaluation report</th>
<th>Project allocation discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Amount Submission Opening report</td>
<td>Detailed report on hard copy (different criteria)</td>
<td>Offer justification as documents for verification</td>
<td>Detailed report requesting a no-objection notice</td>
</tr>
</tbody>
</table>
5. LESSONS LEARNED

The Ziga dam construction project was implemented with a very high degree of professionalism.

Compliance with Contractual Deadlines

In general, no lot or component, however complex, was completed outside of the contractual deadline. Complementary works and even contractual amendments also did not necessitate any specific or particular provisions in terms of issuing a formal or other notice. On the contrary, the works were completed ahead of schedule, and a very beneficial amount of time was saved on the project.

Effectiveness of Coordination System

The effective coordination and monitoring/evaluation system enabled blockages to be avoided at donor and government levels.

Creation of the MOZ within ONEA

The creation of a “contracting authority” structure within the implementing agency, entirely devoted to project implementation and works monitoring, enabled the works to be monitored by ONEA staff through capacity building and creating a sense of ownership of the facilities that enhanced the operational phase.

Existence of Basic Technical Files and High-Quality Technical Specifications

The existence of basic technical files and high-quality technical specifications was also useful, a basis for any professionally implemented project. In hindsight, it can be seen that the long discussions on technical choices and technologies (see 4.1) were justified and enabled correct tender documents to be drawn up, costs to be fair, and, in the long-run, high-quality work to be undertaken at an advantageous price.

Durability of the Works

Since project commissioning, no damage has been recorded, which attests to the high standards followed and the solidity of the structure.

ONEA Case Recognised as Best Practice

ONEA’s Ziga project is now seen as an example of good practice. Given that its internal restructuring supported the successful implementation of the project, ONEA is currently assisting several other national companies in Central and West Africa with their internal restructuring processes -with the support of the World Bank and other partners.

Overall, significant savings were made possible:

- Number of invitations to tender: 15
- Number of bids assessed: 68
- Estimated cost of components: 117 billion F CFA
- Amount of contracts (works allocated): 109 billion F CFA
- Overall savings made: 8 billion F CFA

An analysis of the results shows the importance of the measures taken in terms of ensuring a healthy competition between providers. This enabled the best technical and financial bids to be obtained for the works, i.e. the most advantageous and lowest price for the implementation of highly satisfactory and good quality works.
CONCLUSION

The completion of high-quality infrastructure, resistant to bad weather and other exceptional natural events, forms the basis of any truly sustainable development.

The implementation of structural projects requires an effective organisational set-up, an implementing agency with an appropriate structure, and an excellent mastery of the procedures and processes; all this alongside a firm will on the part of the politicians and the actors involved to enable the objectives to be achieved and corruption to be prevented.

It is commonly said that “systems are only as good as the people in charge of them”. Indeed, systems may be satisfactory but their application may be distorted by individuals. That is a universal truth.

When carrying out high-stakes invitations to tender, one possible approach is to base all evaluations on skills, expertise and deadlines, and to contrast the amount or cost of services to baseline data made available to the tender candidates. This approach deserves in-depth consideration, given that:

- Those who design the projects are experts trained in the best universities
- Those who work in the companies implementing these projects are their peers from those same universities.

The only difference lies in the calculation of costs. The potential savings are certainly worth the effort.
ANNEXES

Figure 5: ONEA’s Previous Organisational Chart
Figure 6: ONEA's New Organisational Chart (1996)
Table 4: Supplying Ouagadougou with Water: A Comparison of Alternatives

<table>
<thead>
<tr>
<th>Baseline Data Comparison</th>
<th>1 Mouhoun without dam</th>
<th>2 Middle course of the Nazinon with dam</th>
<th>3 Lower course of the Nazinon with dam</th>
<th>4a Upper course of the Nazinon with dam</th>
<th>4b Lower course of the Nazinon with dam</th>
<th>5a Middle course of the Nakambé with Ziga dam</th>
<th>5b Middle course of the Nakambé artificial reservoir</th>
<th>6a Lower course of the Nakambé with dam</th>
<th>6b Upper course of the Nakambé with dam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altitude</td>
<td>240 m</td>
<td>280 m</td>
<td>260 m</td>
<td>280 m</td>
<td>240 m</td>
<td>262 m</td>
<td>262 m</td>
<td>240 m</td>
<td>Approx. 230 m</td>
</tr>
<tr>
<td>Distance, Ouaga site</td>
<td>156 km</td>
<td>66 km</td>
<td>110 m</td>
<td>65 km</td>
<td>65 m</td>
<td>53 km</td>
<td>53 km</td>
<td>122 km</td>
<td>135 km</td>
</tr>
<tr>
<td>Contributions</td>
<td>sufficient</td>
<td>sufficient</td>
<td>sufficient</td>
<td>sufficient</td>
<td>sufficient</td>
<td>sufficient</td>
<td>sufficient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incline</td>
<td>60 m</td>
<td>20 m</td>
<td>40 m</td>
<td>20 m</td>
<td>20 m</td>
<td>38 m</td>
<td>38 m</td>
<td>60 m</td>
<td>70 m</td>
</tr>
<tr>
<td>Dynamic height</td>
<td>250 m</td>
<td>106 m</td>
<td>176 m</td>
<td>104 m</td>
<td>109 m</td>
<td>85 m</td>
<td>120 m</td>
<td>195 m</td>
<td>216 m 104</td>
</tr>
<tr>
<td>Pumping power</td>
<td>36.6 gwh</td>
<td>14.9 gwh</td>
<td>25.6 gwh</td>
<td>14.7 gwh</td>
<td>15.3 gwh</td>
<td>14.5 gwh</td>
<td>10.5 gwh</td>
<td>30.1 gwh</td>
<td>33.8 gwh and 26.8 gwh</td>
</tr>
</tbody>
</table>

Table 5: Activity Statistics

<table>
<thead>
<tr>
<th>Number of user subscriptions</th>
<th>32,954</th>
<th>34,211</th>
<th>35,132</th>
<th>36,441</th>
<th>37,128</th>
<th>38,211</th>
<th>40,671</th>
<th>43,967</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private (1+2)</td>
<td>1,132</td>
<td>1,126</td>
<td>1,052</td>
<td>1,010</td>
<td>955</td>
<td>937</td>
<td>942</td>
<td>872</td>
</tr>
<tr>
<td>Large houses and industry (3-4)</td>
<td>1,306</td>
<td>1,303</td>
<td>1,354</td>
<td>1,350</td>
<td>1,384</td>
<td>1,384</td>
<td>136</td>
<td>1,440</td>
</tr>
<tr>
<td>Public and local admin. (5+6+8)</td>
<td>70</td>
<td>82</td>
<td>77</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ONEA (9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,325</td>
<td>1,353</td>
</tr>
<tr>
<td>Standpipe</td>
<td>788</td>
<td>804</td>
<td>1,001</td>
<td>1,102</td>
<td>1,244</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standalone water supply point (PEA)</td>
<td>26</td>
<td>31</td>
<td>34</td>
<td>34</td>
<td>33</td>
<td>34</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>TOTAL</td>
<td>36,206</td>
<td>37,475</td>
<td>38,573</td>
<td>39,937</td>
<td>40,706</td>
<td>40,636</td>
<td>44,391</td>
<td>47,720</td>
</tr>
</tbody>
</table>

Consumption (millions of m3), Private individuals (1+2)

| Large houses and industry (3+4) | 8,526  | 8,372  | 8,094  | 8,975  | 9,199  | 8,139  | 8,735  | 9,220  |
| Public and local admin. (5+6+8) | 2,010  | 1,769  | 1,823  | 1,848  | 1,640  | 1,545  | 1,831  | 1,939  |
| ONEA (9)                         | 1,703  | 1,816  | 1,800  | 2,022  | 1,798  | 1,927  | 1,980  | 2,142  |
| Standpipe                        | 3,458  | 3,274  | 3,948  | 5,246  | 5,377  | 5,842  | 6,627  | 7,627  |
| Standalone water supply point (PEA) | 350    | 419    | 310    | 310    | 301    | 303    | 245    | 104    |
| TOTAL                            | 16,047 | 15,650 | 15,975 | 18,494 | 18,215 | 17,656 | 19,418 | 21,032 |

Consumption / subscription / month / Private individuals (1+2)

| Large houses and industry (3+4) | 22     | 20     | 19     | 21     | 21     | 27     | 25     | 31     |
| Public and local admin. (5+6+8) | 148    | 131    | 144    | 152    | 143    | 137    | 162    | 185    |
| ONEA (9)                          | 109    | 116    | 111    | 125    | 111    | 116    | 121    | 124    |
| Standpipe                         | 366    | 3,398  | 329    | 397    | 360    | 32     | 417    | 470    |
| Standalone water supply point (PEA) | 1,122  | 1,126  | 760    | 547    | 508    | 498    | 1,856  | 788    |
Table 6: ONEA-State Framework Contract (Draft February 1997)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rate of protection of groundwater resources</td>
<td>93%</td>
<td>94%</td>
<td>95%</td>
<td>96%</td>
<td>97%</td>
</tr>
<tr>
<td>2. Total efficiency of facilities</td>
<td>75%</td>
<td>76%</td>
<td>77%</td>
<td>78%</td>
<td>78%</td>
</tr>
<tr>
<td>3. Distribution efficiency</td>
<td>79%</td>
<td>80%</td>
<td>81%</td>
<td>82%</td>
<td>82%</td>
</tr>
<tr>
<td>4. Production efficiency</td>
<td>96%</td>
<td>96%</td>
<td>96%</td>
<td>96%</td>
<td>96%</td>
</tr>
<tr>
<td>5. Rate of malfunctioning meters</td>
<td>1%</td>
<td>0.9%</td>
<td>0.8%</td>
<td>0.7%</td>
<td>0.6%</td>
</tr>
<tr>
<td>6. Rate of meter readings</td>
<td>80%</td>
<td>81%</td>
<td>82%</td>
<td>83%</td>
<td>84%</td>
</tr>
<tr>
<td>7. Number of:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Connections</td>
<td>2,500</td>
<td>3,200</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
</tr>
<tr>
<td>• Standpipes</td>
<td>30</td>
<td>50</td>
<td>90</td>
<td>120</td>
<td>150</td>
</tr>
<tr>
<td>• Standalone water supply points (PEA)</td>
<td>10</td>
<td>10</td>
<td>05</td>
<td>05</td>
<td>05</td>
</tr>
<tr>
<td>8. Rate of water quality</td>
<td>96%</td>
<td>97%</td>
<td>98%</td>
<td>99%</td>
<td>99%</td>
</tr>
<tr>
<td>9. Rate of test completion</td>
<td>80%</td>
<td>85%</td>
<td>90%</td>
<td>92%</td>
<td>95%</td>
</tr>
<tr>
<td>10. Rate of bacteriological quality</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>11. Number of completed public sewage systems</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>12. Standalone sanitation</td>
<td>3,500</td>
<td>3,500</td>
<td>3,500</td>
<td>3,500</td>
<td>3,500</td>
</tr>
</tbody>
</table>
REFERENCES

2. Etude d’une gestion intégrée des ressources en eau du bassin du Nakambé [OIE Décembre 1996]
10. Mission de supervision AFD Janvier 2000
12. Dossiers d’appels d’offres pour le contrôle et la supervision des travaux des lots 2 à 8. ONEA 1997
The Water Integrity Network (WIN) is a network of organisations and individuals promoting water integrity to reduce and prevent corruption in the water sector, with a pro-poor and pro-equity focus.

WIN was formed in 2006 to respond to increasing concerns among water and anti-corruption stakeholders over corruption in the water sector. It combines global advocacy, regional networks and local action, to promote increased transparency and integrity, bringing together partners and members from the public and private sectors, civil society and academia, to drive change that will improve the lives of people who need it most.

Water Integrity Network Association e.V.
Alt Moabit 91b,
10559 Berlin, Germany
www.waterintegritynetwork.net

The National Water and Sanitation Office (ONEA), created by the decree n°1985-387/CNR/PRES of 22 July 1985, is a State company with a capital of 3,080 billion Francs CFA fully owned by the State. The ONEA’s mission is to:
• Create, manage and protect installations for catchment, conveyance, treatment and distribution of drinking water for urban and industrial uses.
• Create, promote and improve, as well as manage collective, individual and autonomous sanitation facilities for the evacuation of wastewater in urban and semi-urban areas.

ONEA
Avenue de l’ONEA,
Porte n° 220, Secteur 17 (Pissy)
01 BP 170 Ouagadougou 01, Burkina Faso
www.oneabf.com

The UNDP Water Governance Facility at SIWI was established in 2005 by the United Nations Development Programme (UNDP) and the Stockholm International Water Institute (SIWI) to promote the development and the implementation of reforms for better water governance. The organisation works in several fields including, IWRM, transboundary water management, drinking water and sanitation, climate change, gender and capacity building.

UNDP Water Governance Facility at SIWI
Stockholm International Water Institute,
Linnégatan 87A,
Box 101 87
100 55 Stockholm, Sweden
Delft Statement on Water Integrity

Statement of the First International Water Integrity Forum, 5-7 June 2013, Delft, The Netherlands

Water is a fundamental resource for sustainable development. It is essential to eradicate poverty, to secure water, food and energy for a rapidly growing population and to maintain life-sustaining ecosystems for future generations. In most countries water crises are not due to resource scarcity but primarily to governance failures. Fragmented institutions obstruct accountability in a sector with high investment and aid flows, making it particularly vulnerable to corruption. Lack of water-related integrity incurs huge cost for societies, in lost lives, stalling development, wasted talent and degraded resources.

The importance of water and good governance has been recognised in preparations on the Sustainable Development Goals (SDGs), as well as in numerous declarations and conventions. The Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda and the 6th World Water Forum both linked effective governance to integrity and control of corruption. Water Integrity embodies the transformative shifts identified by the High Level Panel, by incorporating a global partnership for the equitable, sustainable, and accountable management of water resources and the services these provide to all societies. It is part and parcel of the illustrative goals on Water, Good Governance, Natural Resource Management and Food Security. Eliminating corruption across water-related sectors and building integrity into policies and action plans will be essential to these ambitions.

To take action on promoting water integrity, the Water Integrity Network (WIN), UNESCO-IHE Institute for Water Education and the Water Governance Centre (WGC) joined forces to organise the first International Water Integrity Forum in the Netherlands from 5 – 7 June 2013. It was attended by more than 100 water and integrity experts from over 75 organizations across the world.

Taking stock of water-related integrity issues, the conference finds that

- Water Integrity includes, but extends beyond, control of corruption. It encompasses the integrity of water resources, as well as the integrity of people and institutions. Integrity challenges come in many forms, involving financial transactions, manipulation of knowledge and information, discrimination in all forms, illegal or irresponsible water abstraction and waste discharge, as well as biased rules and processes that favour power and short-term interests over equity, fairness, societal welfare and long-term sustainability.

- Building integrity and overcoming corruption are global concerns. Water management is complex, capital-intense and often involves monopolies, providing systemic incentives for abuses of power. Decision making is dispersed across policy domains and jurisdictions,

---

6 Including amongst others the UN Millennium Declaration, the UN Conventions on Rights of the Child (CRC), on Elimination of Discrimination against Women (CEDAW), as well as the UN Convention against Corruption (UNCAC), the OECD Convention on Combating Bribery in International Business Transactions and several regional anti-corruption conventions.
allowing rampant exploitation of loopholes. These characteristics create the need to actively promote integrity on all levels, from local to global, for national and transboundary water systems. Clear and comprehensive results frameworks, combined with transparency, form the basis of accountability and stakeholder participation. Free and easy public access to relevant, reliable and consistent data and information, including legal documents, is recognized as a key requirement.

Promoting water integrity requires expanding the base, recognizing the fundamental interconnectedness between water, food production and energy supply; between water, sanitation and human health; and between poverty, informal settlements and vulnerability to corruption. Expanding the base also refers to more inclusive water management. Multi-stakeholder approaches are crucial to ensuring water integrity. Such approaches have to bring the debate to weak stakeholders including the poor, to the strong but often disengaged business community, and include the environment and future generations as the ‘silent’ stakeholders.

Promoting water integrity also requires increasing the pace, recognizing that complex new challenges posed by fast population growth, urbanization, rapid destruction of productive aquatic ecosystems and climate change all threaten to overwhelm existing structures. Large-scale funding becoming available to pay for climate change adaptation and ecosystem services creates additional integrity challenges. Increasing the pace includes efforts to scale up systems to provide data and evidence on water-related integrity, establishing effective regulatory bodies and overcoming institutional fragmentation. It also requires building trust between stakeholders, raising awareness through credible information and developing professional capacity based on clear codes of conduct.

The costs of inaction are too high to remain passive. The Forum and its partners call on governments, UN and international organizations, the corporate sector and civil society to promote water integrity. Fighting corruption is an essential first step, but not sufficient. We need to facilitate the recommended transformational shifts, and start changing personal and institutional attitudes and behaviour.

Working towards water integrity requires concrete actions, including to

- Use and expand existing networks and build new alliances between sectors to develop a broad consensus on water integrity, and use multiple communication channels to raise awareness for issues and available solutions;
- Encourage organizations, including our own, to consider water integrity in the development of organizational policies, strategies and action plans;
- Invest in inclusive multi-stakeholder processes that foster collaboration beyond the water sector, engaging user organisations, investors, planning authorities and core governance institutions at country level to join reform agendas;
- Incorporate issues of water integrity, including standards to effectively manage integrity\(^7\), into capacity development, professional training and teaching;
- Advocate in international and regional fora, including the Budapest Water Summit 2013 and the 7th World Water Forum, for the incorporation of water integrity into post-2015 development goals related to water access, water use, good governance and natural resources management;
- Make more data available in the public domain, freely accessible and easy to understand so as to promote informed engagement in decision-making by citizens;
- Move decisively towards a universal code of conduct for individual and institutional behaviour based on ethical principles, values and competence.

---

\(^7\) Building on the established ISO standards 9000 for quality management, 14000 for environmental management and 21500 for project management