Several analytical work has been carried out on infrastructure in Congo, but this study is probably one of the most comprehensive diagnoses ever undertaken on infrastructure development in the Republic of Congo in recent years. Based on available assessments, the study extends the analysis to major relevant issues including a detailed assessment of key constraints on infrastructure development in Congo as well as institutional and regulatory issues. It also analyzes the issue of mobilizing resources for infrastructure financing.

This study seeks to assist the Government of the Republic of Congo in its efforts to upgrade its economic infrastructure and accelerate economic growth. This report focuses on the services associated with electric power, transport and communications infrastructure. It includes a detailed examination of the current status in these three sectors, in terms of delivery and access to infrastructure in recent years and a comparison with trends observed in the other members of the Economic Community of Central African States (ECCAS). The report also identifies national and regional investment priorities. Even more than in other Sub-Saharan African countries, the quality of infrastructure in Congo is low and the cost of the services is high. Successful implementation of the key reforms, capacity building actions and financing options included in the priority action plan proposed by the study would allow Congo to close its infrastructure gap.

This study adds to a series of country and regional studies that the Bank has undertaken to assist member countries in identifying measures that they can take, individually and collectively, to close the infrastructure gap and accelerate integration of their economies. It thus contributes to deepen and broaden the Bank analytical knowledge base and therefore enhancing its role as Knowledge Bank for Africa.

It is our hope that policy makers, development partners and the private sector will find in this report a practical and factual analysis which will help to inform and deepen the dialogue and debate on the expansion of infrastructure in Congo and that its conclusions will be used to guide major reforms in this area. The African Development Bank is already looking forward to continue its dialogue and collaboration with all stakeholders to operationalize the report’s main conclusions and in this way contribute to the Congo’s development efforts.

Marlène Kanga
Regional Director country and Regional Programming Central Africa Region
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The preparation of this report has been coordinated by Nouridine Kane Dia, Country Economist for Congo in the Central Africa Regional Department of the AfDB (ORCE) and supervised by Marlène Kanga and Abdellatif Bernoussi, respectively Director and Lead Economist of ORCE. The Bank’s team benefited greatly from the support of the consultants Philippe De Poorter and Moncef Guen. Rim Trabelsi has provided excellent logistical and administrative support to the production of the report.
### ACRONYMS AND ABBREVIATIONS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AfDB</td>
<td>African Development Bank</td>
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<tr>
<td>AICD</td>
<td>Africa Infrastructure Country Diagnostic</td>
</tr>
<tr>
<td>ANAC</td>
<td>National Civil Aviation Agency</td>
</tr>
<tr>
<td>ANER</td>
<td>National Rural Electrification Agency</td>
</tr>
<tr>
<td>ARPCE</td>
<td>Posts and Electronic Communications Regulatory Authority</td>
</tr>
<tr>
<td>ARSEL</td>
<td>Electricity Sector Regulatory Authority</td>
</tr>
<tr>
<td>CAB</td>
<td>Central Africa Backbone</td>
</tr>
<tr>
<td>CAPP</td>
<td>Central Africa Power Pool</td>
</tr>
<tr>
<td>CEMAC</td>
<td>Central African Economic and Monetary Community</td>
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<tr>
<td>CFCO</td>
<td>Congo-Ocean Railway</td>
</tr>
<tr>
<td>DGIT</td>
<td>Major Infrastructure Works Department</td>
</tr>
<tr>
<td>ECCAS</td>
<td>Economic Community of Central African States</td>
</tr>
<tr>
<td>FDSEL</td>
<td>Electricity Sector Development Fund</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>HIPC</td>
<td>Heavily Indebted Poor Countries</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communications Technologies</td>
</tr>
<tr>
<td>IFC</td>
<td>International Finance Corporation</td>
</tr>
<tr>
<td>IFI</td>
<td>International Financial Institution</td>
</tr>
<tr>
<td>ITU</td>
<td>International Telecommunication Union</td>
</tr>
<tr>
<td>MDG</td>
<td>Millennium Development Goal</td>
</tr>
<tr>
<td>MDIPSP</td>
<td>Ministry of Industrial Development and Private Sector Promotion</td>
</tr>
<tr>
<td>MDRI</td>
<td>Multilateral Debt Relief Initiative</td>
</tr>
<tr>
<td>MEH</td>
<td>Ministry of Energy and Water Resources</td>
</tr>
<tr>
<td>MEPATI</td>
<td>Ministry of Economy, Planning, Regional Development and Integration</td>
</tr>
<tr>
<td>METP</td>
<td>Ministry of Infrastructure and Public Works</td>
</tr>
<tr>
<td>MFPP</td>
<td>Ministry of Finance, Budget and Public Portfolio</td>
</tr>
<tr>
<td>MPME</td>
<td>Ministry of Small- and Medium-sized Enterprises</td>
</tr>
<tr>
<td>MPTNMC</td>
<td>Ministry of Posts, Telecommunications, Information and Communications Technologies</td>
</tr>
<tr>
<td>MTACMM</td>
<td>Ministry of Transport, Civil Aviation and Merchant Marine</td>
</tr>
<tr>
<td>NTP</td>
<td>National Transport Plan</td>
</tr>
<tr>
<td>PAPN</td>
<td>Pointe Noire Port Authority</td>
</tr>
<tr>
<td>PDCT-AC</td>
<td>Central African Consensual Transport Master Plan</td>
</tr>
<tr>
<td>PPP</td>
<td>Public-Private Partnership</td>
</tr>
<tr>
<td>PRSP</td>
<td>Poverty Reduction Strategy Paper</td>
</tr>
<tr>
<td>REC</td>
<td>Regional Economic Community</td>
</tr>
<tr>
<td>RF</td>
<td>Road Fund</td>
</tr>
<tr>
<td>RiSP</td>
<td>Regional Integration Strategy Paper</td>
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<tr>
<td>SME</td>
<td>Small- and Medium-sized Enterprises</td>
</tr>
<tr>
<td>SNE</td>
<td>National Electricity Corporation</td>
</tr>
<tr>
<td>SOTELCO</td>
<td>Congo Telecommunications Corporation</td>
</tr>
</tbody>
</table>
Study Objectives

1. The main objective of this study is to assist the Government of the Republic of Congo in its efforts to upgrade its economic infrastructure and accelerate economic growth.

The study seeks to inform Government’s actions by providing it with analytical support for identifying concrete measures to improve infrastructure service quality and financing, particularly in the energy, transport and telecommunications sectors. It provides a detailed identification of major constraints facing infrastructure development in Congo and proposes a priority action plan comprising investments as well as reform and capacity-building measures. Lastly, the study results will also help to better inform the Bank’s next country assistance strategy for Congo that will be prepared in 2012.

Main Conclusions

2. Despite significant efforts made in recent years to upgrade Congo’s basic infrastructure, the country’s infrastructure deficit remains high.

A vast public investment programme worth about CFAF 415 billion per year, or 8% of GDP, has been implemented over the last three years and has helped to increase the energy generation capacity and to rehabilitate part of the road and rail networks. However, Congo is lagging far behind other African countries. According to the Africa Infrastructure Development Index established by the African Development Bank, Congo was ranked 24th out of 53 countries in 2009.

3. Congo is particularly far behind in the area of transport and energy.

The dimensions of the AfDB Index for which Congo obtained a low score concern the quality of road and energy infrastructure, and access to drinking water. For example, the country was ranked 32nd out of 53 African countries for the energy development dimension of the Index. Concerning transport, the percentage of paved roads in good or fairly good condition is 38%, compared to 79% for sub-Saharan Africa. The rate of access to electricity (about 30% of the total population) is below the average for other low-income developing countries (41%).

4. Lack of rehabilitation and maintenance of assets over the years has led to a serious deterioration of infrastructure.

The practice so far has been to make new investments without ensuring the required maintenance. During the 2006-2010 period, public spending on maintenance did not exceed 0.2% of total public spending. This level is far below the required minimum of 5% of the value of assets suggested by international experience. Lack of maintenance has resulted in the serious deterioration of the quality of assets. Maintenance is particularly urgent as most energy equipment are more than thirty years old and the railway network, which dates back to 1934, has actually never been maintained. Similarly, the dilapidated fixed communications network constitutes a major constraint on the increase and improvement of Internet penetration. The lack of resources has also been exacerbated by poor organization and management of maintenance.

5. The deterioration of infrastructure results in high service costs.

In the transport sector, the cost of railway freight is USD 0.16 ton/km, or eight times the cost in Gabon and three times the estimated cost in Cameroon. According to the World Bank Doing Business 2012 report, the average cost of procedures for importing goods into Congo is USD 7 709 per container, compared to USD 3 819 in ECCAS and USD 2 492 in sub-Saharan Africa. The indirect costs associated with infrastructure services are also high owing to inefficient customs and port processes. They represent one third of the total cost of importing goods into Congo. In contrast, the electricity tariffs in force since 1994 are among the lowest in the region.

6. The operational performance of utility parastatals is low.

In the energy sector, for instance, huge losses representing about 37% of the income of the National Electricity Corporation (SNE) and low recovery rates (80%) result in structurally poor financial performance. In the water sector, only 53% of bills are paid. In the telecommunications sector, the public operator’s management inefficiencies limit its capacity to provide quality...

---

1. This Index is calculated using five components that have an impact on infrastructure development, namely net per capita energy generation, total number of mobile and fixed telephone subscribers, proportion of paved roads and access to drinking water and sanitation.
and affordable services. The poor performance of public enterprises has been exacerbated by the State's pricing policy, which maintains prices below the actual service costs, thus jeopardizing the financial viability of the enterprises concerned and private sector participation.

7. The strategic environment for key infrastructure services has been strengthened, but much remains to be done to build an appropriate institutional and regulatory framework.

Telecommunications and energy sector policies and strategies were updated in 2008 and 2010, respectively. In the transport sector, the National Transport Plan prepared in 2004 is being updated. Despite this progress, the infrastructure institutional and regulatory framework remains weak for several reasons. Firstly, most ministries and agencies lack the required technical and financial capacity to effectively regulate the sector. Secondly, Congo does not yet have legislation with specific provisions governing PPPs. Lastly, regulatory agencies are not yet fully operational and independent.

8. The deterioration of physical infrastructure has also been accompanied by the erosion of technical and institutional capacity due to loss of competences in public administration and lack of a sustained comprehensive capacity-building programme.

This shortage of skilled human resources is particularly significant in the railway, road and civil aviation sub-sectors owing to the retirement of some staff, who have not been replaced. There is a significant erosion of capacity in infrastructure service programming, selection, implementation and regulation.

9. The on-going rehabilitation of existing infrastructure and the strategic position of Congo on a number of transport corridors offer opportunities to develop infrastructure, but major challenges must be met.

The rehabilitation of the national road and railway networks is expected to help to improve the competitiveness of the Congo corridor. The implementation of regional infrastructure operations included in the 2011-2015 Regional Integration Strategy Paper (RISP) for Central Africa will also contribute to maximizing the opportunities offered by regional integration. However, to ensure the optimal use of these opportunities, there is need to: (i) build the capacity of entities responsible for implementing regional infrastructure projects; (ii) improve the management of road corridors; and (iii) accelerate the harmonization of the infrastructure policies of the countries of the region.

10. It will be crucial to strengthen the mobilization of domestic and external resources to finance the huge infrastructure investment needs.

Congo certainly has substantial resources, but infrastructure development financing needs are so enormous that they are beyond the State's financial capacity. To fill the financing gap, it will be necessary to increase fiscal space for infrastructure as well as secure increased participation of the private sector and international financial institutions. Specifically, the inefficiencies afflicting the mobilization of non-oil budgetary revenue and use of public resources (a high level of exemptions and poor budget execution) must be eliminated.

11. The involvement of private operators in the infrastructure sector within the framework of a public-private partnership is a very promising way of covering the financing gap, but the mobilization of private sector resources calls for major reforms.

Apart from the additional resources it provides, private sector participation helps to reduce service costs and also to offset the weak technical and managerial capacity of infrastructure service supply enterprises. However, increased private sector participation in the infrastructure sector requires that key prerequisites be met, namely: (i) rehabilitation of existing assets; (ii) improvement of the legal and regulatory environment; (iii) revision of the tariff policy to enable the private sector to operate on a commercial basis; and (iv) complete financial and technical restructuring of semi-public enterprises.

Main Study Recommendations

12. The priority actions proposed below are geared towards supporting Government’s efforts to promote infrastructure development.

These measures are important and will require the Government’s sustained political will and sustainable support from Congo’s main development partners. They are part of a broader series of detailed recommendations discussed in the main report and included in the matrix of priority actions proposed by the study appended to this summary.
R.1: Significantly increase infrastructure maintenance expenditure.
R.2: Set up a department with managerial autonomy mainly dedicated to rehabilitation and maintenance.
R.3: Review the infrastructure service tariff policy on the basis of the conclusions of on-going studies and apply the resulting price structure.
R.4: Put at the disposal of regulatory agencies the required competences and define financing mechanisms that guarantee them sufficient independence.
R.5: Implement a capacity-building programme, particularly in infrastructure service programming, selection, implementation and management.
R.6: Build the technical and financial capacity of local SMEs.
R.7: Prioritize the rehabilitation of power transmission and distribution networks.
R.8: Adopt the necessary instruments setting up the second generation Road Fund.
R.9: Strengthen the current telecommunications regulatory framework to ensure smooth transition toward the establishment of optical fibre network and e-Government.
R.10: Table before Parliament a bill to define the legal and regulatory framework for PPPs.
R.11: Privatize/restructure ailing parastatals in the infrastructure sector.
R.12: Eliminate exemptions that are not governed by statutory instruments.
I. INTRODUCTION

1.1 Compared to most countries in the region, Congo has recorded outstanding performance in light of its socio-political situation in the early 2000s.

The country has emerged from socio-political instability marked by internal armed conflicts during the 1990s. This situation had an adverse impact on economic growth, which fell from 4.0% in 1995 to 0.3% in 1999. The normalization of the political situation and implementation of macro-economic and structural reforms enabled Congo to restore macro-economic stability and achieve real GDP growth rates averaging 4.9% over the 2000-2010 period. This socio-economic performance as well as progress in implementing the poverty reduction strategy enabled Congo to attain the HIPC Initiative completion point in January 2010.

1.2 Nevertheless, recent economic progress falls short of achieving the Millennium Development Goals (MDGs).

The improved growth recorded in recent years, although substantial, is below the minimum 9% per year estimated by the PRSP to significantly reduce poverty and achieve the MDGs. Consequently, poverty remains high (50.7% of the total population) and most social indicators have fallen behind the MDG targets. Achieving the MDGs is a major challenge that will require sustained growth and a remarkable improvement in public service efficiency.

1.3 The acceleration of growth calls for the expansion and diversification of the country’s production base.

To attain this objective, it is necessary to reduce the infrastructure deficit which is the main impediment to private sector development and growth in non-oil sectors. This deficit is acute in the energy, transport and telecommunications sectors. For example, electricity is the first of the ten major impediments to doing business identified by businesses in a survey on the business climate in Congo conducted by the IFC in 2009. The proportion of paved roads in good or fairly good condition is only 38%2. Lastly, in the telecommunications sector, only 6.5% of the total population has access to the Internet.

1.4 This study seeks to provide analytical support to the Government of Congo to identify concrete measures for reducing the infrastructure deficit and accelerating economic growth.

Specifically, it identifies in detail the major constraints on infrastructure development in Congo and proposes priority actions to help remove the impediments identified. It seeks to provide the Government with a priority action plan comprising reform and capacity-building measures as well as financing options to improve the quality of infrastructure services. Lastly, the study results will help to better inform the next Bank country assistance strategy for Congo.

1.5 Apart from this introduction, this report3 comprises Chapter 1, which analyses infrastructure service provision and access in Congo, and summarizes the main constraints and challenges to be met; Chapter 2, which deepens the analysis made in Chapter 1 by providing a fairly detailed assessment of the current state of transport, energy and telecommunications infrastructure; Chapter 3, which analyses the framework for financing infrastructure in Congo and identifies potential sources of financing; and the last chapter, which summarizes the study’s main conclusions and recommendations.

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1 World Development Indicators Online, the World Bank.
2 This report is a summary of the full report of the study, available at the Bank’s Operations Department Centre Region.

2.1 Coverage and Access to Infrastructure Services in Congo

Although considerable efforts have been made to rehabilitate part of the infrastructure that was badly damaged during the civil war, quality remains poor. According to the Africa Infrastructure Development Index established by the African Development Bank, Congo was ranked 24th in 2009. With an index of 28.5%, it falls behind countries with a per capita income that is two to seven times lower than its own (Graph 1). The areas in which Congo obtained a low score concern the quality of road and energy infrastructure, and access to drinking water.

Graph 1: Classification According to the Africa Infrastructure Development Index 2009

Sources: The Africa Infrastructure Development Index, Economic Brief, Volume 1, Issue 1, April 2011, AfDB.
2.1.2 Congo is considerably behind in terms of transport and energy.

Concerning transport, only 7.1% of the road network is paved, compared to 18.3% for sub-Saharan Africa (Table 1). Due to lack of rehabilitation and maintenance, Congo has one of the poorest railway networks on the continent. The number of accidents per km of road is 0.05%, compared to 0.001% in Cameroon and 0.03% in the Democratic Republic of Congo (DRC). Despite a hydro-electric potential estimated at 14,000 MWh, access to energy infrastructure services in Congo is low. About 30% of the total population have access to electricity, which is below the average for other low-income developing countries (41%). Congo ranks 32nd out of 53 African countries under the AfDB Africa Infrastructure Development Index energy development classification.

2.1.3 Overall, telecommunications development indicators in Congo are comparable to those of other African countries.

The mobile phone to population ratio exceeds that of other sub-Saharan African countries, thanks to significant efforts made to expand access to mobile telephony. In 2009, the number of mobile phone subscribers per 100 people was 58.9, compared to 37.3 for the rest of sub-Saharan Africa. However, Congo has one of the lowest proportions of population with access to the Internet on the continent (6.5%). This partly explains the country’s position in the ITU ranking in its global ICT Development Index (132nd out of 154 countries).

### Table 1 : Sub-Saharan Africa: Access to Infrastructure Services

<table>
<thead>
<tr>
<th></th>
<th>Congo</th>
<th>Sub-Saharan Africa</th>
<th>Low-income Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of paved roads (%)</td>
<td>7.1</td>
<td>18.3</td>
<td>n.a.</td>
</tr>
<tr>
<td>State of paved roads (%)</td>
<td>38</td>
<td>79</td>
<td>n.a.</td>
</tr>
<tr>
<td>Electricity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity generation capacity (MWh per million people)</td>
<td>108</td>
<td>37</td>
<td>326</td>
</tr>
<tr>
<td>Electricity coverage (% of population)</td>
<td>30</td>
<td>16</td>
<td>41</td>
</tr>
<tr>
<td>Communication</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet users (per 100 people)</td>
<td>6.5</td>
<td>8.7</td>
<td>2.6</td>
</tr>
<tr>
<td>Mobile phone subscribers (per 100 people)</td>
<td>58.9</td>
<td>37.3</td>
<td>25.1</td>
</tr>
<tr>
<td>Water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to drinking water (% of population)</td>
<td>41.2</td>
<td>58</td>
<td>72</td>
</tr>
<tr>
<td>Access to safe water in rural areas (% of rural population)</td>
<td>34</td>
<td>47</td>
<td>55</td>
</tr>
</tbody>
</table>

Sources: World Development Indicators Online, the World Bank and www.infrastructureafrica.org. Most recent data.

2.1.4 Access to drinking water remains inadequate despite favourable hydrological conditions.

In 2009, the percentage of the total population with access to drinking water was estimated at 41.2%, compared to 58% for sub-Saharan Africa and 72% for low-income countries. The access rate in rural areas is still very low, with only 34% of the population having reliable access to drinking water, compared to 47% for the rest of the continent. This poor performance will not enable the country to attain the MDG target of providing drinking water to 85% of the total population by 2015, if the current trends were to continue.

2.2 Major Constraints and Challenges in Improving Infrastructure Services

#### Lack of Rehabilitation and Maintenance of Infrastructure Services

2.2.1 The asset quality has deteriorated significantly due to inadequate public spending on infrastructure maintenance.

The practice so far has been to embark on new investments without ensuring the required maintenance. During the 2006-2010 period, public spending on maintenance did not exceed 0.2% of total public spending. This level is far below the required minimum of 5% of the value of assets suggested by international experience. There is urgent need to rehabilitate and maintain existing assets, particularly in the energy, transport and telecommunications sectors. The financial effort needed to ensure the proper maintenance of assets must be accompanied by appropriate institutional organization and efficient management, in order to be able to continue using them.

2.2.2 Given the considerable asset maintenance backlog, huge resources are needed to fully upgrade infrastructure.
According to the AICD, Congo needs to spend USD 946 million per year between 2005 and 2015 to upgrade its infrastructure. These estimates only concern the energy, transport, telecommunications, water and sanitation sectors, and focus only on relatively modest social objectives of ensuring access to infrastructure. This should be compared to USD 692 million which Congo has spent each year over the last five years.

High Infrastructure Service Costs

2.2.3 Due to the deterioration of assets, the cost of infrastructure services in Congo is relatively higher than in other countries of the region.

The cost of railway freight is USD 0.16 ton/km, or eight times the cost in Gabon. According to the World Bank’s Doing Business 2012 report, the average cost of procedures for importing goods into Congo is USD 7 709 per container, compared to USD 2 492 in sub-Saharan Africa. In contrast, the electricity tariffs in force since 1994 are among the lowest in the region. Furthermore, the cost of communications services, which was one of the highest in the region, has significantly declined since 2008, thanks to the entry into the market of new private operators. This has fostered greater competition.

2.2.4 The indirect costs associated with infrastructure services are also high.

The high cost of services is compounded by inefficient customs and port processes. The efficiency of the process of clearing goods through customs was 2 on a scale of 1 to 5 in 2009, compared to 2.4 for Central African countries. Efficiency specific to transport infrastructure was 1.6. These inefficiencies lead to fairly high indirect infrastructure service costs. In fact, according to the Doing Business 2012 report, administrative procedures account for one third of the total cost of importing goods into Congo.

Low Performance of Entities Providing and Managing Infrastructure Services

2.2.5 Lack of resources for asset rehabilitation and maintenance is exacerbated by the low technical and financial performance of parastatals.

In the energy sector, for instance, huge losses representing about 37% of the income of the SNE and low recovery rates (80%) result in structurally poor financial performance. In the water sector, only 53% of bills are paid. The poor performance of public enterprises has been worsened by the State’s pricing policy, which maintains prices below actual service costs. This practice jeopardizes the financial viability of the enterprises concerned and limits their capacity to finance the rehabilitation and extension of generation and distribution networks.

2.2.6 The deterioration of physical infrastructure has also been accompanied by the erosion of technical and institutional capacity due to loss of competences in public administration and lack of a sustained comprehensive capacity-building programme.

This shortage of skilled human resources is particularly significant in the railway, road and civil aviation sub-sectors due to the retirement of some staff, who have not been replaced. There is a significant erosion of technical and institutional capacity in infrastructure service programming, selection, implementation and regulation.

Inadequate Strategic and Regulatory Framework for Infrastructure Services

2.2.7 Progress has been made to strengthen the strategic environment and the institutional and regulatory framework for key infrastructure services, but much remains to be done to build a transparent framework.

Telecommunications and energy sector policies and strategies were updated in 2008 and 2010, respectively. A national transport plan was prepared in 2004, but it has hardly been implemented due to the absence of implementing instruments. The institutional and regulatory framework remains weak for several reasons. Firstly, there is the complexity and absence of a clear definition of the roles and responsibilities of various entities, particularly in the transport sector. Secondly, most ministries and agencies lack the required technical and financial capacity to effectively regulate activities in the infrastructure sector. Lastly, it should be underscored that Congo does not have legislation with specific provisions governing PPPs.

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1The infrastructure sector objectives retained seek to install a new electricity generation capacity of 1 689 MWh, ensure an electricity coverage of 53% of the population, improve 2 370 km of national and regional roads, expand the rural road network to connect 48% of the rural population to national and regional roads and attain an 85% rate of access to drinking water by 2015.

2World Development Indicators Online, the World Bank. 1 corresponds to low efficiency and 5 to maximum efficiency.
3.1 The Energy Sector

Sector Organization and Objectives

3.1.1 The Law of 10 April 2003 instituting the electricity code and subsequent instruments defines the strategic and regulatory framework for the delivery of energy services in Congo.

The law established the National Rural Electrification Agency (ANER), the Electricity Sector Development Fund (FDSEL)\(^3\) and the Electricity Sector Regulatory Agency (ARSEL). The Ministry of Energy and Water Resources designs policies for electricity and water production and distribution, and coordinates the activities of various entities and agencies under its supervision. The SNE, a public corporation, is the main supplier of electricity, although the 2003 code provides for the liberalization of the sector. Other entities and agencies operating in the sector are the Congolese Electricity Generation Company, the Congo Power Plant and the Major Infrastructure Works Department (DGGT), which executes all construction projects worth above CFAF 250 million.

3.1.2 The electricity sector policy adopted by the Government in 2010 defines the sector vision and objectives.

Its main objective is to provide adequate quality and sufficient electricity to the entire population at affordable cost. Its specific objectives are to: (i) increase the rate of access to energy to 90% in urban areas and 50% in rural areas by 2015; (ii) complete the sector reform with the establishment of regulatory agencies and operationalization of the entities set up in 2003; (iii) restructure the SNE; and (iv) fully liberalize the sector in the medium term. The Policy Letter lays special emphasis on PPPs, considered as a major strategic thrust in financing sector investments and promoting cooperation and regional integration with regard to energy.

Recent Performance

3.1.3 In recent years, the Government has adopted stringent measures to strengthen the power generation, transmission and distribution capacity.

Concerning investments, it built a 300 MWh gas-fired plant in Pointe-Noire and a 120 MWh hydro-electric dam in Imboulou. Regarding power transmission, the Pointe-Noire - Brazzaville power transmission and distribution networks in both cities as well as transmission and distribution lines linking up the Imboulou plant are being rehabilitated.

3.1.4 Progress in upgrading part of the energy infrastructure may help to generate enough power to meet the country’s current needs.

Installed power has risen from about 90 MWh in 2001 to 591 MWh in 2011. To this generation capacity should be added an estimated 208 MWh\(^7\) produced by enterprises for their own use. This increase may help to meet current demand and significantly reduce the import of electric power from DRC.

Major Sector Constraints and Challenges

3.1.5 Although potential power supply currently exceeds demand, the total available capacity is low due to obsolete transmission and distribution facilities.

Owing to the advanced state of disrepair of distribution networks and delays in the rehabilitation of transmission lines, power distribution from newly built plants is sub-optimal. Consequently, power supply is yet to meet the country’s demand. Furthermore, the country’s power needs are expected to significantly increase, reflecting the anticipated rise in urbanization in the coming years, the implementation of mining projects, and the pursuit of industrialization policy objectives.

3.1.6 Despite progress at the institutional level with the adoption of the law governing electricity, the framework for implementing the electricity policy remains weak.

Most of the entities established by the 2003 law are yet to be fully operational. Specifically, the FDSEL, which is expected to finance investments in the sector, is not operational. ARSEL, which is responsible for regulating, controlling and supervising the activities of all electricity sector stakeholders, lacks adequate resources and skills and is yet to be independent insofar as it is under the supervisory authority of MEH and not its Board of Directors. These problems are exacerbated by weak mechanisms for coordinating all sector stakeholders and inadequate human and technical capacity.

3.1.7 Lack of facility and equipment rehabilitation and maintenance has seriously eroded the SNE’s capacity to meet demand for power.

Insufficient resources have been allocated for the maintenance of power equipment, most of which are

\(^3\) ANER promotes rural electrification while FDSEL is responsible for the construction of energy infrastructure and human capacity development.

\(^7\) About 82% of firms have generators that meet 56.3% of their electricity needs.
more than 30 years old. This has led to the decrepitude and saturation of generation, transmission and distribution infrastructure. As a result, huge losses are recorded, with less than 50% of effectively generated power being billed. This has also made electricity supply inefficient and unreliable (Graph 2). For these reasons, the rehabilitation of the power grid is a top priority in the medium term.

Graph 2: Energy Generated and Sold by the SNE, 2008-2010 (in MWh)

3.1.8 The SNE’s technical and financial difficulties limit its capacity to address sector challenges.

In addition to the small volume of investment resources allocated for energy infrastructure maintenance and renewal, failure to revise tariffs to reflect the real costs of generation and distribution partly accounts for the SNE’s financial difficulties. The price of a KWh fixed at USD 0.15 is below the average cost of generation estimated at USD 0.28. To ensure the viability of electric utilities, it will be necessary to review and implement a tariff policy that strikes a balance between social objectives and the need to recover production costs. Accelerating the restructuring of the SNE will also be crucial to improving its management, so as to eliminate other operational deficiencies, in particular overstaffing.

3.2 The Transport Sector

Institutional Framework and Strategic Objectives of the Sector

3.2.1 In Congo, the Ministry of Transport, Civil Aviation and Merchant Marine (MTAMM) is responsible for the overall management of the transport sector, although operational responsibilities are shared between many stakeholders.

MTAMM is charged with defining and implementing Government’s road, rail, water, maritime and air transport policy. The Ministry of Infrastructure and Public Works (METP) is responsible for conducting the road infrastructure development policy. The other key sector stakeholders are the General Directorate of Public Works, the General Directorate of Major Infrastructure Works, the DGGT, the CFCO, the Port Authorities of Pointe Noire and Brazzaville, ANAC, and the Road Fund.

3.2.2 The 2004 National Transport Plan (NTP) presented the sector’s long-term objectives.

Its main objective was to provide quality and affordable transport services, ensure access to business and social centres nationwide, and facilitate intra-regional trade. The NTP included a priority investment programme and institutional measures to be implemented over a 15-year period. It should, however, be noted that only part of the NTP was implemented. Although the law governing the NTP was adopted by Parliament in 2006, no implementing instruments were enacted. Nevertheless, the authorities intend to revive the Plan this year, with the support of the European Union.

Recent Performance

3.2.3 Aware of the key role of the transport sector in the Congolese economy, Government has in recent years allocated substantial resources to the sector (about 31.5% increase between 2006 and 2010, and currently standing at 19.6% of total public spending, i.e. 4.1% of PIB).
The financial effort has been very significant for the road sub-sector whose budgetary allocation has risen by 77%. This reflects the authorities’ recognition of transport as one of the sectors needing rehabilitation and investments the most. These resources have helped to implement flagship investments particularly in the road sub-sector and, to a lesser extent, in the railway and maritime transport sub-sectors.

3.2.4 Since 2007, about a dozen projects have been implemented to upgrade road infrastructure.

The projects include: (i) the construction of NR1 that will, on completion, help to pave the entire Brazzaville-Pointe Noire corridor; (ii) the commencement of construction work on the 120 km Obouya-Okoyo road; and (iii) the rehabilitation of 260 km of rural roads. The reconstruction of NR1 between Dolisie and Mindouli, and Kinkala and Mindouli, and the road linking Mindouli to Mayame are also being prepared as part of the future rail-road bridge linking Brazzaville to Kinshasa. Plans have also been made to build and tar the Pointe-Noire - Brazzaville-Ouesso road network backbone.

3.2.5 Furthermore, an emergency rehabilitation and equipment programme was implemented in the railway sub-sector.

The programme mainly concerned the CFCO, within the framework of a protection plan leading to its concession. Thus, between 2007 and 2010, the emergency programme benefitted from financing amounting to CFAF 44.9 billion for equipment rehabilitation and maintenance, and purchase of railway engines and cars. The sub-sector also received support from development partners for conducting the CFCO inventory in 2009 and preparing an investment plan to end in 2025. However, it is worth noting that these investments are insufficient, considering the advanced state of deterioration of the railway network.

3.2.6 Improvements have been made to air and maritime transport infrastructure, thanks especially to private sector contribution.

The construction of the new Brazzaville airport was completed in June 2011. However, the current level of investments is still inadequate to upgrade the country’s airport infrastructure to international standards. As part of efforts to upgrade the Pointe-Noire Port, the Government in early 2009 leased out the container terminal for 25 years. In contrast, there has been little improvement in inland waterway transport infrastructure owing to inadequate investments. Thus, this sub-sector constitutes the weakest link in the multimodal transport system.

Major Sector Challenges

3.2.7 The main constraint on the transport sector is the lack of rehabilitation and maintenance of assets, and the resulting infrastructure decay.

The decay is particularly significant in the road and railway sub-sectors. Although the railway network was recently rehabilitated, most of it is decrepit. In the road sub-sector, new investments have been prioritized, while maintenance has been neglected. This explains why only a small percentage of the road network is in good or fairly good condition (Graph 3). In the inland waterway and maritime transport sub-sector, the Brazzaville Port lacks adequate rolling stock and its freight handling equipment is dilapidated. Lastly, in the air transport sub-sector, the absence of regular maintenance has affected the air and meteorological control systems as well as some runways and air terminals.

3.2.8 The improvement of the governance and regulatory framework is another major challenge in the transport sector.

The institutional environment of the transport sector is complex with five sub-sectors and the involvement of many entities and agencies. The current management of the sector is characterized by an unclear definition of the roles and responsibilities of various stakeholders, weak coordination mechanisms, and weak supervisory capacity of the Ministry of Transport. The presence of many stakeholders also results in the division of already very limited resources among many entities, difficulties in coordinating investment execution and poor infrastructure maintenance management.

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9 The maritime component of the NTP was executed following the implementation of an investment programme (particularly at the Pointe-Noire Port), and the establishment of a maritime one-stop shop.
10 In addition, navigation on navigable waterways is difficult during low flow periods which now last more than four months each year for the Oubangui and Sangha.
11 The inland airports close at 6.00 p.m. due to lack of air navigation instruments.
3.2.9 The insufficient technical and human capacity is particularly acute in the transport sector.

There has been a significant erosion of human resources in the sector due to the non-replacement of retired staff. The CFCO, in particular, is unable to carry out recruitments to replace the ageing and constantly declining personnel. The capacity of the road and civil aviation sub-sectors, particularly at the level of ANAC (air control), is very weak. Specifically, the closure of road maintenance training schools and the freezing of recruitments have eroded the technical capacity to maintain infrastructure and engendered inadequacies in work programming, execution and control.

3.2.10 The establishment of a Road Fund is a significant institutional reform, but major challenges are still to be met to ensure the adequate financing of road maintenance.

The Road Fund (RF) was set up to address the constant lack of funds for road maintenance. Although the Fund's resources increased from CFAF 16.7 billion in 2005 to CFAF 28.9 billion in 2010, they are still largely insufficient to ensure the effective maintenance of the 22,745 km of primary and secondary road network. According to the Ministry of Transport, this amount is far below the minimum CFAF 100 billion that should have been allocated for road maintenance. It is also worth noting that the Fund's lack of control over its resources is a major factor of unpredictability. Lastly, the quality of road maintenance is still unsatisfactory due to the weak control capacity of the Ministry of Transport and the Road Fund, and the absence of performance contracts with the concerned contractors.

3.2.11 The weak capacity of public works SMEs is an impediment to the proper execution of road rehabilitation and maintenance works.

Local public works SMEs have low technical and financial capacity partly due to the absence of an effective flanking policy. Furthermore, the tissue of SMEs has thinned owing to insufficient number of road maintenance bid invitations.

The scale of road network rehabilitation and maintenance works requires the development of the economic fabric and building the capacity of SMEs. A study on the financing of small- and medium-sized enterprises conducted in 2009 by the AfDB proposes detailed measures in this regard.

3.2.12 The restructuring of the CFCO and its successful concession are a major challenge to be met in the railway sector.

The cost of rehabilitating the railway network estimated by the Government at CFAF 902 billion over the 2012-2016 period and the poor financial standing of the CFCO are the main impediments to private sector participation and the reason for the failure of the concession attempt in 2005. Although there is need for a detailed and exhaustive analysis of needs, it is obvious that the cost will be very high compared to the current CFCO traffic volume and income. Therefore, the issue is to determine whether it is economically justified to rehabilitate the entire network or whether priority should rather be given to some portions. Based on available studies, the Government should make the most economically viable choice that will prevent a second fruitless concession process.

3.2.13 As in most African countries, air safety is one of the weak links in the air transport system.

With the present state of infrastructure, Congo cannot ensure effective traffic control. The rehabilitation of air transport infrastructure and capacity building of sector entities, particularly ANAC, is necessary to ensure better airport management and equipment maintenance. In addition, interaction between the various national air systems of the continent and problems relating to air control and safety will require the adoption of measures at regional level. Capacity building could also be designed at the regional or sub-regional level.

3.2.14 The low competitiveness of maritime and inland waterway transport is one of the major constraints impeding maximum capitalization on the huge potential of the sub-sector.

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11 The number of permanent staff dropped from 4,598 to 1,564 between 1985 and 2010.
The natural advantages of the Pointe-Noire Port (the deepest port in the Gulf of Guinea) and a waterway network of more than 5,000 km offer a competitive mode of transportation. These assets made Congo an important transit country in Central Africa until the 1980s. However, this position was lost when the competitiveness of maritime and inland waterway transport significantly degraded due mainly to the non-navigability of the tributaries of River Congo during a good part of the year (attributable to lack of maintenance), the prolonged absence of substantial investments and a decline in the efficiency of the Pointe-Noire and Brazzaville ports (dilapidated equipment/lack of equipment).

3.3 The Telecommunications Sector

Institutional Framework and Objectives of the Sector

3.3.1 The Ministry of Posts, Communications, Information and Communication Technologies is responsible for the communications sector.

The two main functions of the Ministry are to: (i) promote the creation of industries in the posts, telecommunications and new technology fields; and (ii) regulate the activities of private companies and organizations operating in the posts, telecommunications and communication technology fields. The sector has witnessed significant developments with the liberalization of the mobile telephone market in the 1990s, which encouraged rapid service expansion.

3.3.2 In 2009, the Government adopted a legal framework for the governance and regulation of the posts and telecommunications sectors to provide Congo with an institutional and legal environment conducive to investment, and to promote service expansion.

3.3.3 The Telecommunication Services Development Programme includes the extension of access through the National Telecommunications Coverage Project, connection of Congo to the world submarine cable system, implementation of the connectivity strategy and enhanced efficiency of Government (e-Government) through CAB3 (Central Africa Backbone). CAB3 will also provide technical assistance to drive further liberalization of the sector and leverage private investment through PPP arrangements.

Sector Performance

3.3.4 Thanks to the reforms introduced and investments made, the telecommunications sector has experienced outstanding growth in recent years, driven by the expansion of mobile telephone services. According to the ITU (2010), mobile phone use has increased by 48% annually in Congo since 2000, compared to 42% for sub-Saharan Africa (Graph 4). The Internet also experienced substantial development with an average 99% increase in the number of users annually between 2000 and 2009. Despite this sharp increase, Congo has one the lowest penetration rates on the continent. The percentage of the population with access to the Internet is 6.5% as against 8.5% for sub-Saharan Africa. Fixed telephone density (3 lines per 1,000 people) is also low.

Graph 4: Penetration of Mobile Telephony (subsidiaries per 100 people)

Source: ITU

In the Pointe-Noire Port, the timeframe for loading and unloading goods is 12 hours on average, compared to 6 hours at the Cotonou Port (Benin) and Apapa Port (Nigeria), and 8 hours at the Tema Port (Ghana).
3.3.5 Telecommunications was also one of the most dynamic sectors of the economy. Growth in this sector stood at 9.4% per year on average over the period 2006-2010, compared to 5.6% for the transport and 6.0% for the energy sectors. Thus, in 2010, the telecommunications sector accounted for 4.7% of GDP formation, compared to 3.6% and 0.5% for the two other sub-sectors, respectively. This performance was driven by investments made by private mobile telephony operators amounting to more than CFAF 144 billion between 2008 and 2009. The sector is also one of the biggest contributors to public revenue and job creation.

Main Sector Constraints

3.3.6 Despite the expansion of telecommunications services over the last decade, major weaknesses persist.

The most significant weaknesses concern delays in the restructuring of the public fixed telephony operator, inadequate infrastructure and ICT services, weaknesses in the sector’s regulatory framework and lack of skilled staff. These limitations partly account for Congo’s position under ITU’s ICT development indices ranking (132nd out of 154 countries for the global index and 149th for the telecommunications services access sub-index).

3.3.7 The slow progress in restructuring the public fixed telephony operator is a major constraint to improving the performance of the entire sector.

The inadequate resources allocated for operation and maintenance, the high debt burden of the traditional telecommunications operator and management inefficiencies are the main issues facing SOTELCO, as a result of which it has not been able to rehabilitate and properly maintain fixed telephone infrastructure. The obsolescence of the fixed communication network is a major impediment to increasing and improving Internet penetration.

3.3.8 The establishment of ARPCE is a key step towards enhancing sector governance, but significant challenges persist.

ARPCE serves as a sector regulatory agency whose role is to enact rules governing the market and regulate postal and telecommunications activities. However, transition to the establishment of optical fibre networks and changes to be introduced by the Government in its national policy for the development of information and communication technologies, as well as the development of very advanced applications, require the revision and improvement of the current regulatory framework. Furthermore, ARPCE is not yet fully functional since it currently lacks all the skills required to ensure efficient regulation of the sector.

3.3.9 The sector also lacks skilled staff at a time when it is most in need of substantial improvements.

Telecommunications is a sector where technological advances require the constant renewal of human resources. According to the skills development index calculated by the ITU, Congo is ranked 113th out of 154 countries. Areas where capacity building is needed concern the development of service standards for the telecommunications industry and the application of competition policies by the regulatory agency, as well as programming and strategic planning for the technical ministry. The introduction of e-Government should also be accompanied by a far-reaching training programme for the public administration personnel concerned.

3.4 Regional Integration Opportunities for Infrastructure Development

3.4.1 The on-going rehabilitation of national infrastructure and Congo’s strategic position on a number of transport corridors are opportunities for the development of its infrastructure.

On-going improvements in Pointe-Noire Port, the rehabilitation of the road and railway networks, and the construction of a bridge linking Brazzaville to Kinshasa should help to improve competitiveness on the Congolese corridor. These improvements should also help to enhance complementarity between rail, road and inland waterway transport. For example, River Congo and Pointe-Noire Port offer a viable transport route for north Congo, particularly for timber. On-going or planned implementation of regional infrastructure operations included in the 2011-2015 Regional Integration Strategy Paper (RISP) for Central Africa will also help to maximize the opportunities offered by regional integration. Particular mention should be made of the rail-road bridge project, which will play a key role in consolidating regional integration by virtue of its position within Corridor 13 of the Central African Consensual Transport Master Plan (PDCT-AC).

3.4.2 The authorities intend to strengthen complementarity between national and regional infrastructure to take advantage of the opportunities offered by regional integration.

In the area of road transport, the planned priority projects for the 2012-2016 period focus on part of the regional or trans-African network. They concern, inter alia, access to: (i) Gabon with two roads from Dolisie to Mbinda and Ngongo to Yénéganou; (ii) Cameroon through NR 2 from Brazzaville; (iii) CAR through the Ouesso – Enyélé – Mongoumba road; and (iv) DRC through the rail-road bridge between Brazzaville and Kinshasa. On-going improvements in Pointe-Noire Port, rehabilitation of national road NR 1 and the railway network share significant synergies with regional infrastructure operations included.

12 Source: The Posts and Electronic Communications Regulatory Authority.
13 This particularly concerns e-Government, electronic commerce, online security, protection of intellectual property rights, etc.
15 Besides the rail-road bridge project between Kinshasa and Brazzaville, the 2011-2015 RISP includes four other road projects that will be directly beneficial to Congo. They are: (i) the Doussala-Dolisie Road Project (Gabon-Congo); (ii) the Ouesso-Congo-Sangha River Navigation Multimodal Project (Congo-CAR-DRC); (iii) the Ouesso-Bangui-N’Djamena Road Construction Project (Congo-CAR-Chad); and (iv) the Congo – Cameroon Road Construction Project, Phase 2 (Ouesso – Sangmelima).
in the RISP, which will be directly beneficial to Congo. For example, the Pointe Noire-Brazzaville railway line is important in the context of the new rail-road bridge that will link Brazzaville to Kinshasa. It is also important for the inland waterway route to Bangui. Given its considerable hydro-electric potential, Congo also has a special interest in regional integration in the energy domain. For example, the construction of Chollet and Sounda hydro-electric plants should enable Congo to become an electricity exporter and to supply the regional power market through the Central Africa Power Pool (CAPP).

3.4.3 To ensure the maximum use of opportunities offered by regional integration, it is necessary to overcome the major obstacles impeding the efficient implementation and use of regional infrastructure.

These are: (i) weak institutional capacity of entities in charge of implementing regional infrastructure projects, particularly the RECs; (ii) inadequate financial resources; (iii) inefficient management of road, railway and river basin corridors; and (iv) delays in harmonizing the infrastructure policies and procedures of States in the region. For example, the low rate of harmonization of transport taxation and customs procedures results in administrative red tape and many controls on corridors, causing delays and high costs. To eliminate these obstacles, it is necessary to strengthen regional cooperation. Congo should use its membership of several regional institutions to further the

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17 The building of institutional and human capacity, particularly RECs, is one of the two pillars of the RISP for Central Africa.
4 POTENTIAL SOURCES OF FINANCING

4.1 Framework and Structure of Infrastructure Financing in Congo

4.1.1 Unlike most African countries, the bulk of investments in infrastructure is financed with domestic resources.

Congo has financed a large part of infrastructure investments, particularly in the three sectors covered by this study, thanks to oil revenue which accounts for nearly 80% of total public resources. Public sector funding through the national budget averaged 94% during the 2006-2010 period. However, external financing increased sharply in 2010 and accounted for 25.3% of total infrastructure investment, reflecting increased financing from non-traditional donors like China.

4.1.2 Infrastructural investment has increased remarkably in recent years.

The Government has made a significant financial effort to provide the country with new infrastructure. The determination of the authorities to rehabilitate basic infrastructure led to a 22.7% annual increase in investment budget allocations to ministries in charge of infrastructure during the 2006-2010 period. This rise in budgetary allocations hinged on the increase in oil revenue and additional resources released from debt relief under HIPC and MDRI.

4.1.3 The structure of infrastructure investment was more favourable to capital expenditure than maintenance expenditure.

Budgetary allocations for investment absorbed over 95% of total spending on infrastructure during the 2006-2010 period, whereas operating expenses represented less than 5.0% of total spending (Graph 5). The imbalance between the two expenditure categories explains the lack of maintenance of existing equipment and degradation of infrastructure outlined in the preceding chapters. According to the Africa Infrastructure Country Diagnostic (AICD) for Congo, nearly 23% of total spending on infrastructure should be devoted to operation and maintenance. These changes are urgent in the energy and transport sub-sectors.

Graph 5: Structure of Public Spending on Infrastructure, 2006-2010

![Graph 5](image-url)

Sources: Congolese authorities and AfDB staff calculations.
4.2 Investment Needs

4.2.1 Congo has considerable infrastructure investment needs.

To upgrade infrastructure in key areas, it will be necessary to double public investment spending. According to AICD, Congo’s infrastructure financing needs are estimated at USD 0.95 billion per year, or 16% of GDP between 2005 and 2015. These estimates concern only the energy, transport, telecommunications and water and sanitation sectors. They do not take into account the cost of capacity-building needs required to ensure the effective implementation of the vast investment programme proposed.

4.2.2 The recent increase in public investment is an important achievement for Congo, but the current volume of investments remains below the level required to remedy the serious deficiencies in infrastructure.

In the three sub-sectors (energy, transport and telecommunications), allocations have attained an annual average of CFAF 188 billion, or 4.0% of GDP. However, the current amount of resources devoted to them remains largely inadequate, given the state of infrastructure. In particular, the level of spending should be compared with the needs estimated by AICD at 12.7% of GDP.

4.2.3 Given the huge infrastructure financing needs, the increased mobilization of domestic and external resources is critical.

Congo certainly has substantial resources for public investment, but infrastructure development financing needs are so enormous that they are beyond the State’s financial capacity. Even if the level of spending over the last three years could be sustained in the medium term, it will not be enough to fully finance the needs to reduce the infrastructure gap. Credible and sustainable financing of quality infrastructure services in Congo will therefore require the sustained and concerted efforts of the Government, development partners and the private sector.

4.3 Potential Sources of Financing Infrastructure Development in Congo

4.3.1 The report focuses on four potential options for additional financing to fill gaps in infrastructure investment financing18.

These are: (i) substantial increase in tax revenue; (ii) more efficient use of public resources; (iii) increased private sector participation; and (iv) enhanced role of international financial institutions. Reform and institutional measures will also be needed to make the most of these sources of financing.

Increasing Fiscal Space for Infrastructure

4.3.2 Fiscal space for infrastructure could be increased by reducing inefficiencies in domestic resource mobilisation.

The high level of exemptions and limited capacity of tax and customs administrations are the main impediments to increasing non-oil budgetary revenue, which accounted for only 8.7% of GDP in 2010, despite a significant potential. Specifically, excessive customs exemptions are estimated at over CFAF 330 billion, that is more than four times the actual revenue in 2010. It is urgent to review the legitimacy and expediency of such exemptions and retain only those whose economic benefits far outweigh the tax costs. Bolder action will also be needed to combat tax fraud and evasion. This will require the continuation of reforms already initiated by the authorities, in particular the reorganization and modernization of the tax and customs administrations.

4.3.3 A more efficient and judicious use of available resources for investment in infrastructure could release substantial additional resources.

Additional funding equivalent to 2.9% of GDP could be achieved without increasing the current budget if measures were taken to facilitate improved budget execution, more efficient cost recovery and enhanced operational efficiency. For example, if the rate of execution of the capital expenditure of the three main sectors covered by this study were increased from the current 82% to 100%, it would release additional resources amounting to CFAF 50 billion annually, or about 7% of the estimated needs of the three sectors over the same period. Therefore, it is important to speed up the implementation of PAGGFP19 and PAAGIP20, in particular their capital investment programming and execution components.

4.3.4 Reducing operational inefficiencies in the management of public enterprises would also help to increase fiscal space for infrastructure.

Specifically, it is important to eliminate hidden costs due to sub-optimal pricing of public infrastructure services, overstaffing and low bill collection. In the case of the SNE, distribution losses particularly attributable to the fixed charge system, State-imposed rates, and non-payment of bills by enterprises, public agencies and local authorities are estimated at 40% of the existing capacity. Moreover, the rates fixed by the Order of 19 March 1994 have not been revised and are now largely obsolete. The implementation of a pricing policy that strikes a balance between social objectives and the need to recover production cost is therefore an urgent reform.

4.3.5 Proper and regular maintenance would

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18 The options for financing various sub-sectors, in particular private sector participation, will vary according to their specificities. For example, it is relatively easier in principle to increase the role of the private sector in the telecommunications or maritime transport sectors than in the road sector where the Government and development partners have greater incentives for involvement.

19 Government’s Public Finance Management Action Programme.

20 Government’s Public Investment Management Action Programme.
also help to increase efficiency in spending and expand fiscal space for infrastructure.

The lack of maintenance of existing public assets is wastage of technical and financial resources. For example, when a road is not maintained, not only does it quickly become impassable for users, but its upgrading requires very costly rehabilitation works. For example, the average cost of rehabilitating a paved road is estimated at USD 353 per km, whereas the average cost of construction is USD 401 per km. It is critical to establish mechanisms to ensure regular infrastructure rehabilitation and maintenance.

**Encouraging Greater Private Sector Participation in Infrastructure Development**

### 4.3.6 The experience of private investor participation in infrastructure development is relatively recent and very limited.

The liberalization of the mobile telephone sector has attracted four private operators. Part of transport services is also provided by the private sector, particularly the management of the country’s three international airports and the operation of the container terminal at Pointe-Noire Port. In the energy sector, it should be noted that although the Electricity Code has liberalized the sub-sector, services are still mainly provided by the public enterprise. The attempt to lease the railway in 2005 was also unsuccessful. This poor performance is due to the financial and physical condition of the companies involved, lack of a legal and regulatory framework for this type of investment, a high risk perception and an unfavourable global business environment.

### 4.3.7 The use of private operators under PPP is a very promising way of bridging the financing gap but, for the reasons stated above, mobilizing private sector resources is a major challenge.

Besides the additional resources it provides, the involvement of the private sector not only helps to reduce service costs but also to remedy the weak technical and managerial capacity of public enterprises. However, it is obvious that without a strong legal and regulatory framework guaranteeing the safety of private investments, the extensive financial and technical restructuring of the semi-public enterprises involved, the strengthening of regulatory agencies and the rehabilitation of existing assets, it will be very difficult to attract potential private investors. One of the priority measures proposed by the report is to rapidly implement these prerequisites.

### 4.3.8 The establishment of PPPs is not a panacea and should be decided on a case-by-case and sector-by-sector basis.

A 2010 World Bank study that analyzed the experience of toll concessions in some African countries shows that only few cases have been successful and that a road traffic density of not less than 15 000 vehicles per day is necessary to ensure the economic viability of toll concession projects and therefore to attract potential investors. Given the evolution of the volume of traffic in Congo, it will be difficult in the medium term to attract private investment for this type of activity. Hence, the role of the State and development partners will be essential for many more years to come. In contrast, after rehabilitating existing infrastructure, partnerships with the private sector should be sought for: (i) inland waterway transport; (ii) operation of the Brazzaville Port; (iii) operation and maintenance of electricity installations; and (iv) railways.

**Role of International Financial Institutions**

### 4.3.9 Infrastructure financing is one of the best ways for international financial institutions to enhance the competitiveness of the Congolese economy.

The report highlights the impact of infrastructure on growth and its role in regional integration and the use of the opportunities it offers to Congo. For these reasons, International Financial Institutions (IFIs), especially the AfDB, should increase their financing for infrastructure. Specifically, they have an important role to play in financing projects that are not attractive to the private sector (such as road rehabilitation) and regional infrastructure requiring huge investments but that generate significant economic and social benefits. IFIs can also help to reduce the environmental risks of investments in Congo by providing guarantees particularly through partial guarantee instruments. The support of development partners is also crucial in the early years of implementing infrastructure maintenance financing strategies.

### 4.3.10 Besides financial assistance, IFIs have a key role to play in providing institutional support for entities in charge of infrastructure rehabilitation and maintenance.

Specifically, it is necessary to strengthen existing capacity through audits, studies, policy advice and assistance throughout the process of setting up entities responsible for the programming, implementation and monitoring of rehabilitation and maintenance works. This support is especially necessary during the start-up phase of the programme to upgrade existing assets, particularly through the conduct of necessary studies and establishment of relevant management structures. The involvement of IFIs is also necessary for the success of institutional reforms to be implemented by the Congolese authorities in the

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20 An attempt to privatize the SNE was made in 1994, but was declared unsuccessful in 2002.


22 The assistance of development partners is limited since they finance less than 8% of the capital expenditure
infrastructure sector (for instance the establishment of an entity charged with rehabilitating degraded assets, the restructuring of the SNE and the strengthening of public procurement entities). Lastly, the support of IFIs may concern policy advice on how to mobilize financing, including private sector financing.
5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

5.1.1 Considerable efforts have been made in recent years to upgrade the country’s infrastructure, but much remains to be done to significantly improve their quality.

A vast public investment programme has helped to increase the energy generation capacity and rehabilitate part of the road and rail networks. In the telecommunications sector, the investments of private operators have contributed to the expansion of the network and services. Despite these efforts, the current quality of infrastructure services prevents the economy from making the most of its potential and promoting the development of a vibrant non-oil private sector to ensure sustainable growth that creates jobs. The most significant challenges that the authorities must meet to develop infrastructure concern in particular: (i) rehabilitating infrastructure; (ii) improving maintenance financing and organization; (iii) strengthening the framework for infrastructure service financing; (iv) improving the operational performance of traditional public operators; (v) aligning the business climate and regulatory framework with international standards; and (vi) building institutional and implementation capacity.

5.2 Recommendations

5.2.1 Based on the diagnosis made, the report identified priority measures to boost infrastructure development in Congo.

They include the rehabilitation of physical assets, reforms, capacity building and financing. The measures were discussed with all stakeholders during the study validation workshop held in November 2011 in Brazzaville. The main recommendations of the study are summarized below and form part of a broader set of recommendations presented in the Priority Actions Matrix proposed by the study and appended to this report.

5.2.2 Financing for infrastructure rehabilitation and maintenance must be significantly increased.

Annual budgetary allocations equivalent to at least the required minimum of 5% of the stock of assets should be earmarked for carrying out required maintenance works. Concretely, during project design, measures must be taken to ensure that maintenance needs are estimated and incorporated into sector Medium-Term Expenditure Frameworks (MTEFs) and annual budgets. At the same time, an emergency energy, transport and telecommunications infrastructure rehabilitation programme should be implemented.

5.2.3 The organization and management of infrastructure rehabilitation and maintenance should be significantly strengthened.

Specifically, the report recommends the establishment of an entity devoted primarily to rehabilitation and maintenance, endowed with adequate staff and resources. The DGGT would continue to be responsible for all new construction works, based on the priorities set by the ministries concerned.

5.2.4 In addition to the substantial increase in infrastructure spending, strong reform measures will be required to encourage greater private sector participation.

This will mainly include: (i) speeding up the restructuring of public enterprises; (ii) revising the pricing of infrastructure services; (iii) speeding up the implementation of the comprehensive action plan for improving the business climate; (iv) tabling before Parliament a bill defining the legal and regulatory framework governing PPPs; and (v) providing adequate skills and resources to regulatory agencies.

5.2.5 Significant technical capacity building is also required.

The authorities, with the support of development partners, should pay special attention to building capacity for assets design, programming, management and maintenance. These actions are necessary to ensure that the sectors concerned have the skills required for the satisfactory implementation of the assets rehabilitation and maintenance programme, as well as for ensuring its sustainability. It is also necessary to build the financial and technical capacity of local SMEs.

5.2.6 Furthermore, specific measures are required for each of the three sectors covered by the study.

In the energy sector, the report recommends that priority be given to the rehabilitation of transmission and distribution networks, the establishment of an electricity tariff adjustment mechanism, and the replacement of the fixed charge billing system with one based on actual consumption. Regarding the transport sector, the main actions proposed concern the updating and implementation of the NTP prepared in 2004, the establishment of a second generation Road Fund, the introduction of results-based road maintenance contracts, and the operationalization and regular updating of the road database. Lastly, in the telecommunications sector, priority must be given to the rehabilitation of the fixed telephone network, the strengthening of the current regulatory framework to ensure smooth transition towards the introduction of optical fibre network and e-Government, and the execution of a civil service personnel training programme to ensure the satisfactory implementation of e-Government.
Annexes
### Annex 1: Infrastructure Development Priority Action Matrix

<table>
<thead>
<tr>
<th>Actions to be Taken</th>
<th>Body in Charge</th>
<th>Proposed Implementation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ST</td>
</tr>
<tr>
<td><strong>I. RECOMMENDATIONS FOR THE THREE SECTORS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>I.1 Upgrade infrastructure</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Increase financial resources to ensure required maintenance and rehabilitation works (annual budgetary allocations must be at least equivalent to 5% of the value of assets).</td>
<td>MFBPP, Sector Ministries</td>
<td>X</td>
</tr>
<tr>
<td>2. Prepare and implement an emergency energy, transport and telecommunications infrastructure rehabilitation programme.</td>
<td>MEPATI, MFBPP, Sector Ministries, DGGT, FR</td>
<td>X</td>
</tr>
<tr>
<td>3. Audit existing facilities to accurately estimate rehabilitation and new investment needs.</td>
<td>MEPATI, MFBPP, Sector Ministries</td>
<td>X</td>
</tr>
<tr>
<td><strong>I.2 Improve the organization and management of infrastructure rehabilitation and maintenance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Establish a department with management autonomy essentially responsible for rehabilitation and maintenance.</td>
<td>Cabinet of the President, MFBPP, Sector Ministries</td>
<td>X</td>
</tr>
<tr>
<td><strong>I.3 Ensure investment sustainability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Revise the infrastructure service pricing policy and apply the resulting price structure.</td>
<td>MFBPP, Sector Ministries</td>
<td>X</td>
</tr>
<tr>
<td>2. Prepare and implement a medium-term capacity building programme, particularly in infrastructure services programming, selection, implementation and management.</td>
<td>MEPATI, Sector Ministries, MPME, Maison de l’Entreprise</td>
<td>X</td>
</tr>
<tr>
<td>3. Build the technical and financial capacity of local SMEs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>I.4 Improve domestic resource mobilization and investment efficiency</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Eliminate exemptions not governed by statutory provisions and prepare an annual report on exemptions to be appended to the Finance Bill tabled before Parliament.</td>
<td>MFBPP</td>
<td>X</td>
</tr>
<tr>
<td>2. Eliminate hidden costs due to the sub-optimal pricing of public infrastructure services, overstaffing and low collection of bills.</td>
<td>MFBPP, Sector Ministries, MEPATI, MFBPP, Sector Ministries</td>
<td>X</td>
</tr>
<tr>
<td>3. Accelerate the implementation of PAAGIP to enhance the efficiency of public investments.</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
### Actions to be Taken

<table>
<thead>
<tr>
<th>I.5 Increase private sector participation</th>
<th>Body in Charge</th>
<th>Proposed Implementation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Prepare and table before Parliament a bill defining the legal and regulatory framework governing PPPs and setting the rules for private sector activities.</td>
<td>MEPATI, MFBPP, MDIPSP, Council of Ministers</td>
<td>X</td>
</tr>
<tr>
<td>2. Speed up the implementation of the comprehensive action plan for improving the business climate adopted by Government in February 2011.</td>
<td>MFBPP, MDIPSP</td>
<td>X</td>
</tr>
<tr>
<td>3. Provide required skills (based on professional criteria) to regulatory agencies and define financing mechanisms guaranteeing their independence.</td>
<td>MFBPP, Sector Ministries MEPATI, MFBPP, Sector Ministries</td>
<td>X</td>
</tr>
<tr>
<td>4. Privatize/Restructure ailing public enterprises providing infrastructure services.</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

### II. RECOMMENDATIONS FOR THE ENERGY SECTOR

#### II.1 Improve the operational performance of the SNE

<table>
<thead>
<tr>
<th>I.5 Increase private sector participation</th>
<th>Body in Charge</th>
<th>Proposed Implementation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Prioritize the rehabilitation of transmission and distribution networks.</td>
<td>MFBPP, Ministry of Energy, SNE</td>
<td>X</td>
</tr>
<tr>
<td>2. Revise Order No. 681 of 19 March 1994 based on the conclusions of the ongoing study and establish an automatic electricity tariff adjustment mechanism.</td>
<td>MFBPP, Ministry of Energy, SNE</td>
<td>X</td>
</tr>
<tr>
<td>3. Replace the fixed charge billing system with one based on actual consumption and compel public services and institutions to pay their bills on time.</td>
<td>MFBPP, Ministry of Energy, SNE</td>
<td>X</td>
</tr>
</tbody>
</table>

### III. RECOMMENDATIONS FOR THE TRANSPORT SECTOR

#### III.1 Provide the sector with a strategic and regulatory reference framework

<table>
<thead>
<tr>
<th>I.5 Increase private sector participation</th>
<th>Body in Charge</th>
<th>Proposed Implementation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Update and implement the National Transport Plan (NTP) prepared in 2004.</td>
<td>MTACMM</td>
<td>X</td>
</tr>
</tbody>
</table>

#### III.2 Improve road maintenance programming and financing

<table>
<thead>
<tr>
<th>I.5 Increase private sector participation</th>
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<th>Proposed Implementation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Adopt the necessary instruments establishing the second generation Road Fund to ensure its financial independence.</td>
<td>MFBPP, MTACMM</td>
<td>X</td>
</tr>
<tr>
<td>2. Institute results-based road maintenance contracts.</td>
<td>Road Fund, METP</td>
<td>X</td>
</tr>
</tbody>
</table>

#### III.3 Ensure efficient regulation of air transport services

<table>
<thead>
<tr>
<th>I.5 Increase private sector participation</th>
<th>Body in Charge</th>
<th>Proposed Implementation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Provide ANAC with required skills through training programmes on compliance with ICAO standards and procedures.</td>
<td>MTACMM</td>
<td>X</td>
</tr>
</tbody>
</table>
### III.4 Increase the competitiveness of inland waterway transport

1. Lease the Brazzaville Port and the inland waterway units after rehabilitation.  
   - Body in Charge: MTACMM, MEPATI  
   - Proposed Implementation Date: **X**

### IV. RECOMMENDATIONS FOR THE TELECOMMUNICATIONS SECTOR

#### IV.1 Promote the introduction of a digital economy

1. Reduce the debt of the public fixed telephone operator and rehabilitate the fixed telephone network to boost the expansion of services and introduction of e-Government.  
   - Body in Charge: MFBPP, MPTNCTC  
   - Proposed Implementation Date: **X**

2. Strengthen the current regulatory framework to ensure smooth transition toward the introduction of the optical fibre network and e-Government.  
   - Body in Charge: MPTNPC, ARPCE  
   - Proposed Implementation Date: **X**

3. Implement a civil service personnel training programme to ensure the satisfactory implementation of e-Government.  
   - Body in Charge: MPTNPC, PS  
   - Proposed Implementation Date: **X**