



# Mapping Support for Africa's Infrastructure Investment





## TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	5
PART I: INTRODUCTION .....	7
1. Background .....	7
2. Importance of Infrastructure for Africa's Development .....	8
3. Overview of Official Development Finance to Africa's Infrastructure .....	10
PART II: PROMOTING PRIVATE INVESTMENT FOR AFRICA'S INFRASTRUCTURE .....	14
1. Need for Private Investment for Africa's Infrastructure .....	14
2. Examples of Donor Activities in Promoting Private Investment for Africa's Infrastructure.....	20
2.1 Water & Sanitation .....	21
2.2 Transport and Storage.....	22
2.3 Communications.....	22
2.4 Energy.....	23
2.5 Broader Business Climate Reforms.....	24
2.6 South-South Lessons Learned on PPPs .....	25
3. Fragmentation of Development Finance in Africa's Infrastructure .....	26
PART III: THE ROLE OF FINANCIAL INSTRUMENTS AND THE EMERGING ECONOMIES IN AFRICA'S INFRASTRUCTURE .....	30
1. Financing Instruments.....	30
1.1 Introduction .....	30
1.1.1 Investment Funds.....	30
1.1.2 Blending .....	36
1.1.3 Risk Mitigation Instruments .....	38
1.2 Assessing the Impact of Risk Mitigation.....	41
1.3 How Development Agencies Perceive Guarantees .....	43
1.4 Officially-Supported Export Credits .....	43
2. The Role of the Emerging Economies .....	46
2.1 Non-OECD	



## **EXECUTIVE SUMMARY**

Infrastructure development is critical for Africa's economic growth and poverty reduction. Yet there



## **PART I: INTRODUCTION**

### **1. Background**

*This section provides the context, references, and structure of the report.*

The objective of this paper is to present an overview of support by development partners as well as financial instruments that are promoting private investment for Africa's infrastructure<sup>2</sup>. The report is one of the outputs<sup>3</sup> for

The questions covered: Members' strategies for infrastructure in Africa, including mobilising private investment; special considerations for fragile states, environment, regional approaches, and lessons from other developing regions; specific project activities for the enabling environment; application of principles of the Paris



critical to address these deficiencies in order to unlock Africa's productive potential and maximise infrastructure's impact on economic growth and human development. In order to achieve this, significant financial resources are required.

For a number of years, many African countries have featured infrastructure as one of the main focal areas in their national development plans, including the Poverty Strategy Reduction Papers (PRSPs). In 2002, NEPAD adopted a Short Term Action Plan on Infrastructure to promote regional integration by bridging the infrastructure gap. More recently, Heads of State and Government of African countries endorsed a number of priority infrastructure projects and appointed champions for their development at the African Union (AU) Assembly in January 2011 in Ethiopia.

The G8 also established the Infrastructure Consortium for Africa (ICA) at the G8 Gleneagles Summit in 2005 to act as a platform for increasing financing commitments by G8 countries and some key development finance institutions for Africa's infrastructure. The Secretariat, housed in the African Development Bank (AfDB), publishes annual reports and organises meetings for members which now include all the G20 members, major multilateral institutions, the Private Infrastructure Development Group (PIDG)<sup>11</sup>, NEPAD's Infrastructure Project Preparation Facility (IPPF), and the Pan-African Infrastructure Development Fund. The G20 has also emphasised infrastructure development as an important pillar of its Multi-Year Action Plan on Development, with a particular focus on regional infrastructure and ways to leverage private sector investment.

Furthermore, through the joint Aid for Trade Initiative led by the World Trade Organisation (WTO) and supported by OECD, donors have become more aware of African countries' lack of infrastructure as a constraint to their ability to trade and access global markets<sup>12</sup>. The Initiative has also resulted in recognising the need to increase capacity building and technical assistance for infrastructure development as well.

The World Bank undertook a major study called the Africa Infrastructure Country Diagnostic (AICD), whose aim was to expand knowledge on the state of Africa's infrastructure, covering sources of expenditure, sector performance, institutional frameworkD

In fact, an increasing number of infrastructure projects in Africa involve two or more countries—from power pools and submarine cables to transport corridors. The AU-NEPAD African Action Plan 2010-2015 on infrastructure outlines a series of priority regional projects, with sponsoring governments at the highest political level identified for each project. Furthermore, the World Bank has developed a list of 10 priority regional infrastructure projects. A regional approach requires: creating consensus among various countries on policies and institutional aspects; harmonising regulatory frameworks, including tariff-setting; a clear understanding of and a fair sharing of the costs and benefits of trans-boundary projects; both innovative and established financial instruments; and capacitating regional institutions such as the Regional Economic Communities (RECs) that oversee regional projects<sup>13</sup>. Similar to individual country projects, cross-border projects also require capable, sustainable, targeted and sufficiently funded project management, which includes a deep understanding of the economic, financial, and funding aspects of all phases from preparation and implementation.<sup>14</sup>

### **3. Overview of Official Development Finance**

International Bank for Reconstruction and Development (IBRD) and the AfDB<sup>19</sup>. Non-concessional financing from the bilateral donors is not included, even if this forms part of the definition of ODF, due to incomplete reporting at the activity level. Furthermore, it does not include financing by the emerging economies such as China, India, and Brazil, as they do not yet report to the DAC on their development finance (see Part III). For Africa's infrastructure, ODA consisted of 81% of ODF in 2010.

In 2008-2010, among donors that report to the DAC, the disbursement by World Bank, AfDB, the EU Institutions<sup>20</sup>, and the Arab Fund for Economic & Social Development represented 32% of ODA.

As for the bilateral countries, the top three ODA contributors to Africa's infrastructure in 2008-2010 were Japan, France, and Germany. These bilateral countries, along with the World Bank, AfDB, EU Institutions, and the Arab Fund disbursed 79% of ODF to Africa's infrastructure; the remaining 21% was disbursed by more than 27

While many bilateral donors provide government-to-government development co-operation in supporting Africa's infrastructure, others resort to the multilateral organisations to take leadership, as they are well placed to address the crucial aspect of regional infrastructure, given their large number of field offices across the continent and expertise in project finance. In other words, some bilateral donors support infrastructure development through funding various multilateral organisations and facilities<sup>24</sup> through multi-bi funding, as explained above. Donors such as Belgium use these multi-bi channels by recognising the limits to their mid-sized funding level for government-to-government projects. This may be one way of reducing transaction costs and fragmentation; on the other hand, the proliferation of these specialised programme funds could become another source of aid fragmentation.

Other key data regarding aid to Africa's infrastructure is highlighted in Box 2.

**Box 2. Other Key Data on Aid to Africa's Infrastructure**

x The growth of ODF to Africa's infrastructure is is (ge 79.36.Tc 2(')-5(s)2( i)-5(s)2( i)-ehe)-8(T3p5 0 TdT2 1 Tf 0.458

## **PART II: PROMOTING PRIVATE INVESTMENT FOR AFRICA'S INFRASTRUCTURE**

### **1. Need for Private Investment for Africa's Infrastructure**

*This section explains that there is a financing gap for Africa's infrastructure, which needs to be filled by private investment. It introduces existing guidance by the DAC and the Investment Committee which provides directions on how to facilitate private investment for infrastructure. These guidance documents also present challenges that arise in carrying out public private partnerships (PPPs) in infrastructure.*

According to the AICD study, the annual financial requirement for infrastructure in Sub-Saharan Africa is about USD 93 billion a year for both capital expenditures and maintenance. However, only USD 45 billion is being mobilised, leaving a gap of close to USD 50 billion a year. It can be assumed that the funding gap would also be significant if North Africa were included to provide a continental scope<sup>25</sup>.

Current official sources of funding will not be enough to cover this financing gap. Official development finance to Africa's infrastructure has grown steadily, but, as explained in Part I, its proportion in total spending is still modest. Moreover, official development resources are unlikely to further increase in a context of tightening budgets in countries that provide assistance. Furthermore, public expenditure in African countries has played a prominent role, but is unlikely to meet the significant needs of the infrastructure sector, given other competing needs. Private investment, on the contrary, offers some promising way to close the funding gap for Africa's infrastructure.

OECD governments are encouraging their own investors to invest in Africa, although not only for infrastructure. For instance, in 2008, under the "Public-Private Partnership for Accelerated Growth" policy measure, the Japanese government sent three joint missions consisting of government and business representatives to 12 African countries to promote trade and investment and to help improve the continent's investment climate. Moreover, to foster Japanese private business operations in Africa, the Japan Bank for International Co-operation (JBIC) established the Facility for African Investment (FAI) in 2009 to make equity investments and guarantees for private Japanese bank loans and to provide local currency financing to projects in African countries. Furthermore, the Yokohama Action Plan adopted at the Fourth Tokyo International Conference on African Development in 2008 aimed to

with the Korea Eximbank to provide Korean companies with information on investment opportunities abroad, including in Africa. The US Department of Energy undertakes missions between its energy





multilateral agencies; and independence of regulatory institutions and processes from arbitrary government interference<sup>33</sup>

### **Promoting Pro-Poor Growth: Private Sector Development, 2006**

- x Donors should encourage private provision of basic services and infrastructure to the poor by strengthening capacity in legal, regulatory, and administrative frameworks for PPPs.
- x PPPs are needed to finance infrastructure, including water or power distribution projects that are essential for increasing services for the poor. Donors' and development financial institutions' roles as catalysts to maximise the leverage of ODA in attracting private financing are key.
- x Financial instruments are needed to devise innovative and well-adapted solutions, while increasing the leverage of donors' funds, particularly for pro

IV. In order to make **public-private co-operation work**, the following elements should be taken into account: specifying expectations about the private sector's performance; regular and timely consultations between the private and public entities; due diligence and full disclosure from both parties of all the information relevant to the project; setting simple award criteria focused on the quantity and quality of services and the price to end-users; contracts specifying the quantity and quality of services; provisions for future tariffs, technical maintenance and technology transfer; mediation, dispute resolution and recourse to investor-state dispute settlement mechanisms under international investment agreements;

V. Lastly, governments should encourage **responsible business conduct** on the part of private investors, including abiding by contractual commitments, fighting corruption and collusive practices; combating bribery; engaging in dialogue with affected communities; adopting good principles over the environment and society; and upholding human rights.

At the same time, private investment in infrastructure has some challenges. First, some host governments themselves, according to the International Finance Corporation (IFC) of the World Bank t3(i)-3b Tc 0.

On the other hand, some civil society organisations are cautious of PPPs in general<sup>36</sup>. For example, they state that: privatisation of infrastructure should be carried out only if there is private sector interest to invest; cost recovery by investors should not become unaffordable for the poor; PPPs may need to be financially viable in the short to medium term, but should lead to long term development impacts; and risk sharing should not disproportionately burden the public sector, resulting in further indebtedness of host country governments when projects fail. Finally, they state that a thorough assessment of the successes and failures of PPPs in developing countries to draw lessons would be necessary. It must be added that not all of the relatively few PPPs for infrastructure in OECD countries have been successful<sup>37</sup>.

## **2. Examples of Donor Activities in Promoting Private Investment for Africa's Infrastructure**

*The following presents some examples of how donors are supporting country efforts to leverage private investments, including in the specific sectors of water & sanitation, transport & storage, communications, and energy<sup>38</sup>. These activities include: capacity and institution building for defining and implementing sectoral policies, legislation, and regulation; facilitating public-private dialogue; technical and financial assistance for privatisation or liberalisation; support for carrying out a specific PPP or setting up a PPP unit; support feasibility studies; and funding multilateral facilities that promote private investment for infrastructure. Examples cover both country and regional approaches.*

Bearing in mind various challenges in enhancing engagement of the private sector for infrastructure, many donors still see its key role in development. For example, eleven bilaterals<sup>39</sup> signed on to the Bilateral Donors' Statement in Support of Private Sector Partnerships for Development at the United Nations Private Sector Forum in September 2010, which included partnerships for infrastructure. Furthermore, a few donors—namely, Austria, Belgium, Luxembourg, Italy and Korea—explicitly acknowledge the need to mobilise

In reality, many donors are firmly engaged in various types of activities to help enhance private sector participation. For example, USAID provides technical support as well as large-scale training to address the lack of capacity among African governments to negotiate complicated business with the private sector, which it considers as the largest barrier to closing project deals<sup>40</sup>. The Millennium Challenge Corporation (MCC) of the United States has developed a Private Sector Toolkit for partner countries to help them work out financing arrangements for infrastructure. Other donors are helping host governments define and implement reforms, as well as in the upstream preparation of infrastructure projects.

Many bilateral donors provide support for the enabling environment through multi-donor platforms like the Private Infrastructure Development Group. They also contribute to the Public-Private Infrastructure Advisory Facility (PPIAF) housed in the World Bank that provides technical assistance to client governments to support the creation of a sound enabling environment for the provision of basic infrastructure services by the private sector<sup>41</sup>. The Netherlands notes that its support to these multilateral facilities helps avoid duplication and leverages other donors' resources. According to one review, these facilities have had a major impact in supporting reforms to increase private participation in infrastructure by building consensus, strengthening regulatory and legal frameworks, facilitating transactions, and disseminating good practice.<sup>42</sup>

## 2.1 Water & Sanitation

The water sector faces the most difficulty in attracting private investors. Nevertheless, donors are making various efforts, including in involving multiple countries or taking a regional approach. For example, Canada supports the enabling environment for trans-boundary basin management while enhancing service delivery for several countries, such as Zambia and Malawi. It encourages various partnerships including with financing institutions through a multi-stakeholder process in developing guidelines on integrated water resources management. Sweden works with a network in the Southern

Norway, Sweden and the United Kingdom fund a different programme hosted by AfDB called the African Water Facility whose purpose is to finance activities that facilitate investment for water—in addition to physical water infrastructure. The Facility addresses: policy, legal and institutional reform; development and implementation of a regulatory framework; strategic capital investment; effective management of shared water resources; and monitoring and evaluation. Finland contributes to the Africa Water and Sanitation Programme administered by the World Bank, which aims to enhance water and sanitation services through supporting sector reforms, capacity development for national and regional policy makers, and financing strategies to stimulate investments for water and sanitation.

## 2.2 Transport and Storage

In transport and storage, donors, particularly led by the World Bank, are financing sector-wide programmes. Such an example can be found in Mali, which includes modifying the regulatory and institutional framework in order to promote increased private sector participation in the provision of



hydro power.



mention that peace and security are prerequisites for improving the enabling environment. The MCC considers that legal and regulatory reforms must be embodied in the overall economic and social fabric as well. Box 6 describes some of the indicators used to monitor the business climate, especially as regards infrastructure services and regulations that impact on infrastructure investments.

#### **Box 6. Business Climate Indicators Relevant for Infrastructure in Africa**

A number of indicators have been developed to assess the business climate in Africa.

These include the **Doing Business Report**, <http://www.doingbusiness.org/>, which is comprised of ten indicators on the ease of doing business for domestic enterprises, such as getting construction permits or electricity connections.

The **Enterprise Surveys**, <http://www.enterprisesurveys.org/>, cover 125 countries and focus on 11 issues that firms consider to constraints to their business operations. One of these issues is the reliability and quality of infrastructure services, including indicators such as the number of power outages in a typical month.

**Investing Across Borders**, <http://iab.worldbank.org/>, is comprised of indicators on Foreign Direct Investment (FDI) regulations and assesses the extent to which host countries put in place restrictions on foreign investment in certain sectors, including telecom, transport, electricity and waste management among others. The Global Competitiveness Report, ehs EMC BT /Li The





**Figure 2: Largest Donors for Different Categories of Africa's Infrastructure**

	North Africa					Sub-Saharan Africa						
	Hard			Soft		Hard			Soft			
	#	Country	%	#	Country	%	#	Country	%	#	Country	%
Water & Sanitation	1	World Bank	21	1	AfDB	52	1	World Bank	22	1	EU Inst	23
	2	Germany	16	2	Japan	13	2	EU Inst	14	2	World Bank	16
	3	France	16	3	Germany	12	3	AfDB	12	3	Germany	13
	4	Arab Fund	13	4	EU Inst	10	4	Germany	8	4	Japan	6
	5	EU Inst	10	5	France	5	5	France	7	5	Canada	5
	14	Others	24	14	Others	8	26	Others	37	21	Others	37
	Total		100	Total		100	Total		100	Total		100
Transport	1	France	22	1	AfDB	46	1	EU Inst	32	1	World Bank	23
	2	Japan	20	2	EU Inst	44	2	World Bank	25	2	EU Inst	19
	3	Arab Fund	20	3	Japan	5	3	AfDB	16	3	USA	17
	4	AfDB	15	4	World Bank	3	4	Japan	5	4	AfDB	14
	5	World Bank	10	5	Spain	1	5	USA	5	5	UK	11
	12	Others	13	9	Others	1	20	Others	17	15	Others	16
	Total		100	Total		100	Total		100	Total		100
ICT	1	Japan	62	1	Korea	32	1	AfDB	31	1	World Bank	25
	2	EU Inst	17	2	EU Inst	22	2	UK	16	2	Finland	13
	3	Korea	11	3	Spain	13	3	OPEC Fund	12	3	Canada	11
	4	World Bank	3	4	World Bank	12	4	World Bank	10	4	Japan	10
	5	USA	2	5	Canada	9	5	Japan	8	5	EU Inst	10
	7	Others	5	9	Others	12	20	Others	23	19	Others	31
	Total		100	Total		100	Total		100	Total		100
Energy	1	AfDB	27	1	EU Inst	39	1	World Bank	38	1	AfDB	45
	2	Arab Fund	18	2	Germany	27	2	AfDB	22	2	World Bank	29
	3	Spain	17	3	AfDB	24	3	Arab Fund	8	3	EU Inst	5
	4	Japan	10	4	Spain	3	4	Japan	5	4	Germany	4
	5	World Bank	9	5	Japan	2	5	Norway	5	5	USA	3
	8	Others	19	11	Others	5	21	Others	22	20	Others	14
	Total		100	Total		100	Total		100	Total		100

Share of donor in total disbursement for the category (2008-2010) in constant 2009 USD.

Highlighted donors are those that are not the seven largest donors for Africa's infrastructure in general

In other words: the top five donors besides the seven largest donors for Africa's infrastructure in general include:

- x **Spain** in soft aspects of transport, ICT, and energy, as well as hard aspects of energy in North Africa;
- x **Korea** in soft and hard aspects of ICT in North Africa;
- x **USA** in hard aspects of ICT in North Africa, as well as hard and soft aspects of transport and soft aspects of energy in Sub-Saharan Africa;
- x **Canada** in soft aspects of ICT in North and Sub-Saharan Africa, as well as soft aspects of water & sanitation in Sub-Saharan Africa;



**PART III: THE ROLE OF FINANCIAL INSTRUMENTS AND  
THE EMERGING ECONOMIES IN AFRICA'S INFRASTRUCTURE**

**1. Financing Instruments**

should be able to mobilise several dollars from the private sector - the evidence is that partial guarantees have helped MDBs attract from the private sector 4 to 5 times the amount Development.”<sup>53</sup>

Investment funds are usually set up by DFIs using official sources that are then managed by private companies who invest in funds targeted towards African infrastructure projects. This arrangement allows professional fund managers to carry out investments and facilitates DFIs’ support to first-time investors who are often based in Africa or have ties to Africa. As for blending, some DAC members and the European Commission are making use of this approach to combine concessionary funding with financing from market-based sources. Evidence suggests that this package model of funding projects is helping to catalyse infrastructure financing in a more effective way than direct grants or concessionary loans would on their own.

A number of risk mitigation instruments have been developed by development partners in response to the risks associated with investing in infrastructure projects. These instruments cover political and commercial risks and help to allay the concerns of investors, who would otherwise find the risks difficult and costly to manage on their own. However, development partners have differing views on their usefulness in promoting development. The dearth of analysis on guarantees but also on other financing instruments for the infrastructure sector, more so in Africa where investment flows are not as high as in other developing regions, will have to be addressed to ensure a better understanding of their impact in this area. Similarly, while there is a well-developed framework for using export credits to promote trade abroad, there is not much data on how export credits have been used in the

The Netherlands' development bank, FMO<sup>55</sup>, manages specific Dutch government funds in sectors in which FMO has expertise: agribusiness; the financial sector; and energy and housing. The funds focus on facilitating investment in these key sectors. For infrastructure, FMO manages the Access to Energy Fund (AEF) and the Infrastructure Development Fund (IDF) which both aim to catalyse funds from other investors. The Dutch government provides the capital base of the Fund and sets its lending and investment policies, such as identifying the developing countries in which the funds can invest. AEF invests in energy projects (generation, transmission and distribution) that improve access to electricity and household connection rates. This fund's portfolio is 75% in Sub-Saharan Africa and in other least developed countries although as of 2012, the AEF is only available to fund projects in Sub-Saharan Africa.

IDF can invest in a wide range of infrastructure sub-sectors, including ICT, transport (roads and railways), water and sanitation, energy and agriculture-related infrastructure such as irrigation. As of 2012, IDF can also fund transactions in environmental or ecological infrastructure. The Fund provides concessional or non-concessional loans of up to €15.5 million (in euros, USD or local currency) or equity investments of up to €7.75 million to private investors for infrastructure projects in developing countries, including Africa. This funding is completely untied: investors can be from any country and do not need to have links to the Netherlands. The Fund can also financially support other funds or private companies that invest in infrastructure. Indeed, FMO, in managing IDF and other funds, never finances a full transaction on its own but catalyses investment from other institutions such as Germany's DEG, France's Proparco and Belgium's BIO. IDF's list of eligible countries includes not just LDCs but a broader range of developing countries although most of its portfolio is invested in Africa. IDF has so far invested in projects in nine African countries in the energy sector, such as the Dibamba power plant in Cameroon which is being developed by Dibamba Power Development Corporation, a private-public company.

As part of its investment policy, IDF seeks out investments in projects, companies or countries that normally would not attract commercial funding because of various risk factors. IDF makes equity investments (usually 20% but can go up to 49%) and takes subordinated debt positions in project companies. In so doing, it absorbs the higher risk portion of the transaction and thus lowers the risks faced by investors. For instance, IDF invests in greenfield projects, where the infrastructure asset does not exist and has to be newly constructed. Often, these projects involve high risk, cost overruns, schedule delays, revenue overestimates and so on.<sup>56</sup> FMO also plays a venture capital role in providing funding to start-up companies or first-time investors who would otherwise not be able to attract funding from commercial banks or the market. In this way, it helps to diversify the investor base active in Africa, which can have positive implications for competition and improved investor performance. Evidence suggests that funds have the biggest impact when they provide funding to such small, new companies operating in unexplored projects or in emerging economies.<sup>57</sup> Also, IDF provides blended grants for early stage project development. Lastly, if the investments face financial difficulty, FMO can step in to try to rescue them and therefore helps ensure projects' financial sustainability.

Similarly, through the Belgian Investment Company (BIO), its development finance institution, Belgium finances, low income and middle income countries (lower level) infrastructure projects across



all sectors with a

technicians, whereby short-term expatriate staff transferred their knowledge of laying fibre-optic cables to local staff, a technical skill not widely available locally.

Investment funds can also serve as a multi-donor platform, as demonstrated by the Emerging Africa Infrastructure Fund (EAIF). The Fund was set up in 2002 initially with USD 100 million in equity from the PIDG group of donors which has since committed USD 150 million in equity. This equity was leveraged with subordinated and senior loans, borrowed from a range of development finance and commercial lenders, including Barclays, Standard Bank, KfW, IFC, AfDB, OeEB, DEG, FMO and DBSA. As of the end of 2011 the total fund size including equity and debt provided had grown to USD 705 million. The fund manager is Frontier Markets Fund Managers, a division of Standard Bank. It provides senior and subordinated long term project loan financing. By the end of 2011, EAIF had financed 35 projects of which 11 had been repaid and 24 projects are active. Projects it co-financed attracted an additional USD2.5 billion in loans, USD 855 million in private equity and USD 1.74 billion from DFIs.<sup>65</sup> The EAIF is a multi-donor initiative that pools funding from DFIs and private commercial banks, thereby leveraging funding from governments and the development banks with private finance. To give a few examples, EAIF has provided loans for the Rabai power plant in Kenya; Seacom, the undersea fiber optic cable along the east coast of Africa; DP World Dakar, a 25 year concession to operate three container ports in Dakar, Senegal; and the Kivu-Watt project, also co-financed by BIO and Addax Bioenergy, an energy company. All these projects

preparation activities such as carrying out feasibility studies, securing construction permits, and negotiating tariffs and maintenance agreements. Having developed a project to a point where it is bankable, InfraCo recovers its costs through the sale of its property rights to the winning investor, either through a minority equity stake or in cash. If it takes an equity position in the winning company, the stake tends to be approximately from 10% to 15% and InfraCo never retains a majority interest. Any profit from the sale is reverted back to the facility's account to cover new project development



African region. AFD was the lead financier for this project among the co-financing finance institutions.

Preliminary studies, including on the ITF and NIF, found a positive leverage effect on other funding sources: 1 unit of grants blended with 5-6 units of loans leveraged 15 units of total project financing.<sup>69</sup> For example, a project to rehabilitate the Beira Corridor originally had difficulty attracting finance, but when the ITF helped to help fill the funding gap with a €9 million interest rate subsidy to an EIB loan, the project reached closure. According to EIB staff, closure would not have been achieved without the grant element.<sup>70</sup> The interest rate subsidy from ITF also helped Mozambique to keep its indebtedness level (non-concessional claims) compatible with the HIPC process. More generally, more than half of infrastructure projects in the ITF pipeline will receive interest rate subsidies under the HIPC debt sustainability framework.<sup>71</sup>

The grant element in the blending package can also facilitate investment in projects that have high social impact but low financial returns. Moreover, the grant element can incentivise environmentally-responsible projects, as in the case of a wind farm in Egypt which benefitted from a €10 million NIF grant as part of a blended package. If the grant had not been available, the project may have had major difficulty taking off. As for TA, it helps to boost capacity in public utilities and government agencies tasked with preparing projects, thereby increasing the pool of bankable projects that can attract private financing. Moreover, TA that is provided for project implementation can facilitate the progress of the project during construction as well as

operating costs. Furthermore, large infrastructure projects tend to be more visible and have important political implications, thereby exposing them to political interference. This political aspect increases the risk of regulatory changes that could impact the operations and revenues of the project.

Another issue is that, given the narrowness of African financial markets, most investors provide their capital in foreign currency but earn their revenues from the infrastructure project in local currency. Currency depreciation would thus increase the investors' debt burden and compromise their ability to service their foreign debts. Specific instruments have been developed to address the currency risk, although providers are few and the scale of the coverage is often small. Lastly, force majeure risks, such as accidents, uncontrollable situations, extreme events and inaccurate predictions concerning wind and rainfall for hydropower projects typically affect infrastructure projects, particularly in renewable energy.

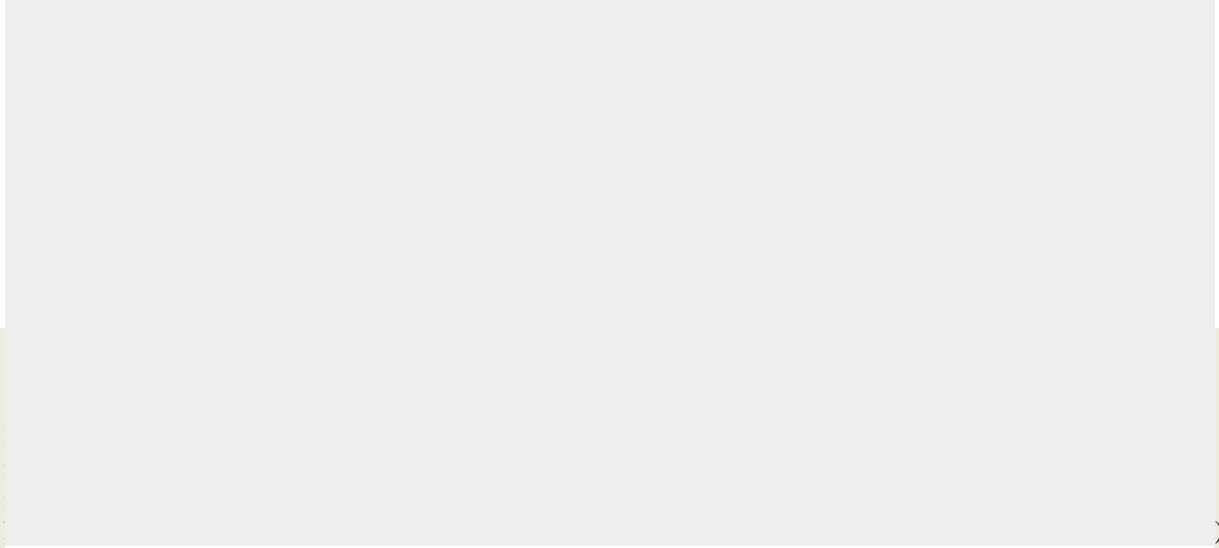
In response to these risks, DFIs and international financial institutions (IFIs) have developed a number of risk mitigation instruments that can help attract private financing in infrastructure projects in African countries.<sup>72</sup> These include Partial Risk Guarantees (PRGs), Partial Credit Guarantees (PCGs), Political Risk Insurance (PRI), Currency Risk Coverage and Export Credit Guarantees (ECGs). The DFIs and IFIs that offer these products charge a high premium to cover their outlays,

offered by a number of institutions across the government. The agencies can be private, government-owned or government-owned but privately managed. Government agencies typically provide their products to investing companies and exporters from their countries although some agencies do not limit eligibility by nationality.

**Currency Risk Coverage** Currently, there is a dearth of instruments that cover foreign currency exchange risk, even though the risk matters for most infrastructure projects funded by foreign currency but earning revenues in local currency. The Currency Exchange Fund (TCX) offers currency hedging products which mitigate currency and interest rate risks through medium to long-term swap agreements. Due to the hedging effect, investments, including in African infrastructure projects, have in many cases moved up the equivalent of two levels in credit ratings (i.e. from a BB rating to a BBB- rating) and in some cases, up to four levels. TCX helps support emerging countries to develop their local currency markets, by sparring local investors from assuming a currency mismatch on their balance sheets. Furthermore, TCX can cover first loss tranches on loans, which is beneficial for equity investors.

*Sources: Export Credit Financing Systems in OECD Member Countries and Non-Member Economies, OECD 2005; Review of Risk Mitigation Instruments for Infrastructure Financing and Recent Trends and Developments, T. Matsukawa; O. Habeck; World Bank 2007; The Currency Exchange Fund N.V.: Overview, TCX March 2010 and TCX Annual Report, 2010.*





)a(o)-42(th)5(2-

agencies is an essential aspect of whether or not they invest.<sup>74</sup> Therefore, guarantees and the institutions that provide them help to influence investment flows to developing countries.<sup>75</sup>

Another benefit is that guarantees sometimes make it possible for the holder to obtain longer term loans. This is important for infrastructure projects as they often involve a long – 20 years or more – project cycle and a long loan tenor can help spread the high up front capital expenditure of a project during a longer period of this cycle. This leaves more room respectively for lower end user usage fees and earlier and increased flows to shareholders via dividends. Partial credit guarantees (PCGs) also help enhance the creditworthiness of companies and sub-sovereign entities, thereby improving their access to funding sources. A concrete example is the provision of a PCG by the World Bank for the Bujagali hydropower project in Uganda. The guarantee was key in attracting funding from four commercial banks in addition to the IFIs who had already committed to the project.<sup>76</sup> Bilateral agencies are also involved in providing guarantees. For example, Germany's DEG and the Netherlands' FMO co-guaranteed a 4.5 billion Kenyan shillings (USD50 million) bond issue for the Celtel mobile phone company to finance network expansion in Kenya.

Finally, guarantees can help to support development efforts generally.<sup>77</sup> Multilateral organisations and national agencies that provide guarantees often undertake an appraisal and due diligence of the companies who apply for guarantees. A common requirement is that inves-5( )11( fl)20()8( m)17(sha)-2(t)

contract design, which have to be tailored to the specificities of the host country and client rather than relying on a standardised model. The costs of contract monitoring are also quite high.<sup>79</sup>

Another issue that complicates the use of guarantees is the difficulty of determining the circumstances under which a guarantee called, and whether the guarantor must disburse funds when regulatory and contractual risks arise. Unlike commercial or political risks, which are well defined, the impact of a regulatory change on project revenue is not always straightforward. Similarly, political risks are not easy to manage because they relate to behaviours of governments and other political actors which typically unfold over time, making it challenging to provide coverage for this type of risk in particular. Lastly, the disbursement of funds can depend on the outcome of arbitration proceedings, which necessitates a protracted legal or arbitration process. These issues can all be significant drawbacks to extending the use of guarantees for infrastructure projects in Africa.

### 1.3 How Development Agencies Perceive Guarantees

The Doha Declaration on Financing for Development, signed by the heads of state of UN member countries including OECD members, mentions that “official development assistance (ODA) and other mechanisms, such as, inter alia, guarantees and public-private partnerships, can play a catalytic role in mobilizing private flows.” However, there are mixed views among development agencies on the usefulness of guarantees as a development tool. Some government providers of PRI view themselves as “insurers of last resort” by serving customers who cannot get coverage from private insurers.<sup>80</sup> AFD believes that guarantees can help achieve the MDGs by mitigating risks, thereby mobilising private investment, improving the financial stability of developing countries, and increasing liquidity in recipient countries. Italy’s aid agency has also agreed that guarantees have strong benefits, as has the Canadian International Development Agency, although the latter adds the caveat that there needs to be a credible way of placing a price on the covered risk in order to count guarantees as ODA.<sup>81</sup> In a Senior Level DAC meeting, Belgium, France and Greece suggested that the definition of ODA should be expanded to take into account non-ODA public resources such as guarantees as they can leverage private financing in developing countries.<sup>82</sup> However, the aid agencies of Denmark, the Netherlands, DFID of UK and USAID of the US, maintain that guarantees should not be counted as OOF, even if the risks they cover can be priced, because ODA should be based on the actual flow of resources.<sup>83</sup> The EU, Ireland, Spain, the UK and the US have also expressed concerns about including guarantees in the definition of ODA, as it would undermine volume commitments made to developing countries.<sup>84</sup>

---

<sup>79</sup> *Investment Guarantees and Political Risk Insurance: Institutions, Incentives and Development*; Kathryn Gordon, OECD Investment Policy Perspectives, OECD 2008.

<sup>80</sup> Ibid.

<sup>81</sup> DAC Senior Level Meeting 2004 Summary Record.

<sup>82</sup> *Summary Record of the Senior Level Meeting (SLM)*; 26 August 2011; [http://olisweb.oecd.org/vgn-ext-templating/DCD-DAC-M\(2011\)3-FINAL-EN](http://olisweb.oecd.org/vgn-ext-templating/DCD-DAC-M(2011)3-FINAL-EN)

Copyright © 2011 by OECD. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage or retrieval system, without the prior written permission of the OECD Publishing and Distribution Service. ISBN 978-92-64-11111-1. DOI: 10.1787/9789264111111

## 1.4 Officially-Supported Export Credits

The OECD Arrangement on Officially Supported Export Credits sets out the most favourable terms and conditions by which governments can provide export credits. It also restricts the use of tied and untied aid. The Participants to the Arrangement are OECD countries, although Brazil is a Participant to the Sector Understanding on export credits for civil aircraft. Between 1990 and 2006, the value of export credits from OECD countries with a repayment period of one year or more was approximately USD 50 – USD 60 billion a year. About 66% went to developing countries and about 90% was for the infrastructure sector, mineral resources and mining.<sup>85</sup>

Export credits provide non-concessional loans to promote exports as well as for financing capital-intensive projects abroad. Credits are provided for trade and investment transactions; loans that cover the risk of default on export loans; and bond issues. Often, they are provided in conjunction with guarantees from the state, as well as investment insurance for project finance based on the expected future revenues of the project. Export credit agencies (ECAs), which provide export credits and in some cases investment insurance and guarantees as well, have different criteria for providing these products. In some cases, such as Switzerland and France, eligible beneficiaries must be nationals of that country, but in other cases, such as Canada and Germany, eligibility can include international private sector companies, importers and lenders. Other agencies have other conditions on eligibility. The Swedish Export Credit Guarantee Board (EKN), for instance, requires that for guarantees of exports, 50% of the goods must be of Swedish origin. Belgium's Finexpo generally provides export credits to Belgian companies for projects in developing countries but accepts applications for support from developing country governments for untied aid on a case-by-case basis. When providing official export credits, OECD ECAs follow the OECD Arrangement on issues such as the length of the tenor for the insurance or guarantee and minimum premiums, as well as OECD standards for responsible business conduct such as the Anti-Bribery Convention and the Guidelines for Multinational Enterprises.

Many export credit agencies (ECAs) also provide insurance and guarantees for exports and investments abroad by home companies. They are either owned by the government such as the Norwegian Guarantee Institute for Export Credits (GIEK), or are administered by an independent entity (e.g. Germany's Foreign Trade and Investment Promotion Scheme (AGA), which is administered by a consortium of two private companies. Most agencies provide risk coverage for both commercial risks, such as insolvency, political risk, currency risk, and credit risk. Some agencies also provide coverage for non-commercial risks, such as terrorism, piracy, and kidnapping. The OECD Arrangement sets out the most favourable terms and conditions by which governments can provide export credits. It also restricts the use of tied and untied aid. The Participants to the Arrangement are OECD countries, although Brazil is a Participant to the Sector Understanding on export credits for civil aircraft. Between 1990 and 2006, the value of export credits from OECD countries with a repayment period of one year or more was approximately USD 50 – USD 60 billion a year. About 66% went to developing countries and about 90% was for the infrastructure sector, mineral resources and mining.<sup>85</sup>

Arrangement terms are considered to be completely non-concessional (i.e. 0% concessionality) and are not counted as official development assistance (they are considered to be “other official flows”).The Arrangement rules on tied aid are based on the underlying principle that projects that can attract commercial finance should not benefit from official aid from the state. However, if importing developing countries are unable to pay back their loans, the export credits conferred to them can be turned into debt relief. However, this rarely arises because most export credits go to private entities and in the few instances where they are provided to sovereigns, they are often given to high-income and middle-income countries that are not eligible for debt relief.

The Arrangement continues to be updated on a regular basis. For example, it has been adjusted to support renewable energy projects by allowing for longer repayment terms on loans, more flexible repayment schedules, and revised fixed interest rates for long-standing loans. More analysis is needed on how export credits have been applied in an African context, and how they have impacted infrastructure investments in African countries specifically. To do this analysis, more data collection is needed.

**Figure 4: Summary of Financing Instrument**

Name of Instrument	Description	Application/ Examples	Main Benefits for Leveraging Private Investment	Main Challenges
Investment Funds	These funds provide capital to <div style="border: 1px solid black; height: 100px; width: 100%;"></div>			

## **2. The Role of the Emerging Economies**

social areas.<sup>93</sup> Therefore, while emerging partners may, at first glance, seem to be competitors to traditional donors, they may in fact complement each other.

## 2.2 China: An Important Player in Africa's Infrastructure

China is now Africa's biggest partner for its infrastructure sectors, providing about two-thirds of their new spending since 2007.<sup>94</sup> In other words, estimates show that China has outpaced the World Bank as the leading funder of Africa's infrastructure (see Figure 2). China's approach involves not only aid but also a number of financial instruments offered by its various state institutions. For instance, the China Development Bank provides non-concessional development finance while the China-Africa Development Fund provides equity finance to ventures launched or backed by Chinese enterprises. The Fund is also a gateway to partnership with European firms for infrastructure deals.<sup>95</sup>

China's Eximbank operates in the same manner as the export-import banks of OECD countries by providing export credits, preferential loans, and guarantees to sellers and buyers. It provides concessional loans to Chinese enterprises for their investments and exports abroad, backed by an interest rate subsidy from the central bank. If DAC definitions were applied, only the concessional loans can be counted as foreign aid.<sup>96</sup> China's use of a mix of grants, export credits and concessional loans therefore comprises a market-oriented "package financing mode".

China has also used resource-backed loans, whereby financial institutions such as the China Development Bank provide non-concessional loans<sup>97</sup> to governments which in return contract Chinese companies to build infrastructure projects and extend the right to extract natural resources as well. In this way, the government pays for its infrastructure costs through mining or oil extraction rights. The approach has been used in Angola to finance energy, water, airports, roads and rail projects, but this Angola model has also been used in Ghana for the construction of the Bui Dam, where, instead of minerals, the loans were backed by exports of cocoa. Chinese companies are not obliged by the Eximbank to export the extracted resources back to China.<sup>98</sup>

---

<sup>93</sup> *African Economic Outlook 2011: Africa and Its Emerging Partners*; African Development Bank, OECD, UNDP and UNECA, 2011.

<sup>94</sup> *BRIC and Africa: New Partnerships Poised to Grow Africa's Commercial Infrastructure*; Simon Freemantle and Jeremy Stevens; Standard Bank; 15 October 2010.

<sup>95</sup> *The Dragon's Gift: the Real Story of China in Africa*; Deborah Brautigam, Oxford 2009.

<sup>96</sup> Ibid.

<sup>97</sup> The China Eximbank is the only Chinese bank authorised to offer concessional loans.

<sup>98</sup> *The Dragon's Gift: the Real Story of China in Africa*; Deborah Brautigam, Oxford 2009.





The Angola model has helped develop infrastructure in fragile and low-income states, which may otherwise not have had access to market finance or even to donor funding which tends to focus on social sectors in these countries. Moreover, while the terms of deals made under the Angola model are often unclear, this is the case for many infrastructure deals involving private companies in general. There are some encouraging signals that African countries are negotiating to their own benefit instead of simply being passive to Chinese terms. In Angola, for example, the government included a

## **PART IV: APPLYING THE PARIS DECLARATION ON AID EFFECTIVENESS AND CONCLUSIONS**

### **1. Applying the Paris Declaration on Aid Effectiveness**

*This section describes good practices and challenges for donors in applying the principles of the Paris Declaration on Aid Effectiveness in their support to Africa’s infrastructure development, which includes promoting private investment. In particular, it describes the views expressed by donors on alignment, harmonisation, and managing for results.*

Several donors indicate general adherence to the principles of the Paris Declaration on Aid Effectiveness in working on Africa’s infrastructure development—for both physical aspects and the enabling environment. Some state that their assistance is aligned to partner countries’ priorities, particularly expressed in the national development plans or PRSPs. Austria mentioned that, for example in Uganda’s water and sanitation sector, the Ugandan Government led successful consultations to enhance its monitoring and evaluation capacity by developing a performance measurement framework that included indicators on access, usage, managerial aspects, impact and cost effectiveness. To this joint effort, Austria contributed to improving the definition, criteria, and methodology of this framework.

Consultancy Firm, Inc. [CO] 2012. All rights reserved. (i) 313 (er) 13 (i) -3 (c o) 2 ( ) -11 (d) 2 (c 89 013 (e1 (n) 2e ) 2 ( ) 11 (i)



## 1.2 Managing for

## 2. Conclusion

The ultimate objective is not about promoting private investment *per se*. On the contrary, it could be counterproductive if some private investment led to unsustainable infrastructure development that posed a huge financial burden on the host government. In fact, the main goal is sustainable growth and poverty reduction that could happen at the end of a long and complex process involving many actors and interventions. Nevertheless, when private investment is deemed to make major contributions to this goal through a specific infrastructure plan, then development partners should collectively look at what they can do more to help improve the enabling environment and provide effective financing instruments. This could be done through enhanced dialogue among African governments, the private

## ANNEX 1: PRIVATE PARTICIPATION IN INFRASTRUCTURE, 1990-2009

Country	# of projects reaching closure	Sector with largest investment share	Type of Investment, largest share	Projects Cancelled or Distressed
Algeria	27	Energy	Greenfield	0
Angola	7	Telecom	Greenfield	0
Benin	6	Energy		1 or 6% of total investment
Botswana	2	Telecom		0
Burkina Faso	5	Telecom	Divestiture	0
Burundi	3	Telecom	Greenfield	0
Cameroon	7	Telecom	Divestiture	0
Cape Verde	2	Telecom	Divestiture	1
Central African Republic	4	Telecom	Greenfield	1
Chad	4	Telecom	Greenfield	2
Comoros	2	Transport	Concession	1
Congo, Dem. Rep.	7	Telecom	Greenfield	1
Congo, Rep.	7	Transport	Concession	2 or 22% of total investment
Cote d'Ivoire	15	Telecom	Greenfield	1 or 2% of total investment





showed that 25% of water projects (the most affected sub-sector) were cancelled or under distress in Africa between 2000 and 2005, with a similar rate for electricity projects as well.<sup>7</sup>

Better institutional arrangements can help project implementation, which in turn can lead to gains for both the private and public parties.<sup>8</sup> Well-functioning municipalities can facilitate the delivery of infrastructure services and ensure the proper functioning of all aspects of the project cycle. Moreover, a strong enabling environment, based on long-term master planning, is critical for investment sustainability. The public sector will remain essential in strengthening regulatory and institutional support that would facilitate effective project preparation. In particular, for regional projects, the complexity of the projects demands a solid framework for harmonisation and coordination among several governments.

Various studies have analysed the factors behind project cancellation and in most cases, a weak enabling environment is to blame. One study found that in the transport sector, traffic flows fell below forecasts because of overly optimistic projections, alternative traffic routes in the case of tolls, and insufficient due diligence. In the water and sanitation sector, contract cancellation was often motivated by the inability to raise tariffs to cost-recovery levels and difficulties in collecting bills from customers. The electricity sector faced the same problems. In the telecommunications sector, the reason for project cancellation was a low customer base, and government changes to the structure of the market.<sup>9</sup> Another study found that certain factors tend to make projects more likely to be cancelled: the challenging environment around the water sector makes it a high-risk sector for cancellations; projects in SSA also more likely to be cancelled because of weak institutional capacity; projects with foreign sponsors; and larger projects. Also, the potential of private sector participation in the energy

financial appraisals, determining baselines of anthropogenic emissions, and the process of validation, verification and monitoring, can be skill-intensive. Similarly, while IPPs can potentially contribute to the power grids of many countries there aren't enough policy frameworks in place to facilitate IPPs.<sup>12</sup> Another example is geothermal energy, which has significant potential but the African Rift Valley, for instance, has not been exploited due to the high costs of exploration, the high risk associated with it, and the "lack of supporting policies, regulatory frameworks, technical capacity, and resource information on one hand."<sup>13</sup>

## 5 The Enabling Environment is Key for Attracting Private Investment

While public resources are important, private funding is indispensable for addressing Africa's massive infrastructure needs. Strengthening the enabling environment can help attract private investors, who are a crucial partner in the development of Africa's infrastructure. Part of the reason for the success of telecommunications infrastructure in Africa, for example, is because of liberalisation in licensing which led to greater market players and more competition, which drove down prices and led to greater access to more consumers. Moreover, investors pursue several prospects and bids at the same time, so bureaucratic and slow processes in government approvals and licensing create an opportunity cost for investors.<sup>14</sup> (A study on IPPs in Africa found that countries with a better investment p



The Dragon's Gift: the Real Story of China in Africa; Deborah Brautigam, Oxford 2009

Dynamic Risk Management: the Missing Link in Infrastructure Finance, John Larew et Mark Robson, Oliver Wyman Risk Journal, ;

EU-Africa Infrastructure Trust Fund Annual Report 2010;  
[http://www.eib.org/attachments/country/eu\\_africa\\_infrastructure\\_trust\\_fund\\_annual\\_report\\_2010\\_en.pdf](http://www.eib.org/attachments/country/eu_africa_infrastructure_trust_fund_annual_report_2010_en.pdf)

Evaluation of the Demonstration Effect of IFC's Involvement in Infrastructure in Africa: Final Report; Castalia, 2011

GPR Ex-Ante Analysis of BIO Commitments 2009: Final Report; BIO/ DEG 2009

Guaranteeing Development – Impact of Financial Guarantees; James Winpenny, OECD 2005

How China is Influencing Africa's Development; Martyn Davies, OECD Development Centre, 2010

How the Growth of Emerging Markets Will Strain Global Finance, Richard Dobbs, Susan Lund and Andreas Schreiner, McKinsey Quarterly, December 2010

IDA Makes First Private Loan Guarantee; Africa Renewal; United Nations Department of Public Affairs: <http://www.un.org/ecosocdev/geninfo/afrec/vol12no4/ida.htm>

IMF Regional Economic Outlook, Oct 2010

Infrastructure: The Foundation for Growth and Poverty Reduction: The China-DAC Study Group  
[http://www.oecd.org/document/63/0,3746,en\\_2649\\_34621\\_44173540\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/63/0,3746,en_2649_34621_44173540_1_1_1_1,00.html)

PPI Activity in Infrastructure in Sub-Saharan Africa Declined in 2009; World Bank, PPI Update Note 48, December 2010; <http://ppi.worldbank.org/features/December2010/2009-Sub-Saharan-Africa-PPI-infrastructure-Note-12-13-2010.pdf>

Privatizing Basic Utilities in Sub-Saharan Africa: the MDG Impact; Kate Bayliss, UNDP Policy Research Brief No 3, January 2007; <http://www.ipc-undp.org/pub/IPCPolicyResearchBrief3.pdf>

Promoting Pro-Poor Growth: Policy Guidance for Donors (Infrastructure); OECD 2006; <http://www.oecd.org/dataoecd/16/46/36301078.pdf>

Proparco Annual Report 2010: [http://www.proparco.fr/webdav/site/proparco/shared/ELEMENTS\\_COMMUNS/PDF/Rapports-annuels/Rapport%20annuel%202010/Annual%20Report%202010.pdf](http://www.proparco.fr/webdav/site/proparco/shared/ELEMENTS_COMMUNS/PDF/Rapports-annuels/Rapport%20annuel%202010/Annual%20Report%202010.pdf)

Public Private Partnerships: Fit for Development?: Eurodad Submission to the WP-EFF [http://www.eurodad.org/uploadedFiles/Whats\\_New/News/PPP\\_Eurodad\\_Final\\_in%20template1\(1\).pdf](http://www.eurodad.org/uploadedFiles/Whats_New/News/PPP_Eurodad_Final_in%20template1(1).pdf)

The Queensway Syndicate and the Africa Trade; The Economist, August 13, 2011: <http://www.economist.com/node/21525847>

Questionnaire on Donor Support to Enhance Private Investment for Infrastructure in Africa <http://www.oecd.org/dataoecd/5/1/49108411.pdf>

Stocktaking of the water and sanitation sector and private sector involvement in selected African countries; Céline Kauffmann and Edouard Perard; NEPAD-OECD Africa Investment Initiative, 2007; <http://www.oecd.org/dataoecd/17/8/39679099.pdf>

Sustaining Water for All in a Changing Climate: World Bank Group Implementation Progress Report of the Water Resources Sector Strategy; World Bank, 2010

What Drives Private Sector Exit from Infrastructure; Clive Harris, Kumar Pratap; Gridlines March 2009; <http://www.ppiaf.org/ppiaf/sites/ppiaf.org/files/publication/Gridlines-46-Private%20Sector%20Exit%20-%20CHarris%20KPratap.pdf>

What International Investors Look for When Investing in Developing Countries; Ranjit Lamech and Kazim Saeed; World Bank 2003

World Bank Guarantee Products: Partial Risk Guarantees in Support of Privatizations and



[www.oecd.org/dac](http://www.oecd.org/dac)

[www.oecd.org/daf/investment/](http://www.oecd.org/daf/investment/) africa