

Local financing for infrastructure in Zambia

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11 August 2017

Question

What are the past and current barriers to local financing of infrastructure, with particular attention to barriers for local banks and pension funds? What interventions have been used to resolve barriers to finance for infrastructure in Zambia or other sub-Saharan African countries? To what extent has commodity index-linked financing been considered in Zambia (or neighbouring countries) as another means of hedging financial exposure to the country's key economic determinant (i.e. copper prices)?

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1. Overview

This rapid review of literature identifies constraints and interventions related to financing infrastructure in sub-Saharan Africa, with particular attention to the role of pension funds in the region. The need for infrastructure development in Africa and Sub-Saharan Africa is well-established in the literature (see, for example, World Bank, 2017; Brookings Institution, 2017; Cambridge Economic Policy Associates, 2015) and approaches to financing infrastructure investments have received significant attention (for example, Maurer, 2017; World Bank, 2017; Essers et al., 2016; Cambridge Economic Policy Associates, 2015; Office of the Special Adviser on Africa, 2015). However, specific discussion of infrastructure and financing in Zambia has received limited coverage in publicly-available documents that we were able to find in the time available for this report.

Barriers to local financing of infrastructure are related both to the nature of the projects available for investment, which often fail to meet the financing requirements of investors, and to a lack of available capital related to financial market conditions (CEPA 2015). The main barriers to investment described in the literature (see section 2 below for discussion) are:

- Lack of project 'bankability'
- Lack of private capital availability
- Lack of enabling environment
- Lack of human resource skills (i.e. technical, legal, financial)
- Length of project development
- Lack of transparency
- Regulatory barriers
- Competition from non-infrastructure projects
- Aversion to investment in less liquid projects
- Mismatch between investor desires and financing opportunities
- Lack of financing vehicles and instruments
- Limited deal size
- Perceived and real risk
- Absence of market for infrastructure assets
- Sovereign ceiling
- Currency risks

For infrastructure investment to be made more attractive to local financiers, the review found that the following **interventions** have been recommended by various academics and practitioners (see section 4 below for discussion):

- Increased capacity to prepare/negotiate/transact projects
- Need public origination of projects
- Resource availability at early stage
- Project development funds (PDFs)
- PPP framework development

- Achieve project ‘bankability’
- Mobilise local currency financing
- Pension sector growth
- Pension reform
- Improved governance/regulation
- Development of domestic financial and capital instruments
- Partnership development
- Co-investor encouragement
- Risk management

Strength of the evidence base

With this report’s focus on barriers and constraints to local financing in Zambia and neighbouring countries, there are only a limited number of sources available which provide relevant information. There is limited robust evidence in the literature on what has worked previously, what may now be done and how it may be carried out. Instead, the emphasis in the literature tends to be on the challenges and on recommended or perceived solutions associated with local funding of infrastructure. Barriers to local financing in sub-Saharan Africa and in Africa more generally have received attention, but there is a paucity of evaluations of interventions. Research on the specific barriers and initiatives in Zambia has proved hard to come by.

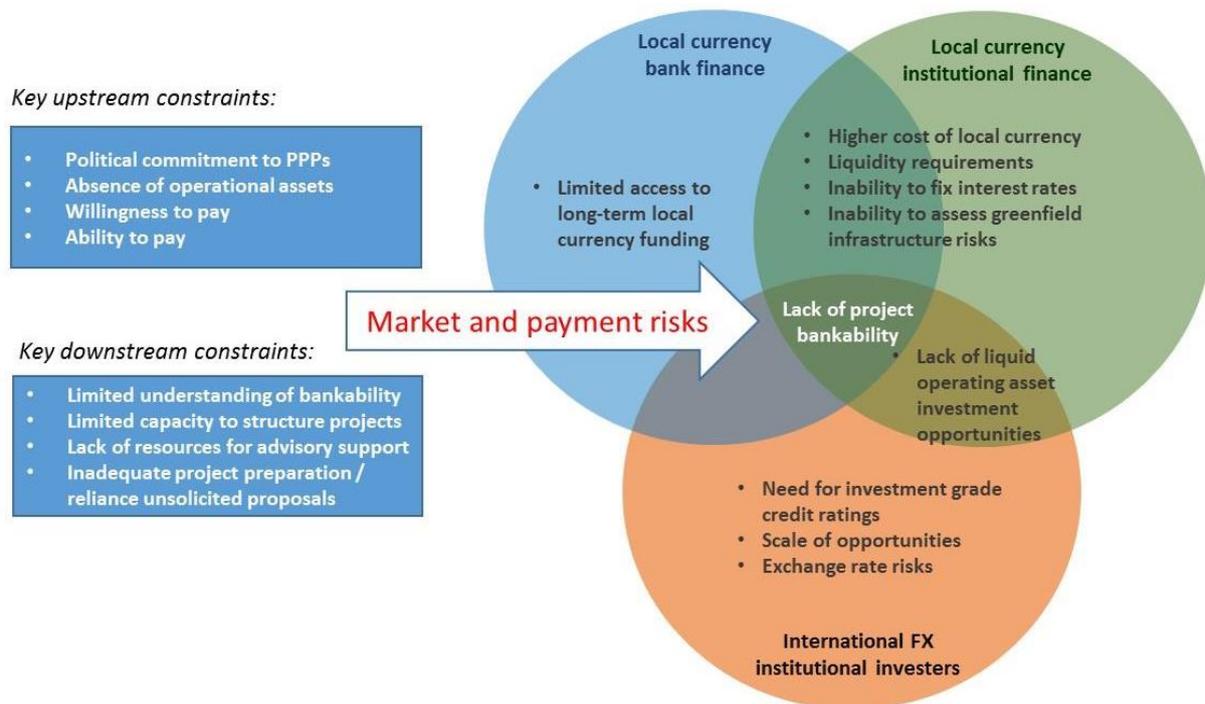
In the time available for this review, we were unable to find evidence regarding whether commodity index-linked financing had been considered in Zambia or in neighbouring countries as a means of hedging financial exposure to the country’s key economic determinant.

2. Barriers to local financing

A research programme commissioned by DFID on private finance for infrastructure investment in DFID priority countries in sub-Saharan Africa (SSA), excluding South Africa, reported in 2015 that the main constraints on the flow of private capital to infrastructure projects are due to either: (1) a lack of “bankable¹ project opportunities in which projects meet the financing requirements of lenders and investors at different points of the project life cycle”, or (2) a lack of “private capital from domestic and international credit and capital markets to finance such projects, linked to issues in these markets rather than the quality of the available projects (Cambridge Economic Policy Associates, 2015, p. 1). Other barriers are a result of availability of specific sources of private finance. For example, “whilst it is possible to raise long term FX bank debt, raising local currency denominated or institutional debt finance is more challenging” (CEPA, 2015: p. 4).

¹ Bankable: Project or proposal that has sufficient collateral, future cashflow, and high probability of success, to be acceptable to institutional lenders for financing. Read more: <http://www.businessdictionary.com/definition/bankable.html>

Figure 1: Barriers to private financing of infrastructure in DFID focus countries



Source: CEPA (2015)

In terms of **upstream constraints**, CEPA (2015, p. 5) suggest that the long-recognised lack of an “enabling environment” has been a barrier to PPPs and private investment. However, in the context of this constraint, the focus has often been on objective factors such as the lack of appropriate legislation and capable institutions. CEPA advises that these problems have certainly contributed but that they are amenable to donor interventions. It goes on to state that some of the challenges lie even further upstream and involve a lack of recognition of the need to pay for infrastructure services and to overcome different interest groups that can work against PPPs succeeding. To address these constraints, CEPA recommends a “very high degree of ongoing political commitment that can survive political cycles” (2015, p. 5). These political challenges require the same level of focus as more technical issues such as developing a legal and regulatory framework, project preparation and modes of financing.

Nevertheless, CEPA suggests that there is now a recognition of what is required to finance long-needed infrastructure and this is linked to an apparent movement for change (2015, p. 5). It asserts that this “may help to overcome the headwinds that PPP approaches have historically faced” (2017, p. 5) and cites the success of South Africa’s renewables programme as an example to other potential investors of what private finance can achieve.

Turning to **downstream constraints**, a public sector partner must either package projects to attract private sector interest or else be able to respond to unsolicited approaches (CEPA, 2015, p. 5). Downstream constraints “relate to the more objective challenge of improving (the public sector partner’s) ability to do so successfully” (CEPA, 2015, p. 5). Findings of research carried out by CEPA with private sector and key government stakeholders suggest that they appear to have a rather limited interpretation of bankability “in which projects clearing a given financial hurdle rate are considered so” (CEPA, 2015, p. 6). Bidders are reported to be looking for a ‘more

comprehensive risk mitigation package, which sets out how risks are to be allocated and managed, as well as the composition of any required security”.

CEPA suggests further that the lack of availability of appropriate technical, legal, and financial skills, both inside and external to government, to support the necessary processes and activities is a key constraint (2017, p. 6). While it recognises that “there are donor-backed transaction advisory facilities such as DEVCo, these are typically only available to support the mid and later stages of the project development cycle, not its early stages” (CEPA, 2015, p 6). This results in long project delays and significantly higher costs to both the public and private sector, causing escalation in the expense of infrastructure provision. notes that it takes an average of seven years for projects in Africa to advance through the project development cycle (CEPA, 2015, p. 6).

CEPA’s research found that a ‘top-down’ approach” to supporting PPPs is frequently used (2015, p. 6) and is very resource intensive. There have been efforts to establish PPP nodes in multiple ministries, whereas in most countries PPP activity and potential seems highly concentrated (for example, in electricity generation). An alternative approach would be to pilot more focused approaches restricted to sectors with the greatest immediate potential (CEPA, 2015, p. 6).

CEPA suggests that “the key challenges remain how to deal objectively and systematically with unsolicited approaches, whilst developing capacity in government to originate and progress project opportunities. Unsolicited approaches are often opaque arrangements, not least in terms of how project rights – often worth millions of dollars – are acquired. This lack of transparency makes it more challenging for different DFIs to participate in their financing and for donors to provide any required subsidies. This tends to delay project timelines and whereas, at best, the approach can produce one-off successes, government-led programmes show the best outcomes in terms of volumes of transactions concluded” (CEPA, 2015, p. 6). According to CEPA’s report (2015, p. 6), Africa’s main success stories involve these programmes:

- Nigeria has attracted a total of US\$7.2bn of investment in its ports, since 2005, following the ports concession programme. The government has also raised approximately US\$2.5bn through the sale of electricity assets via two separate programmes and has led the way in terms of asset divestment.
- Kenya’s power utility (KPLC) has gained market credibility through a successful IPP programme which has included 10 closed transactions worth nearly US\$2.2bn since 2008.
- South Africa has recently attracted US\$14bn to its renewables programme.

CEPA (2015, p. 6) links **constraints to bank finance** to the difficulties facing financial institutions, rather than issues related to the projects themselves. Potential issues can be “upstream or downstream in nature, including regulatory barriers, human resource-driven capacity constraints as well as competition from opportunities other than infrastructure that reduce financiers’ interest in infrastructure opportunities” (CEPA, 2015, pp. 6-7).

CEPA suggests that there are two categories of finance provider: “banking institutions, that is, credit markets; and sources of institutional finance, such as pension funds, life assurance funds, sovereign wealth investors, and any other institution that invests in financial instruments, such as debt and equity, issued by listed and unlisted companies” (2017, p. 7). It states further that there is no evidence that access to long term foreign finance causes a barrier, since many banks in

Africa can avail of long term US dollar finance, which is complemented by the considerable resources of the DFIs relative to the flow of project opportunities.

With respect to **constraints to institutional investment**, CEPA (2017, p. 8) states that local institutional investors tend to look to avert equity exposure in infrastructure projects, looking, instead, for investments that are more liquid.

Further, it observes that a “considerable constraint for both local and international debt institutional investors is the mismatch between what they are looking for and the project financing opportunities on offer” (CEPA, 2017, p. 8). Institutional investors such as pension funds require “*operational and liquid assets, not greenfield, illiquid ones*. This is not just the case in DFID focus countries, but also in developed countries. In these countries, most debt institutional investors will seek opportunities for investment when a project is refinanced, once construction and other implementation risks have been successfully managed. Historically, institutional debt financing of greenfield projects was only achieved with the support of monoline credit insurers, most of whom have withdrawn from the market following the global financial crisis” (CEPA, 2017, p. 8).

Another study on private financing completed this year for GIZ similarly identifies a range of barriers to infrastructure investment as being either specific to infrastructure as an asset class, or more generic for institutional investors or for the target market (Maurer, 2017, p. iii):

- **Lack of appropriate financing vehicles and instruments:** large institutional investors often require intermediaries to help with due diligence of direct project investments, or may operate indirectly through investment funds, although private equity funds typically have an investment horizon of 8 to 10 years while infrastructure requires a much longer term, and the level and structure of private equity fund management fees often do not fit with large and long-term infrastructure financing vehicles (p. 11)
- **Minimum deal size:** large global investors are generally interested only in very large-scale projects, but local institutional investors are normally interested in smaller deal sizes (pp. 11, 21-22)
- **A myriad of risks:** an information and knowledge gap, related to infrastructure as an asset class, creates uncertainty for institutional investors to analyse performance of infrastructure investments. This leads to high risk perceptions. (p. 12)
- **Absence of a market for infrastructure assets:** in contrast to listed investment instruments, it is difficult to reduce or liquidate unlisted infrastructure assets at short notice. “There is no secondary market for this emerging asset class. The heterogeneity within the infrastructure sector poses a challenge for standardization and benchmarking which are important elements for market creation. Overall, this adds a liquidity risk to infrastructure investments” (p. 13)
- **Scarcity of well-structured bankable infrastructure projects:** sound projects with an acceptable risk-return ratio are rare. Preparation and structuring of complex infrastructure PPPs can be lengthy and cost and quality of project preparation is often underestimated. An illustration of the extreme is the Kigamboni bridge in Tanzania which took 20 years to plan, prepare and construct (p. 11)
- **Regulatory barriers and disincentives** at global level (Basel III/Solvency II) and in-country impose restrictions which may have an adverse effect on infrastructure

investments. Both regulatory frameworks have been criticised for being short-term focused and for “forcing financial institutions to rely more on assessments of credit risk by private rating agencies, thus, abdicating part of the public regulatory authority in favor of private rating agencies” (p. 13). Basel III is a global regulatory framework which requires banks to maintain high capital allocation for long-term loans to infrastructure providers. “Together with the higher cost of matching long-term assets with liabilities with a similar duration, the regulation has greatly dis-incentivised banking sector involvement in infrastructure projects. It is likely that banks will become more reluctant to provide project loans” (p. 13). A similar effect was feared from the Solvency II regulatory framework on pension funds and insurance companies in the European Union that came into effect in January 2016. “It follows the principal framework of risk-based capital adequacy with the effect of penalizing long-term investments of insurers and pension funds, including infrastructure assets. There are concerns that fair value and risk-based regulations for institutional investors could lead to further de-risking and pro-cyclicality, and may also be detrimental to substantially increasing infrastructure and other long-term investment strategies” (p. 13)

- **Sovereign ceiling:** the credit rating for an individual project or firm cannot exceed that of the country where it is located. This “rule effectively closes the door for debt financing in African countries, with very few exceptions, by global institutional investors”. (p. iii).
- **Currency risks** weigh heavily on long-term financing: “cross-border long-term financing – albeit on concessional terms – can be very costly for recipient countries due to currency devaluations over the long run” (p. iii).

Maurer particularly points out that the sovereign ceiling and currency risk do not significantly affect domestic institutional investors, which points to significant potential for such investors (p. iii).

3. Pension funds as investors in infrastructure

There is “surprisingly little collective and well-collated information on the African pensions industry” (The Commonwealth Secretariat, 2014, p. 3), although there is some evidence that local banks and pension funds may be potential sources of infrastructure funding.

Recent reforms in many African countries have created private pension systems which are rapidly accumulating assets. The Nigerian pension industry grew from US\$7 billion to \$25 billion from 2008 to 2013; Ghana’s pension industry is expected to expand by up to 400 per cent from 2014 to 2018; pension assets equate to approximately 80 per cent of GDP in Namibia and 40 per cent in Botswana (Commonwealth Secretariat 2014, p. 3).

Observers suggest that pension funds offer significant potential as a source of funds for investment. The Commonwealth Secretariat, for example (2014, p. 3) suggests that “pension funds play a critical role in finance through the mobilisation and allocation of stable long-term savings to support investment”. The Brookings Institution (2017, p. 5) argues that there is an “urgency to act now if the significant potential of African pensions to finance infrastructure development is to be leveraged” with sub-Saharan African countries being “in a ‘demographic sweet spot’ as dependency ratios are low, the labour force is growing rapidly, and the impact of aging has not yet hit their pension systems”, and suggests that policymakers need to address existing obstacles to pension funds investment in infrastructure.

However, pension funds have been underutilised for investment in infrastructure in Africa (Brookings Institution, 2017, foreword). The Brookings Institution cautions that pension assets as a share of GDP are low because “pension funds are relatively small and dominated by often poorly performing pay-as-you-go (PAYG) schemes for public sector employees. Even when pension reform has been implemented, as in Nigeria, and assets are available for investment, governance and regulatory obstacles as well as a dearth of adequate financial instruments limit pension funds’ allocation to infrastructure” (2017, pp. 5-6).

The Brookings Institution (2017) describes a dichotomy where some pension funds may be too risk averse to invest in risky, decades-long infrastructure projects, while others contend that with the right governance, regulation, and instruments to assess and manage risks associated with long-term investment in infrastructure, pension funds could play a key in transforming the continent’s infrastructure landscape. Until recently, African pension funds were cautious of investing in long-term infrastructure projects such as roads, rail and ports (Maurer, 2017, p. ii). Nevertheless, the experience of global and South African pension funds investing in alternative asset markets has attracted the interest of local pension funds and regulators (Maurer 2017, p. ii)

To enable further local pension fund activity in financing infrastructure, the Brookings Institution (2017) suggests that the following initiatives are needed:

- Pension reform driven by strong political leadership and ownership by all stakeholders can help improve the performance of African pension systems and develop pension assets. However, pension reform should be carefully designed so as to learn from the lessons of the mixed results of earlier experiences in Latin America, notably in Chile, as well as in Central and Eastern European countries.
- Improvements to the governance, regulation, and supervision of pension funds can help pension funds invest in infrastructure in a manner consistent with their primary goal of ensuring old-age income security.
- Even when sufficient pension assets are available and asset allocation to infrastructure investments is made, African countries will still need to develop domestic financial and capital market instruments for infrastructure investment.
- Given the large scale of infrastructure investment, African countries will need to consider the net benefits of complementing domestic pension assets with foreign and multilateral investments through co-financing and innovative policies.

Cambridge Economic Policy Associates (2015, p. 12) suggest that pension funds find operational and liquid assets more attractive than greenfield, illiquid ones. Notwithstanding this, CEPA goes on to report that there has been a gradual movement in asset allocation to riskier asset classes and to alternative investments (including infrastructure) which may be less liquid but offer higher returns. For example, in 2013, Wentworth reported that South Africa, Namibia and Botswana had employed pension funds in buying infrastructure bonds: “The Botswana Public Officers Pension Fund is in the process of diversifying 14% of its portfolio to alternative assets in property, private equity, hedge funds and infrastructure. Namibian pension funds have bought Zambian infrastructure project bonds. South Africa’s Government Employees Pension Fund bought \$595 million in the Industrial Development Corporation’s ‘green bond’ issue, aimed at funding renewable energy. Other pension funds held by South Africa’s Old Mutual and Sanlam have invested in toll roads and energy projects”. (Wentworth, 2013). Some countries are passing new

regulations to allow investment into private equity, and several African pension funds have started to invest in private equity (Maurer, 2017, p. ii).

Global institutional investors are showing an increased interest in African infrastructure investments (Maurer, 2017). For example, there have been investments in infrastructure funds dedicated to Africa or global funds with an Africa window. A large proportion of these (87%) have been in the form of private equity. Australian and Canadian pension funds have been at the forefront in global infrastructure investments with allocations of 10% and 15% of total assets respectively (Maurer, 2017, p. iii).

NEPAD (2013) provides a useful overview of the main public sector funds and pension schemes in Zambia: the National Pension Scheme Authority (NAPSA) which consolidated several public schemes in 2000, the Public Service Pension Fund, the Local Authority Superannuation Fund, as well as significant private pension schemes. The defined contribution schemes require employer contributions, and the largest private schemes are African Life Assurance (AfLife), part of the Sanlam Group and Madison. Pension funds are growing annually and there are planned reforms to increase contributions.

Zambia issued a successful Eurobond in September 2012, the proceeds of which were to be used in the roads and energy sectors. The total net issuance amount of USD734 million was distributed between USD 500m in the 2012 budget for roads and energy; and USD 234m in the 2013 budget. The Kafue Gorge Lower Project was estimated to cost USD 2bn, requiring USD 600m in equity, of which the government had allocated ZESCO USD 200m for their share of the joint venture with Chinese companies (NEPAD, 2013).

However, the private capital market has largely been absent in relation to infrastructure financing. Information and awareness of capital markets is described as lacking and no high-quality issuer has accessed the market directly. Family firms are deterred by disclosure requirements, fees and general market awareness. There is also a lack of intermediation in Zambia, with few investment banking operations looking to push innovation in the local capital market (NEPAD, 2013, p. 180).

Given the Government's fiscal constraints, ZESCO (Zambia's corporatized power utility) has been looking for joint ventures with Chinese, Indian and Western investors to fund their USD 5.3bn project pipeline (NEPAD, 2013, p. 180). NEPAD indicates further that "banks extend credit secured by revenues from mining clients. Other parastatal issuers may include the Roads Development Agency, who will consider ring-fencing cash-flows to assist in raising funds. In addition, Zambian municipalities such as Lusaka, Solwezi and Livingstone are also looking at local and international bond markets" (pp. 180-181).

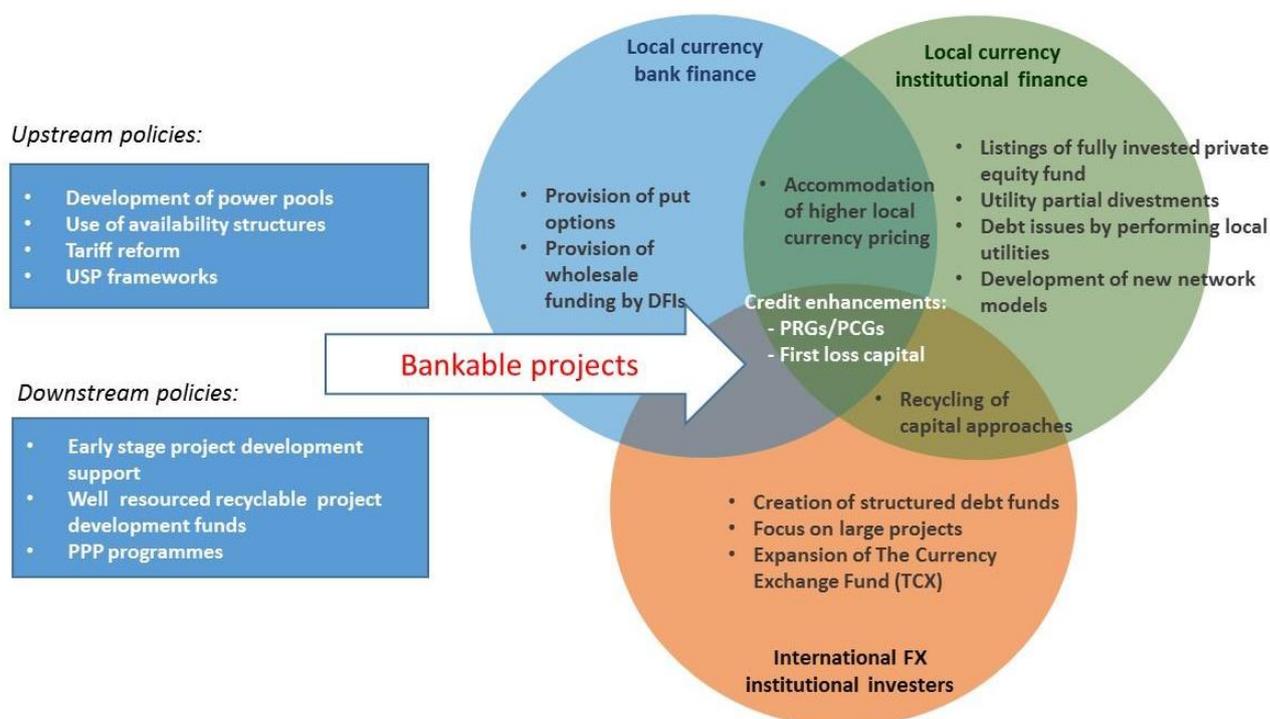
In addition, ZESCO has been "following a diversified strategy to increase power generating capacity in the country, including project finance in which they are a joint venture partner with an external party. They are a 50-50 shareholder in the Itezhi-Tezhi hydropower project and are following a similar approach with projects such as Batoka Gorge" (p. 198).

4. Interventions to enable local financing

The literature describes a number of ways in which local financing of infrastructure may be enabled. However, most available literature tends to either make recommendations or to describe initiatives and their objectives, but does not provide details of how initiatives are put into operation in practice or provide evidence of actual outcomes.

CEPA (2015, 8) reports on policy options to attract private finance to infrastructure programmes that have worked in countries such as South Africa and India (Figure 2). CEPA recommends that resource flows from donors, and government budgets to develop capacity to prepare, negotiate, and transact projects, need to be increased (p. 10). It suggests that “more public origination not only of projects, but of PPP programmes” is needed and that there needs to be an attendant increase in project preparation resources with early stage support being critical: “most support from global facilities is only available once a project is developed to at least the pre-feasibility stage. This is a considerable gap given typical line ministries have limited experience of identifying potential PPP opportunities and undertaking initial analysis. For example, the Kenyan PPP unit has had to reject many proposals from line ministries for support to develop opportunities as they lack an understanding of what is required” (2017, p. 8).

Figure 2: Potential policy options to increase private finance to infrastructure in DFID focus countries



Source: CEPA (2015)

Reflecting on experience in South Asia, CEPA (2015) states that, in terms of **downstream support**, “different forms of Project Development Funds (PDFs) appear to offer the most potential to support the development, packaging and transacting of projects” (p. 8). Success fees should be charged to projects that reach financial close, with the PDF being reimbursed so that it can be “at least partially revolving” (p. 8). It is important that a combination of a PDF and any success fees allow for the procurement of appropriately skilled advisors.

In addition, PPP frameworks need to be developed so as to provide approaches for dealing with unsolicited proposals and for donor-backed developer approaches which can bring innovation and risk capital to PPP (CEPA, 2015, p. 10).

NEPAD reports that Zambia has an evolving PPP program, with associated law passed in 2009 (2013, p. 198). There is a special unit that reports to the Ministry of Finance which is in the

process of establishing PPP focal points in all line ministries. The rail sector is a key priority because of the strain that the mining sector is putting on roads in the Copperbelt. There is also a USD 200m project to connect TA-ZARA Railway with Angola (p. 198)

Achieving bankability

The evidence suggests that “the vast majority of greenfield PPPs that have successfully raised commercial bank finance, have done so with the support of partial risk guarantees (PRGs) provided by the main MDBs. Similar support can also be sought from export credit agencies (ECA) from an investor’s country of origin. For instance, outside of South Africa, Kenya and Nigeria have the highest levels of private investment in their power sectors – as such, they can be seen as being at the frontier of private financing. In Kenya, five out of seven IPPs closed in the period 2010-15 have required PRG support across a range of government commitments. In Nigeria, four out of four projects have also required PRG support” (CEPA, 2015, p. 10-11).

PRGs allow allocation of different risks to different stakeholders. For example, commercial performance risks can be transferred to the private sector, whereas governments are required to stand behind their own obligations, such as the responsibility of state-owned off-takers to pay for contracted services (CEPA, 2015, p. 11).

Mobilising local currency financing

The most obvious way to increase the participation of local institutional investment in equity is through the traded equity of private sector and state-owned companies (CEPA, 2015, p. 12). Raising local currency debt financing is challenging because of the greater supply side constraints, relative to FX financing. Notwithstanding this, “even its partial provision within a financing structure can form a natural hedge against the exchange rate depreciation risk associated with the accompanying FX debt financing in the structure. Therefore the objectives of an intervention to promote local currency financing are twofold: first, to improve the ability of projects to manage exchange rate risks; and second, to increase the range of opportunities open to local lenders and investors” (p. 12).

CEPA (2015, p. 12) notes that, unlike “international institutional debt, which requires a large investment and investment grade credit ratings, local currency institutional debt investment typically requires neither. However, local currency institutional debt has specific additional non-credit requirements, which need to be addressed if it is to be mobilised. The first of these is the fact that local currency debt will be more expensive than FX as its pricing is driven by local interest rates, which will typically be higher than FX (especially given the current historically low interest rates in most OECD economies). Charges for infrastructure services need to reflect these additional costs. Second, institutional investors will want to be in a position where they can sell down their positions at short notice in the event that they need cash. The best way to achieve this is for the debt to be publicly listed”.

In their summary of ways forward for African governments to use infrastructure project bonds, NEPAD (2013, p. 25) suggests that a number of initiatives are needed. With respect to pension funds, there is a requirement to continue progress on pension-sector growth, including mandatory employee/employer contribution, tax incentives, and professional asset management. In addition, they suggest that independent regulators who permit holding of infrastructure assets need to be established. With reference to infrastructure itself, NEPAD states that “corporatization and professional management of utilities and parastatals in order to prepare them for primary

bond market issuance and to provide bankable off-take agreements for private-sector projects” (p. 25) are necessary. This should be backed by:

- encouragement of issuance to finance investment programs.
- a transparent, rules-based regulatory environment including licensing for IPPs, PPP grid access and tariff setting. Establishment of laws and institutions with strong political support to ensure projects are ready for market.
- ensuring IPPs, PPPs and private projects share currency risk to incentivize local market borrowing. This will also limit the currency exposure of utilities.
- promoting projects with structures that remove demand or market risks so more acceptable to bond investors. Consider partial guarantees to improve bankability. Raise capital for possible co-investment in local bond markets.

For Maurer (2017, p. iii), a number of initiatives are under way to address some of the infrastructure funding constraints. He suggests, though, that there is a need “to enable, motivate and incentivize institutional investors to make “baby steps” toward infrastructure finance in Africa”. (pp. v-vi) and that some investment barriers are “persistent and call for amenable solutions and external support” (p. iii).

Maurer highlights that although numerous project preparation facilities have been set up by development organizations for building pipelines of bankable projects, some at the regional but most of them at the global level, their impact has been modest thus far. Donors and DFIs have launched infrastructure funds and co-investment platforms (for example, the Africa50 Infrastructure Fund² created by the AfDB and the Managed Co-lending Portfolio Program (MCP)³ launched by the IFC. However, Maurer (2017) contends that there is still a need for innovative financing vehicles and instruments that match institutional investors’ needs and preferences, are aligned with their risk-return profiles and that can unlock institutional capital on a large scale, especially debt financing. According to Maurer, regulatory barriers are only partly being addressed. He suggests that Basel III⁴ penalizes long-term bank lending for infrastructure. The same is true for European pension funds and insurers under Solvency II⁵ but consultations are under way for a recalibration of the framework.

² The Africa50 Infrastructure Fund’s mission is to mobilize long term savings from within and outside Africa and private sector funding to promote infrastructure development in Africa (<https://www.africa50.com>).

³ MCP is a new International Finance Corporation (IFC) Syndications product that allows institutional investors the opportunity to passively participate in IFC’s future loan portfolio. (http://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/IFC+Syndications/Overview_Benefits_Structure/Managed+Co-Lending+Portfolio+Program/)

⁴ Basel III is a comprehensive set of reform measures, developed by the Basel Committee on Banking Supervision, to strengthen the regulation, supervision and risk management of the banking sector. The measures aim to improve the banking sector’s ability to absorb shocks arising from financial and economic stress, improve risk management and governance and strengthen banks’ transparency and disclosures (*Bank for International Settlements: <http://www.bis.org/bcbs/basel3.htm>*).

⁵ Solvency II is a new set of rules governing how banks are funded and their governance. Under these rules, insurers will need enough capital to have 99.5 per cent confidence they could cope with the worst expected losses over a year. The rules take a risk-based approach to regulation: the riskier an insurer’s business, the more

Maurer argues that **partnerships and co-investments** in infrastructure could be promoted: “Co-investment platforms are important catalysts for crowding-in institutional investors. By pooling their resources, institutional investors can leverage their cumulative risk appetite and invest in a variety of deals, diversifying their infrastructure portfolio and potentially gaining a better, more stable longer-term return than would be possible if investors were to invest in deals by themselves. Having DFIs as co-investors provides reassurance to institutional investors and also helps to gain access to prospective investment opportunities. It is recommended to utilize the existing co-investment platforms and to replicate such platforms for other infrastructure investments, as appropriate...Peer-to-peer exchange and peer learning can be very effective tools to promote infrastructure finance, both among pension funds and pension regulators. The different levels of development of pension systems in Africa provide a useful context for exchange of knowledge and expertise amongst industry participants across the continent” (2017, p. v).

The multiple risks in infrastructure finance require a comprehensive **risk management** approach. Some risks can be managed internally, others may require external risk mitigation support from donors and DFIs (2017, p. iii). This is especially relevant for debt financing; Maurer (2017, p. v) suggests that “risk mitigation can – to a considerable extent - be achieved standalone through innovative finance structures and financial engineering techniques. To some extent, however, it requires external enhancement support from government, donors or DFIs to make project debt issues attractive to investors”. Maurer recommends that innovative finance structures be developed and proven financial engineering techniques for risk mitigation be applied, including:

- Unbundling of infrastructure projects into components with different risk-return profiles and creating component-specific financial products
- Pooling of multiple infrastructure projects with different risk-return profiles into a single portfolio, thereby enhancing diversification
- Credit enhancement through risk tranching and subordination or donors to provide external credit enhancement via first-loss tranches as effective instruments for aligning risk and return profiles for institutional investors.

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Suggested citation

Rajé, F. (2017). *Local financing for infrastructure in Zambia*. K4D Helpdesk Report. Brighton, UK: Institute of Development Studies.

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K4D services are provided by a consortium of leading organisations working in international development, led by the Institute of Development Studies (IDS), with Education Development Trust, Itad, University of Leeds Nuffield Centre for International Health and Development, Liverpool School of Tropical Medicine (LSTM), University of Birmingham International Development Department (IDD) and the University of Manchester Humanitarian and Conflict Response Institute (HCRI).

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