IGC International Growth Centre

Financing Expansion and Delivery of Urban Services: International Experiences and Rwanda Challenges

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Working Paper

March 2014

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Financing Expansion and Delivery of Urban Services International Experiences and Rwanda Challenges

Issues Paper

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The paper reviews models and practices for financing the development and operation of urban infrastructure in developing countries and sheds lights on Rwanda's challenges and opportunities, with preliminary reform suggestions. The main findings include: (i) Rwandan cities need more resources to cope with urbanization; (ii) Revenue opportunities include income tax surcharges, business taxes, property and property transfer taxes, and capital gains taxes, but also development fees or betterment taxes to extract private benefits for financing infrastructure; (iii) Diversifying infrastructure financing instruments by using ring-fenced project financing, municipal enterprises, or public-private partnerships could expand the funds available for infrastructure development; (iv) Debt financing in form of borrowing or bond issuance are among the most immediate options for the largest Rwandan cities.

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Abbreviations

CIP	Rolling capital improvement programs (CIPs)
EWSA	Electricity, Water & Sanitation Authority
GOR	Government of Rwanda
IFC	International Finance Corporation, WB
KCC	Kigali City Council
OSRs	Own-source Revenues
MINAGRI	Ministry of Agriculture
MINECOFIN	Ministry of Economy & Finance
MINICOM	Ministry of Trade & Industry
MINIRENA	Ministry of Natural Resources
MININFRA	Ministry of Infrastructure
RHA	Rwanda Housing Authority
RTDA	Rwanda Transport Development Authority
RURA	Rwanda Utility Regulatory Authority
RWF	Rwanda Franc
WB	World Bank

Executive Summary[1]

Planning ahead and ensuring sustainability. The rapid urbanization in Kigali city and in some Rwandan secondary cities has generated a growing demand for urban services and infrastructure. *Medium term planning* is essential for developing cities, with strategic selection of priority investment projects, and complementary technical and financial modalities that ensure sustainability of funds and human capacities for future operation and maintenance, while protecting the poor. Rolling capital improvement programs (CIPs) are good tools for achieving these goals.

Infrastructure gaps and funding gaps: Rapid *urbanization widens the gap* between the needed and the built urban infrastructure. But also, there is a *growing backlog* in maintenance and refurbishment of the current infrastructure. Finally, there are *growing differences* between Kigali, large secondary cities, and other districts in financing capacities. These gaps and differences should be taken into account in forming national infrastructure financing policies.

Financing investments from the capital budget: Investment in urban infrastructure is financed predominantly through *capital budgets,* supplemented by operating surpluses, central government transfers, donor grants, and debt. Central governments and donors often transfer funds to local budgets in the form of *targeted or earmark grants*, *performance grants*, or *matching grants* to incentivize good performance and support *sector priorities*. This remains the main funding form in Rwanda in the medium term, but Kigali and secondary cities have good opportunities to expand financing.

Boosting own-source revenues: Rwandan cities have ample opportunities to expand own-source revenues; many of these are generated by urbanization, growth, and infrastructure investments, which appreciate land values substantially. Cities should press developers to contribute a *fair share* in building the needed infrastructure, using *land-based financing*. Actions include: (i) imposing *development fees* and *betterment levies; (ii)* revising the *property tax system* and collecting *property transfer tax* and *capital gain tax*; (iii) *selling and leasing public land* strategically to maximize public benefits; and (iv) testing the sale of *special development rights*.

Debt financing: Kigali and some secondary cities can gradually pilot and expand debt financing. *Loans* are the most obvious option; although current bank lending rates are not suitable for long-term financing, the rates are decreasing. Piloting municipal *bond issuance* is a good option for Kigali, which can generate lower rates than loans by avoiding exceptionally large interest margins.

Diversifying infrastructure financing: Rwandan cites have initial experience and many good opportunities for expanding infrastructure investments by *off-budget schemes*, such as ring-fenced *project financing*, establishing independent *municipal enterprises*, and carefully testing *public-private partnerships*. Many commercial services and some urban services are good candidates for testing these off-budget financing models. The good experiences in concessionary in-city bus transport and management contracts in solid waste collection show promising experiences in Rwanda.

Enabling environment and capacity building: In order to well utilize the above opportunities, some reforms are required in the legal and institutional framework. Furthermore, based on good initial steps

[1] This paper is prepared for the request of the International Growth Center to supplement my presentation at the National Forum on Sustainable Urbanization in Support of EDPRS2, held in Kigali in March 20-21, 2014.

(land cadaster, master plans) cities should build reliable *fiscal databases*, establish *billing and collection* capacities with remedies, and good *communication programs* to inform stakeholders.

Introduction

Rapid urbanization is the most substantial growth trend in the developing world in the 21st century. Rural-urban migration and the inherent growth of the cities – and particular expansion of the large and mega cities – are driven by socio-economic factors, many beyond the control of the governments. The movement of people is a reaction to the fact that the cities and urban agglomerations have become the engines of economic growth. In responding to these movements adequate and timely expansion and wise operation of the urban infrastructure are among the most significant challenges the cities and their governments face today. The successful and livable cities around the world show evidence of well-planned infrastructure development, many with a good combination of public and private investments. The urbanization in Rwanda and especially Kigali reflects the above trend.

Delivery of urban services is the most important function of local governments and financing services consumes often two thirds or more of the local budgets in well-functioning municipalities; while small local governments may spend relatively more on local administration. Experiences in both the delivery and financing of local services are very diverse around the world, because of differences, in the intergovernmental finance framework, the fiscal policies,[2] the assignment of service responsibilities and revenues between government tiers, and local administrative or managerial capacities, among others. Thus, there is no one single 'optimal' model in financing local services; yet there are basic models and many applied more in developed countries while others are dominant in the developing world. This paper addresses the financing issues in countries where the local governments are responsible for providing substantial parts of the local services, just like in Rwandan cities.

This paper is prepared to support the ongoing Rwanda urbanization dialogue.[3] It first summarizes the models and practices for financing urban infrastructure development (focused on experiences in developing countries). Based on a desktop assessment of recent policy documents and short field visit, the paper then briefly summarizes the current forms of urban financing in Rwanda, and helps to outline possible models for improving infrastructure finance in Rwanda. The discussion covers not only investments, but also underscores the importance of securing the sustainability of built infrastructure and ensuring the viability of the local services by arranging funds and human resources for adequate operation and maintenance.

To help the non-technical users we have annexed a list of definitions at the end of this paper.

[2] Bird, R.: Are there Trends in Local Finance? Munk School of Global Affairs, University of Toronto, 2011.

[3] Prepared by Mihaly Kopanyi for and under the guidance of the International Growth Centre. The author greatly benefitted from the National Forum on Sustainable Urbanization (March 20-21, 2014), policy documents shared, and interviews made with key local and central government officers during filed visits before the forum. We are particularly thankful for the officers and advisors of the MINECOFIN, MINALOC, MININFRA, the City of Kigali, and Musanze and Muhanga districts.

International experiences in financing urban infrastructure development

Planning the urban infrastructure: Good plans for urban infrastructure development express the needs and priorities of urban areas, in terms of both recurrent and capital spending, in ways that can be translated into budgets. Cities often formulate capital improvement plans or programs (CIPs) with specific priority projects and actions. CIPs cover 3-5 years ahead and are drafted in an iterative process of discussing needs and priorities in dialogue with key stakeholders, and selecting technical and financing modalities correspondingly.[4] They also plan and analyze means for financing the services after completion of the new investments. CIPs are often rolling plans, where the program of the upcoming year is detailed and included in the upcoming annual development budget, and then a new additional year is added to the rolling plan. Kigali city also has a 5-year development plan[5] which reflects good vision and clear priorities but gives little space to financial plans.

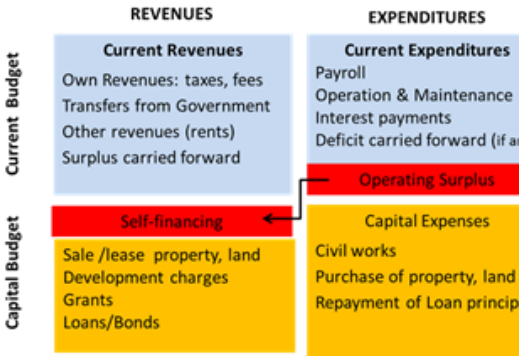
Thus, before delving into infrastructure financing models it is useful to address the issue of the budget and the importance of ensuring sustainable financing for local services expanded by the new infrastructure investments. Experiences show that infrastructure assets decline and services deteriorate fast where budgets leave inadequate room for financing the operation of the services. A new water network may starts with 24-hour service seven days a week, but the service drops down soon to 5-10 hours and just a few days a week, and correspondingly citizens' satisfaction and willingness to pay degrades too.

Infrastructure financing models can be classified in different ways, but one useful mode is to discuss on- and off-budget financing separately. The following sections thus start by summarizing the on-budget financing models first, then the off-budget schemes.

Budgeting Infrastructure Development

The role of the budget: The local budget is the most traditional and common source for financing local services and infrastructure development in both the developed and the developing world. However, developing countries[6] use more on-budget financing while advanced off-budget financing schemes are more prevalent in the developed world. For analyzing the on- and off-budget[7] financing models, it is useful to follow a standard budget structure that clearly distinguishes current (also called as *non-development*) and capital (also called as *development*) budget (see figure 1)

Figure 1 Standard Budget Template



[4] Guidebook on Capital Investment planning for Local Governments (The World Bank 2011 – http://web.worldbank.org)

[5] http://www.kigalicity.gov.rw/IMG/pdf/Kigali_City_Development_Plan-2013-2018-Draft.pdf

[6] An exception is China that is particularly well known for his off-budget infrastructure financing.

[7] Off-budget financing in nutshell includes projects where the funds for development and/or operation of the given services are kept outside the local budget like in an independent municipal enterprise discussed later.

(although many developing countries do not yet apply this budget format).

Operating surplus: The operating surplus is an indicator of the viability of a municipality, since a negative operating balance would mean that the municipality uses more revenues than it is able to collect on a recurrent basis. A healthy local budget thus should have an operating surplus which can be set aside as general reserve for rainy days, or used for development. Secondly, the operating surplus, as the self-financing part of the capital budget, could serve as financing, either for asset-development or debt service, and certainly to leverage external resources. Thirdly, cost recovery, i.e. the difference between service charges/revenues and cost of services (e.g. water, sanitation) plays a major role in the current balance, because they either add more to or use up a good part of the general current revenues when utilities are included in or subsidized by the city budget.

The capital budget contains the main *financing* sources used beyond the operating surplus.

Triple balance: A budget contains three balances: the operating/current balance, the capital/development balance, and the balance total.[8]

Operating Services and Managing Built Assets

Interlinks between development and operation: Operating services and managing built assets has four critical interlinks with local infrastructure financing.

Planning the financing of operation and maintenance: The first and most obvious is *financing operation and maintenance* (O&M), because the operation of new infrastructure induces costs, sometimes quite substantial. Operation expenses could amount annually about 5 to 15 percent of the initial investment cost or more. For instance, solid waste collection and disposal need fuel and labor; water supply and waste water treatment need pumping and generate huge electricity bills etc. It is essential to ensure that future O&M costs are included in the financial analysis of any infrastructure project. If the project is feasible, it means the municipal budget also has room to finance O&M.

Clear accounting of operation and maintenance: The second interlink is *accounting*. Operation and maintenance requires proper accounting of costs and revenues (like cost centers or fund-based accounting). For instance, a solid waste operation is hard to manage if the accounts mix the fuel cost of waste collection trucks with other municipal vehicles (like the mayor's car).

Planning systems for operation and maintenance: Third, proper operation requires *systems and procedures for operation and maintenance*, i.e. technical and managerial capacities for timely repair and refurbishment of assets. Cities in developing countries often violate this rule and delay maintenance, which results in eventually dilapidated assets, increased operation costs, and poor service delivery (like broken wells or pipes increase water loss, increase costs, and reduce water supply to customers).

Avoiding unnecessary operating costs: Finally, money paid to cover *unnecessary costs of services reduces the current budget* of the local government, hence reduces the *operation surplus* and the funds for future investments. Avoidable/unnecessary costs include subsidies that are greater than necessary, or those paid on behalf of social groups that could afford to pay full fees, or paid to inefficient service enterprises to cover expenses that could have been avoided.

[8] The "balanced budget" principle is often confused by arbitrarily referring to one of these three balances, of which the total balance is technically always presented, because of the accounting logic.

Means for providing the four critical interlinks of O&M: Financing measures vary in how successfully they provide these four financial components.

Investment grants and O&M: The grant-financed investment projects, whether national or donor funded, often fall short in ensuring the said four critical interlinks. Grant-financed investment projects are generally focused on or limited to the funding of initial infrastructure. This would work well, if the local budgets were robust in supplying proper O&M, and the respective municipal departments had skills and capacities for managing the technical and financial aspects of O&M and periodic refurbishments. Donor programs perform better than central governments in building these critical capacities in local governments and often assign specific project-subcomponents to finance human capacity development. But even some donors ignore the fact that the local government may fail to appropriate funds for proper O&M in the future.

Service fees and cost recovery: Service fees and charges in principle should generate sufficient funds for the sustainable operation of many urban services; this is the default case in developed countries. In contrast, in developing countries, service fees are often set below cost recovery level. The reasons behind this include low customers' ability to pay, but more often simply reflect a lack of information, inadequate skills in tariff setting, and lack of political support and acceptance of the cost recovery charges. While many of these constraints are valid at least initially, policy makers often fail to understand the fact that losses of underfinanced services will eventually be paid by the whole community in subsidies. For instance, the water tariffs include 60% of subsidies in New Delhi, India.[9] Donors put a strong emphasis on cost recovery in project financing *agreements*, but may fall short in *enforcing* cost recovery, often because the real issues and deficiencies become apparent only beyond the 4-5 year timeframe of the donor program. At this point, the consequences of insufficient recurrent financing constrain service delivery.

Low tariff for all and blanket subsidy: The worst case for service provision is when tariffs are kept generally low, *"to help poor people to pay"* (a favorite argument of politicians); this is a problem because rich people pay the same low tariffs, and the service entity is allowed to operate with persistent and unbearable deficits. This is a lose-lose situation, where the customers accept the poor service (e.g. unsafe water provided for an hour daily), and the entity defers maintenance but is still bailed out at the end of the year with a blanket balance sheet subsidy from the municipal or central budget.

In contrast, infrastructure project experiences strongly underline the importance of the following pricing or tariff-setting principles:[10]

(i) Feasibility and pricing of the services should be factored in and discussed/agreed upon with customers at the earliest phase of project planning;
(ii) Ability to pay and adequate tariffs should influence project modality (e.g. provide community tap instead of in-house water connection for families that are unable to pay high tariff);
(iii) Ensure cost recovery and financial feasibility are good signals for providers;
(iv) Ensure affordability and good price signals for customers;

[9] Ahmed, A.: Review of current practices in determining user charges and incorporation of economic principles of pricing of urban water supply; The Energy Resource Institute (TERI), India, 2010.
[10] Derived from Morrell – Kopanyi ibid

(v) Avoid blanket, balance sheet, or deficit subsidies; rather tailor subsidies to objectives and target specific customers.

Protecting the poor: Protecting low-income customers with targeted subsidies is essential when setting cost-recovery tariffs and ensuring the long-term financial feasibility of local public services. There are two ways of targeting low-income customers: a) targeting their services, and b) targeting the tariffs.[11] Service targeting includes lowering tariffs for lower quality services (e.g. a community tap rather than household piped water); geographic targeting by providing simple and cheaper services for specific zones like slums; and income based subsidies, including progressive volumetric tariffs (low tariff for low consumption volume), gradual increased unit tariff at volume levels, or the poorest paying a proportion (e.g. one third) of the bill and a supporting fund paying the rest to the provider if the first collected.[12]

Table 1 Forms and means of Operation Subsidies

Supply Side Subsidies					Demand Side Subsidies		
Explicit		Implicit			Explicit		Implicit
Target grant to provider to pass through to target groups	Performance grant to provides	Annual block grant to provider	Ad-hoc discretionary grant to provider, balance sheet subsidy	Forced subsidy, payment for provider's arrears to its suppliers	Cross subsidy	Tariff credit to the poor	Low tariff forced by the council and loss absorbed by the provider
Best	good	Adverse, ill targeted			Effective	Target	Negative

Good and bad subsidies: Subsidies are justified in certain circumstances and as said could improve financial viability of services and address equity and affordability issues. But there are good subsidies that encourage rational consumption, are equitable for customers, and encourage efficient service provision, and bad subsidies that are inequitable, regressive, and discourage efficient service provision. The latter induce persistent deficit, burden the budget, and preserve poor quality of services. Table one summarizes the various forms of operation subsidies and clearly indicates that a) explicit target subsidies are effective and advisable, while b) implicit subsidies, and particularly supply-side implicit subsidies, tend to be counterproductive, non-equitable, and regressive, and thus should be avoided. At the end of the day, the financing for these implicit subsidies will come from the same community.

Restructuring services and tariffs: Building a *new* water system with a newly established spotless company would be the ideal case, but is rarely possible. Rather, local governments often face the challenges of restructuring, refurbishing, and/or expanding an *existing* system with obsolete service networks, below cost-recovery tariffs, and thousands of poor customers. Experiences show that improvements are possible even in these circumstances, but require not only political support, but also *time, money, and skills*. The Output Based Aid (OBA) provided by the GPOBA[13] trust fund has supported about fifty projects in developing countries with a subsidy for implementing reliable service management and improving tariff system and collection efficiency. The OBA funds are granted and disbursed based on verified achievement of agreed performance targets (volume of waste collected, water supplied, and fee collected), but also finance consultancy or training for preparing and

[11] Morrell, L. – Kopanyi, M.: Managing Local Expenditures, in Farvacque-Vitkovic, C–Kopanyi, M: Municipal Finance handbook for Local Practitioners (World Bank 2014)

[12] The RES (gap) foundation Hungary offers a good example (Kopanyi et al. 2004 ibid)

[13] GPOBA refers for the Global Partnership for Output Based Aid, an international donor trust fund that provides subsidies and technical support for improving local public services. GPOBA founders include the DFID, World Bank, IFC, and AusAid and managed by the World Bank. (www.**gpoba**.org)

implementing the performance improvement plan. For instance, the Municipal Solid Waste Management OBA[14] project plans to provide US$ 4.3 million in subsidies to the four partner municipalities under the Nepal Emerging Cities Program. Initial results are very promising in six month after the project effectiveness.

Increasing tariffs and charges: Tariffs often cover less than half or a quarter of the accounted costs. But, increasing the service charges bluntly to reach cost recovery is neither possible nor advisable as a preliminary step, because it would accept and finance the operation inefficiencies (technical losses and poor fee collection). Instead, in-depth dialogue with stakeholders, technical improvement to reduce losses, and demonstrated improvement of services should happen in parallel while *gradually* increasing tariffs and reforming of collection. The Karnataka Urban Water Sector Improvement[15] World Bank project (US$39.5 million) offers a success story. Under this project, Veolia (a private operator) increased water supply from a few hours per week to 24 hours per day for 180,000 people, without increasing the amount of bulk water, in ring-fenced demonstration zones of three small cities in Karnataka state, India. Under this World Bank project the operator first renovated the distribution network, installed meters, introduced progressive volumetric tariffs and effective management with billing and collection system, and an NGO supported the reform with social intermediation.

On-budget Financing of Local Infrastructure

Local governments by default finance development from their capital budget- the approach known as 'on-budget financing'. This is the dominant case for local governments in the developing world and particularly for small local entities; while local governments in the developed world often expand their financing capacities by supplementing on-budget financing with more sophisticated off-budget instruments such as ring-fenced project financing, outsourcing, or public-private partnerships (discussed later). The lists of discussed on- and off-budget financing instruments with short remarks on merits and demerits of each instrument are summarized in table 3 at the end of this section.

Own-source revenues and central transfers in developed countries: Most[16] funds channeled to local governments supplement local governments' own-source revenues, and should be accounted for as budget revenues. There is again an important difference between the practices across countries. Local governments in developed countries often have a large own-source revenue base (30-40%, or an even larger share, of the budget) and receive unconditional shared taxes and block grants, although earmarked grants are not uncommon either. In developed countries, there are not many central government rules for capital spending, apart from limiting debt exposure (e.g. debt servicing must be less than 15% of the operating budget), so they have a great deal of discretion in planning and using funds for the operation and development of services and spend most of the budget on services[17] (Table 2). They also have capacities for both strategic planning and effective structuring and managing of infrastructure development.

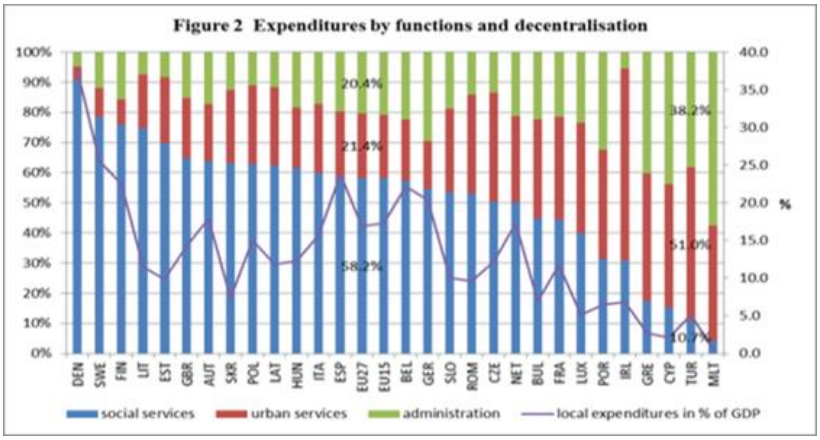
[14] Nepal Municipal Solid Waste Management OBA, World Bank report 2014.

[15] The cities were Hubli, Belgaum and Gulbarga; (KUWASIP Project, The World Bank 2008)

[16] There are odd practices when some revenues are not properly accounted and budgeted, like development or operation grants passed through the local government to its entities (support to a water provider), bills paid on behalf of the local government (e.g. electricity bills paid by the province to the national electric company on behalf of municipalities or their entities in Pakistan, or revenue intercepts in Jordan)

[17] Kopanyi, M: Financing Municipalities in Turkey, World Bank Note, 2013

Targeted and earmarked grants in developing countries: The shares of own-source revenues of local governments in developing countries are often small; they receive mostly target, earmarked, or performance grants with lot of rules and limitations about their spending. An extreme case is Nepal where municipalities receive a block grant, but must spend 60% of the budget on development. Similar rules exist in Pakistan supported by an argument that this curbs administrative expenses and the hiring of new staff. Financing projects through block/ earmarked grants makes it difficult to assess the size and nature of the operating surplus, especially because many earmarked grants should be returned if unspent. It may also happen that some local governments receive earmarked capital grant and engage in large development projects when they are running current deficits. Of course, no mayor would refuse a grant or a project because of current deficit, but this becomes quite problematic as the local budget has no room to fund the new, sometimes, very substantial, additional operating and maintenance expenses,[18] and hence the viability of the new infrastructure is undermined.



Local governments in developing countries mostly finance infrastructure from capital transfers and/or grants that the government or donors provide for preselected projects. These lead to the question of how to allocate and distribute the development grants equitably and effectively. Experiences with the various grant forms and modalities are very mixed, leaving no hope for a single optimal model.

Formula based grants

Formula based grants award money to authorities based on their underlying characteristics, according to a prescribed formula. They are very common for allocating general block grants or operating grants equitably, mostly in combination with equalization factors called 'equalization grants'. Needless to say that equalization is always relative, and aims at reducing rather than eliminating inherent differences across local governments. Full equalization would be neither possible, nor advisable, in part because of difficulties in measuring precisely the differences and their underlying causes. Some argue that the full compensation of differences may trigger adverse reaction from those who worked hard, while making stragglers lazy in improving their performance.

Equalization grants for development: Equalization grants typically allocate current or general transfers, while Rwanda uses them to equalize development grants.[19] There are particularly few cases where equalization grants are designed exclusively for allocating development funds. Saudi Arabia is one of the

[18] When we asked the design company how would the Kabul government finance the solid waste collection and disposal system they planned, first they admitted that there were no operation costs factored into the feasibility model (over 10 % of initial investment per year); then they expanded the project budget to cover O&M in the 3 pilot years of operation.

[19] Goodfellow, T.: Local taxation and institutional accountability in Rwanda's growing cities: the case of Kigali, IPAR Annual Conference, Kigali, December, 2011; http://eprints.lse.ac.uk

few exceptions where the local governments must cover their operating expenses from own revenues, while receiving a formula based capital grant with one equalization factor. The recently introduced Saudi development grant formula consists in:[20] 35% Population + 20% Area + 10% Index of construction costs + 35% Infrastructure deficit; but experiences and lessons still need to be drawn. The formula looks simple, but requires detailed data collection and engineering expertise for estimating the construction cost index and the infrastructure deficit. Furthermore, the scale of the project matters, because any earmarked or formula based development grants would be effective only if the local governments have sufficient administrative and technical capacity for selecting, structuring, and implementing the infrastructure projects.

Performance Grants

Performance grants aim at incentivizing local governments' good performance by rewarding it with general or infrastructure project grants. The performance conditions may aim either at improving financial management, or participatory budgeting, or service delivery, or own-revenue performance. Performance grants often supplement rather than replace basic unconditional transfers such as shared taxes. These grants may be distributed as sole performance awards, or by a combined transfer formula like that adopted in 2013 in Jordan,[21] (Figure 3). Jordan's formula distributes a block grant by combining an equalization grant with a performance grant. The equalization grant is the difference between spending need proxies (population, area, and distance from Amman) and revenue potential proxies (number of houses, rent, poverty, and other revenues) and allocates 80% of the transfer pool. The performance grant is a revenue matching grant that allocates 10% of the transfer pool that tops up actual collection of selected own revenues. So the formula incentivizes better revenue performances, while the service delivery effectiveness is not yet measured. A 10% transition grant had to be used to soften the landing of the new formula by avoiding sharp drop of revenues compared to the previous year.

Figure 3 Transfer Formulae in Jordan

Complex performance conditions: The Nepal performance-grant system is designed by donors and aims to force municipalities to comply with so-called, 'Minimum Conditions of Performance Measurements' (MCPM). The allocation of transfer is based on a formula (50% population + 10% area + 25% poverty + 15% tax effort); but the municipalities should also comply with MCPM, and do not get the transfer if they fail to do so (a handful of the 75 municipalities fail every year). The formula is simple, but the MCPM matrix includes about sixty four combined factors that are hard to follow even for academics. These cases suggest that well-designed performance grants motivate good behavior, albeit more towards the central government rather than to the local beneficiaries. They also face challenges

[20] Muwonge, A – Ebel, R: Intergovernmental finances in a Decentralized World; in Farvacque-Vitkovic, C – Kopanyi, M: Municipal Finance handbook for Local Practitioners (World Bank 2014)

[21] Kopanyi, M: Introducing a new Transfer Formulae, Jordan RLDP project, Mission report, The World Bank November, 2012

including administrative complexity and high transaction costs, data constraints, or elite capture, and thus they are not well suited for distributing development grants.

Municipal contracts

Municipal contracts include special forms of performance grant systems that focus on essential capacity building, financial and organization reforms, and strategic planning and reward good performances by allocating funds for these reforms but also for infrastructure development projects. Municipal contracts worked well in West African countries, including dozens of cities in Ghana and Senegal. Key objectives of municipal contracts[22] include: supporting integrated urban and local development; giving municipalities greater responsibility in selecting and financing projects; introducing urban and financial audits; securing the commitment of the local government via the contract; motivating citizens' participation; and measuring results against specific problems identified in service delivery. Municipal contracts put high emphasis on reforming the local planning, administration, and management system (the 'stick') and reward performance with grants for adjacent infrastructure projects (the 'carrot'). Municipal contracts also face most of the performance grant challenges, including administrative complexity, strong donor and advisory involvement, substantial analytic work and transaction costs; thus, they may phase out after completion of the overarching local reforms.

Earmarked or targeted development grants

Earmarked or targeted grants are very common around the world and they well support some national or sectoral priorities (like roads, environmental protection, or cultural heritage). For example, many developed and developing countries have established 'Road Funds' for supporting the development, rehabilitation, and maintenance of road networks and charging customers by a road tax (often built into the price of fuel). Similarly, environmental protection funds are filled by polluters' penalties or environmental taxes and support developments with substantial environmental improvement effects like drainage and flood control systems in cities. In short, local governments can and should tap into these kinds of national funds if they are available.

Block grants for development: Earmarking is a broader policy phenomenon in developing countries; central governments often provide block grant earmarked generally for infrastructure development or for specific sectoral grants. The development block grants restrict spending exclusively to infrastructure projects, but offer flexibility to the local governments in selecting local priorities and allow a broader range of developments, including building offices for public administration (Figure 4) and commercial service infrastructure (like parking spaces, bus terminals, vegetable markets, etc).

Figure 4 City-hall with 4 Small Shops at the Ground Floor (Maan city, Jordan)

Most of the commercial investments are important for improving livability, but on the revenue side, they often evaporate rather than generating net revenues for the local government. Investments in fee-based commercial services should generate net revenues for the local budget, yet often fail to do so. For instance, under the

[22] Goudriaan, M: Effective aid Through Municipal Contracts, VNG International, 2010

Kampala KIIDP[23] project, we found that parking, markets, and office rentals did not generate net revenue to the budget, because the very simple one-page contracts allowed the private operators to use any revenues for maintenance and refurbishments; they cleverly claimed that this O&M used up 99% of revenues.[24]

Revenue generation projects: Projects that primarily aim to generate revenue are very popular in many developing countries, despite the mixed experiences with real revenue generation and the question of whether it is wise to spend for profit when basic services are missing. Some local governments are enthusiastic to build shopping complexes (Nepal), office complexes for lease, wedding halls (Jordan), or even bakeries (Turkey). Many of these are good developments, but would be better left for the private sector to build. For instance, a Nepali city built a shopping complex from a grant and loan funding, the units of which were quickly rented out way below market rates, and the unwise contracts for which allowed unconditional subletting by leaseholders. Re-renting soon became a mainstream action with ten-fold rental fees, and tenants cashed out huge profits; eventually, the local government failed to collect enough revenues for its debt service.

Sectoral earmarked grants: Sectoral earmarked grants are also common, including grants for developing roads, public transport, water and sanitation, solid waste disposal, cultural activities, or health and education infrastructure. These grants are very powerful in supporting and implementing national or sector priorities. The funds set aside can be used exclusively for the prescribed development, are often disbursed quickly, and can be well-controlled. A four-year water supply program in Hungary, funded by a sectoral earmarked grant, increased household connectivity from 70% to 96% in the early 1990s.

Sectoral grants require local skills and capacities: In developing countries, the shortage of local administrative, technical, and project management capacities is among the main challenges in good utilization of sectoral grants. Local governments may receive the funds, but fail in the timely completion of engineering plans, or in the timely obtaining of environmental or construction permits, or in proofing or enforcing rights of way or land ownership, thus the projects are seriously delayed often with huge cost overruns. The functioning of the central intergovernmental grant system is also among the challenges. Low predictability and late distribution of central grants are the typical shortcomings, namely the transfer pool is defined late in the fiscal year. As a result, funds are distributed only in the second part of the year and thus projects remain incomplete and funds undisbursed or unused; which may be misinterpreted as a healthy budget with robust balance, making the cross comparison of municipal budgets difficult.

Matching development grants

Matching targeted grants are often variations of the sectoral earmarked grants, but which support development by requesting co-financing from the local government and/or directly from the beneficiaries (citizens). The underlying argument is that advance payments and direct cash contribution by the beneficiaries improve inclusion, involvement, and local ownership of the projects. But also, it may support careful project selection, incentivizes aligning the scale/size of projects with the needs, and

[23] Kampala Institutional and Infrastructure Development project (KIIDP), World Bank 2005-2010.

[24] The KIIDP project supported developing new and detailed (10 page) contracts that protect the interest of the city with measurable performance conditions and eventually renegotiated or retendered 35 commercial service contracts, and then revenues have substantially improved in the following years. (ibid)

motivates cost efficiency, if the matching share is substantial. In fact the matching part is often nominal-only 5-10 percent in developing countries; it is better than nothing and plays some role already compared to the unconditional grants. The matching grant could, however, be as high as 30%, 50% or even 70%, the latter more prevalent in developed countries. The Accession and Structural Funds provided for the member candidate countries by the European Union are powerful examples of the matching grant systems with very visible positive results.

Matching grants in developing countries: Even some developing countries managed to make substantial matching payments politically acceptable. For instance, it is a well-accepted and well-functioning rule in Jordan that the beneficiary households and commercial real estate owners should contribute by 50% to developing or asphalting in-city roads at their premises. Beneficiary contribution is a commonly accepted rule in Nepal too with mixed experiences. For instance, in community water projects[25] the connection charges were set extremely high, because the water was in desperate need, and the families were willing to pay for connection. However, later the same families felt that they have already paid for the water and were reluctant to pay cost recovery monthly tariffs; as a result of such problems, many projects failed financially, and because of deferred maintenance they even failed technically five years down the line.

Differentiated matching shares: Policy makers often differentiate the matching share across sectors; local governments must contribute 20% of project cost for sanitation, 30% for water, 50% for commercial services, and 100% for revenue projects (no grant). But also, the matching grants can be differentiated across groups of local governments with higher matching required from well-off large local governments and lower matching from small, backward local governments, who in turn, could only apply for smaller projects. Needless to say, clear policy rules and a formula should be stipulated upfront to ensure transparency and fairness in using differentiated matching grant systems.

Project Grants

Grants provided by the central government or by international donors for preselected local governments and preselected projects can be called, '*project grants'.*[26] Project grants are rare in developed countries, and often used in very special circumstances, like discretionary grants for London to support infrastructure for the Olympic Games. The cities received substantial US federal grants to rebuild public infrastructure after Hurricane Katrina. Central governments often support big public transport projects with discretionary grants like the Ankara Metro rail project.

Project grants in developing countries: Project grants are very common in developing countries. One reason is that donors are sometimes reluctant to provide blank checks to central or local governments, letting them decide freely what, when, and how to build; donors prefer preselecting the most important sectors based on in-depth studies (policy, environmental, and social impact assessments) and intense dialogue with the central government and with the ultimate beneficiaries. This still can be a bottom up process, if the selection of beneficiaries is very consultative and aims to identify the highest local priorities, the most important development areas with the highest service, social and economic impacts, and the highest willingness to participate by the shortlisted beneficiaries.

[25] Nepal STWSSP Project; Asian Development Bank (Memo 2011).
[26] This is not a common term, but appeared to be useful for our discussion.

Project grants and technical assistance: Donor projects grants are often made more effective not only by analytic studies, but often by substantial technical assistance to the center agencies and to the final beneficiaries financed and managed under the program. This is a major support to the countries and cities, since donors are willing and able to fill the local government's knowledge gap in the structuring, financing, and implementing of large urban projects like bus rapid transport systems, water and sanitation, solid waste management, road, or clean energy projects. Finally, the donors put high emphasis on sustainability and safeguarding, i.e. compliance with international environmental, social, and cultural heritage protection standards. In short, the main differences between domestic project grants and donor projects are that the donors provide not only funds, but also build stakeholder's capacities and warrant greater discipline. Donors put high emphasis also on establishing baseline indicators and measuring outputs and outcomes against baselines.

Some beneficiaries find the donor requirements overwhelming and may try avoiding donor financing, either by postponing development or targeting national grants with softer conditions. The majority of the donor programs worldwide, however, are quite successful with measurable positive impacts, enhanced local capacities, and sustainable services.

The Tanzania Strategic Cities project[27] (TSCP) is a good example of success. The project became effective in September 2010 and used half of the funds by mid-term of implementation, while the initial capacities of the participating cities in managing projects were very low. The project supports the seven strategic cities of Tanzania (except Dar es Salaam), since strengthening the urban sphere of these cities has the potential to improve the economic power and development capacity of the entire country. The bulk of the project funds of total USD163 million of support for infrastructure projects:[28] road, solid waste disposal, bus terminals, and water and sanitation, selected and prioritized in joint analysis of local needs with the participating local governments. The project includes a substantial technical assistance component (supported jointly by the World Bank and the Danish Government) to build capacities in infrastructure project development and implementation, as well as in revenue enhancement and urban management.

Technical assistance: For instance, the economic and financial appraisal of the projects assumed that paving the roads and ensuring four season use, safety, and cleanliness with drains and street lighting would increase the value of the adjacent land and buildings; thus the cities should increase levying and collect more property taxes. But the tax base and the billing and collection capacities had to be built in parallel with the road development. Indeed, many Tanzanian cities[29] managed to achieve this goal. The results verified by the mid-term review mission are very promising with visible and substantial improvement in many fronts, including not only infrastructure and better livability, but also expanding revenue potential; albeit some cities are doing better than others.

[27] Tanzania Strategic Cities Project, World Bank 2010; Mid-term Review report, August 2013

[28] The key findings at mid-term of the project include, the followings: "In Arusha and Dodoma for example, the gravel road network in the city centers have been transformed to a paved standard, with drainage, lighting, and pedestrian amenities; contributing to improved mobility, safety, with an expected reduction in flood events (ibid).

[29] "The cities made good progress since the last mission in developing systems for revenue enhancement and GIS-systems – some are expected to be operational in August 2013…Arusha has already increased its base of 'taxable' properties from 20,000 to 120,000. Billing is automated, using bar-code technology–and taxpayers have the added option to pay via mobile phone, or on-line."

Donor support to national programs: Donors also prefer joining already existing national programs and committing to fulfill a segment of the overall development plans by using the said selection procedure. But by default they also prefer exercising tighter control in project selection, design, structuring, disbursement, and implementation, since the national systems are often fail to meet the required quality standards. The common practice is to establish a project management unit (PMU) in the host ministry and set detailed rules for project implementation, disbursement, and reporting. Most of early PMUs were established by the donors, effectively represent the donors, and obey the rules set for the particular project. The new generation of programs delegates the project management to developing country *governments,* with effective, but more distance control exercised by the donors. A good example is the Prime Minister's Office–Regional Administration and Local Government (PMO-RALG) in Tanzania.

Donor programs through national commercial banks: After careful appraisal donors are willing and able to rely on the national financial and public administration systems. These modalities have been tested, including using the commercial banks as local intermediaries.[30] The expectation is that commercial banks have good risk management and project management capacities, making them well suited to managing donor programs such as fee-based financing. Experiences, however, suggest that some local commercial banks first failed to manage the specific risks of the local government sector (often associated with the political influence of the projects, and the uncertainties from the intergovernmental finance system); they failed to adjust their risk management to the long-term lending with maturity way beyond their current practices; and they failed to manage soft loans and found that the interest margin offered by the donors was insufficient to cover the business risk of lending. As a result, on-lending credit lines offered by the central governments from donor funds were sometimes left undisbursed and later often even cancelled (like in Hungary in the early 1990s).

Municipal Funds

Municipal Funds: Donors often direct infrastructure funding to a special financial intermediary, often called a 'Municipal Fund' (in Nepal, Georgia, Palestine, and Tamil Nadu Fund, India)[31] or a 'Development Bank' (in Jordan, Turkey, or the DBSA in South Africa). The donors use these intermediaries to wholesale their finance for local governments, and then lend these funds to appropriate programs. Such municipal funds are better suited than project management units or ministries to combine grant and loan financing, though levels of experience in loan management and debt recovery are vary across municipal funds, and some fall under political influence and may follow directed lending with low prudential discipline. Despite mixed experiences, moving towards to market based debt financing is a wise decision in developing countries, and the municipal funds are much better suited for this task than project management units or ministries.

The mission of the municipal funds: Municipal funds have been established with the vision that they would gradually help local governments to reach markets. They indeed play critical role in countries with shallow local capital market, short term lending practices, and unprepared local governments. They often start by providing soft loans below market rates[32] and longer maturity subsidized by the central

[30] This model has been tested with no success in East and South Europe transition countries since the 1990s.
[31] See details in Krishnan, L.: Tamil Nadu Urban Development Fund–Private Partnership in an Infrastructure Finance Intermediary; Chapter 8 in. Peterson G. – Annez, P.: Financing Cities, SAGE-World Bank, 2007
[32] Because the shallow market and short maturity (3-5 years) in commercial lending, there is no proper reference rate established for longer term financing (10-20 years) in most of the developing countries.

governments who also takes the foreign exchange risk. Most of these funds are thought to phase out after the local market matures and the local governments adjust to market based financing. The reality is that very few of these funds have managed to lead the municipalities to the market, and thus fail to phase out as an institution in developing countries; they remain in place for decades, but play an instrumental role in financing local infrastructure. The few funds that got very close to market based financing include the FINDETER[33] Columbia, the Tamil Nadu Fund, India, and the INCA South Africa, which has completed its mission in filling the gap in market-based financing, and then phased out from the market in 2012.

Project Grant Policy Options

Lessons from the above financing modalities suggest that project grants and special financial intermediaries play major roles in financing urban infrastructure development in developing countries, but there is a wide range of modalities, rather than one single magic financing model. Since a very substantial part of local infrastructure is financed by regular intergovernmental transfers and earmarked or targeted grants form central government agencies; the question arises why and till when do the donors need special project units or financial intermediaries. Another related question is whether the donor funds should be better integrated into the national infrastructure finance system. There are no easy and simple answers to these inspiring questions.

Donor programs implemented through the national systems: Donors have been providing general policy loans to the central budgets that could be used for boosting the infrastructure finance funds in developing countries. Secondly, donors do prefer controlled financing modalities (PMU, Municipal Funds) because they are often thought to provide better technical assistance, build capacities in local and central agencies, exercise fiduciary control, warrant safeguard requirements, ensure timely disbursement of funds, and finally ensure achieving planned outcomes. Thirdly, donors have developed models for wholesale financing through the national systems against agreed performance targets and outcomes (the scheme known as Program for Results or P4R); but this modality requires robust national system and capacities in both the national and local levels.[34] Three P4R projects in Africa urban area include the Tanzania Local Government program and a health project in Ethiopia. The more recent is the Uganda Municipal Infrastructure Development (USMID) program, a US$100million IDA credit that supports fourteen secondary cities. It will be delivered by the national entities under a Program-for-Results scheme that links the disbursement of funds directly to the delivery of defined results.

Donors to crowd in funds: Donor programs aim at crowding in rather than crowding out infrastructure financing funds. This means that the donor programs aim at providing additional finances to selected target sectors or entities beyond and above of the funds that are available or regularly distributed from national public sources. Simply adding the donor funds to the virtual or defined pool of urban infrastructure finance and distributing proceeds in the regular formula based (equalization) grant system would lose the sectoral focus and the power of the supplementary project funds. Finally, the donor financing often imposes harder conditions than the national fund distribution; thus, a local governments

[33] Financiera de Desarrollo Territorial S.A., Findeter, established as a credit institution with the participation of the Ministry of Property and Public Credit and various government agencies. It gained a BBB rating from Fitch in 2012.

[34] The P4R was introduced by the World Bank in early 2012 and "the P-for-R epitomizes problem solving engagement and moving from a project mentality to a development solutions culture" (P4R Two Year Review Concept Note, The World Bank OPCS, November 2013)

would not apply for donor funds should these simply aim to replace funding from other central government sources, since no mayor would want to replace softer money with harder money. For instance, the government of Hungary insisted to cut central fund allocation equal to the amount cities obtained from donors in the late 1990s; as a result, donor project funding stopped quickly. In short, having donor funding a bit independent of the national systems and from the political cycle could be useful for everyone.

Borrowing–Debt Financing

Local governments in developed countries are heavily reliant on debt-financing of urban infrastructure. The municipal bond market is the second largest market in the United States, and traditionally supported by tax-free interests on municipal bonds. This works because both the demand and supply side of the municipal bond market is deep and robust with well-informed players, albeit about half of the bonds are held by individuals. It is also important that there is a framework for responding to municipal defaults, which are not at all uncommon (recent defaults include Harrisburg city 2012, and Detroit city 2013). [35] In contrast, the European tradition is that local governments rely more on bank borrowing (Germany, France, Spain). The DEXIA, a French-Belgian specialized financing entity, offered a successful example of bank financing for local governments worldwide for decades; but it was hit hard by the 2008 international financial crisis, lost its nearly $20 billion equity, scaled down dramatically, and was eventually purchased back by the Belgian government in 2012.

Debt financing in developing countries: Most local governments in the developing worlds are not yet equipped for market-based financing of urban infrastructure; and, as said, the shallow local capital markets are not suitable to serve them either. Many local governments are able to handle short term borrowing to bridge the gaps between income and expenditure flows within the fiscal year, but have neither financial nor human capacities for structuring and managing long-term debt financing of larger urban infrastructure projects. For these reasons, some central governments fully prohibit local government borrowing both short and long term (like Pakistan after a major default at the early 2000s). Other governments allow debt, but impose various restrictions; the most obvious of these is to prohibit borrowing for current expenditures. However, the local governments or their entities easily circumvent these rules by accumulating arrears against suppliers of goods or services (mounting unpaid electricity charges are the most common actions),[36] also called, 'forced credits'.

Borrowing regulations: Specific regulations and restrictions for borrowing for infrastructure development imposed by governments in developing countries include: borrowing from the ministry of finance or treasury, preapproval of loans by the ministry of finance (or other ministries), ceilings on the stock of debt (e..g 60% of net revenues) and/or the debt service (e.g. 15% of net revenues) and/or new debt (e.g. 10% of current budget). [37] These restrictions are effective as long as they are strictly enforced. But, difficulties appear, like shortcomings in budgeting and in establishing the current budget balance, or in the disciplined accounting of expenditures (with no unpaid bills stored in secret drawers).

[35] Appleson, J.-Parsons, E.-Haughwout, A.: The Untold Story of Municipal Bond Defaults, Liberty Street Economics, August 2012

[36] The Lahore Water Supply Agency (WASA) openly publishes on its website its annual report which shows that a good portion (about half) of the electricity bills are in arrear and eventually paid by the Provincial budget to avoid politically delicate situation of stopping water services for a city that hosts 9 million people.

[37] Freire, M.: Managing External Resources, Chapter 7 in Farvacque-Vitkovic, C – Kopanyi, M: Municipal Finance Handbook for Local Practitioners (World Bank 2014)

Uncertainties in politics and intergovernmental finance, like late processing of the central transfers, which make it difficult for local governments to fulfill debt service obligations on time, also make it difficult for lenders to appraise the credit risk years ahead.

Lending by or loan pre-approval by ministries: The lending or loan preapproval by a ministry is often ineffective or doubtful, because the public employees approving it are not trained for banking, nor market based appraisal of investment projects, nor analysis of the creditworthiness of the applicant local entity; they also face the above mentioned information constraints, uncertainties, and difficulties that any lender would face. Furthermore, the preapproval of loans by ministries may generate moral hazard when both the municipality and the lender are motivated to reach a 'sweet deal'; both consider the stamp of the ministry as a full fledge financial guarantee, and it is uncommon that the lender asks the ministry, based on the stamp and signature, to step in and pay when the borrowing local entity fails in its debt service. Ministries tend to pay, and may keep the liability of the municipality in a stock of debt (as happened in Turkey in the 2000s); but these stockpiles of unpaid debts tend to grow over years rather than being worked out, leading to large liabilities at the central level, as in the case was in Argentina and Brazil in the 1990s.

Debt financing is a market action: The debt financing is a market action no matter how it is wrapped and it is justified only if both sides of the market are sufficiently prepared both technically and financially. The market must thus be deep and sophisticated enough. Meanwhile the borrower local entities must be financially viable with sound accounting and financial management systems; robust and reliable own revenue flows, and robust current budget surpluses. Without meeting most of these conditions, on-budget debt financing of local infrastructure is non-advisable; neither by private debt or banking agencies nor by state-owned financial intermediaries. Providing soft loans by municipal funds, as discussed above, resolves only a small portion of these issues, namely reduces the cost of debt and improves the viability of the projects slightly, but neither addresses nor resolves most of the above mentioned institutional or capacity issues.

Debt financing requires meeting strong conditions: Debt financing works well for selected, good local governments with strong human and financial capacities. Thus, under well-disciplined lending conditions it is worth testing; but expanding debt financing should be gradual and careful. Preparation of projects with partial or full debt financing requires special care. First, the project should be well justified and feasible, with proven demand and willingness and capacity to pay by final beneficiaries. This can be supported by specific agreement before project appraisal on initial tariffs and rules for subsequent tariff increases. These agreements should be factored into both the feasibility studies and the project design to ensure selecting cost-efficient modality and cost recovery operation. Second, financial viability and acceptable tariffs may require differentiated tariff structure and subsidization of the poorest customer groups (as discussed before).

Third, debt financing requires careful financial structuring of the project with thorough analysis of options in financing, interest rate, maturity, and guarantee instruments. Finally, tight cost control, contract management, and construction monitoring are vital to avoid large cost overruns that could damage the viability of the project, often close by the completion. Most of these principles and practices are also important when the project is financed from grants, but the debt service obligations make it more important to obey these rules. South African municipal projects offer good examples of market-based financing, with strict rules that the central government would not pay the debt of failed municipal projects.

Off-budget Financing of Local Infrastructure

There are various options for financing local infrastructure projects or operations outside the local government budget; some of these are typically applied by the local governments, while others by the central or regional governments, or international donors. Local governments may have an option to decide whether to provide local services by budget entities like water, solid waste, or road departments; or to form independent corporatized entities such as municipal enterprises (MEs); or to sign agreements with private entities; or set joint ventures.[38] To establish MEs, they move the respective assets from the municipal balance sheet and provide working capital (cash) to the enterprise, assigning to it the fulfillment all development and service functions. With that step the given service is moved out from the municipal budget. The major underlying argument is efficiency; the corporatized service entities can focus better on the services, hire adequate staff (and pay better outside the public servant salary scale), and provide the services more efficiently than a department.

Central Government Schemes

Central governments' direct investment schemes are arms-length financing forms of the regular on-budget project financing. The major difference is that instead of money transfers, the central or provincial governments or parastatal agencies (like the Public Health and Engineering Department–PHED in Punjab, Pakistan) directly finance, structure, and implement these projects and then hand over the assets to the local governments. From the local governments' perspective, these projects show the characteristics of in-kind donations or asset transfers, rather than project financing. These projects (not uncommon in developed countries either) could be very powerful tools in supporting national priorities; they are effective in bridging the gaps in the local technical, project structuring, and project management capacities; and they focus on specific sectors (road, water, transport, or housing etc) and thus may have strong sectoral impact.

Adverse effects of central schemes: Central schemes could also be problematic and counterproductive. The so to speak, "Vertical Schemes" in Pakistan are examples of direct central government investments, since these are fully decided at the federal government level (cabinet or federal ministries) with funding set aside in the central or ministry budgets, and implementation contracted out by federal agencies. However, lack of coordination across ministries' programs plus political influence often distort this project modality.[39] Project managers often bypass local governments and implement without involvement of local stakeholders; sustainability is often hampered, because operating costs of the projects are not factored into the local operating budget; and the asset ownership is left unclear after completion and political handover. Experiences suggest that it is vital to well integrate these central government projects into the local governments' development plans, harmonize them across state agencies and with other financing forms, discuss them with key stakeholders, and then budget them into the local accounts properly.

[38] Off-budget financing is often preferred because it reduces the debt accounted in the budget, but experts warn rightly that "…keeping debt off balance-sheet or off budget does not reduce actual liabilities for the government and may merely disguises government liabilities… reducing effectiveness of the debt monitoring mechanism."; Delmon, J.: Private Sector Investment in Infrastructure – Project Finance, PPP Projects and Risks, Walters Kluwer, World Bank, PPIAF 2009

[39] Central officers may feel they know the local needs better and they could control development better (indeed money makes power) thus initiate and implement projects "for the people" i.e. often very political rather than economic decision.

Off-budget donor projects: Some bilateral donors prefer off-budget projects: they bring the money, hire or deploy project implementation management teams, bring technical expertise as needed, contract construction, and finally hand over the structure to local governments as an in-kind donation. They do so often without precisely sharing information about the project costs. In some extreme political, security, or natural disaster situations these projects might offer the most adequate form of support; but in normal circumstances, it would be better to include and involve the local council and financial officers, and account the funds and expenses into the local budget regardless of the implementation arrangement.

Operation and maintenance in jeopardy: The donors often put high emphasis on analyzing the demand, consulting with the key stakeholders, and helping proper use of the project facilities. Yet, they often fail to arrange project proceeds for financing operation and maintenance, which may undermine the project's financial viability.[40] The argument behind is that they provide the assets and "just require" good ownership confirmed by the commitments to finance operation and maintenance from local funds. The problem is that there is no mayor who would honestly admit the lack of funds and asks postponing or denies a project offered readymade for free. The only way in mitigating these risks is to include and involve the central or regional governments and find modalities for ensuring sufficient and sustainable financing of the operation and maintenance of the granted facilities.

Projects by parastatal entities: Parastatal deconcentrated service entities offer another example of off-budget service and finance. They are often established by the central or regional government or sectoral ministries, like the regional or local water supply, public transport, energy, health, or education entities. The merits of these include: size-efficient large regional services and good financing and management capacity often unavailable in small local governments. Services provided by regional parastatal entities (enterprises or departments) also reflect the form and level of limited decentralization (deconcentration). The demerits include non-responsiveness, when the entities are too big and run without fair communication and cooperation with the local stakeholders (users and local government alike), and inefficiencies when they perform like administrators rather than service providers. Parastatal service entities are often established by the higher government tiers without the discretion of the local governments; and they might be handed over to the locals in decades of operation as happened in the European transition economies. From the local government perspective these entities require similar control and regulatory oversight to ensure efficient and quality service, fair pricing, and timely and responsive satisfaction of the local demand.

Municipal Enterprises and Development Authorities

Municipal enterprises, as independent legal entities, could develop and finance infrastructure more flexibly, borrow on a commercial basis, receive grants from the central or local governments, and engage in joint ventures with other public or private entities to reach scale economies. They remain under the control of the sole or majority local government owner who is also the regulator of the local services. Neither the debt nor the other liabilities of the MEs influence the municipal budgets directly, because MEs are independent entities. However, there are strong indirect links, including first, that the

[40] Donors granted School buildings for dozens of local communities in remote Pakistan areas, but the local governments had no money to hire teachers and cover operating cost in many of these schools. Thus they remained abandoned and kids remained untrained.

sole owner is ultimately responsible for the liabilities of the entity; second, the municipality holds the ultimate responsibility for providing the services, thus must step in if the enterprise fails.[41]

Municipal enterprises are dominant form of service entities: Because of their superior management and operational efficiency, municipal services are increasingly moved out to municipal enterprises, even in many developing countries. MEs became the main forms of service provision in the European transition countries and most of them are working very well. Municipal enterprises in full and partial ownership represented the largest economic sector in Hungary by the end of the 1990s.[42] Another example is Nepal, where small water user communities (WUCs) develop, own, and operate water supply systems like quasi enterprises in a gray legal framework; and indeed many water entities fail in short years.

Governance challenges with municipal enterprises: MEs could generate huge contingent liabilities to the budget; they may grow out from the control of the local governments, because soon they may have greater assets than the local government; the enterprise managers may become politically influential; the local governments may lack capacity to monitor, guide, regulate, and control the enterprises; finally, the local governments often engage in ambiguous financial transactions with their enterprises, including moving revenues or assets to or out from the enterprises, borrowing via the enterprises and moving the proceeds to the budget to circumvent budget limits and borrowing rules. For instance, municipalities were not allowed to borrow in China, but the enterprises established by the local governments could freely borrow and their often much larger scale than the municipal budget would allow incurring debt.

Development Agencies: Independent development corporations are very traditional in India (e.g. Development Authority in Delhi–DDA or Mumbai–MDA), Pakistan (e.g. the Lahore Development Authority–LDA), and China (e.g. the Shanghai Urban Development and Investment Company – UDIC), and similar development companies are getting increasingly popular in the Balkan countries too. These municipal enterprises show both successes in operation and in growing power. The Shanghai UDIC was empowered to manage extensive land lease,[43] land transformation, and fixed asset investments; and contributed to the extraordinary development and transformation of the City. The fixed asset formation[44] in the city was about RMB2,300bn. (US$275bn), about 30 times larger than one annual fiscal receipt of the city between 1989 and 2004, and the city has grown much further since then. This financing scheme has attracted debates about the sustainability and the risk of financial crisis, because of the enormous liabilities UDICs have taken against the future value of the land and against the generally much lower fiscal receipt of the owner local governments.

Ring-fenced Project Financing

Ring-fenced project financing is a financing model when the investment funds are raised exclusively against the future revenue flow of the project[45] or urban services. In this way, the particular

[41] Kaganova, O. – Kopanyi, M: Managing Local Assets, Chapter 6 in Farvacque-Vitkovic, C – Kopanyi, M: Municipal Finance handbook for Local Practitioners (World Bank 2014)

[42] Kopanyi. M – Hertelendy, Zs.: Municipal Enterprises in Hungary, in Kopanyi et al: Intergovernmental Finances in Hungary – A Decade of Experience, The World Bank, 2004).

[43] Since the land by law should remain in public/state ownership in China

[44] Fu, G.G.: Urban Infrastructure Investment and Financing in Shanghai; Chapter 6 in. Peterson G.–Annez, P.: Financing Cities, SAGE-World Bank, 2007

[45] The Washington Baseball Stadium (USA) opened in 2008 and cost US$611million is a Famous ring-fencing case where the Council was reluctant to approve the Mayor's initiative to build a stadium from budget sources; but

development is considered as being financed outside the budget. Ring-fenced financing offers multiple benefits such as: the assets remain in the ownership of the local government, the project is implemented by the local government, but it is off-budget and causes no cost for the taxpayers apart from direct beneficiaries; the debt is secured with a dedicated project revenue stream. Ring-fencing is ideal for financing commercial services (parking, vegetable markets, sport or wedding halls, housing) or so to speak revenue generation projects (shopping malls, office complexes), if latter are justified investments of local governments.

Ring-fencing challenges: Ring-fencing is the default financing form (often combined with municipal enterprises) in many developed countries, while rarely applied in developing countries. The challenges with ring-fenced project include a) administrative complexity, b) required expertise and time to structure them well and protect the interest of the local governments and customers; and c) the need of disciplined and open minded council that understands and approves this scheme. Ring-fenced financing is supposed to be neutral to the local budget, but it may induce contingent liability to the local government and budget, because a) the revenue stream may depend on the economic cycles, b) successful contracts may require partial guarantee by the local government, and c) the service provision remains on the shoulder of the local government.

Ring-fenced energy projects: The energy efficiency projects offer a simple case of ring-fencing–that is well used in transition countries. The local governments invest to replace street lighting systems and lamps in schools, hospitals, public buildings with energy efficient equipment, and repay the loan from the ring-fenced savings in the energy bills. The beauty of these projects is not only that these are simple to structure and implement, but also the investment is paying off in 2-3 years. Finally, local governments with budget problems can borrow and implement these if they ring-fence the revenue flow and make it independent from their budget. For this to happen they may need to establish a simple municipal enterprise dedicated for this project and phased out after the loan is repaid.

Ring-fenced projects in Africa: African countries offer a few examples of ring-fencing, like the *ring-fenced* water, and sewerage service provision by the Nairobi City Water and Sewerage Company (NWSC) that finances high water investments in large urban centers and manages water supply.[46] Other cases with ring-fenced financing schemes include the Yemen Port Cities project, the Alexandria Development Project with components for ring-fenced Housing and land development, some in public-private partnerships.

Public-Private Partnerships

Public-Private Partnerships (PPPs) represent an even more advanced form of external or off-budget financing of urban infrastructure. Enthusiastic discussions and high expectations emerged about the role of PPPs in urban infrastructure development and service provision in the 1990s. But very moderate results arose, particularly in urban services; PPP contributed only 2-3% of public infrastructure

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agreed eventually to ring-fence the project and basically used the lease contracts based on an approved detailed development and engineering plan that includes the stadium and revitalization of the neighborhood with shops and residential units. The city issued bond against the lease agreements and successfully financed and completed the development without spending from the budget apart from the initial cost of preparation. However, a similar revitalization attempt has led to the bankruptcy of the Detroit city in 2013.

46 The project was prepared under the World Bank Kenya - Nairobi Water and Sewerage Institutional Restructuring Project (http://www-wds.worldbank.org/external).

development in the last two decades.[47] The merits of PPPs are unquestionable, including supplementing scarce public resources from private funds; providing efficient private managerial capacities thus reducing the cost of services; taking over substantial risk from the public entities (construction, financing, operation/business risks etc); and the corporate operation is much more flexible than the public operation. The demerits start with the complexity of structuring PPP arrangements; difficulties in approval/acceptance of PPPs by public administration, politicians, and the public; lack of experiences and expertise in the local governments to control the private partner; and finally shortage of capable domestic private entities to take over public services in developing countries.

PPP management contracts: PPP is a kind of buzzword that refers for a wide variety of PPP arrangements. For the matter of simplicity we can structure them along two factors: the ownership of the assets, and the scope of the management in service provision.[48] In the simplest PPPs the assets remain in public ownership, but the local government signs a *service/performance contract* or a *management contract*, the latter with more freedom for the private partner in operation and maintenance. This arrangement is suitable for developing countries because it is relatively easy and simple to structure, politically acceptable, and easy to change in case of failure or misconduct of the private partner. But the most important benefit is that the service does not require drastic and immediate improvement in efficiency and radical tariff increase, since there is no need for immediate full recovery of cost of operation plus investment plus debt service costs. The private operator is responsible only to achieve the agreed improvements. Thus the improvement of services can be gradual with full cost recovery kept in a distance.

Leasing out public assets or joint ventures: The second level of PPPs includes: leasing out the assets or forming a joint venture and providing the services under the discretion of the private partner/management with rules set in the agreement. Joint ventures are formed with majority or minority public equity, but often with majority decision power of the private partner. However, attempts to lease the assets or form joint ventures often end up with failure and cancellation or renegotiation of the contract.[49] The main reason behind is that the private partners (maybe the public too) tend to underestimate the gravity of key technical and financial issues like the quality of dilapidated assets, the human capacity and behavior of the labor force, and the regulatory uncertainties in changing the tariff structure. So the main challenge is not to provide services, but to turn around a technically and financially nonviable entity.

Concessions: The outsourcing of development with a concession, Build-Operate-Transfer (BOT), or similar agreements are more advanced PPPs where the private partner designs, finances, builds, and operates the program, and finally may return the assets to the public partner. However, many above mentioned challenges prevail. First of all, full cost recovery is a major precondition of the success of these PPPs, but citizens' ability and willingness to pay limits the tariff options, making political reluctance and thus the risk for future tariff adjustments also high. The PPP agreements may mitigate these risks by including some form of subsidies paid out from the local government budget, preferably in decreasing scale over time to ensure the agreed minimum revenues. The PPP might include off-take agreements like minimum volume of water purchased by citizens and public entities, or minimum volume of waste disposed of in the PPP landfill; if the volume low, the municipality is obliged to pay the

[47] Annez, P.: Urban Infrastructure Finance from Private Operators, pp. 313 in Peterson, G – Annez, P 2007 ibid.)
[48] see p.8 Delmon 2009 ibid
[49] Like the case of the Dar es Salaam Water Company, where the private partner, a reputable foreign firm walked out in two years with complete failure.

difference, thus the contingent liability is left in the municipal budget. This may induce moral hazard since the guaranteed volume and revenue discourage the private partner to improve efficiency, to expand services, or to enforce collection of charges.

New Advanced Financing Opportunities

There are new financing instruments that have been tested in the developing world in the last decades; including land-based financing and output based aids (OBAs). Of these, the land-based financing plays very substantial role in some countries (Bhutan, China, India, Ethiopia, Nepal, Turkey, and the European transition economies), while OBAs only supplement the mainstream financing forms.

Land-based financing

The land-based financing includes various instruments when land-related rights, or fiscal or regulatory power, is transferred to fund public infrastructure;[50] many of these provide on-budget funds, though others are implemented in off-budget arrangements such as via municipal enterprises. The significance of land-based financing arises from the fact that well performing developing countries boost public and private investments in urban areas that in turn appreciate land value on an extreme scale (ten to thirty fold increases in land value are not uncommon). Most of these benefits are realized by private players with little or no financial benefit for the public entities that played a great role in the land value appreciation. Thus, *value capture*- that is, extracting a fair portion from the private benefits to the public budget- is an utmost important action that local governments should take in developing countries (this is a default policy in developed countries).

Leasing or Selling Land

The Chinese model: The astonishing development of Chinese megacities like Shanghai offers one model where the *state-owned land is leased out* for private development, often for 99 years. The success of this model requires: a strategic development plan with long-term vision of the city development; a corresponding development program; the right of the cities to use land for development freely (including the power for drastic removal of structures and people to clear the sights for new development, which is virtually impossible to implement in many countries); and a municipal enterprise (like the Shanghai Chengtou Corporation). The Chengtou Corporation is a development and investment company established by the Shanghai local government for managing land-lease, borrowing against lease revenues, and investing the proceeds for developing basic infrastructure including highways, bridges, water and sanitation, etc. The lease fee is estimated based on demand and the future value of land after the development.

Shanghai seems to be an incredible success, since over the last two decades it generated development about thirty times larger than the city's initial one year total budget.[51] Ethiopia has tried to emulate the China model, like the development in Addis-Ababa and in Amhara State.[52] The challenges the China model is facing include: the risk of real estate bubble;[53] the increasing tensions because of the drastic

[50] Kaganova, O. – Kopanyi, M: Managing Local Assets, in Farvacque-Vitkovic. C.–Kopanyi, M. 2014.
[51] Fu, G.: Urban Infrastructure Investment Financing in Shanghai, in Peterson – Annez 2007.
[52] Ethiopia passed a new Land-lease holding act and the government has allocated large plots of land for industrial zones in Dire Dawa, Kombolcha, Hawassa, and in the Addis Ababa vicinity in 2012.
[53] Peterson, G.: Land-Leasing and Land-sale, in Peterson–Annez 2007

removal of farmers; and huge contingent liabilities for the city created by the municipal enterprise in this financing scheme.

Selling public land has funded substantial development in many countries. Land-sale has a great and double potential: first, it generates bulky one-time revenues for development; second if well done, it accelerates adoption and implementation of large urban development or modernization programs. This model works when the local government owns sizable land for development or manages to transform agricultural land to urban land development. Adequate urban development plans, reliable asset management, and accounts on government-owned land are key preconditions for using land-sale strategically for infrastructure financing. But land records are often vague or nonexistent in cities in the developing world.[54]

Successful land sales in the developing world include, Mumbai and Bangalore in India and Alexandria and Cairo in Egypt. For instance, Cairo adopted a development plan and then auctioned desert land for new towns that generated $3.1 billion; with this single transaction they generated an amount over one hundred times larger than the total (generally low) annual property tax collection of the country.[55] These cities can sell land, but face less liberal rights than China for moving the inhabitants; for instance Mumbai has paid high compensation and had to pool public and private land for implementing large development project.

Land pooling has been successfully tested in many Asian developing countries including India, Nepal, and Bhutan. This model supports urban expansion and development in areas with scattered public and private land ownership. The primary objective is the same: urban development increases land values manifold (20-30 fold increases are not uncommon); with that in mind the local government adopts a detailed town plan with streets, public spaces, commercial and residential zones and then forms a development partnership with the incumbent land owners.

The Ahmedabad case: Ahmedabad,[56] India, offers a successful case, but there are many smaller land-pooling schemes in Nepal and Bhutan too. The process starts with the adoption of a town-plan and completion of a detailed valuation for fair compensation of the owners. The government does not acquire land from the owners/farmers, but still the town plan often manage to retain about 40-50 percent of land for public places (roads, parks, schools, health, culture, and trunk infrastructure). The scheme assigns an agreed small plot back to the initial owners. Finally, the surplus land is sold in open market auctions and proceeds are used for compensating the owners and financing infrastructure. The results are very positive in terms of creating new livable urban places and providing houses for thousands of families; but the process is very lengthy and requires great negotiating skills, political support, and strong legal, financial, and technical expertise in the local governments.

Converting municipal fiscal and regulatory power into money or infrastructure

Converting municipal fiscal and regulatory power into money or infrastructure includes various actions most of the local governments can commit, if they have courage, expertise, and political support. These tools include: sale of special development rights, land development fees, and property taxation.

[54] But many cites even in developed OECD countries have poor land/asset records (The Economist, vol.410, No 8869, January 11, 2014.

[55] Kaganova, O.–Kopanyi, M 2014; ibid

[56] Joshi, R.-Sanga, P.: Land reservations for the urban poor: the case of town-planning schemes in Ahmedabad; Center for Urban Equity, CEPT University Ahmedabad, 2009…

Selling special development rights has emerged because developers often seek the cutting-edge of development and want to build more and go beyond the building codes. Thus cities may grant these extra permits, such as permits for more floors, for a fee and use the proceeds for infrastructure development; this has been practiced in cities in India, Latin America (Lima), and East Europe (Belgrade). Teheran city offers an extreme case, since it generated over two thirds of its annual revenues from special permits, because the city's master plan allowed only four floor buildings and the city issued an ordinance to charge an increasing fee for floors above the 4th. Some say this is a questionable practice, since either violates or makes the master plan irrelevant. Second, relying on these fees so extensively and using the proceeds largely for operating expenses exposes the budget to the real estate market cycles. Others argue rightly that the developers offer win-win deals, but should be charged for any extra permits, rather than rejecting applications or granting rights for free.

Land development fees are special one-time charges levied on developers to cover the cost of on-site or off-site infrastructure development. A huge office or shopping complex requires high capacity trunk network connections, increases traffic substantially, and also generates negative effects like air, water, or noise pollution. Needless to say there are huge positive impacts too, including employment, taxes, economic development in the area nearby, and increased land and real estate value. Land development fees are charged for extracting public share from private gains, for funding the required on- and off-site infrastructure. This is a standard practice in developed countries, since the basic premise is that users should pay.

Development fees in developing countries: Development fees are getting increasingly popular in the developing world too (like the Balkan countries)[57]; the reasons behind this include: it is easy to collect them, since the developers are desperate before obtaining permits and able and willing to pay; large developments generate hefty gains for developers and paying the fee is easily possible; and these fees are politically well accepted. The challenges include: fair estimation of the fee requires good database and analytic skills to avoid under- or overcharging; the proceeds should be used for infrastructure development or refurbishment, but are often rather used for current expenses; the revenues might be very high in development booms and projects maybe overcharged, motivating careless budget spending that cannot be sustained during an economic downturn, such as that after 2008.

Betterment fee: Some cities have levied a one-time *betterment fee* to tap the private gains after public infrastructure projects have increased real-estate values (in Australia, Poland, Columbia), but most have abolished this fee over time, because it is difficult to estimate and collect. The property tax and the property transfer tax levied based on the value gains offer better, long-term, and more reliable revenue alternatives. Colombia offers an interesting case of land development fee and taxing betterments: they use a complex formula under the pretext that they are calculating the increase in land value due to infrastructure, but after so many years and data collected, it is not difficult to calculate the infrastructure cost of the new development and take into account the value added to the land.

Property tax is a natural way of extracting private gains for public benefits, and public infrastructure has proven to increase the value of adjacent land and real-estates substantially. It is crucially important for cities to revalue the real-estates adjacent to the large public infrastructure development projects and collect higher property tax after completion. Cities in developing countries often fail to benefit from this opportunity. Tanzania offers a positive case: increasing property tax collection was factored into the city

[57] Farvacque-Vitkovic, C.–Kopanyi, M–Palmreuther, S: City-to-City Dialogue –Summary Report; World Bank Austria Partnership Program; World Bank Institute 2013.

revenues and project feasibility in the Tanzania TSCP project,[58] and a technical assistance grant (from the Danish Government) helped the cities to establish a reliable property tax database and enable collecting substantially larger tax revenues as soon as the new systems become operational.

Property transfer tax is another instrument to tap private benefit at the event of transferring properties from one owner to another. This tax is easy to collect because both the sellers and buyers want to obtain land titles and are ready to pay a fair transfer tax (often in the range of 1-3% of contracted land sale value). This tax may not work in countries where land transactions are not properly registered (or oral agreements are accepted). Local governments in Pakistan collect more revenues from transfer tax than from property tax; since an excessive transfer tax may discourage fair registration transfer transactions or true price of the sold properties.

Capital gain tax on land and real-estate (improvements) is another good source for local governments. This works well if the property transfers are well recorded. This tax aims at extracting private gains from real estate speculation and quick gains. The tax base is the difference between the sales price and the initial purchase/investment price of the property, reduced according to the verified subsequent improvements made by the last owner. The capital gain tax (often in the range of 20–30 %) is typically levied if the property is divested within ten years following the purchase and maybe less or nil when the property is held over ten years. This tax could provide substantial revenues for the local governments, while discouraging speculative investments.

Table 3 Summary of On- and Off-budget Financing Instruments

On-budget Financing Funds for financing infrastructure and/or operation are budgeted			Off-budget financing Funds for financing infrastructure and/or operation are provided by external entities without incurring funds to the local budget		
Source/form	Pros	Cons	Source/form	Pros	Cons
Own revenues, operating surplus	Strong ownership, local decision	Small funds prevent large investments	Central government schemes	Help fast and powerful development	Unclear ownership, weak sustainability
Formula based block grants	Predictable revenue, help equalization	Suits more for financing operation	Donor support in-kind donation	Strong control, fast implementation	weak sustainability
Performance Grants	Motivate and support good performers	May not support weak municipalities	Municipal Enterprises	Effective operation, low burden on the budget	Could be non-responsive to clients, contingent liability
Municipal contracts	Complex performance grant with capacity building	Hard and costly to administer	Development Authorities	Large holding, comfort debt financing	May outgrow the local government
Earmarked development grant	Strong in supporting national and sector priorities	May distort local priorities and reduce sovereignty	Ring-fenced project financing	Self-financing, ease budget burdens, helps sustainability	Needs higher tariffs, hard to structure and mange

[58] IBID

Matching development grant	Strong local ownership	The rich municipalities get richer	Public-Private Partnerships	Financing with small or no budget funds, strong private management,	Local government may fail in controlling PPP
Project grants	Strong in supporting national and sector priorities	Ad-hoc funds in top-down decisions, maybe inequitable			
Debt financing	Expand funding beyond fiscal resources, fasten development	Need local capacities and good capital market, maybe too expensive			
Land-based financing	Huge potential to boost capital budget	Need analytic skills, strategy, and political support			

Infrastructure Financing Issues in Rwanda

The rapid urbanization in Kigali city and in some secondary cities in Rwanda has generated a growing demand for urban services and for the development of the urban infrastructure. Urbanization in many countries and cities is driven by private actions that create structures and situations that can be corrected late only with very expensive and sensitive interventions (e.g. relocation of people and businesses). Timely, coordinated development of the urban infrastructure is essential to avoid random, unplanned, informal, and mushroom development of the urban spaces with insufficient infrastructure. Further, urbanization increases the economic potential of the cities, and city planning and timely development of the public infrastructure contributes to a great extent to the appreciation of the value of the urban land and superstructures like homes, offices, or commercial buildings. The urbanization train is moving and the cities should act before it leaves the station.

The following section summarizes the initial findings and preliminary suggestions on the financing of urban infrastructure based on desktop assessment and short field interviews. Additional analysis and in-depth policy dialogue are required to clarify issues, explore real opportunities, and agree upon specific steps for implementing the gradual changes, which need time, effort, and money. Time-bound action plans at the national and district level would be instrumental to providing a road map for effective urban infrastructure financing.

Key challenges and opportunities: The Rwandan local governments are facing with both challenges and opportunities; and in responding to the urbanization challenges the local governments:

1. Need much more resources for the timely development of urban infrastructure;
2. Should generate more local revenues by collecting more taxes, but also extracting private benefits created by urbanization; and
3. Should diversify infrastructure financing by using various on- and off-budget financing schemes in order to expand the funds available for infrastructure development.

Need for and options to collect more resources

Infrastructure gap: There is a rapid urbanization in some cities especially in Kigali that increasingly widens the gap between the needed and the built infrastructure. For instance, an adequate waste water network and treatment plant, ecofriendly drainage system, sanitary landfill, roads, health and education facilities are among the most immediate needs. Discussions also revealed that there is a growing backlog in repair and maintenance of the existing infrastructure.

Funding gap: There is a growing difference between Kigali, the six largest secondary cities, and the other districts, in their generation of own-source revenues (OSRs). The share of OSRs is over 50% of local revenues (excluding donor funds) in some districts (e.g. Kigali city and Nyarugenge) while less than 5% in Burera district (Northern Province)[59] with other districts falling in between. These differences are attributed to the diverse economic progress and also the shortcomings in collection capacity and efficiency.[60] Formulae based equalization (described above) is a good tool to reduce differences, mostly

[59] World Bank Program Document, April 2013 (p. 45)

[60] Local Government Revenue Potential Study (LGRPS), International Center for Public Policy, Andrew Young School of Policy Studies, Georgia State University, November , 2013.

in supporting operational rather than capital expenditures.[61] Own financial resources are major tools for supporting decentralization[62] and the Government is committed to provide funds to the local governments.[63]

Reliance on Donor funds: Infrastructure developments are largely financed by donor programs in Rwanda. Even Kigali City, which collects the largest share of OSRs, had an operation surplus of RwF2bn, but only a small own capital budget of RwF5 million in 2010; barely enough for repair and maintenance.[64] Kigali finances infrastructure largely from donor funds and inter-entity transfers. The 2011/12 Kigali budget reports[65] show that OSR were less than a quarter of the total funds (which compares favorably to other countries), but over half of the total budget was from donor funds. The other Rwanda districts and secondary cities rely even more on transfers and donor grants. A major challenge here is that donor funds are unlikely to increase in the future; rather they may decrease, as Rwanda moves towards becoming a middle income country. Generating more national and own local funds for financing urban infrastructure is thus a matter of urgency.

Substantial unutilized revenue potentials have been identified, including new shared taxes, local tax surcharges, and boosting land related taxes like land-lease fees, fixed asset taxes, betterment levies, and property transfer taxes.[66] Concerted actions are required at both national and local level in order to transform these potentials to actual budget revenues, including the revision of local tax policies, analysis and expansion of the tax bases, revision of some tax rates, establishing reliable databases, and developing billing and collection capacities.[67] A recent decision to centralize the collection of property taxes by the Rwanda Revenue Authority (RRA) is a step in a good direction. However, it is vital to also maintain local responsibilities and encourage local actions for facilitating the revenue collection by timely updating of tax bases (e.g. capturing new properties, verifying taxable properties) hand in hand with the RRA.

Property taxation should be made more equitable and more effective by fairly taxing land (accounting for improvements in land value), reducing exemptions, establishing a reliable fiscal cadaster (comprehensive register of real estate with taxable values), strengthening tax administration, and timely billing and collection. The property tax rate (fixed asset tax) is 0.1%, about a tenth of the commonly levied international rates; thus a gradual increase of this rate towards the 1% benchmark in 5-10 years would increase local revenues substantially. The former, area-based, system offers a good base for levying property tax: revising the system to the value base (ad valorem) taxation would be too expensive and technically difficult in the medium run; an area based taxation system is simple, easy for taxpayers to understand, and can fairly approximate market values if fiscal zones and unit taxes are timely updated to reflect key technical characteristics of the improvements and the apparent real estate value zones of the cities.

[61] Feruglio, N.: Implementation of Capital Transfers.
[62] Government of Rwanda: Decentralization Policy (p 43), 2012
[63] MINALOC: National Strategy for Community Development and Local Economic Development; www.minaloc.gov.rw
[64] Municipal Financing, Kigali Subarea Plans; Winston Associates, 2010
[65] MINECOFIN Budget reports; http://www.minecofin.gov.rw
[66] LGRPS study ibid pages 19-23
[67] Goodfellow, T.: Local taxation and institutional accountability in Rwanda's growing cities: the case of Kigali, IPAR Annual Conference, Kigali, December, 2011; http://eprints.lse.ac.uk

Selling or leasing land is a major opportunity for many Rwandan cities. Land-lease fees are among the largest local own-source revenues in most of the large Rwandan cities. However, land is a scarce resource and thus land-lease or sale should be approached strategically and be consistent with land transactions and the city's long-term vision and master plan. The master plan approaches the land issues strictly within the currently defined city boundaries. But the land-lease or sale plans should strategically include the peri-urban areas in order to timely identify territories for further city expansion and to ensure the availability of public land for future public infrastructure development. Cities should refrain from land speculation and speculative acquisition, but may need to acquire cheap agricultural land in peri-urban areas before the development spreads and increases the land prices substantially. The cities may develop a land-asset register in order to support informed strategic decisions on land development, divestiture or acquisition. For instance, Kigali is assumed to have a grave shortage of land, but about 65% of the land in the Gasabo District and about 60.8% in Ndera sector is developable.[68]

Capturing land value appreciation: The development of land induces enormous land appreciation and generates very substantial benefits for the private developers. These are apparent in Kigali and some better-off cities. Rwandan local governments should extract a fair share from these private benefits and channel incomes to their budgets to finance local infrastructure. This is a major source of potential revenue and a unique opportunity that will vanish as the time passes, because it should be levied and collected at the beginning of private development projects. To tap into private benefits of land appreciation, concerted actions are required including clear policy and national legislation enabling cities to collect land-related revenues, the development of local analytic capacity to calculate land appreciation and the fair share for public revenues, market analysis to explore real factors and reference numbers for appreciation, and the local political support for adopting and enforcing land-revenue collection.

Taxing or subsidizing developers? Recent discussions on approaching land development projects suggest that there is a lack of clarity about the best options and policies that would help Rwandan cities. Some experts advise that they should collect more land revenues, others argue just the opposite, namely to provide additional subsidies to developers, because the country and Kigali needs more development (ideas include VAT or import tax exemptions and/or providing free urban infrastructure rather than collecting development fee for financing infrastructure). International experiences suggest that the land appreciation could be surprisingly high (ten or twenty fold increases are not uncommon) and that thus developers have room to contribute in funding respective infrastructure. Secondly, developers value more the enabling environment (clear legal framework, fast and low-cost transactions, economic growth, reliability and predictability of rules and games) more than the issue of paying fair taxes. Thirdly, subsidizing development should focus on supporting exclusively specific target groups such as "the poorest of the poor" with low-cost housing; most other housing or commercial developments do not deserve subsidies.

Tapping land speculation gains: Urbanization, public infrastructure investments, and private land development may generate windfall profits or even inspire land speculation. Land development fees or betterment levies are the appropriate instruments for extracting private benefits upfront at the time of issuing the construction permit; they can be used to finance the adjacent urban infrastructure, which is also vital for the effective operation and sale of the new private developments. Extracting revenues from private benefits for public infrastructure thus has multiple advantages: a) it generates funds for

[68] Nsabimana, E. B.: Land Transactions in Peri-urban Areas of Kigali City, in IPAR 3rd Annual Research conference, November, 2013.

infrastructure that would help further development and collection of more funds; b) it takes a fair share from the (rightful, but windfall) private gains; and c) they can reduce land speculation.

Capital gain tax can also reduce land speculation and provide money for the local budget. In many countries, a capital gain tax is a more general tax levied on both real and financial investments. Regarding land gains, it is levied on the net difference between the initial land purchase price and the sales price of developed land and structures, net of verified development expenses; it is levied with a rate of 20-30 percent if the land or structures are sold within ten years of acquisition. The recently improved land registers and well-identified land-parcels in Kigali and other cities offer the opportunity to develop computerized fiscal cadasters (real estate registers) with reliable databases for fair, transparent and systematic taxation of properties and capital gains on land development. This also requires timely recording the real estate transactions and prices.

Property transfer tax also offers a good revenue source, with non-distortive taxation of private income of the sellers. The current charge on property transfers- a flat fee of RwF45,000- is on the one hand regressive,[69] and on the other hand provides only a miniscule revenue to cover administration. A simple transfer tax in the range of 1 or 2 percent of contracted sale value would be more equitable (taxing more the high-value sales). Some may argue that the transfer tax would encourage misreporting of contract value; but countries easily mitigate that risk by a) introducing the capital gain tax, and b) comparing reported sale prices to established market reference price and randomly assessing certain properties before levying the transfer tax.

Diversifying local infrastructure investments' financing

Diversifying the financing instruments in infrastructure investments simply means that local governments should approach each project plans with openness to identify the most suitable on- or off-budget financing instrument, discussed in the first section of this note. Adopting and institutionalizing a five year rolling Capital Improvement Program (CIP) would help in prioritizing project ideas, communicating them with key stakeholders, and selecting the best financing instrument for each project in an iterative process where technical and financial modalities are harmonized and finalized, and then included respectively in the upcoming annual budget plan. Good CIP programs account funds also for operation and maintenance of the planned new assets.

On-budget financing is dominant: On-budget financing, including current surplus and own capital income, capital transfers, and project grants from donors remains the main source of financing for Rwandan local governments in the medium term. The main reasons behind include: a) the availability of central government and donor funds, b) low capacities in structuring and managing complex off-budget projects, and c) the fact that urgent infrastructure projects are often better-served by on-budget than off-budget financing. Developing the waste-water network and constructing waste-water treatment plants, but also building drainage systems, are among the most urgent development needs for Kigali and other cities. These are not only expensive, but should be financed from the budget, since at best the operation and maintenance of these systems could be recovered from user fees; if necessary, land

[69] The RwF45,000 is too high for low value land, while too low for high value land. With a 1% transfer tax, the RwF45,000 would be equivalent of taxing a RwF4.5 million land transaction. Thus it is charging too high for lower value land. So the flat administrative cost could be lowered in parallel with introducing a 1-2% property transfer tax.

development fees or betterment levies could also substantially contribute in financing these investments.

Debt financing is moving onto the radar screen of Kigali and some secondary cities. Kigali has sizable annual operation surpluses, which can be used for leveraging and servicing debt. Kigali has already borrowed from local commercial banks for development purposes, so it has gained some initial experiences. Some secondary cities might consider debt financing too. Borrowing from commercial banks seems to be an appropriate form of debt to start with, since it is simple, easy to structure, and fast. However, the very high commercial bank lending rate (around 15%)- fuelled by an exceptionally wide interest margin (around 10% to date)- makes loans unsuitable for financing long-term infrastructure.

Bond financing: Cities can pilot bond issuance, which no longer requires expensive transactions. The main benefits of bonds include: a) expanding the maturity from the current range of 5-10 years to the range of 15-20 years, more suitable for financing long-term infrastructure investments; b) obtaining debt below the commercial bank lending rate with yields closer to the bank deposit rates. However, it is worth mentioning that setting a benchmark interest rate for a bond is not easy, since there is no comparable market reference yield in Rwanda.[70] Furthermore, it should be tested if the potential investors are willing and able to buy a bond. A large volume of general obligation bonds that will be repaid from general revenues may overburden the local budget; thus it would be better to pilot bond issuance in the financing of ring-fenced development projects outside the city budget.

Municipal Development Funds (MDFs) are well-known specialized financial intermediaries established in about 70 countries around the world to support municipal infrastructure investments. MDFs can offer loans with much longer maturities than commercial banks; they could provide lower interest rates; and could combine the demand of the local governments and may issue bonds against this aggregate demand. In addition, MDFs often combine loan and grant financing, and often provide substantial technical assistance as part of the loan or grant agreement. It would worth studying if, when, and how, the development funds recently merged into the Local Development Authority (LoDA) could be transformed into an effective financial intermediary that could gradually assist Rwandan local governments also in debt financing. Positive experiences with MDFs suggest that this move could be a good step in supporting Rwandan local governments in piloting and gradually scaling up debt financing.

Ring-fenced debt financing could also be a good step in testing off-budget financing. Ring-fenced projects are a better way to start experiencing debt financing than is acquiring debt against a general obligation of the local budget. In fact it is advisable to finance off budget most or all the commercial service projects, such as office complexes, markets, inter-city bus terminals, or energy projects.[71] A ring-fenced financing modality would be safer to the local budget and it would force the management to ensure financial viability in structuring the project, and in implementation and in operation.

Municipal enterprises: Establishing legally independent municipal enterprises for specific services is basically a variation on ring-fenced financing. The main difference is that the assets and the seed capital

[70] The current downward sloping yield curve is good for the country in general, but makes more difficult to price the bonds with long-term maturity (20 years).

[71] The Tamil Nadu Fund, India successfully financed dozens of small water projects in ring-fenced financing scheme and issued bonds against these demands (Rajivan. K: Linking Cities and Debt Finance; in Kopanyi, M. – Sharafudeen T: Strengthening Local Government Finances for Better Services and Greater Accountability, Summary Report World Bank 2013).

are transferred from the balance sheet and the budget of the local government to the enterprise, which becomes entirely independent. In contrast, the assets of a ring-fenced project remain in the municipal balance sheet; and only the revenue flow is ring-fenced. Establishing independent municipal enterprises is worth testing in Kigali and some secondary cities for some of the services and investments mentioned above (and others). The benefits of a municipal enterprise could include: a) higher operation efficiency, b) flexible management structure and market-based salaries for management and staff, c) market-based operation, and d) market-based financing.

Public-Private Partnerships: Ring-fenced debt financing offers the opportunity to open up projects for public-private partnerships (PPPs), as with some energy projects that are moving in this direction in Rwanda. But, PPPs are already also being tested in other fields in Rwanda, including the concession-based bus public transport services and contracting of private operators for solid waste collection and disposal. The operation of sanitary landfills as they would be constructed could offer another options for PPPs; albeit building a sanitary landfill will require on-budget investment from the local government. The expected enormous housing development program in Kigali and some secondary cities will and should be driven by private developers, some maybe in PPP arrangements.

Way forward

The above short summary of infrastructure financing issues shed light not only on the substantial challenges, but also the ample opportunities for Rwanda's larger cities in expanding the scope, the sphere, and the financing capacities for developing local urban infrastructure and meeting the fast-growing demand for urban services. In order to well utilize the above opportunities, some reforms are required in the legal and institutional framework. Furthermore, based on good initial steps (land cadaster, master plans) cities should build reliable *fiscal databases*, establish *billing and collection* capacities with remedies, and also good *communication programs* to involve and inform stakeholders on plans, taxes, charges, and levies. This road could be bumpy- more analysis, courage, and careful steps are required-, but there is no other way to keep pace with the rapid urbanization.

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Annex 1: Definitions

Betterment levies are special one-time charges (by nature taxes) levied to cover part of the cost of off-site infrastructure development. Land owners that will benefit or have benefited from development of specific local public infrastructure (metro-rail, road paving, and drainage, water, or sanitation networks) appreciating the value of their land, house, or other properties, are charged.

Capital gain tax is levied based on the gain (the difference between the divestiture and acquisition price net of proven subsequent improvements) the owner of fixed or financial assets realized during a time period between acquisition and divestiture. Capital gain tax on real-estates aim to discourage land speculation and thus often reduced or annulled after holding the property longer time like over 10 years.

Central government transfers: all kinds of funds provided to the local government by or on behalf of the Central Government

Capital improvement programs or plans (CIPs): CIPs are multiyear plans for developing local assets selected in detailed prioritization process for the upcoming three to five years with preliminary but realistic technical and annualized timing and financing options. The CIPs are often rolling plans and revised annually where the incoming year plans are finalized and moved to the *capital budget* of the incoming year, and another final year is added to the CIP.

Capital budget: the section of the local government budget that includes revenues gained for investments (capital development) and allocates funds for investments.

Concession or Concessionary service arrangement: the concession is a specific contract between the local government and a third party (often private entity) that enables for developing assets and providing services exclusively form the funds of the concessionary partner under the agreed performance conditions such as volume of water per day, quality of water, tariff form and level, etc.

Cost Centers: accounting arrangement where the revenues and expenditures of various services are segregated and thus the real cost and financial performance of services can be clearly accounted and indicated.

Debt: funds or finances obtained by local governments by borrowing loans or issuing bonds with the obligation to repay the principal amount and the due interest (which could be zero interest) at agreed time and installments.

Delegated services or functions: by law assigned to the central government, but performance is delegated down to the local governments and financed by earmarked grants (e.g. paying teacher's salaries, providing basic health services).

Development fees are special one-time charges (by nature taxes) levied on developers to cover the cost of on-site or off-site infrastructure development

Donor grants: grants provided by multilateral or bilateral donors directly to local governments or via the central government agencies (Ministries, Municipal Funds)

Earmark grants: grants allocated for specific investments or specific operation expenses and the local governments must use the proceeds exclusively and in the set amount to the earmarked expenses.

Earmark grant could be common form of central government support, but often used for financing *delegated services* or functions.

Equalization grants: funds transferred to the local governments based on a formula that includes specific factors aiming at equalizing or often just reducing the inherent revenue differences across local governments.

Land-based financing is a general term referring for various instruments when land-related rights or fiscal or regulatory power is transferred to generate fund public infrastructure; these include selling or leasing land and improvements, selling special development rights, charging development fees, levy betterment levies or other land-related taxes.

Management contracts: often performance contracts signed between the local government as owner of the specific assets and a separate legal entity (private person or company, a municipal enterprise, a regional service entity owned jointly by several local governments) for managing the respective assets and providing the agreed services under agreed conditions (local water company, a regional landfill with multiple owners).

Matching grants: offered for all or a set of local governments with the condition to match the grant amount with own-source revenue, such as 60 percent of a water investments is provided by the central government if the local government submits evidences that the 40 percent part of the project cost is secured to be financed from the local budget.

Municipal enterprises: enterprises owned (established or acquired) by the local government, but operated as legally independent entities outside the local budget and balance-sheet.

Off-budget financing: financing local investments or services in form or by entities that are outside the local government's budget.

On-budget financing: financing local investments from the local government budget that includes own-source revenues, central transfers, or donor grants that incurred in the local budget.

Operating budget: the section of the local government budget that includes general revenues (shared taxes, unconditional grants, and own-source operating revenues) and specific grants assigned for covering operating expenses such as salaries or other costs for running health or education services.

Operating surplus: is the balance of the operating budget that means the difference between the operation revenues and the operating expenditures. The operating surplus should be positive and used for either general reserve or as a self-financing part of the capital budget.

Own-source revenues: revenues collected by or on behalf and under the full discretion of the local government, including local taxes, fees, charges, or asset proceeds (selling or leasing land, buildings, or other assets or gaining income from financial assets).

Performance grants: allocated based on some measurable performance indicators often set in a specific performance grant formulae. The performances may include administrative or revenue improvements, such as timely approval and/or submission of local budget, obeying accounting and financial reporting standards, or reaching agreed revenue targets.

Property tax levied based on real properties land and/or improvements, the tax base can be defined based on estimated property value ("ad valorem property tax), or the size of the property (square meter

or land or floor area of the buildings (called area based property tax), which often take technical and market characteristics into account (value zones of the city, size forms or material of the buildings).

Property transfer tax is a one-time tax levied at the transfer of the ownership rights based on the gross value of the property registered in the sale contract. The reported sale value might be revised and increased by the land transfer authorities to avoid underreporting.

Public-private partnerships (PPP): legal arrangements between the local government and a private entity for developing assets and/or managing or providing local public services. The main PPP forms include simple managing services by using the local government's assets (management contract), building and operating services from the private funds maybe with some public assets like land, and granting concession for service provision.

Ring-fenced project financing: financing local investments or services from the dedicated revenues generated by the same project by separating and closing out the financial flows (both investments and revenues) from the local budget. The assets developed in ring-fenced project are included in the local government's balance sheet, but the respective financial flows are excluded from the local budget.

Shared taxes: general revenues allocated to the local governments from centrally collected taxes based on the source jurisdictions (municipalities, cities, villages). Taxes shared between the central and local government sector, but allocated based on some equalization or other formula rather than the basis of the source are not considered as shared taxes, rather as one form or source of the formulae-based allocation.

Special development rights: special rights granted to land developers against a substantial fee to enable investments in size, form, or structure that goes beyond the rules stipulated in the actual zoning or city development plans.

Targeted grants: grants to the local governments allocated with specific sector policy targets and often combined with other conditions like matching payments by the beneficiaries. The targeted grants support specific sector policies (like water, road, health or education services), but leave the discretion of the local governments to apply for these funds only if the declared target is a priority investments or service for the given year.

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