



Human Resources Capacity Benchmarking

A Preliminary Toolkit for Planning and Management in Africa



Cities Alliance
Cities Without Slums

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Rue Royale 94
1000 Brussels
Belgium

<http://www.citiesalliance.org>

info@citiesalliance.org

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Cover photos:

Cities Alliance

Author:

Richard Slater

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LIST OF KEY ABBREVIATIONS AND TERMS

PWD	Public Works Department
SWM	Solid Waste Management
TPD	Tons per day
PSO	Principal Sanitation Officer
O&M	Operations and Maintenance
GIS	Geographical Information System
ULB	Urban Local Bodies

1. ABOUT THE TOOLKIT

WHY A TOOLKIT ON STAFFING?

Cities and towns in Sub-Saharan Africa are experiencing a crisis in capacity that is insufficiently recognised and poorly understood. The Future Cities Africa Project has initiated work to understand the depth and breadth of this crisis. This work has analysed existing staff capacity in critical frontline services and key support functions in 16 cities of varying sizes across four countries.

The capacity of a city is one of the most critical determinants of inclusive, resilient urban development. Cities across Africa are faced with mounting challenges of near-explosive levels of urbanisation, growing informalisation, and deteriorating services. These conditions have prevented cities from transforming into engines of inclusive growth.

The capacity trap

While municipalities are responsible for addressing these challenges, they are often the weakest link in government. Understaffed by under-qualified, poorly paid and under-motivated employees, it is no surprise that cities struggle to assume the multiple and increasingly complex roles expected of them. The Future Cities Africa Project has examined the capacity trap that engulfs cities in Africa, undermining infrastructure provision and service delivery.

Government size is an important policy issue. While public employment is part of the service-producing sector – one of the largest, fastest growing sectors in the world – it imposes significant fiscal burdens. The issue of optimal staffing looms large for government and donor agendas; so much so that during the advent

of liberalisation in developing countries in the late 80s and 90s, donors pushed for downsizing as a way to enact administrative reforms and correct government excesses.

Studies show that despite growing numbers of state employees, developing countries continue to be seriously short-staffed in many key functions¹. The problem is especially acute at sub-national levels in developing countries that are grappling with weak decentralization frameworks. This has been exacerbated by a lack of overall funding to local governments, competing fiscal needs for substantial capital investment, and the need for major rehabilitation to offset a legacy of neglect. As a result, when it comes to staffing and resources, sub-national governments are incapacitated both functionally and physically.

To put this into perspective for Sub-Saharan Africa, developed countries on average deploy 36 civil servants per 1,000 people. The number for a large developing country such as India with a population of 1.25 billion is 8 per 1,000. Our sample data from urban local governments shows that even the most well-staffed country in our sample has a mere 1.4 staff members per 1,000 people. This high variation in staffing at comparable governance levels runs parallel to both intra-country and intra-institutional differences. Little research, however, has focused on the absence of internal staffing parity and how it affects last-mile service delivery.

The public sector is at a further disadvantage, since as it competes with the private sector for qualified staff and lags in recruiting and staffing processes. This is mainly because of differing compensation scales and because the private sector dedicates more resources to understanding gaps in human resource management and how they impact efficiency.

Despite the situation, little has been done to empower local governments to understand their staffing gaps and address them accordingly.

THE KEY ISSUE

If local governments are resource-constrained, then it becomes imperative for them to understand how well they are staffed, where the gaps are, and what trade-offs to make to achieve optimal service delivery.

¹ See, World Bank (2005) *East Asia Decentralizes: Making Local Government Work*; Indira Rajaraman (2008), 'An empirical approach to the optimal size of the civil service', *Public Administration and Development* 28(3):223 – 233; Government of India (2008)

'Refurbishing of Personnel Administration - Scaling New Heights', Tenth Administrative Reforms Commission Report.

AIM OF THE TOOLKIT

This toolkit provides a novel intervention in understanding urban service delivery gaps. It takes staffing as a key driver and an entry point to achieving desired service-level standards and benchmarks.

- **A model framework.** The toolkit is a first attempt to develop an analytical device that provides a systematic, rational model for towns and cities in Africa to conveniently and rapidly assess their extant levels of staffing against a model framework.
- **Benchmarks for staffing levels.** Careful assessment and estimation of optimal staffing levels required to perform key roles and tasks in an efficient, effective manner were undertaken in each of the following areas: municipal finance, revenue, planning, engineering and public works, and environmental health and solid waste management. These benchmarks may be used to examine current levels and norms and the prevailing degree of under- or over-staffing.
- **Better direction of resources.** The toolkit demonstrates differentiated gaps against a benchmark, allowing urban local government to see where best to direct resources and what levels of recruitment, capacity development, and training may be required, and at what cost.
- **The data can be extrapolated to a wider geographic area.** A composite picture of the 16 sampled towns and cities in the four countries may be used to approximate averages for a wider geographical territory in Sub-Saharan Africa. This data should prove useful in guiding policy dialogues with ministries.

- **Resource optimisation.** This toolkit opens much larger policy questions around the most efficient way to ensure improved service delivery – questions that are not being systematically addressed in the current debate around the urban transition in Africa. It can facilitate governments at the national or local level to test alternate staffing models to optimise resources available for urban service delivery.

HOW TO USE THE TOOLKIT?

The toolkit is designed as a handy practitioners' guide to understanding staffing efficiency in urban local government in Africa. It provides insights into:

1. Variations in urban local government features (population, area, finance, and service levels) for different categories of town.
2. Variations in municipal staffing numbers and patterns across categories of towns.
3. Staffing averages for each category.
4. Adjusted averages based on (population, area, finance, and service levels as relevant).
5. Variations as compared to the Model Benchmarks.
6. Variations in pay scales across public and private sectors.
7. Variations in staff qualifications.

While the current model has been designed for African cities, it is adaptable to other continents and expandable to other sectors of government – making it an important tool for decision makers.

USING THE MODEL

STEP 1: REFER TO THE MODEL FRAMEWORK

A model staffing framework has been developed and detailed in this toolkit. It provides an optimal number of staff and posts for efficient service delivery in select urban services including: environmental health and solid waste management, public works, roads and street lighting, as well as administrative services including planning, finance and revenue. These estimates are then adjusted according to key urban service variables such as geographic area, population, density, number of properties, and total revenue (including transfer).

The model has been designed so that any end user may easily input the requisite data for a specific town to generate a staffing gap analysis.

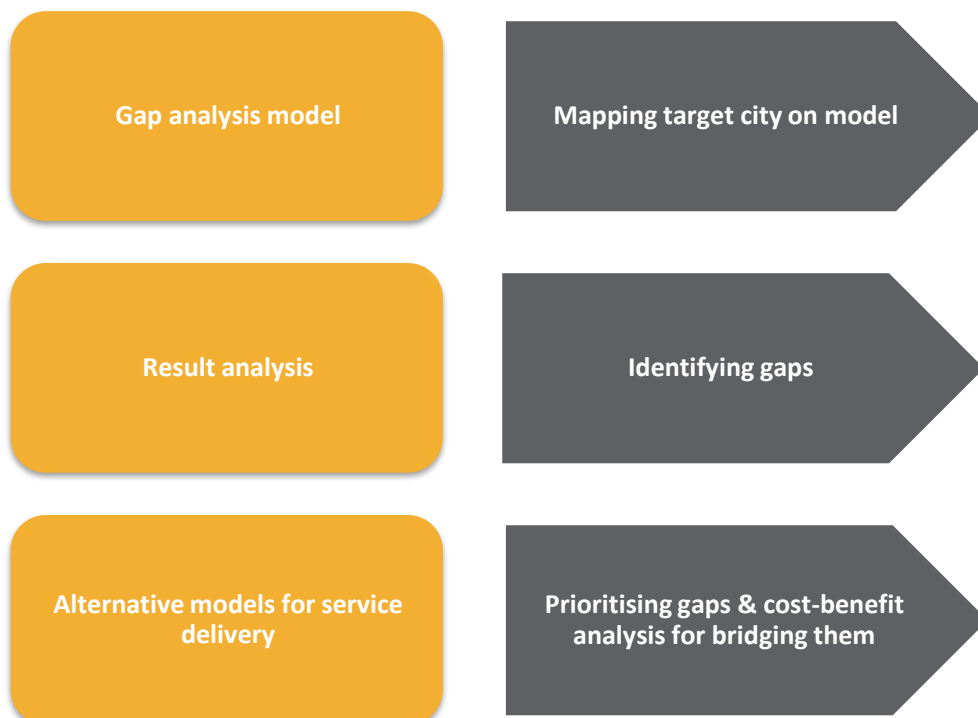
STEP 2: UNDERSTAND THE GAPS FOR YOUR TOWN/CITY

Mapping actual staffing data against the Model Framework will help identify the status of a city in terms of staffing number, posts and capacity in relation to service standards in comparison with the Model Framework, after adjusting for local variations. This analysis may be used to assess the degree of staffing undersupply or oversupply, and the extent of correlation between staffing and current service levels (coverage and/ or quality).

STEP 3: GAP FILLING STRATEGIES

After completing steps 1, and 2, the user will have an approximate status of staffing levels and gaps for key municipal service delivery functions. Equipped with this information, the user may then identify areas for more detailed analysis, and explore various strategies/ models for address staffing gaps which may include staff recruitment, training, deployment of new operating systems, work processes, technology, and equipment.

FIGURE 1: OPTIMUM MANPOWER DEVELOPMENT THROUGH THE MODEL FRAMEWORK



2. UNDERSTANDING THE 'GAP ANALYSIS MODEL'

The staffing gap analysis is a hybrid model that draws from a variety of sources. It is customised to an African urban context in terms of the implications of population density, geographic area and prevailing levels of networked infrastructure for effective service delivery, operations, and maintenance. The model utilises different municipal staffing assessment methods in developing countries, including time and motion studies across various municipal departments, model staffing norm assessments², and national and state level municipal cadre reforms initiatives³.

Assumptions from these studies have been modified and improved upon by introducing a more comprehensive set of variables to reflect the socio-economic and geographical realities of sampled African cities. The model relies on findings from 16 cities in four countries and the three geographic regions of West, East and South East Africa, ranging in population size from 40,000 to two million.

WHAT DOES THE MODEL DO, AND HOW?

The model analyses staffing data for all managerial and technical grades across six key functions and sub functions: Municipal Finance and Accounts; Revenue; Planning; Engineering, Public Works and Street Lighting; and Environmental Health and Solid Waste Management.

It captures the number of staff required as well as the corresponding qualifications and skills deemed optimal for different categories of city to provide services to adequate standards across the respective service areas.

For each sector, and each position under the sector, the model derives a benchmark based on basic essential criteria, allowing the user to identify deficits and/or surplus across function, qualification and sector.

While the benchmarks are developed based on key variables, these can be further adjusted according to a range of additional parameters listed in Annex 1 that

will help to indicate the likely need for more or less staff in each functional area. These parameters may be incorporated into a more advanced version of the model after further testing.

METHODOLOGY AND CHOICE OF VARIABLES

The benchmarks on which the model is built represent an ideal staffing range that a city should have in terms of tasks required to perform the respective functions in a reasonably effective manner. The benchmarks are worked out based on functional tasks and quantum of work in relation to population, geographic area, service network and municipal revenue, for the main categories of managerial, technical and support staff, considering effective spans of control for supervisory grades.

The model uses several layers of information on municipal staffing to derive benchmarks that reflect the number of staff required to perform the main tasks in each functional area to a reasonable standard of service. This has included drawing from the following layers and sources:

1. Layer one

- a. Comparative literature on municipal staffing that has contributed to the analysis of staffing capacity includes over 50 studies, reports and published works (articles, chapters, books) on public service staffing and capacity at central, regional and local government levels, primarily related to developing countries in Asia and Africa. This review provided information, insights and data for Layer 1.

(See Annex 1 for a full listing of literature references that have informed the methodology and choice of variables.)

- b. Detailed municipal cadre reviews from developing countries that have notified staffing recommendations (Ghana and India) and staffing gap assessments based on the following reviews:

² Local Government Service Secretariat, Staffing Norms, Government of Ghana.

³ Cadre Reform Study, Urban Administration and Development Department, Government of Madhya Pradesh; Cadre Reform Assessment, Ministry of Urban Development, Government of India.

- i. <http://www.tmepma.cgg.gov.in/files/155.pdf>
 - ii. <http://pearl.niua.org/sites/default/files/Final-Report-30-09-2014-submitted-M%20Cadre.pdf>
 - iii. <http://icrier.org/pdf/FinalReport-hpec.pdf> (IF FOUND RELEVANT)
 - iv. http://planningcommission.gov.in/aboutus/committee/wrkgrp12/hud/wg_capacity_%20building.pdf (Gives some guiding principles)
 - v. http://www.odisha.gov.in/revenue/HRM/OAS/restructuring/5719_28_2_09.pdf
- c. This layer draws from and captures detailed analysis of municipal staffing gaps and benchmarks from cadre review studies undertaken across three states and more than 50 reference cities and towns in India

with populations ranging from 50,000 to three million. The findings from the reference cities and towns were applied to over 100 cities and towns to estimate capacity gaps and propose responses.

2. Layer two

This layer was informed by the literature, cadre reviews and assessments in Layer 1, as well as a secondary technical review of functions and tasks to deliver reasonably effective service levels in each of the municipal departments under assessment. The review provided further insights for the modelling of a Human Resources/staffing requirement for respective functions based on the service delivery structures, systems and technology prevalent across the range of municipalities. See Figure 2 for a detailed understanding of the variables used to create the city-wide benchmarks.

BOX 1: LIST OF SAMPLE TOWNS

Ethiopia	Dire Dawa and Mekelle	Mozambique	Tete, Nacala and Nampula
Uganda	Entebbe, Fort Portal, Tororo, Jinja, Gulu, Arua and Hoima	Ghana	Kumasi, Tamale, Bolga and Sunyani

FIGURE 2: BENCHMARKS

Sectors	Position	Benchmark (x)	Variable Linked to Benchmark
Planning	Chief Physical Planner	1	1 if 2 or more Physical Planners
	Physical Planner/Urban Designer	3	1 for every x Assistant Physical Planner
	Assistant Physical Planner/Building Officer	15,000	1 for x number of population
	Auto CAD/Data Operators	2	1 for every x Assistant Physical Planner

Sectors	Position	Benchmark (x)	Variable Linked to Benchmark
Revenue	Deputy Commissioner/Chief Revenue officer	-	1 in case Revenue Officers are more than 1
	Revenue Officer	2	1 for every x Assistant Revenue Officers
	Assistant Revenue Officer	2	1 for every x Revenue Inspectors
	Revenue Inspector	5	1 for x number of Tax Collectors
	Tax Collector/Assistant	1,000	1 for x number of households (average household size of 5)
	Data Operators/ Operational Staff	2,000	1 for x number of households (average household size of 5)
Public Works Department (PWD)	Chief Engineer	50,000	1 if population is > x
	Superintending Engineer	2	1 per x Executive Engineer, minimum of 1
	Executive Engineer	2	1 per x Assistant Engineer, minimum of 1
	Assistant Engineer	2	1 per x Sub-Engineer
	Sub-Engineer	15,000	1 per x, minimum of 2
	Sub-Professional Staff	10,000	1 per x, minimum of 2
	Operational Staff	20,000	6 for every x population
Street Lighting	Executive Engineer	-	1 in case Assistant Engineers are more than 1
	Assistant Engineer	2	1 per x Sub-Engineer
	Sub Engineer	6	1 for every x Operational Staff, minimum of 1
	Operational Staff	20,000	1 set of 3 for every x population, minimum of 3
Solid Waste Management (SWM)	Waste Generation, tons per day (TPD)	600	Considering x gallons per capita per day
	Superintending/Principal Public Health Engineer	-	1 when Executive Engineers are more than 1
	Executive Engineer/Senior Public Health Engineer	2	1 for every x Assistant Engineers
	Assistant Engineer/Public Health Engineer	2	1 for every x Sub-Engineers
	Sub-Engineer/Assistant Public Health Engineer	2	2 till 100 TPD and 2 for every additional 50 TPD
	Operational Staff	-	Total
	Collection	2	x per vehicle (helper and driver). Density @600 kg/m ³ ; trips per vehicle per day 2; capacity of collection vehicle - 2.5 cu m
	Transportation	3	x (driver & helper) per vehicle. Density @900 kg/m ³ ; trips per vehicle per day 2; capacity of collection vehicle - 10 cu m;
	Landfill Site & Transfer Stations	15	x till 300 TPD and 5 for every additional 100 TPD

Sectors	Position	Benchmark (x)	Variable Linked to Benchmark
Sanitation	Area (SqKm)/Effective Area*	-	As per the data given
	Chief Sanitation Officer	-	1 if PSO >1
	Principal Sanitation Officer (PSO)	2	x per Sanitation Officers, minimum 1
	Sanitation Officer	2	x per Sanitation Inspectors
	Sanitation Inspector	8	x per Sanitation Supervisors
	Sanitation Supervisor	8	x per Sanitation Workers
	Sanitation Workers	-	1 if Population Density < 700 1.5 if 700 < Population Density < 1000 2.5 if 1000 < Population Density < 3000 3 if 3000 < Population Density < 5000 4 if Population Density > 5000
Finance	Budget (million USD)	-	AS per data given or per capita of ~70 USD (same as Gulu's per capita)
	Finance Controller	30	1 if budget is > x million USD
	Chief Finance and Accounts Officer	15	1 if budget is > x million USD
	Senior Account Officer	0.5	x times Accountants
	Accountant	0.5	x times Junior Auditors
	Junior Accountant	2	X times Internal Auditors
	Principal Budget Analyst	2	1 for x Budget Analyst
	Budget Analyst	-	Same as procurement
	Principal/Chief Internal Auditor	2	1 for x Senior Internal Auditors
	Senior Internal Auditor	2	1 for x Internal Auditors
	Internal Auditor	1	1 for every x million USD of budget, minimum 1
	Procurement Specialist	7.5	1 for every x million USD of budget, minimum 1

STAFFING REVIEW

This review comprised an in-depth assessment of the roles and functions of staff in different categories of town and in different municipal environments (population, geographic area, density, budget etc.). The assessment was also supported by sample time and motion studies in complex functions, such as solid waste management, to derive benchmarks for different managerial and technical posts within each department.

Once the number of core staff had been determined, the model applied a composite formula for determining the more senior supervisory grades based on level of authority, function and task, and control span. The secondary technical review was undertaken through detailed studies that examined the following:

- Function, tasks and business processes within the target departments.
- Staff and skills required to undertake respective functions and tasks.

- Estimated volume of work and tasks performed per person per day.
- Number of staff required to undertake functions and tasks for existing levels of service coverage (pop/ area/ households).
- Number of staff required to undertake functions and tasks for existing levels of service coverage and levels of non-coverage (pop/ area/ household).
- Number of staff required to undertake functions and tasks for future levels of service coverage (population/area/household).

KEY VARIABLES

The various elements of the model included determining the key impacting/ driving variable in each functional area. This included an assessment of variables such as population, municipal area, size of municipal budget, number of households/ properties, volume of service (e.g. solid waste per capita per day), and number of properties.

Key criteria for each sector

1. Planning: Population.
2. Revenue: Number of households.
3. Public Works Department (PWD): Population.
4. Street Lighting: Population.
5. Solid Waste Management: Waste generation at 600 gallons per capita per day.
6. Sanitation: Municipal area covered.
7. Finance: Total municipal revenue.

MODEL ADJUSTMENTS

Adjustments were made to account for likely impact of future growth. In some cases, where data on a variable was not available or appeared inaccurate, the data was normalised by cross-referencing other cities in the same country where such data was available, and then adjusting for other variables. For instance, in the Planning function, the model draws from international norms that range from 1: 6,000 in denser urban environments (United Kingdom) to 1: 12,000 in less dense areas (United States of America) and then further adapts these to an African context based on 1: 15,000. Similar adjustments have been made across other functions.

The main adaptations applied for the Africa context included:

- Larger physical areas covered within the municipal boundary/service areas and lower population densities of core and peripheral areas within the physical boundary.
- Fewer km of tarmac road length.
- Fewer individual properties/dwelling units per population.
- Higher volumes of per capita solid waste generation.
- Higher rate of demographic growth.

The model was further adjusted for other factors such as the number and capacity of vehicles used in a service fleet, collection time, and area that can be serviced by a given unit (staff or fleet) based on the population density in each city (See Annex 1 for a detailed set of parameters that may impact the benchmarks for a city depending upon the specific service delivery context).

LIMITATIONS OF THE MODEL

- All data for developing the benchmarks was collected from municipalities in Sub-Saharan Africa which are often subject to certain data-related constraints, including the reliability of data collected from municipal officers.
- A cross-section of towns from countries and geographical areas of Sub-Saharan Africa were selected to offset bias. Two of the four countries represent Anglophone systems (Ghana and Uganda), and Ethiopia and Mozambique were deliberately chosen to help offset any bias. The selection of towns was determined based on the easy availability of relatively accurate data.
- Salary comparisons were available for only some tiers of staff. Thus, the focus of the analysis is based on two departments in two countries (Ghana and Uganda) and is indicative rather than comprehensive.
- For city-specific micro analysis, staffing calculations include private concessionaires who provide solid waste services if the relevant data is available. If the data is not available, the analysis is based on the number and effective area served by municipal staff. The macro analysis of gaps is confined to managerial and technical staff; operational staff are not considered part of the analysis.

3. KEY FINDINGS

The model reveals a significant shortfall in municipal staffing against benchmarks. Findings from 16 cities reveal that cities are trying to function with as little as 27% to 29% of ideal capacity (when analysed using a weighted average), after adjusting for population, size, density, number of properties, revenue receipts and type of infrastructure network (Figure 3 and Table 1).

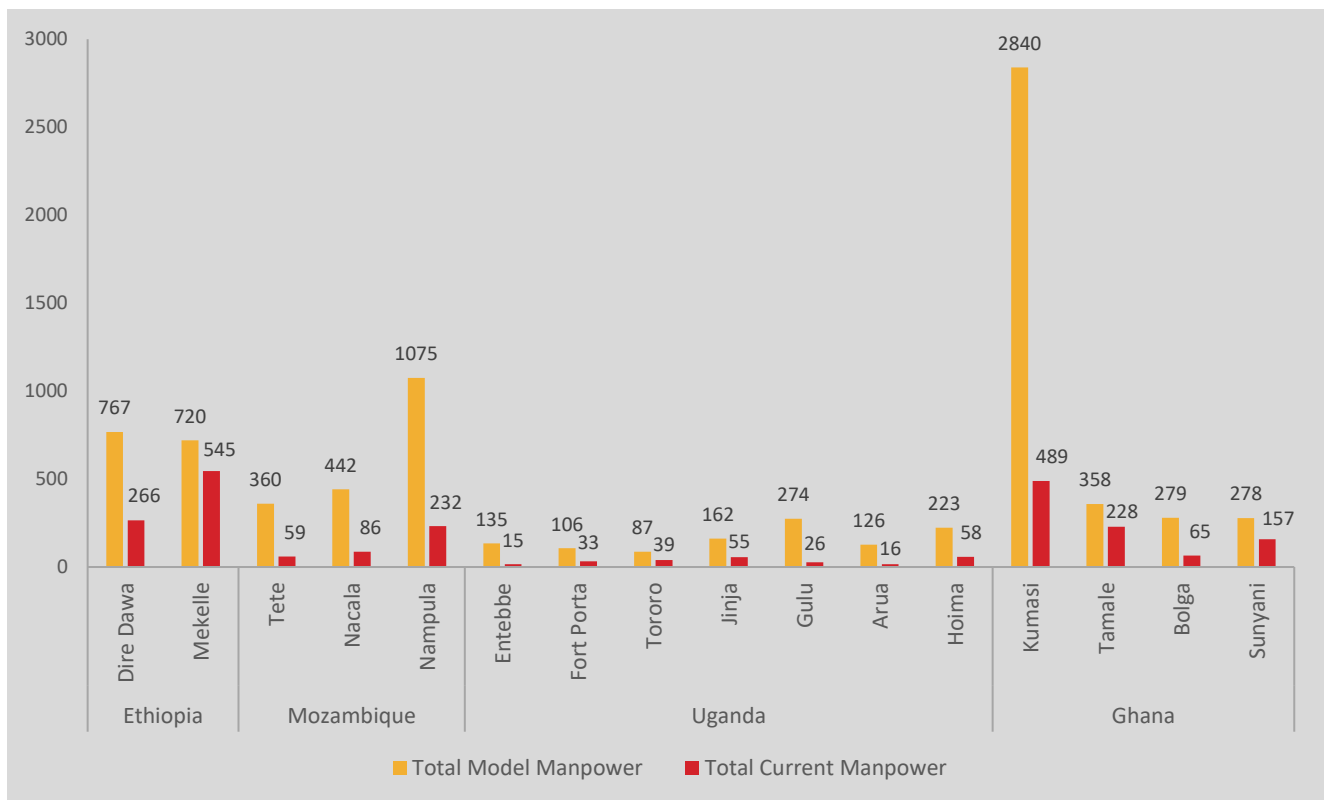
While the model provides rich analysis that can be assessed at the city level, the toolkit underscores some common and overarching findings and themes

across five different types of staffing gaps: geography, function, qualifications, pay scales, and span of control.

GAPS BY GEOGRAPHY

- Sampled African cities are functioning at much less than half the required capacity.
- Of the four countries, Mozambique is the worst staffed with only (20%) of required capacity, followed by Uganda (22%), Ghana (25%), and Ethiopia (55%).

FIGURE 3: TOTAL STAFFING GAP BY CITY*



*The analysis shown in Figure 3 does not include support staff/operational or contracted staff in Solid Waste Management (SWM) & Sanitation.

TABLE 1: STAFFING SHORTFALL (%)

Country	Cities	Current personnel as % of required personnel
Ethiopia	Dire Dawa	34.7
	Mekelle	75.7
Mozambique	Tete	16.4
	Nacala	19.5
	Nampula	21.6
Uganda	Entebbe	11.1
	Fort Porta	31.1
	Tororo	44.8
	Jinja	34.0
	Gulu	9.5
	Arua	12.7
	Hoima	26.0
Ghana	Kumasi	17.2
	Tamale	63.7
	Bolga	23.3
	Sunyani	56.5

GAP BY FUNCTION

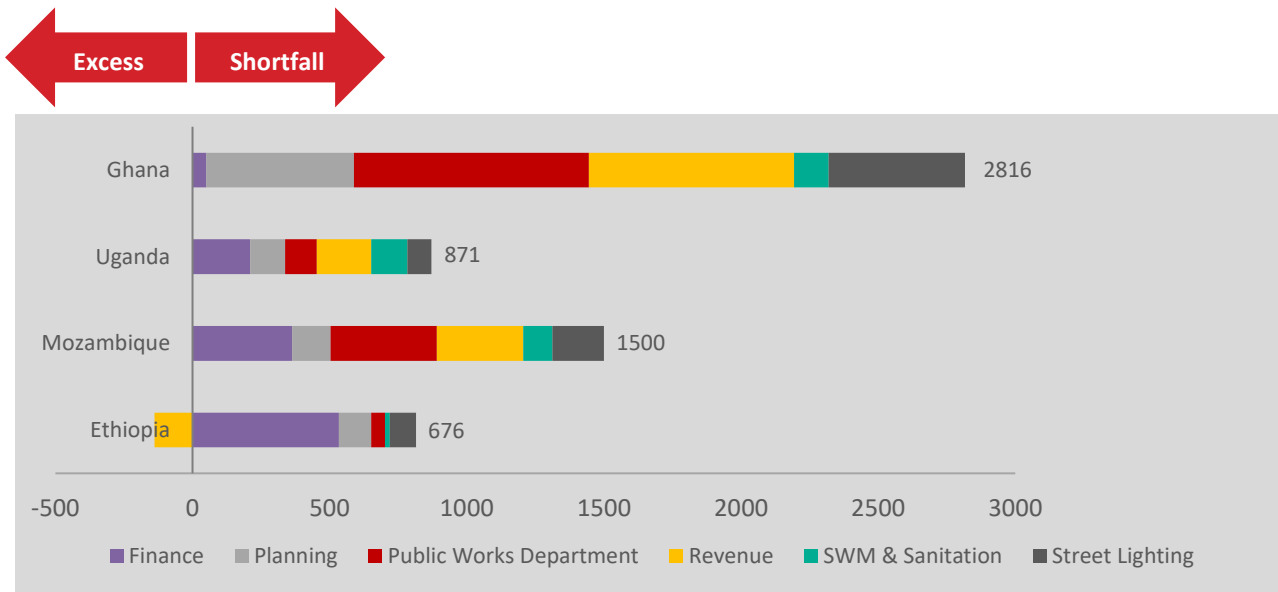
- Across the countries, there are serious staffing gaps in various departments resulting in sub-par service delivery (Table 2 and Figure 4).
- Street lighting, finance, and planning are the most poorly staffed.
- Mozambique and Ghana have no dedicated staff deployed for street lighting.
- Ethiopia employs more staff in the revenue function than would appear optimal. This requires further investigation.

TABLE 2: STAFFING GAPS BY FUNCTION*

Country	Finance	Planning	Public Works Department	Revenue	Solid Waste Management (SWM) & Sanitation	Street Lighting	Total
Ethiopia	534	118	50	-139	17	96	676
Mozambique	363	140	388	315	106	188	1500
Uganda	210	128	115	199	131	88	871
Ghana	50	538	857	748	126	497	2816

*a negative number implies a staffing excess.

FIGURE 4: STAFFING GAPS BY FUNCTION



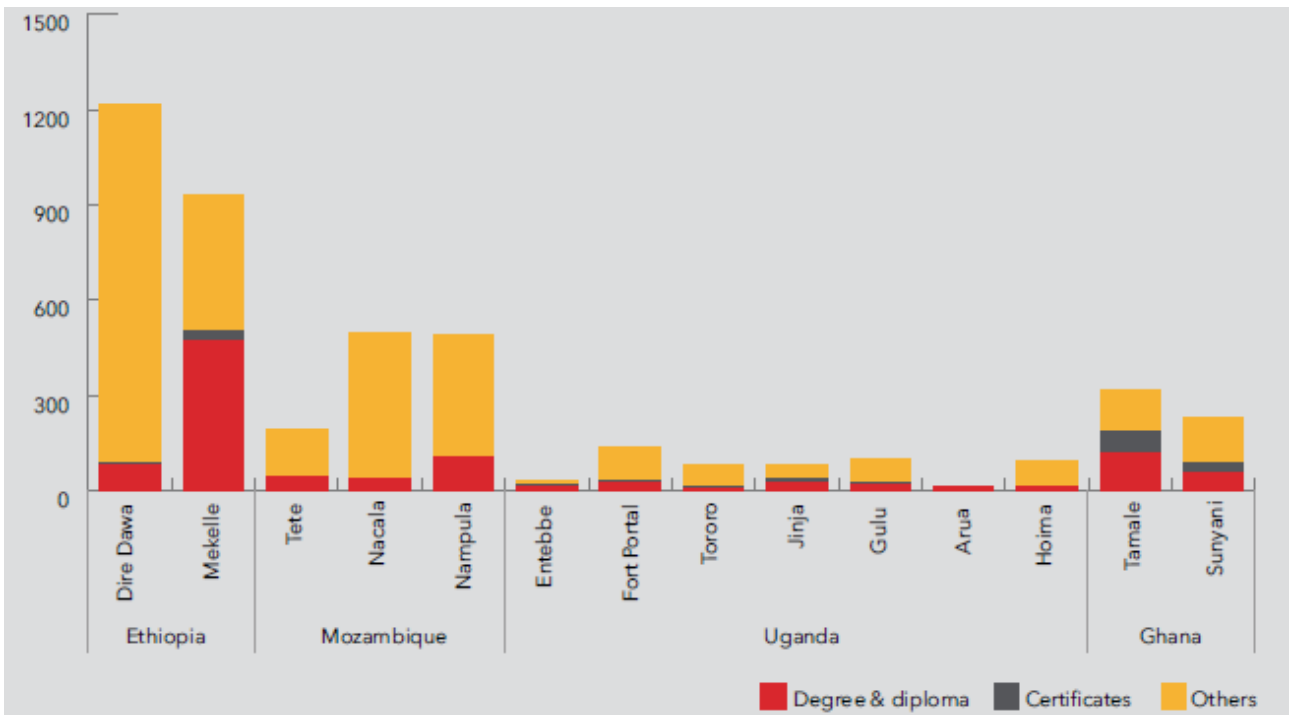
GAP BY QUALIFICATIONS

Only a small percentage of the staff across the target cities has advanced degrees and diplomas, although most staff have certificates of attendance on a variety of professional training courses, or compensate for the lack of degrees through years of experience (Figure 5).

GAPS IN PAY PARITY

Analysis of pay parity is based on remuneration data from the planning and engineering departments in Ghana and Uganda, comparing salaries for managerial and technical staff with local governments, local private sector, international NGOs, and multi-national corporations (Figure 6 and 7).

FIGURE 5: QUALIFICATIONS GAP*



*This analysis only includes managerial and technical staff and not support/ operational staff.

FIGURE 6: ANNUAL SALARY COMPARISON – GHANA

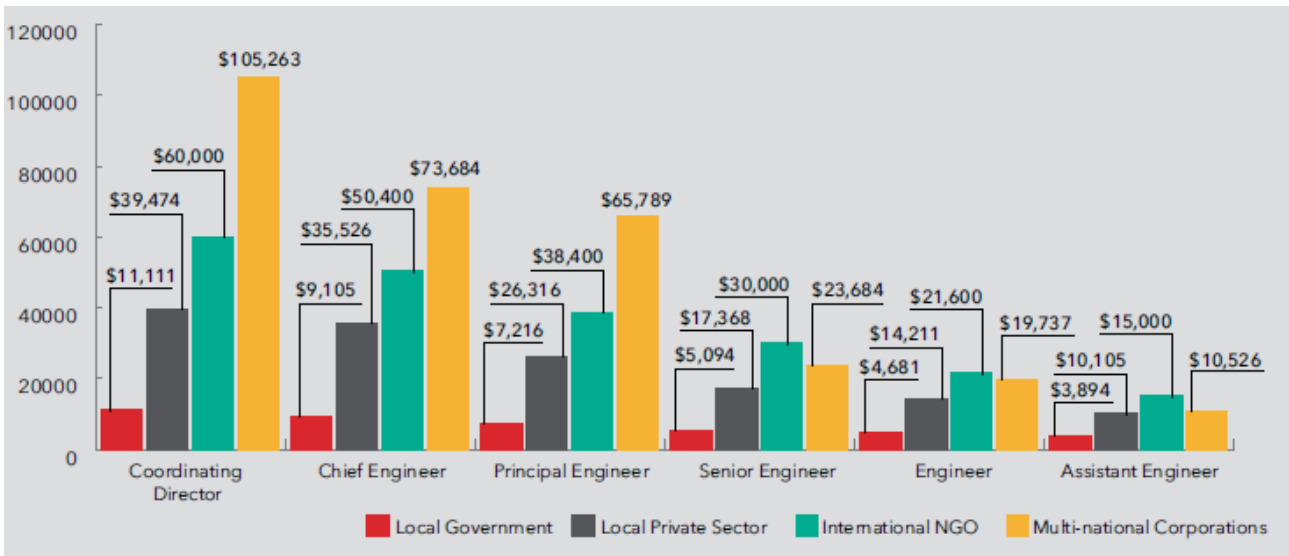
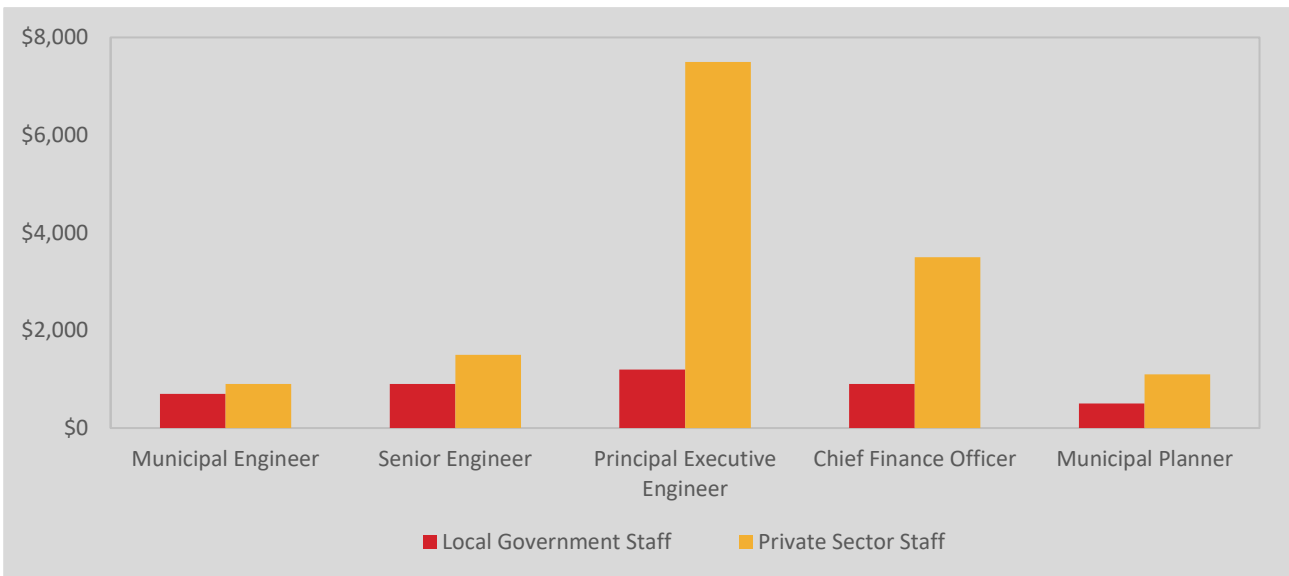


FIGURE 7: ANNUAL SALARY COMPARISON - UGANDA



KEY FINDINGS

- Pay differentials between local government staff and private sector staff in equivalent posts are greatest for senior managerial and technical staff. In almost all instances, local government salaries are no more than 15-20% of the salary for their Multi-National Corporations counterpart.
- Such drastic pay gap differentials are likely to contribute to rent-seeking, corruption, and the strengthening of entrenched interests in local governments.
- This differential becomes smaller toward the junior technical posts.

GAPS IN SPAN OF CONTROL

Ethiopia has the highest ratio of managerial and technical staff to population in target cities, with a ratio of 1.4 per 1,000 people (Figure 8 and 9). Despite being the highest in our sample, this ratio is still poorer than that of other rapidly developing countries, such as India, where civil servants and senior managerial staff are pegged at 8 per 1,000 people, and much further behind that of developed countries that enjoy a ratio of 30 per 1,000 people⁴.

While this ratio pertains to higher echelons of governance, given the comparative underfunding of sub-national governments, we can conclude that not only is there significant understaffing in African cities, but that there are significant differences between countries and between cities as well.

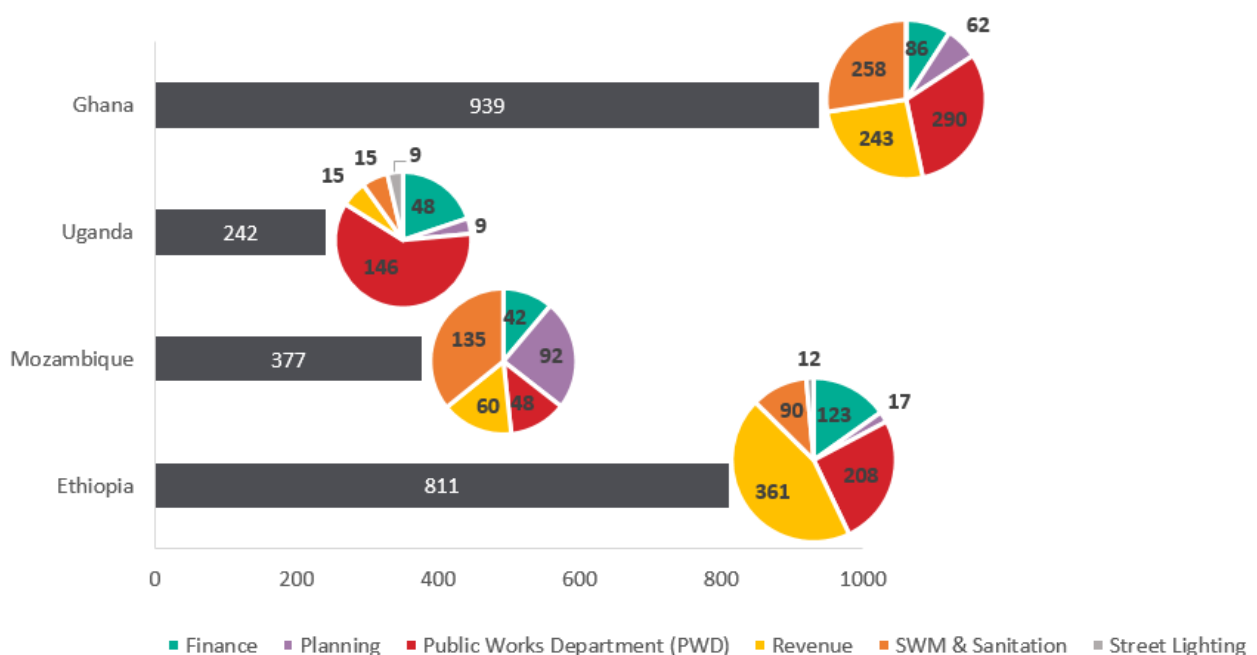
Generally, it seems clear that African local governments are much worse off in terms of senior

managerial staff than their respective national governments. Local governments are being asked to perform their functions without the necessary skills and capacity. This has implications for relations between centre and sub-national governments and the latter's ability to be administratively self-sufficient.

The other three sampled countries in descending order of performance are Uganda, Mozambique and Ghana. Mozambique has the highest shortfall (80%), Uganda (78%), Ghana (75%) and Ethiopia (45%).

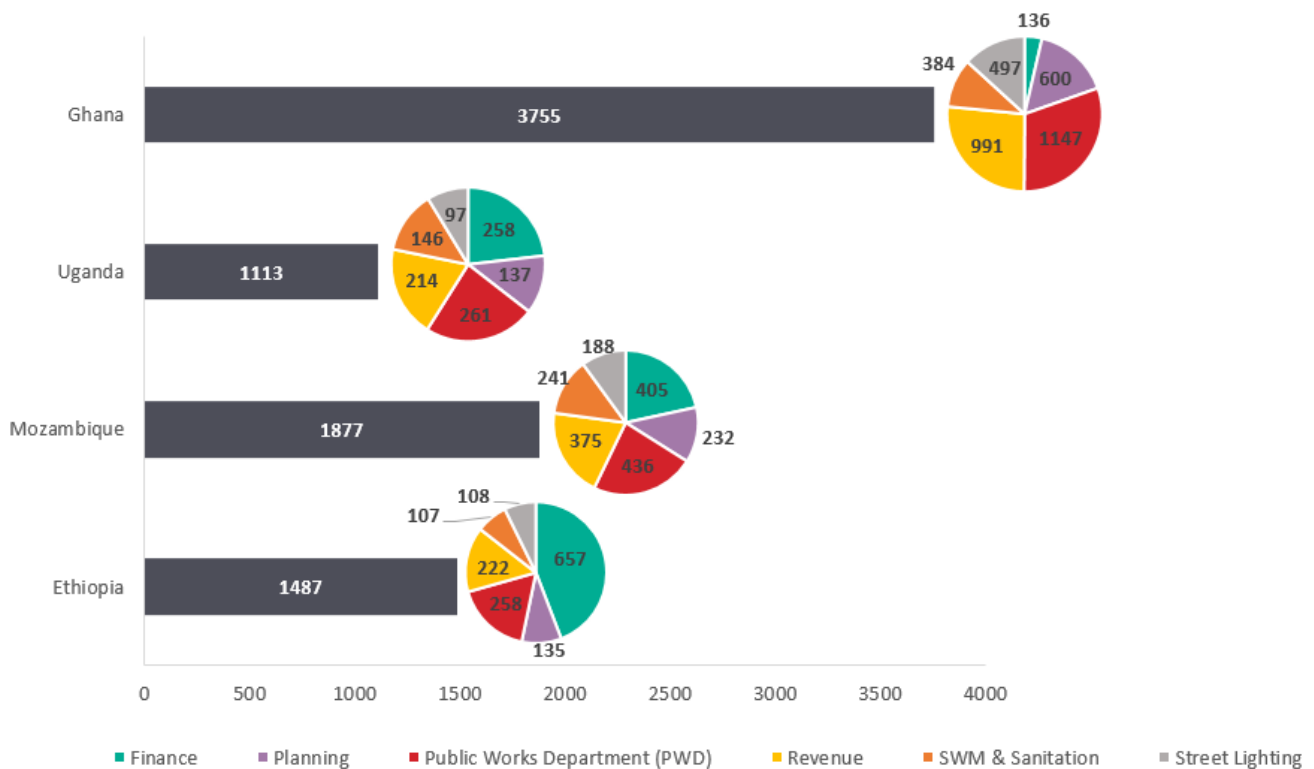
While these figures provide an overall picture of the supply of managerial and tech staff, a closer examination of city-level differences would be able to show how the span of control is affected by these shortages – i.e., how the performance of junior and support staff is impacted by the absence of adequate managerial and supervisory guidance.

FIGURE 8: MANAGERIAL AND TECHNICAL STAFF STATUS



⁴ See, Indira Rajaraman (2008), 'An empirical approach to the optimal size of the civil service', *Public Administration and Development* 28(3):223 – 233.

FIGURE 9: BENCHMARK



GAPS AT THE CITY LEVEL: CASE ANALYSIS OF DIRE DAWA, ETHIOPIA

Dire Dawa is an average-sized African town with a population of 277,000, and a population density of 9,473 people per sq km spread over an area of 29.24 sq km. It is the second largest town in Ethiopia after Addis Ababa and an important regional administration.

An analysis of Dire Dawa’s staffing gaps reveals that:

- The city’s current staffing levels are more than adequate for performing its revenue-related function.
- The city exceeds stipulated benchmarks quite significantly in Solid Waste Management (SWM) and sanitation (taken together as one function here). The manpower deployed by the concessionaire for SWM and Sanitation is included in the current manpower and considered to be support staff.
- In all other functions, current levels fall short of benchmarks. For instance, the city has only 11% of the required personnel for planning, and 13% for finance. These continued gaps could impact service delivery and reforms.
- Qualitatively, only 7% of the staff hold degrees or diplomas; the majority (92%) hold certificates.
- Due to high levels of overstaffing in SWM and Sanitation, Dire Dawa has a cumulatively higher number of support staff, in excess of required benchmarks.
- The city’s support staff are poorly monitored, as evident from the broad base of the manpower pyramid and the disproportionately tapering pinnacle. This implies that lines of supervision and control are poorly implemented in the city. This analysis is true for many other cities in the sample.

FIGURE 10: STAFFING GAPS IN DIRE DAWA, ETHIOPIA

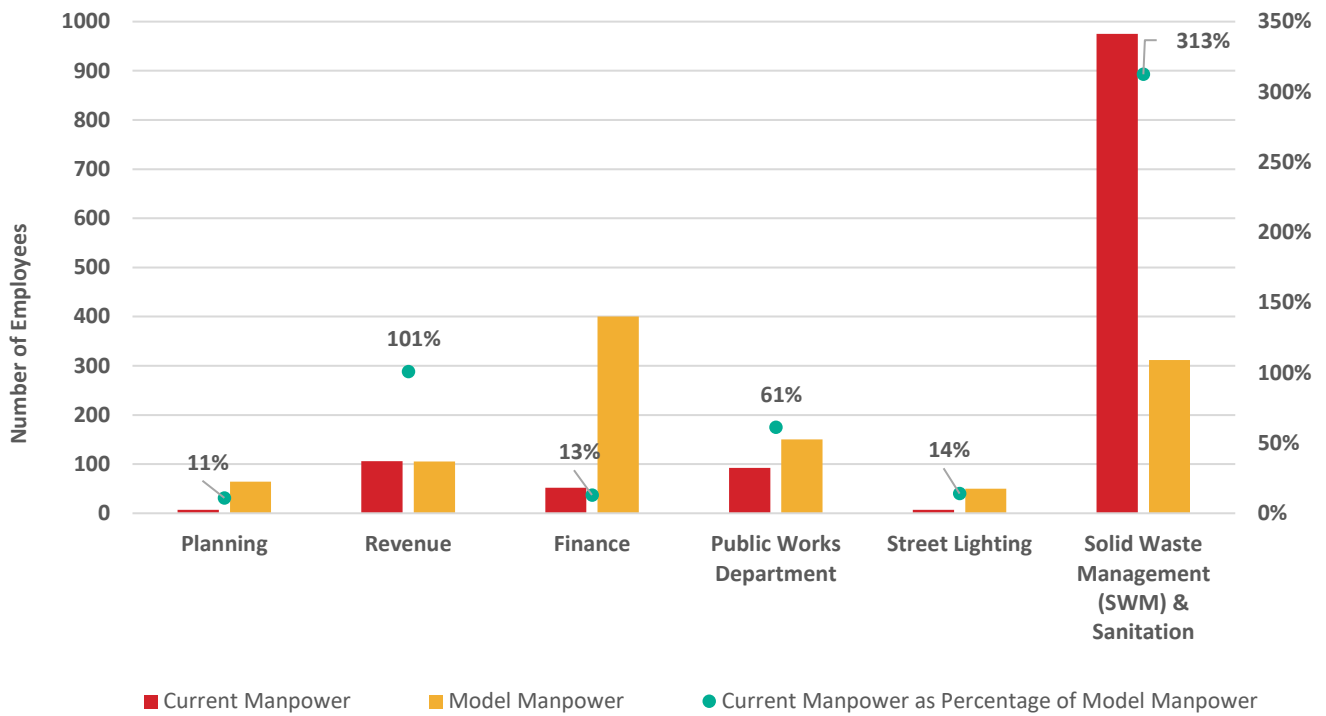
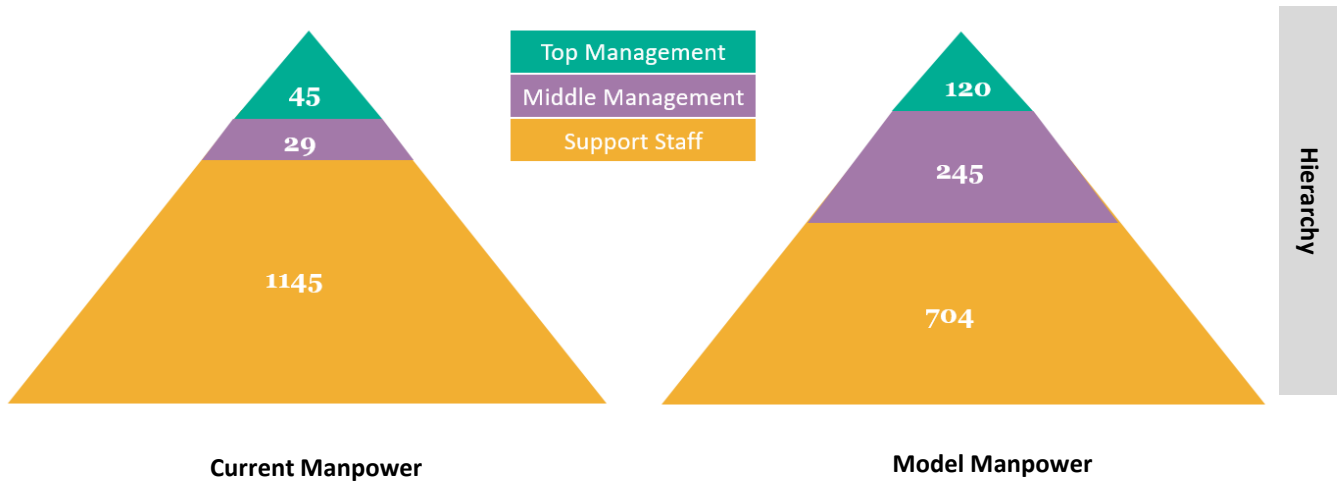


FIGURE 11: HIERARCHY GAPS IN DIRE-DAWA



4. WAY FORWARD

This model is a preliminary analysis of staffing gaps based on data from 16 towns and cities in Sub-Saharan Africa. It is flexible and immensely adaptable to other contexts.

The preliminary analysis of four countries provides compelling evidence that this is a broad area requiring urgent attention in the context of Africa's urban

1. Validation of model and results through stakeholder consultations and site visits in select target cities.
2. Consolidation and expansion through the addition of more towns and cities in Africa to check for anomalies and to make the model more robust.
3. The expansion of the model to include francophone countries and North Africa.
4. Detailed city level analysis:
 - 4.1. Differentials from benchmark standards
 - 4.2. Impacts of technology/design and service delivery parameters on staffing

transition. As such, it needs to become a core component of Cities Alliance's work programme in Africa. Specifically, we need better data and analysis and – above all – the sustained attention of national governments and their development partners.

The next steps that the Cities Alliance will undertake include:

5. Impacts of alternate service delivery models such as outsourcing, management contracts, and concessions.
6. Comparative benchmarking with the UK, France, South Africa, and some advanced Indian cities.
 - 6.1. Recruitment options, implications and affordability
 - 6.2. Training options, implications and costs
 - 6.3. Real remuneration incentives and gaps
7. Conceptualising model concession agreements for services.
8. The model can be expanded to incorporate costs on staffing for each city, then show changes in fiscal pressures with change in ratios.

ANNEX I: PARAMETERS FOR ADJUSTING BENCHMARKS

A. SOLID WASTE MANAGEMENT		
S.no.	PARAMETERS	DESCRIPTION
A1	City size & Characteristics	
1.	Area of the City	Area is an important variable, especially when combined with density below
2.	Population	A critical driver
3.	Population density	Direct bearing on staff requirements
4.	Urban Population growth rate	If the population growth rate is high, future increase in personnel will need to be factored in.
A2	Other factors	
1.	Mode of execution	If a city is operating the service it will be necessary to calculate waste collectors, drivers, operators and helpers. However, if the operations have been contracted out, the requirement of operating staff will be minimal.
2.	Technology to be used	The number of operating personnel at the facility will depend on the technology being used for waste processing and the size of landfill.
3.	Quantity of waste	Although quantity of waste is directly proportionate to population, bulk generation of waste is not.
4.	Type of roads	Existing nature of constructed roads can have a bearing on staff required to maintain different surfaces.

B. PUBLIC WORKS		
S.no.	PARAMETERS	DESCRIPTION
1.	Area of the City	The larger the area, the more staff required.
2.	Population	Will be a consideration in deciding the number of staff, as no. of projects will depend on the population.
3.	Nature of Projects	Nature of the projects will influence the number of staff.
4.	Numbers of the Projects	Number of the projects undertaken will be a critical factor in determining staff.
5.	Financial Strength of the Local Body	If the city budget is in surplus, it is likely there will be a larger staff requirement from a larger capital and O&M spend.

C. ROAD WORKS		
S.no.	PARAMETERS	DESCRIPTION
1.	Area of the City	This will influence the number and density of urban roads.
2.	Length of the Roads	The greater the length, the greater the maintenance requirement.
3.	Type of Roads	This will impact on O&M intensity.
4.	Budget	This will influence the number of projects.

D. URBAN PLANNING		
S.no.	PARAMETERS	DESCRIPTION
D1	City Size and Characteristics	
1.	Population	A larger city will have more intensive urban interactions and hence need more staff for planning, implementing controls, and implementing regulations
2.	Area of City	Depending upon city size, multiple physical sub units/areas may be needed, which will require more planning input.
3.	Population density	Denser population will create multiple interactions in urban space and stress on infrastructure needs, which will require more staff. Uneven densities across the city will require more inputs on redensification schemes to achieve optimal urban form.
4.	Urban Population Growth Rate	Faster urban growth will continuously stress physical space and will require more inputs on expansions, dealing need with migrant population, revising density norms, redensification, etc.
5.	Urban Sprawl	Larger urban sprawl will mean quicker spread of urban fabric, amalgamation of hinterlands, and complex regional interactions. All this will require intensive planning input.
6.	Level of decentralisation (City, Neighbourhood, Ward, Sub Ward etc.)	The higher the level of decentralisation, the greater the requirements of planning staff to plan, execute and regulate at each level with specialisation.
7.	Planning regions or Units or Divisions	Planning regions or divisions are created to decentralise functions and enable participation in planning and implementation. They also impact staffing.
D2	Development Interventions and Investments	
1.	Housing Needs	Overall housing gaps will require more schemes for addressing residential layouts and will impact urban planning staff.
2.	Urban Poor	Urban populations that are below the poverty line and reside in informal settlements/engage in informal jobs require specific planning inputs that will influence planning staff.
3.	Local Government Capital Expenditure	Implementation of development projects through local government is an important variable that will influence planning inputs.
4.	Investments by Private sector	Apart from local governments, private sector investment in real estate, jobs, and industry will impact requirements for urban planning.
5.	Income range of Municipality	Cities with higher income will generate higher demand for high-quality projects and visionary planning.

S.no.	PARAMETERS	DESCRIPTION
D3	Existing legislations pertaining to Area Development Plans and Land Use Permissions	
1.	Development Plans /Town Planning Schemes	Existing legislation in Urban Acts relating to planning schemes will directly impact planning staffing.
2.	Procedures for development Permissions	Existing legislation in Urban Acts relating to development permission (for town planning schemes, land use conversion, preparation of local area plans, valuations etc.) will directly impact planning staffing.
3.	Implementation of Development Programmes/ Projects	Municipalities are also expected to implement central development projects that will influence staff requirements.
4.	Vacant land within the jurisdiction	The amount of vacant land earmarked for development projects will influence urban planning staff.
D4	Existing legislations pertaining to Building Controls and Permissions	
1.	Systems for Building Control	The provisions for building control (FAR, Setbacks, facade control etc.) in local municipal acts will directly impact urban planning staff.
2.	Number of Properties	Number of properties registered with the municipality will directly impact urban planning staff.
3.	Building permissions/ permits granted (rate of building construction)	The rate of building permissions granted by the municipality will impact urban planning staff.
4.	Encroachments within city	The larger probability of encroachments on public properties and roads and tapping into municipal services (water, electricity) will impact staff.
5.	Approvals of plans (residential/ commercial/ institutional)	Approvals of plans (residential/commercial/institutional) are usually covered under the planning division. The rate of approvals put up each day will impact staffing
D5	Information systems	
1.	GIS-based property information system	GIS-based property records and land use information system are effective ways to reduce staffing requirements and avoid ambiguity in permissions, land use planning, etc.
2.	GIS-based permission for Town Planning Schemes/ Building Construction	GIS-based permission systems and computerisation reduces manual labour and is an effective way to reduce staffing requirements.
D6	Others	
1.	Road network	Road network availability and quality impact transportation requirements, which will influence planning inputs and staff.
2.	Public Transportation network	Availability and quality of public transport and projections for the future will impact specific inputs on transportation planning.

3.	Urban design norms, Heritage structures/ Conservation norms	Guidelines on design, preservation of urban form, physical controls, norms related to heritage buildings, and conservation structures will call for specialised inputs in urban design, conservation and heritage planning (usually considered as part of overall planning activity).
4.	Environment	Quality of environment, existing practices related to conservation, and regulations on air, land and water pollution will impact specific inputs for environmental planning.

E. FINANCE AND AUDIT

S.no.	PARAMETERS	DESCRIPTION
1.	Budget size	Increase in budget size may require additional staff, subject to other parameters.
2.	Number of activities/ programmes	Number of activities and programmes run by a city will have an impact on the size of the staff.
3.	Volume of Accounting Transactions	Large number of small value transactions would require more staff.
4.	Level of E-Governance initiatives	Higher level of computerisation and integration of various modules with the finance module will reduce the number of staff for routine operations and reconciliations.
5.	Internal Control System	As the budget size increases, internal control systems need to be updated, which in turn would increase the staff requirement unless automated systems are in place.
6.	Level of Regulatory and Reporting environment	Requirement of accounting classification, aggregation, cost allocation etc., depends on the level of regulatory and reporting requirements, and will impact staff.
7.	Pre or Post audit	Pre-audit/concurrent audit will require more staff for Audit than in case of post audit.

F. REVENUE

Sr. No	PARAMETERS	DESCRIPTION
1.	Size of ULB area and number of assesses	Requirement for revenue collectors will depend on size of geographical area, number of assesses and population density.
2.	Revenue streams	Higher revenue streams/ taxes will require more staff for collection and assessments.
3.	Assessment process	Self-assessment of taxes by assesses will reduce the number of staff required
4.	GIS/E-Gov-based monitoring system	GIS-based automated system for tax collection and monitoring will require less staff.
5.	Outsourcing of collection	If the collection of revenue is outsourced or is through automated payment gateways, less staff is required.

G.	HIERARCHY	Decision on number of persons reporting to a higher level
1.	Span of control	Ideal span for direct monitoring is about 6, i.e. one person can effectively supervise the work of 6 subordinates. It will also depend on other factors.
2.	Difference in Salary of superior level	The greater the gap in salary between staff, the more spans of control are required.
3.	Nature of activity/functions and Monitoring requirement	Functions requiring close monitoring or detailed checking of work done by subordinates will reduce the span of control.
4.	Management approach	Management by direct control will require a shorter span of control; in case of management by exception, span of control may be higher.

ANNEX 2: LITERATURE REFERENCES FOR REFINING METHODOLOGY

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