

Full Length Research Paper

Addressing Gender Needs in Infrastructure Development: A Study of Kampala's Urban Landscape

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Urban service delivery in cities of Africa is undergoing transformation in the quest to improve access and coverage while reducing the urban infrastructure deficit. This is mainly signaled by the gradual shift to integrated urban planning functions and decision-making spheres within the institutional set-up of city authorities. This paper builds on a triangulated study in Kampala city to argue that urban planning functions should not only be integrated but also responsive to gender needs, as an inclusive pathway to sustained provision of infrastructure. The study found out that the utilization of infrastructure and the associated aspects of service delivery are socially preconditioned by socio-economic preferences that are based on gender differentials in mobility needs. Women preferred infrastructure that offers personal security, flexible mobility, hygiene and physical comfort, whereas men were primarily concerned about alternative travel routes for punctuality, safety while on the road, convenience and quicker connectivity to public utilities. But planning at city level has neither integrated nor transcended the physical, economic and environmental accounts of infrastructure and service provision to include gender responsiveness. This ultimately leads to delivery outcomes that are less aligned to variations in women's compared to men's end-user expectations. The paper concludes with a step-wise framework for conceptualizing how urban planning can be gender responsive together with examples on real-life applications in the context of African cities.

Key words: Infrastructure, services, gender, urban planning, African cities.

INTRODUCTION

Urban services and infrastructure provision are an essential part for Africa's sustainability in city transformation (Ndulu, 2006; Kessides, 2006; Foster and Briceño-Garmendia, 2010). Despite the longterm investment in infrastructure, urban Africa is characterized by infrastructure and service provision deficiencies that hamper livability and economic growth (AfDB, 2103). Dabla-Noris et al. (2012) observe that closing Africa's infrastructure deficiencies in terms of coverage and access would increase per capita growth and economic performance by 2.2 percentage points. Countries like

Mauritius in North Africa, which have gone through transformation in infrastructure provision, have realized the economic gains associated with an innovative shift from traditional urban service provision strategies to those that embrace the new horizons of demand for smart, climate compatible and knowledge-based city services (Khadaroo and Seetanah, 2008; Holt, 2012; urban planning functions and decision-making spheres (McRobbie, 2002; Mudambi, 2008; van Stigt, 2013; Connelly et al., 2013), but also responsiveness along gender and social group characteristics with informal Anttiroiko et al., 2013). Such a shift not only requires the promotion of economic restructuring for integration of settlements inadvertently marginalized (Abbott, 2002; Winayanti and Lang, 2004; Harrison, 2006; Mayer, 2009; Buyana, 2012). Many a time, however, the use of gender responsive approaches to urban planning and its implications on infrastructure and

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service delivery has been sought with limited effort in both developed and developing cities (Dempsey et al., 2011; Nwaka, 2005; Yigitcanlar et al., 2008). It is the physical, economic and environmental aspects of a given city that always take center stage in processes of integrating urban planning functions (Cappiello et al., 2011; Helm and Tindall 2009; Hoehner et al., 2003; Thompson, 2002). The gender and urban planning discourse too has for a long time largely focused on women-specific concerns within social service sectors (water, health and education). Less emphasis has been laid on infrastructure as a point of departure to understanding the required transformation in urban service delivery. For instance, Rakodi (1991) and Turner et al. (1995) presented a gendered critique on urban planning, with a focus on the distribution of economic opportunities through gender-aware decision-making processes. But these critiques overlooked the usefulness of infrastructure in providing physical and visual clues to women and men as they explore the said socio-economic opportunities.

Whitzman et al. (2013) and Wekerle (2013) drew insights on how urban design can be attuned to community-level prevention of violence against women, but this did not wholly represent how gendered segments in urban populations use infrastructure and services to meet their livability needs in cities. Therefore if urban planning is to be engendered broadly, there is need to provide the required depth of analysis on a wide range of infrastructure and attendant service delivery sectors, in which women's compared to men's city-specific needs can be discerned. Such in-depth and sector-specific gender analysis can create possibilities for aligning planners' views with end-user needs on different forms of urban infrastructure provision. The ultimate advantage lies in bringing about infrastructural designs and service provision aspects that are responsive to the priorities of different social groupings amongst city residents. This is the issue that the proponents of participatory urban planning have emphasized by contending that innovativeness in planning cycles should largely focus on pathways that offer meaningful and functional partnerships with the local population in setting service provision priorities (Garcia-Ramon et al., 2004).

Even amongst women, the nature of constraints faced with regard to intra-urban mobility and personal security differ not only on account of poverty status and type of settlement in the city, but also according to age, household characteristics, degree of engagement in income-generating activities (Chant, 2013; McIlwaine, 2013; Lacey et al., 2013). This implies that it is limiting to assume that women-specific issues can be tackled using programmes that are separate from those targeted at other city residents. This is because it undermines the relational understanding of women's interface compared to men's with regard to the needs that are associated with

living and working in the city. Therefore urban planning in Africa has to embrace both integrated and gender responsive approaches, as an inclusive pathway to sustained provision of city services and infrastructure.

Framework for urban services and infrastructure provision in Kampala city Uganda

Planning for urban infrastructure and services in Kampala is within a framework of policies, laws and regulation in Uganda. The Local Governments Act (1997), the Physical Planning Act (2010) and Kampala Capital City Authority Act (2010) provide the modalities on how different departments in the city authority come into play in the provision of services. Characteristic to these policies and laws is the decentralization of services and their provision by local governments, with policy oversight from central government agencies. In addition to decentralization, urban services and general approach to urban development is by sectors with limited integration of urban planning functions. Thus it is common in the administrative structures of the city to have designated offices to sectors including water, transport, road works, health and schools among others. This two-pronged approach to urban service delivery has yielded two implementation approaches to urban service delivery. These include the project-based and the sector-wide approaches. The project-based approach is considered realistic and relatively easier to monitor when specific projects are identified and activities planned out with associated investments. Currently, urban infrastructure provision in Uganda and Kampala in particular follows this implementation approach. This approach is associated with local government level and lower scales of implementation.

The second implementation approach is the sector-wide approach which recently been introduced at national level. This approach is characterized by national priorities and needs assessment within a sector where planning and design of infrastructure is at national level. However, often implementation is accomplished through projects whether these are designed as pilot projects or on off projects. Project-based approach has been critiqued because it is usually not linked with follow up on pilot projects to complete the cycle and coverage. This leaves some communities un-serviced compared to the communities in which pilot activities are implemented. But the urban services and infrastructure developed in piloted communities become unsustainable in relatively short time periods due to the usually overwhelming demand and use. At the national level, urban infrastructure development is not integrated to provide better services nor spatially for a balanced development. There is a concentration of infrastructure investment in the central region and Kampala city gets a biggest share of investments while other major towns remain under-funded. But the

services and infrastructure development have not corresponded to the 4.9 percent annual growth rate of the city living service gaps and accentuating urban poverty (Okwi et al., 2003), in which 16 percent of Kampala's population is estimated to be under the poverty line. It is this framework that provided the basis for a triangulated study in Kampala city, on how gendered the demand of services and infrastructure is.

MATERIALS AND METHODS

Kampala is Uganda's capital and only city, occupied by 40% of the national urban population (UBOS, 2002). The mandate of delivering services and infrastructure is under Kampala Capital City Authority (KCCA), which until 2011 was known as Kampala City Council (KCC). This mandate is derived from the KCCA Act (2010), which also entails the transfer of planning and service delivery functions to five administrative divisions in the city including Kawempe, Makindye, Nakawa, Rubaga and Central division. Together with KCCA, these divisions through their political and technical teams ought to plan and deliver a number of services including sanitized neighborhood environments, safe and comfortable public transport, user-friendly physical infrastructure, protection and restoration of green areas, provision of recreation facilities and other services that are expected to enhance livability in the city.

The study therefore undertook an end-user service satisfaction survey across the five city divisions with a focus on urban sanitation at neighborhood scale; public transport; physical infrastructure; and recreation services. The choice of these urban sectors enabled the capturing of gender differentials in residential, travel, working and leisure needs. A survey questionnaire was used to capture data on such gender needs as well as the levels of awareness, access and satisfaction with city infrastructure and services by sex of the respondent. Purposive sampling was chosen to reliably permit the selection of female and male respondents, who have at one time accessed one or more city service. One hundred (100) respondents were interviewed in each division but since many of these had to be contacted from home, at the work place or from urban traffic, the survey acquired a response outcome of 470 out of the expected 500 respondents (244 male and 226 female respondents).

Data processing was done using descriptive statistics on the level of awareness, access and satisfaction with city services and infrastructure. The survey data was complimented with two separate-sex focus groups with city residents in order to profile and rank gender roles, mobility needs and preferences around the utilization of infrastructure. Additionally, key informant interviews were undertaken amongst planning departments in KCAA. The departments included physical planning and works, engineering, environmental services, labor, gender and community development. Analysis of focus group and interview data was conducted as conversations were being carried out. This allowed immediate grouping of responses to ultimately triangulate end-users', service providers' and planners' experiences on the delivery of services and infrastructure in Kampala city.

RESULTS

Gender and the Utilization of Infrastructure in Kampala city

In Kampala city, the utilization of infrastructure is socially

preconditioned by differentials in the mobility needs of women relative to men, which are based on the social differentiations in their domestic and commercial roles. From the separate-sex focus groups, we found out that women have triple gender roles: domestic care taking; income provision through participation in paid work; and communal roles that involve networking at neighborhood level as a way building new or maintaining already existing social capital. Men on the other hand, mainly focus on the search for paid work around the city and are much less involved in domestic care.

This three-layered profiling of women's roles into domestic, commercial and communal was associated with shorter but multiple trips. This is because women usually prefer jobs or self-employment stationed nearer to the areas of residence for a walkable distance between home and the workplace. For this reason, women depend much on the available pedestrian footpath network, although a number of them opt for public Omni buses and private means if the travel involves reaching out to the city center or up-country. This kind of mobility pattern underlies women's preference for infrastructure that offers personal security, flexible mobility, hygiene and physical comfort.

Men's greater presence in search for paid employment and the related aspects of family provisioning, makes them travel longer but fewer trips. We found out that men highly depend on cycling and driving to access places of work and back home, except in situations where walking is done at neighborhood level and along the streets in the city center. Therefore men were largely concerned about alternative travel routes for punctuality, safety in usage, convenience and quicker connectivity to public utilities. The study concluded that the utilization of infrastructure and the associated service delivery aspects are socially preconditioned by socio-economic preferences, which are determined by gender differentials in mobility needs.

Satisfaction with services and infrastructure in the city

Sanitation services

Since urban environmental service provisioning is predominated by sanitation and waste management systems, we studied end-user satisfaction with sanitation services in Kampala. These mainly involve the removal of liquid and solid waste from commercial and residential areas by private and public entities to landfill centers in the peripheral parts of the city. The provision of community-level sensitization on public hygiene and installation of supportive environmental infrastructure follows including drainage systems, public toilets and waste skips. But from an end-use perspective, rating of performance in the sanitation sector was very low. Most of the male respondents (50.0%) and female respondents (51.0%) said that sanitation in the city is bad, as indicated in Table 1. The challenge according to officials from

Table 1. Rate of satisfaction with sanitation services.

Sex of the respondent	Rating your satisfaction with sanitation services					Total
	Very good	Good	Fair	Bad	Not able to tell	
Male	2.4%	11.4%	23.3%	50.0%	12.9%	100.0%
Female		6.1%	33.7%	51.0%	9.2%	100.0%

KCCA is environmentally irresponsible behavior amongst end-users, who keep throwing plastics in drainage channels and illegally dumping other waste on the streets. This leads to clogging of drainages, flash floods during heavy rains, contamination of air, water sources and exposure to diseases, malaria and cholera in particular.

The end-users, however, attributed the low ratings of performance to hygiene and sanitation difficulties in neighborhoods and the city center. Although KCCA has raised awareness and involved community members in hygiene promotion and sanitation, the study discovered that women do not have adequate provision of toiletries (especially sanitary bins) in public toilets whereas the men noted that the entry-charge of using a public toilet is most times not reallocated to better the services and improving the environmental quality around public facilities. The physical security and integrity of women around such facilities is constrained due to inadequate lighting, thereby a reduction in the levels of utilization at night. Furthermore, public toilets are not user-friendly for the disabled due to access-steps and toilet seats that are not aligned to their physical impairments. Accordingly, livability in sanitation terms is constrained by a combination of factors that include environmentally insensitive behavior and flaws in the design of infrastructure among others. .

Urban transportation

We surveyed female relative to male end-users of public transportation to establish satisfaction from a gendered view point but also performance of the operationalization of public transport. Public transport in Kampala comprises 16 seater Omni buses in addition to passenger buses operated by town companies. The biggest share of passengers and trips of motorized transport is by the omni buses at 39%, followed by motor cycles at 8.9% and bus services at 0.1% (ROM, KCCA, 2011). Based on this distribution, users of transportation services indicated that all modes of transportation are blind about specific gender needs in public transportation. The gender groups identified as negatively affected are the pregnant women, elderly, PWDs while certain gaps in public transportation affect the entire population.

A close look at the bus services, users acknowledged that all vehicles operated on this service are gender insensitive because the design does not meet the

boarding, sitting and disembarking needs of physically challenged persons and pregnant women. This is because of high steps for boarding and alighting while the disabled would find it difficult to board with wheel chairs and clutches in addition to the bus corridors not being wide enough to accommodate wheel chairs. For omni buses, the disabled group cannot use the service due to space limits. In addition to specific gendered needs around design of the vehicles used in transport, there are issues around operations the critical one being bus stops which are non-existent on many of the roads and where they exist, they are used and crowded by omni buses for picking passengers. The gender dimension of this shortcoming is a public transport system which is devoid of facilities that would bring about convenience, effective and efficient public transportation for all social groups. As part of operations, omni buses stop just anywhere and everywhere and this has affected traffic flow and inconveniences that translate into high costs associated with traffic jams and delays. According to a recent study by the Ministry of Works and Transport (2012), the average travel speed is 2.5 km per min in Kampala region. This speed is low and the trips are too time-consuming; when we consider intra-city trips, traffic delays at peak hours increases this time. The design of gender sensitive buses would have to utilize kneeling buses with wide corridors to enable use by the mentioned gender groups who need help, support and time to use the service.

Another issue for transportation services relates to road signage and usage. The signage placing is characterized by competition for space on and off the carriage way with advertisement. Walking and cycling take the biggest share of transportation in Kampala with 43% of all trips according to the 2011 study by ROM and KCCA. Yet pedestrians and cyclists compete with motorized transportation for space on the roads. Analyzed data indicate a fair to low satisfaction rating about adequacy of pavements usually utilized by cyclists and pedestrians. In practical gendered sense, the dominance of youths, low income earners and women as users of pavement spaces for walking and cycling is undoubted. These experiences are reinforced by the low levels of satisfaction with the transportation network that were captured from the survey and presented in Table 2. The table shows that only 1.4 and 1.9% of the female and male respondents respectively indicated “very good”, in regards to public transport in Kampala city.

Table 2. Rate of satisfaction with transport services.

Sex of the respondent	Rating your satisfaction with transport network					Total
	Very good	Good	Fair	Bad	Not able to tell	
Male	1.4%	17.7%	43.2%	32.7%	5.0%	100.0%
Female	1.9%	21.2%	39.9%	30.8%	6.3%	100.0%

This low level of rating on satisfaction with public transport was also attributed to persistent limitations in safety while travelling to, from and within the city. Both female and male respondents expressed concerns about competition for space on and off the carriage. The observation made is that the city road network is characterized by absence of segregated lanes for pedestrians, motorists and cyclists. This shortfall partly explains the prevalence of road accidents amongst pedestrians and cyclists. Records obtained from the Uganda Police Headquarters in Kampala (2011) showed that in 2009, pedestrians and motorcyclists were the highest number of victims in road accidents. At Kira Road police station in Nakawa division, for example, 43% of the accidents recorded affected pedestrians whereas 21% affected passengers in vehicles. A similar pattern was recorded at another police station in Kawempe division, where 32% of the accidents recorded had pedestrians as the victims and 25% were passengers. Respondents admitted that road crashes have time and labor consequences for women as custodians of family health who must take care of the injured and shoulder the household economic burden in case the main income generator dies. The study revealed that women's mobility is constrained by narrow sidewalks and the absence of pedestrian precincts, as they take short but multiple trips that maintain the household at neighborhood level. For the men, overcrowding and delays associated with traffic congestion mean that they have to take longer travel times and cannot rely on driving to take them to their destinations. Results of the survey on constraints showed that the overriding burden in transport amongst males is time constraints stemming from traffic congestion, represented by 72% of men's responses compared to 19% of the female responses. These gendered patterns and experiences signify the usefulness of comprehensive and accurate gender disaggregated information on urban transportation, as the entry point towards placement of end-user expectations at the center of delivering services and infrastructure. Urban physical infrastructure Study findings revealed that signage on roads, in and around buildings together with street lighting are not reliable in providing physical and visual clues to women and men for easing passage and access to other city services. Women said that it is usual to forego a travel if the street

or neighborhood access road is not well-lit or if there is a perceived threat of getting lost or failing to find parking while shopping due to overcrowdings in the city center. Men on the other hand are usually victims of injuries and sometimes fatalities because they sit in the driving wheel and have to ensure the safety of pedestrians, other motorists and cyclists at road junctions and on the main streets of the city, due to inadequate lighting or failure to adhere to directional signage or the absence of it. Narrow pavements were also noted to be a limitation when seeking to overtake a person ahead of you or crossing from one road side to another. Respondents in the survey further noted that road signage is more dedicated to cars than pedestrians. They were also quick to note that even the available signage is not well maintained and sometimes obscured by advertisements and election posters, thus giving an impression of mess and negligence. These concerns underlie the variations in satisfaction ratings, as presented in Table 3. Data further indicated that the rating for ramps that ease of movement among persons with disabilities, is poor, with over 57.4% of the respondents rating as so. But the gender statistics indicate a higher proportion of female respondents rating their satisfaction with ramps as poor compared to men (Table 4). This was further attributed to women's concerns about drainage works at neighborhood level that have no ramps, which hampers movement by disabled family members. The study also found out that sight impaired people move around the city with difficulty requiring support. For example, sound signals at road junctions with traffic lights are not installed. Sight-impaired road users would have to rely on other road users to get to know where it is safe to pass, which in some cases may not be available. In addition on-road guides for sight impaired people are also not installed like proper kerbs for them to know at what point they would when walking. Whereas this can be defrayed during day when pedestrian population is at its highest and can offer help to the blind, in the evenings and night, the blind would get serious problems. Recreation and social amenities Part of the legally prescribed functions for KCCA is planning recreation parks, tree planting, green corridors and other environmental-friendly areas. This requires well

Table 3. Satisfaction with visibility of the signage for road users.

Sex of the respondent	Satisfaction with visibility of the signage for road users					Total
	Very good	Good	Fair	Bad	Not able to tell	
Male	1.8%	22.6%	38.9%	31.7%	5.0%	100.0%
Female	1.4%	23.2%	35.3%	34.3%	5.8%	100.0%

Table 4. Rate your satisfaction with ramps for physically impaired.

Sex of the respondent	Satisfaction with ramps for physically impaired					Total
	Very good	Good	Fair	Bad	Not able to tell	
Male	0.5%	9.9%	27.5%	54.1%	8.1%	100.0%
Female	0.5%	6.3%	24.0%	61.1%	8.2%	100.0%

maintained, lit and furnished green areas, squares, parks, entertainment halls, and play fields are a binding factor between environmental and physical development planning for the city. From the focus groups, we found out that the location of a household determines women's access to leisure facilities and choice of travel means as well as number of hours to be spent on leisure activities. Respondents argued that since women are the primary care takers of the home, their preference usually lies in recreation facilities that are nearer to their residence or within the neighborhood. Women at the lower scale of income rely on neighborhood routes to access entertainment centers in the evenings, and therefore safety on such routes is a leisure need. Women in relatively higher income groups can afford recreation facilities that are located far away from their homes, and therefore need well-lit streets and buildings to guarantee their physical integrity and safety from sexual violence while walking, cycling or driving back home in the night.

As child care takers, women said that they need play fields nearer to homesteads or within recreation centers that can guarantee safe and amenable access by boys and girls, especially during weekends and school holidays. Interviews with urban service-users also showed that good lighting and landscaping creates active spaces for women to rest and not feel isolated during their chain of trips and varied destinations at neighborhood level. On the contrary, men were more concerned about the prices of family leisure trips because most green areas and entertainment centers are now privately owned with entry user fees. Respondents argued that prices for family leisure trips are high, especially for low income groups, and therefore men prefer shorter and cheaper travel to recreation centers.

Urban service providers in KCCA noted that commercial developments within the center and at neighborhood scale should be the area of focus in responding to leisure needs while sustaining green spaces. However, during

the survey we observed that commercial developments in Kampala have to a greater extent undermined the ways

in which integrated urban land use can be applied to respond to leisure needs. There is a huge neglect of social amenities that they have been left to private sector. Though this might not be a problem, guidelines are yet to be in place on how private providers can value compatibility of land uses. Such guidelines according to the key informants should focus on interdependence between the natural and built environment in the recreation sector. However, an interviewee commented that it is increasing becoming a hard-to-implement principle due influence peddling during the approval of commercial and residential developments at KCCA.

Urban planning services

Urban planning in Kampala is one of the dodgiest activities for the city authority. It is this institutional structure and processes which are meant to guide at strategic and local-level configuration and development of urban space. The planning acts are the basis for supporting social, economic, political and now environmental amenities. From the key informant interviews, there is limited strategic urban planning piecemeal planning that characterizes local-level development. KCCA, urban planning is meant to guide housing development, structure plans, detailed plans and neighborhood plans to provide the basic services at different scales. This connection includes critical infrastructure but the focus in this section is on physical payout and amenities that enable utilization of gendered spaces. Kampala now has a recently approved Physical Development Plan that is a broad framework for spatial development. At city-wide level planning focuses on strategic location of land use and activities, infrastructure, environmental conservation and promotion of economic activity. At neighborhood level planning considers issues including accessibility, circulation network, physical infrastructure, connectivity and local economic opportunities. At site or plot level, planning looks at specific issues like provision for kitchen,

bath places space utilization and adequacy in a house.

From interviews with planners in KCCA, development in the city is largely occurring informally and not aligned with the spatial plan. In addition such development is also inadequate in responding to the needs of women relative to men in respect to housing, safe community roads and amenities. On this backdrop of systemic failure of planning at all levels, there is an amenity deficit and need that many people in Kampala have taken individual ingenuity to fill the gap. The result is a cumulative imprint of informal neighborhoods characterized by conflicts and poor conditions of living that have pushed the majority to marginal places such as low lying areas prone to flooding. The gendered impacts of failed planning and inadequate livability in the city are far reaching with female dwellers exposed to various forms of gender violence during day and at night (Boomsma and Steg, 2012). The linkage between systemic failure of planning and gender violence is partly shown by the rating of safety on community roads. The majority respondents of 80% rated safety as fair or poor and the gender differentials on the same rating indicate a slightly differing rate between women and men by 2%. This close rating points to the wider effect of safety to all social groups and categories in the city which speaks to a normative call for engendering the city infrastructure to enable livability in Kampala. From in-depth interviews, it was established for example most people in slum areas are single mothers and that livelihood strategies are very much locale based in the neighborhood.

The challenges of raising children in informal settlements with no basic infrastructure are far reaching let alone the specific challenges around leaving a backyard with skeletal drainage characterized by flowing grey water that exposes the children, the disabled and women to environmental health risks (Lwasa et al., 2009). In line with proposals regarding gendered needs of infrastructure, urban planning needs to respond in a more innovative way that considers affordability, social inclusiveness and sustenance minimum housing and neighborhood level service standards to support these groups. The standards can be used as a tool for mainstreaming gender concerns but also for evaluation of progress. For community level infrastructure planning is done but implementation does not cater for pedestrian precincts.

According to the planners in KCCA, an eight (8) meters of carriage way of a road reserve of 20 meters is commonly implemented because the compensation requirements to occupiers of the land. This implies a limitation in adequately responding to the desired reduction in competition amongst the gendered groups of road-users on the carriage way.

DISCUSSION

From the study findings, it is clear that critical urban

infrastructure and ancillary furniture is inadequate and this has profound impacts on the utilization needs of females relative to males in the city. Female users of the infrastructure are exposed to differing risks whether these are adults, girls, and persons with disabilities. The gendered needs around the use of infrastructure ought to be standardized, enforced, maintained and replaced periodically to reduce the impacts created by the deficit. Standardization will require urban specific policies, ordinances and regulations that should be reinforced by a backbone of effectively integrated institutional structures that are responsive to gender differentials in mobility needs and how this can be taken care of in infrastructure design and provision, which would ultimately be beneficial to the entire public and restore urban quality of life.

The need for gender responsive planning: A step-wise framework for African cities

Sustained response to the women's and men's infrastructure and service provision constraints in Kampala city provide a basis for why and how gender responsiveness can be a central account in urban planning process. This would have to involve disaggregating end-user demand for services and infrastructure by sex, location and connectivity to public utilities, thus deepening the analysis on needs to inform the design of plans, programmes and policy decisions that respond accordingly. But the capacity to conceive, design and deliver infrastructure and services that are customized to differentials in women's relative to men's needs, is still lacking amongst planners in Kampala city. The study found out that several capacity building workshops and trainings have been conducted for this purpose in KCCA on an annual basis, but at the time of the study there was no indication of applying the knowledge and skills gained to the routine procedures of economic, physical and environmental planning, yet not less than 15% of the annual local government capacity building fund had been on KCCA alone, since 2001.

If the knowledge acquired could be effectively used to mainstream gender into planning, processes such as procurement and contracts management, which is one of the key interfaces between service providers and end-user demands, could involve tasking the physical planning and works departments to input gender considerations into the Bill of Quantities (BoQs) for contractors. Examples of such gender considerations include signage that provides visual and physical clues for all gendered categories of road users (pedestrians, motorist and cyclists), obliging construction firms to comply with the stipulated width and length of pedestrian precincts, the positioning and design of signage and providing equal employment opportunities to female and male casual laborers while ensuring that the design of urban spaces caters for the physically impaired, adequate lighting

within and outside the building, parking slots for wheel chair users, door-way signs and toilets that have sanitary bins for women's comfort.

To achieve this, we propose a framework for gender responsive planning at city level as below;

a) Conceptual planning and design; in all urban sectors, one of the initial steps in service provision is the thinking behind the design of a plan and or its strategy, a process known as conceptualization. This step is very crucial in gender responsive planning because it is where tools for baselines and situational analyzes need to be disaggregated to ensure capture of gender differentials in needs and design requirements for a planned infrastructure, service and or system. At this stage, the gender needs are identified, detailed according to sex, location and socio-economic status. This leads to the attainment of gender disaggregated data and analysis for proper identification of differentials in needs by urban sector and category of end-user.

b) Installation and implementation; following design is installation for infrastructure and or implementation if it is more of a procedure or system like decision making processes. At this stage is the importance of supervision to ensure that gender responsive designs, for example road signage that heeds to differences in language proficiency and visualization, are adhered to during installation. Gender responsive planning is implemented at this stage. A key function is the procuring of services and or equipment that is aligned to gender needs, something that is often thought of as an additional cost, yet if well understood and appreciated from the end-user point of view, can be budgeted for using the available resource envelope. In KCCA, it is common for procurement and financial processes to consider gender mainstreaming as an issue that is either irrelevant in physical work or a donor-driven requirement that needs a separate budget. However, it is costlier to neglect end-user demands than investing a service or infrastructure that is not user-friendly in strategic terms.

c) Operationalization; this stage is characterized by detailing the procedures and arrangements for putting into operation the designed and implemented infrastructure or service action plan. Operationalization includes rules of use, modalities for operation, incentives and penalties for female relative to male users. This requires close monitoring for compliance including security against vandalism and theft in the case of urban furniture, like phone booths for real-time communication while on travel around the city. It is at the operationalization stage that differences in end-user needs are neglected, for example enforcing rules of designated spaces for disabled persons in parking slots to ensure that they access these spaces. Whereas many a time regulations and rules exist, city authorities in Kampala city have perpetually lamented about enforcement challenges. This an area for improvement and change if planning is to be successful but it stems from the whole

set of activities required for operationalization.

d) Evaluation; at this stage, the aim is to track progress on the results gained from at the earlier steps of gender responsive planning. Such results may have been planned or unplanned, but the essence to gain feedback for purposes re-aligning the gender responsive planning process to consolidate the gains made in the interim and devise strategies for addressing the challenges that have emerged. This further interlinks the earlier stages of gender responsive planning through a feedback loop, for purposes of continuous improvement in the design and delivery of services and infrastructure.

Conclusion

Gender responsive planning is an approach to improving the delivery of infrastructure and services in African cities. It provides an entry point for understanding how the physical, environmental and economic aspects of cities can be integrated to positively affect the lives of women and men. This is because approach has the potential to match planners' ideas about service delivery with end-user needs, something that is crucial in ensuring that the design of physical and social spaces in cities is guided by decisions that are based on the ideals and preferences of city residents (Simonsen, 1996; van dijk et al., 2011; van den Berg, 2012). Gender responsive planning further makes women and men not only community-level participants but also partners in shaping the urban planning agenda. This is an issue that has been earlier emphasized by participatory urban planning, as a pathway to improving the quality of places in ways that offer a sense of not only livability but also belonging and ownership to the local population (Garcia-Ramon et al., 2004).

However, striking a balance between the idea of gender responsive planning and with the emerging demand for green, inclusive and safe cities is something that African planners ought to consider (French and Lalande, 2013; Werna, 2013; Klodawsky, 2013). Such a balance is obtainable if planning processes follow a holistic path, where end-user needs are the basis for defining how green, inclusive, gender responsive and safe a given city should be and further analyzing how planning processes can be adjusted to take on priorities that benefit the entire urban population. Although the application of such multifaceted and pluralistic urban planning has been critiqued for being generalisitic and un-standardized (Cao and Zhang, 2013; Ng and Xu, 2014), there is need for African cities to appreciate and understand how the integrated nature of urban planning functions and gender responsiveness in particular, can support the innovative use of information about service end-user needs in the design and implementation of programmes for effective response in different urban sectors. This is what underlies the step-wise framework for applying gender responsiveness to urban planning processes. And since the study findings reveal how the

use of services and infrastructure is gendered, it is then rational for African cities to adopt the framework while designing city infrastructure and related service delivery programmes.

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REFERENCES

- Abbott J (2002). An analysis of informal settlement upgrading and critique of existing methodological approaches. *Habitat Int.* 26(3):303-315.
- AfDB (2103). An Integrated Approach to Infrastructure Provision in Africa. Economic Brief. African Development Bank.
- Antiroiko A, Valkama P, Bailey S (2013). Smart cities in the new service economy: building platforms for smart services. *AI & Society*, 1(12)
- Boomsma C, Steg L (2012). Feeling Safe in the Dark: Examining the Effect of Entrapment, Lighting Levels, and Gender on Feelings of Safety and Lighting Policy Acceptability. *Environ. Behav.* 34(9).
- Buyana K (2012). The Gender Dimensions of Climatic Impacts in Urban Areas: Evidence and Lessons from Kampala City, Uganda. *Research in Urban Sociol.* 12.
- Cao K, Zhang Y (2013). Urban planning in generalized non-Euclidean Space. *Planning Theory* 12(4)
- Cappiello G, Garrone P, Nardi P (2011). Cooperation between Local Actors in Infrastructure Projects-Evidence from Italian Utilities.
- Chant S (2013). Cities through a "gender lens": a golden "urban age" for women in the global South?. *Environment and Urbanization* 25(1):9-29.
- Connelly S, Markey S, Roseland M (2013). We Know Enough: Achieving Action Through the Convergence of Sustainable Community Development and the Social Economy. *Economy of Green Cities.* 12 (6).
- Dabla-Norris E, Brumby J, Kyobe A, Mills Z, Papageorgiou C (2012). Investing in public investment: an index of public investment efficiency. *J. Econ. Growth.* 17(3).
- Dempsey N, Bramley G, Power S, Brown C (2011). The social dimension of sustainable development: Defining urban social sustainability. *Sustain. Dev.* 19(5).
- Foster V, Briceño-Garmendia C (Eds.). (2010). Africa's infrastructure: a time for transformation. World Bank-free PDF.
- French MA, Lalonde C (2013). Green Cities Require Green Housing: Advancing the Economic and Environmental Sustainability of Housing and Slum Upgrading in Cities in Developing Countries. *Econ. Green Cities* 12(1).
- Garcia-Ramon MD, Anna O, Maria P (2004). "Urban planning, gender and the use of public space in a peripheral neighbourhood of Barcelona." *Cities* 21(3).
- Harrison P (2006). On the edge of reason: planning and urban futures in Africa. *Urban Stud.* 43(2).
- Helm D, Tindall T (2009). The evolution of infrastructure and utility ownership and its implications. *Oxford Rev. Econ. Policy* 25(3).
- Hoehner CM, Brennan LK, Brownson RC, Handy SL, Killingsworth R (2003). Opportunities for integrating public health and urban planning approaches to promote active community environments. *Am. J. Health Promotion* 18(1)
- Holt W (Ed.). (2012). Urban areas and global climate change. Emerald Group Publishing, United Kingdom: London
- Kessides C (2006). The urban transition in Sub-Saharan Africa: Implications for economic growth and poverty reduction. Washington DC: Cities Alliance.
- Khadaroo J, Seetanah B (2008). Transport and economic performance: The case of Mauritius. *J. Transport Econ. Policy* 17(3).
- Klodawsky F (2013). Gendered livelihoods and inclusive cities. *Building Inclusive Cities: Women's Safety and the Right to the City*, 19.
- Lacey A, Miller R, Reeves D, Tankel Y (2013). From gender mainstreaming to intersectionality. *Building Inclusive Cities: Women's Safety and the Right to the City*, 143.
- Lwasa S, Tenywa M, Mwanjalolo G, Sengendo H, Prain G (2009). Enhancing adaptation of poor urban dwellers to the effects of climate variability and change. *Earth Environ. Sci.* 6(33).
- Mayer M (2009). The 'Right to the City' in the context of shifting mottos of urban social movements. *City* 13(2-3).
- McIlwaine C (2013). Urbanization and gender-based violence: exploring the paradoxes in the global South. *Environ. Urbanization* 25(1)
- McRobbie A (2002). Clubs to companies: Notes on the decline of political culture in speeded up creative worlds. *Cult. Stud.* 16(4).
- Mudambi R (2008). Location, control and innovation in knowledge-intensive industries. *J. Econ. Geogr.* 8(5).
- Ndulu BJ (2006). Infrastructure, regional integration and growth in sub-Saharan Africa: dealing with the disadvantages of geography and sovereign fragmentation. *J. Afr. Econ.* 15(suppl 2):212-244.
- Ng MK, Xu J (2014). Second Metamorphosis? Urban Restructuring and Planning Responses in Guangzhou and Shenzhen in the Twenty-First Century. In *Maturing Megacities* (pp.29-60). Springer Netherlands
- Nwaka GI (2005). The urban informal sector in Nigeria: towards economic development, environmental health, and social harmony. *Global Urban Dev. Mag.* 1(1).
- Okwi P, Emwanu T, Hoogeveen J (2003). Poverty and Inequality in Uganda: Evidence from Small Area Estimation Techniques. World Bank and UBOS working paper.
- Rakodi C (1991). Cities and people: Towards a gender-aware urban planning process?. *Public Adm. Dev.* 11(6)
- Republic of Uganda (2010). Kampala Capital City Authority Act.
- ROM and KCCA (2011). Draft Final Report on the Kampala Physical Development Plan. Kampala, Uganda
- Thompson CW (2002). Urban open space in the 21st century. *Landscape Urban Plann.* 60(2).
- Turner J, Fouracre P (1995). Women and transport in developing countries. *Transp. Rev.* 15(1).
- Uganda Bureau of Statistics: Uganda Demographic and Health Survey, 2000/2001. Entebbe, Ministry of Finance and Economic Planning and Macro International Inc., Calverton, Maryland, USA 2002.
- Van den Berg M (2012). City Children and Gendered Neighborhoods: The New Generation as Urban Regeneration Strategy. *Int. J. Urban Regional Res.* 10.
- Van Dijk T, Aarts N, De Wit A (2011). Frames to the Planning Game. *Int. J. Urban Region. Res.* 35.
- van Stigt R, Driessen PP, Spit TJ (2013). A window on urban sustainability: Integration of environmental interests in urban planning through 'decision windows'. *Environ. Impact Assess. Rev.* 42.
- Wekerle GR (2013). 11 Women's rights to the city. *Democracy, Citizenship and the Global City.* Routledge: London
- Werna E (2013). Working in Green Cities: Improving the Urban Environment While Creating Jobs and Enhancing Working Conditions. *Econ. Green Cities* 34(1).
- Whitzman C, Legacy C, Andrew C, Klodawsky F, Shaw M, Viswanath K (2013). *Building Inclusive Cities: Women's Safety and the Right to the City.* Routledge: London.
- Winayanti L, Lang HC (2004). Provision of urban services in an informal settlement: a case study of Kampung Penas Tanggul, Jakarta. *Habitat Int.* 28(1).
- Yigitcanlar T, Velibeyoglu K, Baum S (2008). Knowledge-based urban development: planning and applications in the information era. New York, NY: Information Science Reference.