Street Addressing and the Management of Cities

Catherine Farvacque-Vitkovic
World Bank Institute Urban Practice
The World Bank
A Challenging Context

- **Growing urbanization and subsequent increasing demand on services and infrastructure:** In West Africa alone, 63% of the population will be city dwellers in 2020 (270 million out of 430 million). Within 10 years, the urban population of West Africa will have increased by 43 million. The traditional image of an essentially rural Africa is increasingly out of touch with reality.

- **Emergence of local governments:** The wave of decentralization is upon most countries and the World Bank has supported this process through a number of projects/programs aiming at addressing the priority needs of local beneficiaries. However, the main challenge ahead is to sustain improvement of city governance and management, which are plagued by both poor financial situation and weak technical management capabilities.

- **Reconcile the dual challenge of economic growth of cities and poverty reduction:** A major challenge is to make cities function better, whereby basic services are provided and an enabling environment for trade and economic activities is created.
What is Street Addressing?

- A system that allows the identification of a building or land plot based on the identification of a street and an entrance number;
- Includes installing street signs, numbering doorways, mapping, street index and database management.
- Technique shifts emphasis from plot level demarcation/registration titling to occupancy units at the street level and from property rights to occupancy status.
- Applied today in more than 15 African countries with World Bank and other donor support – with an increasing demand from other regions (Latin America, Middle East & North Africa, Asia).
- Has multiple applications related to municipal management and municipal services (solid waste, road maintenance, mail, fire/ambulances, epidemic prevention, urban information systems and fiscal applications).
What is Street Addressing?...

*Street addressing provides an opportunity to:*

- Create a map of the city;
- Conduct a systematic survey that collects targeted information about the city and its population;
- Set up a database on built environment: information is associated with an address which makes it easily locatable.
Example of an address map (Conakry)
Mannheim: An example of codification system and a prototype for 19th century cities in Europe and the United States
Street Addressing system in Washington, D.C.
Overview of main experiences in Africa

The addressing activities undertaken between 1989 and 2004 include projects in 52 cities in 15 countries (Benin, Burkina Faso, Cameroon, Chad, Congo, Côte d’Ivoire, Djibouti, Guinea, Mali, Mauritania, Mozambique, Niger, Rwanda, Senegal, and Togo).

- Chad (1991) was the first country to carry out a street addressing initiative (N’djameña), with assistance from the French Cooperation Agency and the city of Paris.
- Burkina Faso (1991) established an initial baseline for street addressing in Ouagadougou and Bobo-Dioulasso with World Bank financing. The most noteworthy application was the linking of the street addressing system to a new “residence tax.”
- Cameroon (1993) designed its street addressing project with World Bank assistance and received implementation support from the French Cooperation Agency. Operations on the ground were supervised in part by NGOs.
- Guinea (1993) received World Bank support to launch a street addressing initiative in Conakry, which was tirelessly implemented by a highly motivated municipal street addressing unit. The most significant applications created under this initiative were the organization of a solid waste collection system and support for secondary street maintenance.
- Mali (1993) conducted a street addressing initiative in six cities including Bamako, with assistance from the World Bank and the French Cooperation Agency. Local artisans crafted street signs that continue to serve as a benchmark despite a few shortcomings.
- Togo (1996) concurrently launched a street addressing initiative and a residence tax in Lomé.
- Mozambique (1996) was the only non-Francophone country to conduct this type of operation, for which the French Cooperation Agency pro-
vided support and technical assistance over several years. Six cities including Maputo have implemented street addressing systems and developed a variety of applications.

- Mauritania (1997) implemented street addressing in twelve cities including Nouakchott, with assistance from the World Bank, the French Cooperation Agency, and the French Development Agency (AFD). The initiative was combined with a fiscal application.
- Djibouti (1998) and Congo (1999) conducted street addressing studies but did not implement them.
- Senegal (1999) carried out a street addressing initiative in twelve cities. This operation, conducted under the Urban Development and Decentralization Program financed by the World Bank and the AFD, is one of the strengthening measures that city authorities decided to use in their “municipal contract.”
- Niger (2001) instituted a remarkably effective street addressing system in Niamey with support from the International Association of Francophone Mayors (AIMF). The French Cooperation Agency is currently providing support for an addressing initiative in Maradi (2003).
- Benin initially adopted a block addressing system (neighborhood, block, plot), which was later replaced by a “street-house” system under the 1990 Urban Land Register project initiated in 1990 Cotonou and Parakou with financing from the French Cooperation Agency. A similar project was also undertaken in Rwanda; a new program, PIGU (Infrastructure and Urban Management Project), is planned to assign addresses to informal settlements in Kigali (2005).
- Côte d’Ivoire limited its street addressing project to the installation of street signs in Abidjan, Abengourou, and San Pedro. Financing for San Pedro came from the national government and the European Union under the Coastal Towns Development Project (PDCC).
Overview of main experiences...

A sample of 21 cities representing 11.2 million people shows the following:

- Street addressing can be done in cities of all sizes. The sample includes cities ranging from 80,000 to 1.3 million inhabitants.
- The overall budget for these operations totals US$6.8 million, for an average of US$325,000 per project.
- In all, 84,000 street signs were installed and 1.2 million buildings were assigned an address, thus serving about 75% of all households.
- The average cost is US$0.6 per capita and US$5.7 per addressed doorway.

<table>
<thead>
<tr>
<th></th>
<th>Average</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cities in the sample</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Number of inhabitants (year 1 of addressing)</td>
<td>540,000</td>
<td>11,200,000</td>
</tr>
<tr>
<td>Surface area of cities (in ha)</td>
<td>4,200</td>
<td>88,000</td>
</tr>
<tr>
<td>Number of streets</td>
<td>2,000</td>
<td>42,000</td>
</tr>
<tr>
<td>Number of intersections</td>
<td>3,400</td>
<td>72,000</td>
</tr>
<tr>
<td>Number of street signs</td>
<td>4,000</td>
<td>84,000</td>
</tr>
<tr>
<td>Number of doorways addressed</td>
<td>57,000</td>
<td>1,200,000</td>
</tr>
<tr>
<td>Percentage of streets named</td>
<td>8%</td>
<td></td>
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<tr>
<td>Cost of equipping addressing unit</td>
<td>US$35,000</td>
<td></td>
</tr>
<tr>
<td>Cost of operations</td>
<td>US$325,000</td>
<td>US$6,800,000</td>
</tr>
<tr>
<td>Annual municipal budget</td>
<td>US$2,600,000</td>
<td>US$54,000,000</td>
</tr>
<tr>
<td>Number of streets/ha</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Number of intersections/ha</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>Number of signs/intersection</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td>Cost per doorway addressed</td>
<td>US$5.7</td>
<td></td>
</tr>
<tr>
<td>Cost per capita</td>
<td>US$0.6</td>
<td></td>
</tr>
<tr>
<td>Average municipal budget/capita</td>
<td>US$4.8</td>
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Why is it necessary?

Street addressing has several objectives:

(a) For the public, it makes the city more “user-friendly” by
   - Improving the system of street coordinates to enable people to get around the city more easily,
   - Facilitating the delivery of emergency health, fire, and police services, and
   - Locating urban facilities

(b) For local governments: it increases municipal revenues and improves urban management through the use of:
   - Tools for planning and managing municipal services by technical departments: the identification of public assets (street system, facilities, their length, number, and condition) allows a monitoring system to be put in place to assist with urban planning and programming of investments;
   - Tools to improve local tax collection: using information gathered by street addressing initiatives, it is possible to locate and compile a register if taxable individuals or businesses and thereby more accurately determine the tax base.

(c) For the private sector: it enables utility concessionaires to manage their networks more effectively. In fact, street addressing helps water, electricity, and telecommunications concessionaires to maintain their networks and collect fees.
Street Addressing has many applications

1. Street addressing and civic identity
2. Street addressing and urban information
3. Street addressing and support to municipal services
4. Street addressing and local taxation
5. Street addressing and land management
6. Street addressing and slum upgrading
7. Street addressing and concessionary services
8. Street addressing and economic development
Street Addressing Applications

1. **Street addressing and civic identity:**
Street addressing is one of many requirements that will help a city achieve social integration – it is a technical requirement for transforming a city from an informal urban space to a civic community.

2. **Street addressing and urban information:**
Through its surveys and spatial identification of locations, street addressing offers an exceptional opportunity to gather baseline information on a city. It is advisable to use an address management software that incorporates the standard functions of a database and the functions designed to handle spatial dimensions of the data. This can evolve later on into a GIS that can be coordinated with other urban management tools.
Street Addressing Applications...

3. **Street addressing and support to municipal services:**

   - **Street maintenance:** Street addressing assists in a) the identification of the location; b) the recording of features of each street. These data have been used in some cases (i.e. Guinea – Conakry) to identify and implement annual maintenance programs.

   - **Household waste collection:** Again, Conakry provides an eloquent example with the delineation of waste collection zones and routes.

   - **Inventory of municipal buildings and assets:** Few municipalities have an awareness of the extent of their assets. An initial inventory can be conducted during the first street addressing survey in order to identify the layout of assets to which ownership status, property value, and estimated cost of upkeep can be added.

   - **An aid to investment planning:** Street addressing provides information on population, infrastructure and services in each neighborhood which has proved to be very useful for a) needs assessment and b) identification of investment priorities. In Senegal, Guinea, Mauritania, Niger, Cameroon, Rwanda, and other countries, street addressing has been instrumental in the urban audits leading to municipal contracts.
4. **Street addressing and Local Taxation:**

**Street Addressing:** An opportunity to re-examine the municipal taxation system on several fronts:

- Improve knowledge of tax base and fiscal registers.
  - In Senegal, for example, street addressing has been used to reconcile address directories and taxpayer rolls in order to create a tax register that includes both taxpayer rolls and address information.
  - Assess the performance of tax enrollment and collection operations for business taxes and license fees and for property tax (list of names of taxpayers surveyed, amounts assessed, and so forth);
  - Close the information gap between the address directory and existing tax rolls for commercial licenses and fees and/or property tax (assuming that the two can be compared quickly, either through the use of cadastral or other references used in drawing up the subdivision plans, or by randomly adding names already on the tax rolls to the address directory);
  - Include address information on tax rolls and assessment notices;
  - Locate addresses not surveyed (businesses, dwellings, mixed-use properties);
  - Conduct additional field surveys;
  - Create a register of all potential taxpayers;
  - Determine tax amounts and create rolls or registers for collection of advance payment.
Simplify the local taxation system, in particular the property tax

Property tax produces little revenues due to the following reasons:

- No real political will to enforce it
- Central tax departments have little incentives to collect a tax that devolves to the municipal level
- Tax exemptions have been overriding policy, preventing any substantial revenue increase
- Difficult to use ownership as the basis for direct property taxation when titles are issued sparingly and most people have no land titles.

To overcome these problems:

- Municipalities have sought to simplify procedures and move away from reliance on a tax based on property valuation.

- Basing the property taxation system on occupancy rather than on ownership delinks the tax from the tenure status and moves it toward the sphere of consumption of urban services. Such is the case of the residence tax in Burkina Faso.

- This involves a shift in tools and a clarification in the use of tools – cadastre and street addressing.
5. **Street addressing and Land Management:** In a current context of cumbersome land titling procedures, multiple claims on land and overwhelming informal urbanization, street addressing provides an opportunity to locate and monitor what is happening on the ground and should be the first activity to be undertaken by local governments.
# Cadastre and Street Addressing: A Comparison

<table>
<thead>
<tr>
<th>Cadastre</th>
<th>Street Addressing</th>
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<tbody>
<tr>
<td><strong>Definition</strong></td>
<td>A general inventory of improved and unimproved land in a municipal territory, with an individual listing of their physical composition, using a planimetric plot representation, their economic use (yield), and their ownership, to provide the government with a sufficiently precise estimate to equitably apportion taxes on the landholding.</td>
</tr>
<tr>
<td><strong>System of coordinates</strong></td>
<td>A method for public identification of streets (and related urban fixtures) and properties that makes it possible to locate buildings in a city through the use of identifying markers, the planimetric representation of blocks of houses, and an address directory.</td>
</tr>
<tr>
<td><strong>Streets/public space plots</strong></td>
<td>Street addressing specifies an address according to street name, and therefore all streets and other public spaces are identified. Street addressing identifies doorways rather than plots.</td>
</tr>
<tr>
<td><strong>Urban fixtures</strong></td>
<td>Street addressing identifies the location of urban fixtures and assigns them an address. This task is not carried out systematically during the initial intervention phase.</td>
</tr>
<tr>
<td><strong>Representation in map form</strong></td>
<td>Street addressing establishes a city map on a scale of 1:10,000 that shows street names and/or numbers, numbers of doorways of some buildings, address subdivisions, utilities. This document is widely distributed to government offices and the general public.</td>
</tr>
<tr>
<td><strong>Type of map</strong></td>
<td>A record of occupants, lot description and the associated land rights, drawn up in conjunction with the map.</td>
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<tr>
<td><strong>Representation on the ground</strong></td>
<td>An address directory contains a limited amount of information, including street identification, building number, economic use (residential or business activity), and perhaps cadastral reference and water and electric meter numbers.</td>
</tr>
<tr>
<td><strong>Directory/register</strong></td>
<td>(Table continues on the following page.)</td>
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<tr>
<td>Cadastre</td>
<td>Street addressing</td>
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<tr>
<td><strong>Registration of ownership</strong></td>
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<tr>
<td>A cadastre does not systematically guarantee ownership rights (for example, a fiscal cadastre).</td>
<td></td>
</tr>
<tr>
<td><strong>Information provided about lots and buildings</strong></td>
<td><strong>Economic use</strong></td>
</tr>
<tr>
<td>A cadastre does not indicate economic use, though it provides information that could help determine the property value.</td>
<td><strong>Physical composition</strong></td>
</tr>
<tr>
<td>A cadastre provides exact descriptions, such as surface area, apartment number, and property value.</td>
<td><strong>Ownership</strong></td>
</tr>
<tr>
<td>A cadastre indicates the name(s) of the owner(s) and/or rightful claimants.</td>
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<tr>
<td><strong>Implementation</strong></td>
<td></td>
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<tr>
<td>A cadastre takes years to implement. It is updated regularly, primarily for changes of ownership. (France’s cadastre has been redone three times.)</td>
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<tr>
<td><strong>Tax application</strong></td>
<td></td>
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<tr>
<td>A cadastre does not necessarily result in a tax application, but in most cases it is useful for that purpose.</td>
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<tr>
<td><strong>Cost</strong></td>
<td></td>
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<tr>
<td>The cost of implementing a nationwide cadastre is difficult to estimate, but some World Bank projects indicate a cost of about $100 million.</td>
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<td><strong>Staff</strong></td>
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<tr>
<td>A large and highly qualified staff is needed to implement and maintain a cadastre on a long-term basis.</td>
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Street Addressing Applications...

6. **Street addressing and Slum Upgrading:**
In the context described above, cadastral registration generally covers less than 10% of the population while urban areas continue to grow in an essentially informal way – street addressing can be a feasible option to locate and monitor occupancy in informal settlements.

7. **Street addressing and Concessionary Services:**
When utility concessionaries in urban areas take part early on in street addressing programs, the results are often very positive in terms of information sharing, billing and network maintenance. When it comes to postal services, after some hesitation due to the strong implementation of P.O. Box, there is a renewed interest with private express mail delivery services – Mozambique has gone a long way on this application.

8. **Street addressing and Economic Development:**
This is a new frontier. The address directory provides important information on formal and informal economic operators. The economic database of Maputo (BDE) has been a model with the registration of 9000 companies and business activities.
To Learn More:
World Bank Publication
WBIUR has developed an e-learning program based on the book on Street Addressing and City Management. Will be available in English, French and Spanish.

For additional information, contact:
Catherine Farvacque-Vitkovic (Cfarvacque@worldbank.org)
or Sabine Palmreuther (Spalmreuther@worldbank.org)

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