

# From Elitist Standards to Basic Needs – Diversified Strategies to Land Registration Serving Poverty Alleviation Objectives<sup>1</sup>

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**Key words:** Land registration, tenure security, poverty alleviation, urban space, public land management, administrative boundaries, decentral land administration, basic information systems, small area statistics.

## SUMMARY

Land surveyors are more used to deal with wealth than with poverty. In a world, which is rapidly urbanising with urban poor representing about 50% in developing countries, new models of establishing tenure security are called for. The paper presents a diversified approach to land registration based on some key topics:

- From illegality to formal tenure;
- From government to governance;
- Urban segregation and urban upgrading;
- Management of public land and public space;
- Definition of administrative and community boundaries;
- Local land administration and basic information at community level.

While the paper argues for more differentiated approaches to land tenure regularisation, some common denominators of actions underpinning poverty alleviation strategies, are also discussed, e.g.:

- Decentralisation and deregulation;
- Safeguarding and upgrading public space;
- Settlement of administrative and community boundaries;
- Registering and managing public land and common land resources;
- Establishment of basic information accessible and open for the general public.
- Incremental improvements of tenure security in informal areas, especially slums;

Titling programmes have so far focused on supporting the land market, while the poor also needs protection against the market forces through appropriate public regulation.

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<sup>1</sup> The author owes special thanks to Drs. J.C. (Johan) de Meijere, Assistant Professor, ITC, the Netherlands, for his valuable contributions and comments.

# **From Elitist Standards to Basic Needs - Diversified Strategies to Land Registration serving Poverty Alleviation Objectives<sup>2</sup>**

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## **1. THE URBAN POVERTY CHALLENGE**

Land surveyors are more used to deal with wealth than with poverty. We have highly developed methods for cadastres, land registration and physical planning, which function well in cases of a certain level of stability, public infrastructure and economic development. These land registration and management strategies are focused on regulating and registering individual properties through legal instruments implemented by the public administration.

These well-known strategies cannot cope with the fast urban growth taking place all over the world, where especially the poorer countries are faced with huge and expanding slum areas and an urban poverty, which can be even more humanly degrading than rural poverty.

The world is urbanising rapidly, and so is poverty. Urban poverty statistics vary, according to how poverty is defined. UN-Habitat reckons that the urban poor now represent 49% of the urban population in developing countries, and number about 1.1 billion globally.

Until recently land surveyors were mostly engaged in rural land reforms, due to the previous development focus on rural areas. The challenges of urban poverty differ in many ways from a rural setting in respect to land and property. Inhabitants in urban areas depend less on natural resources (land) and more on cash income, and housing plays a key role as an economic resource, e.g., as a base for income generation activities (Satterthwaite, 2000).

Traditional planning and land supply systems have already been proven inadequate with the rise of a slum area, and it is necessary to reconsider how to contribute to improving tenure security and living conditions for the poor under such circumstances. Issuing a title to a person in a slum area certifying that he/she barely owns anything may not be the best way to spend scarce resources for the purpose of alleviating poverty.

This paper takes the form of an essay and intends to review and present some ideas, rather than strive at a systematic analysis of a vast field.

## **2. FROM ILLEGALITY TO FORMAL TENURE**

The importance of land registration has been argued strongly by Hernando de Soto (1986), who has been highly successful in attracting attention to the cost of informality and the

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importance of transforming informal tenure into formal tenure and thereby including the assets into the formal economy.

Urban poverty is so complex, that it will not be overcome by a single type of intervention such as e.g., formal titling. Irrespective of the expected positive impact of an orderly land administration system, it has been shown that titling programmes do not necessarily provide the expected increase in investments and economic growth for the urban poor, but there has been found a correlation between titling and physical consolidation of the constructions in recently formalised areas (Kagawa, 2001).

Some studies indicate that the land market is functioning despite a lack of formality. A study of informal urban land transactions in Accra, Ghana, by Antwi (2002) showed that informal transactions work remarkably well and obey fundamental economic laws of supply and demand. Antwi writes: *“Formal documentation and registration of interests in land, as they operate in Accra, are having no impact on the market, at least, to the extent that price conveys information on the operation of the market. This calls for a comprehensive appraisal of the title documentation regimes. Pertinent issues relate to questions as to why purchasers are not registering their interests and/or why it has been implausible to use government fiat to coerce them into doing so.”*

Whether registered or not, land in an urban environment is converted from being an asset based on its use value to being a market asset, and in that way also an object of speculation making it even more difficult for the poor to access in a legal way.

Considering tenure security as identical with titling could be an oversimplification. Payne (2000) argues that titling is not always necessary to provide secure tenure, and he describes the degree of informality of tenure, as a continuum of categories from complete illegality to formal tenure, a pattern found in many cities:

- Pavement dweller
- Squatter tenant
- Newly legalised freeholder of squatter house or plot
- Tenant in unauthorised subdivision
- Squatter ‘owner’ - regularised
- Owner - unauthorised subdivision
- Legal owner - unauthorised construction
- Tenant with contract
- Lease-holder
- Free-holder.

Payne demonstrates that the provision of full, formal tenure status to informal settlements raises their commercial value and can therefore actually reduce tenure security for the most vulnerable social groups, such as squatter tenants. Entry into a slum area and informal tenure arrangements may be the only access to urban residential areas, which the urban poor can afford. Therefore, there has to be applied caution in introducing major tenure reforms in order not to harm the most vulnerable groups, according to Payne (2000):

*“A starting point may therefore be to regard every step along the continuum from complete illegality to formal tenure and full property rights as a move in the right direction, to be incrementally. This would minimise market distortion and the risk of undesirable social consequences.”*

It also has to be considered, that the titling of nano-plots in slum areas would stall all future options for a redesign. While the concept of incremental improvements is clear, an implementation of such upgrading will depend on the specific local conditions.

An area of potential conflict in land tenure is that between renters and owners, ref. to Schilderman, Lowe, 2002:

*"Rental housing is on the increase in the towns and cities of the Third World. It is exceeding 50% already in many urban areas, and has reached close to 90% in many of the low-income settlements in Kenya where ITDG (Intermediate Technology Development Group) is working. Most of the time, renters are looking for affordable housing, whilst owners are after maximum profits. In extreme cases, investments in shacks in slum areas of Nairobi are repaid within a mere 6 months."*

This indicates that land titling would not suffice for providing tenure security, but protection of tenants is perhaps even more critical to protecting vulnerable groups from exploitation. The urban poor need some form of regulation, but mostly of a very different kind than what is in force in most countries.

### **3. SEGREGATION OF SPACE – AN URBAN POVERTY CHALLENGE**

It is predominantly the rich who have been able to benefit from current models of land registration in developing countries. Moreover, these properties tend to be segregated in space from the poorer sections of properties.

The tendency is clear, that the properties of the rich tend to be registered and mapped, and the rich tend to be able to defend their rights within a(ny) given system. Often the systems are designed so that the rich pay relatively low taxes, or taxes may be levied only on land in actual use, with the effect that land bought for investment purposes (not in use) remain untaxed, whereby speculation is indirectly subsidized. Middle class properties may or may not be registered, and a continuum of different de facto conditions may be found both in respect to formality, market value and taxation. Tenure regularisation reforms may thus be of particular advantage to the middle class, which will have the resources to take advantage of improved opportunities following the regularisation of tenure.

Poor people's homes on the other hand are typically fully outside the formal system, be it settlements on communal lands or squatter areas. In Mumbai, India, more than 50% of the population is slum dwellers but occupy only 8% of the land (Burra and Patel, 2001).

Furthermore, urban settlement patterns tend to be characterized by a strong segregation of neighbourhoods into different socio-economic classes, which aggravates the conditions and options for the poor. Unfortunately previous urban planning practices based on zoning may have added to undesirable socio-spatial segregation through its separation of land allocated for different activities and standards for residential and business purposes. For women

especially, it is important to have the option of developing home based enterprises, but zoning regulations may prohibit mixed land uses.

Whereas land use regulations intended to control the individual properties are inadequate, over-regulating and obsolete, there are other forces at play as well in the actual territorial exclusion of the poor. Allocation of open space, infrastructure and services are favouring the richer neighbourhoods and reinforcing the segregation. Irrespective that it is the formalised properties, which pay property taxes, it is desirable that property tax revenues should be spent to the betterment of the city as a whole.

It is a chicken and egg situation that planned developments have services and poorer areas not due to their informality. Utility companies tend to be more pragmatic than city governments in providing services irrespective of their formal status, if people pay.

It has been suggested that the allocation and functions of “public space” is a possible key to poverty alleviation (Lungo, Baires, 2001):

*“Moreover, beyond the changes on the relation between the urban land regulation and the reduction of socio-spatial segregation, we believe that a key question to build social sustainable cities it is necessary the recuperation of an integrating urban component by excellence: the public space.”*

Consequently land regulation programmes incorporating this aspect into their designs may better serve poverty alleviation objectives.

#### **4. FROM GOVERNMENT TO GOVERNANCE**

A precondition for a successful tenure reform is the sustainability of an institutional capacity to cope with large registration programmes and the services required. Shortcomings in institutional capacity have proven to be a limitation in tenure reforms, in particularly in the disadvantaged countries, and this does not seem to be overcome by education programmes within the foreseeable future. In this respect it is perhaps necessary to reconsider the basic role of government, changing the focus from government to governance recognizing that the State is but one of the three domains of governance, constituted by the loci of political (the State), economic (the private sector), and social power (the civil society).

The general characteristics of good governance are

- Participatory
- Sustainable
- Legitimate and acceptable to the people
- Operates by rule of law
- Accountable
- Enabling and facilitative
- Regulatory rather than controlling
- Service-oriented

If translating this into the sphere of land administration the role of the three different domains of governance has to be defined in relation to the functions of tenure security, land management, fiscal cadastre, public administration (Spatial Data Infrastructure), and facilitation of services and information to the wider public.

#### **4.1 The Role of the State**

The State plays the well known roles of regulator and provider of public services at national and local levels according to its specific political and administrative structure, with land administration being but one of the components within the general legal and administrative framework. The responsibilities between different branches of public administration may not always be sufficiently clear, neither in legal terms nor geographically.

In many developing countries the state has defined norms for land registration and for urban development in a complex institutional setting based on elitist norms, so that only the resourceful citizens can comply with them, with the result that only a minor part of the properties are within the formal system. When the majority of the potential beneficiaries of the public services, the largest part of the population, is outside the reach of the formal system, it can be argued that is not the people, but the State system, which is marginalized. Consequently, the basic role and functions of the State in land administration need to be redefined, if it is to retain its credibility.

Payne (2001) writes *“The extent to which anyone – even the middle and upper income groups - follows official guidelines is relatively limited and declining. Informal land and housing supply systems have proved capable of meeting demand, despite rapidly increasing populations and low incomes. Homelessness is almost unknown despite a doubling of urban populations and a failure of public and formal private sectors to meet this demand. It is government, not the poor, which is marginal to urban development processes. However, it remains to be seen if these informal supply systems will be able to cope when populations continue to increase and put even greater strain on water supply and sanitation networks, and transportation systems.”*

It is interesting to note that the Department for International Development, UK (DFID), has found, that in almost every country, administrative procedures are considered a more serious constraint on access to legal shelter than planning regulations or standards, in particular because these procedures require permissions from several different government departments or agencies, adding to the complexity and cost paid directly or indirectly. Simplification of procedures (one-stop-shops) combined with a modification of standards to a realistic level should consequently be a top priority in any land administration reform conforming with the principles of good governance.

Decentralisation is another strategy expected to better meet the needs of the poor by bringing the services closer to the beneficiaries. The physical distance to services is a barrier for its use by the poor especially, both due to the cost and to the knowledge required to use it. It can be mentioned that in some countries, where women’s movements are restricted, it may pose an even more difficult hindrance for women to reach distant offices.

Public land administration tends to be suffering under the dual tight requirements of lawyers and surveyors. Furthermore, this sector of public administration appears to represent some of the most “infected” areas in countries, where corruption is prevalent, due to the assets under their administration and the power of the decisions of public employees affecting these assets.

The World Bank has evaluated the results of its many land reform and land registration projects in developing countries (Byamugisha, Zakout, 2000) and came to the conclusion that land and real estate projects have performed better than non-land projects in terms of outcome and sustainability *but not as well in terms of institutional development*.

Foreign assistance projects have tended to be designed by the central land administration authorities often acting as a conservative factor. It may be discussed how other stakeholders can be getting more influence in the formulation and design of land administration reforms often funded by foreign aid, when decentralisation and new models are called for.

Reforming land institutions is not just a technical job; it is at the heart of achieving the necessary progress in respect to decentralisation, democratisation and poverty alleviation strategies.

## **5. GOVERNMENT AS A LAND OWNER**

What is often overseen in tenure reforms is the role of the national and local governments as the owner and caretaker of public lands for:

- development and use: urban development, construction, roads and infrastructure, recreation;
- restricted use: forest, rangeland
- Protection/ Prevention (non use): parks, conservation areas, hazard areas.

Another important function of land under public ownership is its potential use in a pool of land for structural development and an active land policy.

Public land is a common asset for society and a resource for future use for the benefit of present and coming generations, but unfortunately public land in developing countries tend to be

- Poorly registered and mapped, even having an unknown extent;
- Suffering under uncertain administrative organization (public administration or community);
- Poorly managed and subject to various forms of illegal use;
- Exposed to land grabbing practices by a powerful elite;

Governments should take on their responsibility as a landowner on equal footing with private owners. It may be a result of public land exempted from land tax, that the State has not cared to register its land, but the lack of registration of public land is one of the reasons why registers in many countries are so deficient.

One can wonder why most focus in land registration programmes has been devoted to titling of private lands, since public land is such an important asset of a nation and for future generations, whereby it may also constitute the most important asset of the poor. Land in the possession of private individuals is generally policed by these occupants, while public land may not be supervised so carefully or not at all. Apparent vacant land invites squatting, encroachment and other unauthorised use.

In some countries in transition poor or inaccessible records of the public land, or an unclear status, has acted as cover for powerful individuals exploiting the assets at their own advantage. It is a temptation for persons in power to dispose of public land for political purposes, or for reasons of personal gain, if the conditions permit so. Recording and managing public land is therefore at the heart of transparency requirements and good governance. It does not mean that the central State bureaucracy should necessarily manage the land as stated by Hiremath (2001): *"The process of state control over natural resources that started with the period of colonialism must be rolled back. Given the changed socio-economic circumstances and greater pressure on natural resources, new community control systems have to be established that are more highly integrated, scientifically sophisticated, equitable and sustainable"*.

Considering the importance of public land and space for poverty alleviation, it is argued here that tenure reforms need to focus on the registration of the public land as a top priority.

## **5.1 Management of Public Land and Public Spaces**

Sustainable development has been at the top of the international development agenda since the Stockholm-conference in 1972, so the international attention to environmental protection and sustainable development seen from the macro perspective is highly developed. Even school children are taught at school the importance of the environment, protection of the forest, clean water, etc.

Implementation of these policies in specific cases is another matter. The strength of the land administration system is tested locally in the power struggle between interests in the political and the economical domain.

In a local neighbourhood in an urban setting living space and public space makes the whole difference for the poorest. Rich people can afford creating their own living space, but for the poor people without means the public space provides opportunities for both recreation and for business development. Good streets function as economic veins in a city. Public health is a prime concern in slum area lacking the most basic conveniences.

Poverty priorities in planning and regulation of urban areas should therefore be focused on safeguarding and upgrading public space to create space for necessary infrastructure, in particular good roads, services and local activities (sports!), etc. such has been performed e.g., by a number of urban upgrading projects, see <http://www.worldbank.org/urban/upgrading/>.

Consequently intervention is required by the State to free some areas in cities from the operation of market forces and to create spaces for the urban poor.

It goes without saying that the need to reserve space for necessary infrastructure should be foreseen at an early stage, as the cost of installing it later is much higher. Consequently this points to a need to reserve and manage land for public space at an early stage in a land tenure regularisation programme to ensure a poverty alleviation effect.

## **5.2 Settlement of Administrative and Community Boundaries**

Administrative boundaries are usually important delimitations of land managed under different legal-administrative regimes, for which reason settlement of administrative boundaries through the whole hierarchy of administrative levels is an important step in land titling, as it is for a number of other reasons.

Often administrative boundaries are defined on small scale maps only and lack a definition in scale 1:1 in the field. The need to determine administrative boundaries in detail may have passed rather unnoticed, due to the abstraction level of the bureaucratic systems using names as a common reference without considering what is the precise territory or area required at the more practical levels of land administration and management. Increasing density of population and of intensity of use may also require a higher precision in definition of administrative boundaries than before. In cases where new communities have developed, their existence needs to be recognized.

The degree to which administrative boundaries may be blurred or undetermined may of course vary, but at least one of the following situations is likely to be encountered:

- Boundaries defined in the field and accepted by inhabitants, but not reflected in detailed maps or records;
- Fuzzy boundaries in the field e.g., due to interwoven communities, but (outdated) straight lines or abstract representation on maps;
- Disputes of a political character over the control of areas or communities;
- Disputes over land rights between neighbouring possessors /owners belonging to different communities, whether individual owners or communal land holders;
- Unclear territorial reference of public land;
- Insufficient spatial definition of boundary delimitations both in the field and on maps.

It is argued here that the settlement of administrative boundaries should be given top priority in a land registration regularisation process with a poverty alleviation focus for the following reasons:

### **5.2.1 Determining the Jurisdiction of Local Areas**

Settling the hierarchy of administrative boundaries permits local land matters within each administrative territory to be handled at the lowest possible level. Supposedly, this could lead

the way for less complexity, shorter processes and a more expedient resolution of local land questions within any given system.

In the case of policy changes towards decentralisation, the practical issue of boundaries will also need to be resolved to provide a clear territorial framework.

### 5.2.2 The Toughest Disputes Often Occur in Relation To Community Boundaries

In many cases, the toughest hurdles in clarification of rights are associated with community boundaries. Community boundaries may be disputed between neighbouring local communities, chiefs or politicians. Solving these disputes at first is likely to ease the clarification of rights at the lower hierarchical levels.

As an example, in the Bolivian lowlands settlements established in previous land reforms were designed with buffer areas between the different colonies, but these areas have later been infringed upon resulting in disputed community boundaries. Within communities a more stable situation generally prevails.

### 5.2.3 Customary Land Tenure Requirements

Customary land tenure may not only be a rural issue, but be a tenure regime in expanding urban or peri-urban areas, as well. In areas dominated by communal tenure systems, clarification of community boundaries and recognition of communities' rights to specific tracts of land resolves many problems, e.g. are means to limit encroachment by outsiders. Within community boundaries different options of land administration can be considered.

An example of the importance of the topic, a representative of the Ghana land commission has loosely estimated that if the stool land boundaries between the different stools would be settled, this would resolve 90% of all land disputes presented for the land commission.

There is a growing recognition that communal tenure systems may constitute a low-cost way of providing tenure security, which at the same time permits internal flexibility, if combined with accessible mechanisms for dispute resolution and enforcement (Deininger, Binswanger, 2000). In such cases land administration would not generally be concerned with the delimitation of parcels or properties within the community, but be restricted to settlement of community boundaries. Various strategies can be taken to the internal registration and keeping of land records. In the special case of titling projects of indigenous areas Hvalkof and Plant (2001) suggest that, "Bank project with specific land titling components should give priority to the demarcation and titling of indigenous areas before dealing with properties owned by non-indigenous individuals."

### 5.2.4 Needs for Well Defined Small Area Statistical Data and other Administrative Data

Censuses of population and housing are the most common (and often the only) source of small area statistics. The reliance on statistics is growing due to the increase of monitoring activities and the setting of the UN-Millennium goals for poverty alleviation. The reference

frame of statistics is administrative territories and locality boundaries divided into sub-areas (Enumeration Areas) for operational reasons.

The quality of statistics is dependent on many factors including a spatial full coverage (no over or under counting) within well defined boundaries during censuses and surveys. Upgrading the boundary definition in the field and on maps will therefore be contributing to better statistics.

Clearly recurrent statistical surveys within small areas are depending on a sufficiently accurate definition of areas, and statistical sample surveys also rely on exact targeting.

Tripathi (2001) states that in order to meeting the rising demand for data for smaller areas, census offices in most countries have decided to demarcate Enumeration Areas (EA's) based on the framework of villages, localities or other low-level social structures. "EA's delineated by this method would not cut across village or locality boundaries and therefore facilitate production and dissemination of census data for smaller areas."

In determining administrative and community boundaries census managers like surveyors recognize the importance of involvement of local leaders. Boundaries have to be agreed upon by the concerned parties through local negotiations and formalised procedures.

It can be concluded that settlement of administrative and community boundaries constitute a high priority task for multiple purposes.

## **6. LOCAL LAND TENURE REGULARISATION**

Within the framework defined above it is suggested to diagnose each area as a basis for determining the priorities of land registration or other types of intervention to support a poverty alleviation strategy. As a result of the diagnosis, a diversified approach could be adopted designed to the different needs and conditions of each type of area and community. As Deininger et al. (2001) writes:

*"It is now widely recognized that, universal provision of secure land rights within a country does not require uniformity of the legal arrangements. Instead, what is needed is that rights are transparent and can, within the existing physio-geographic, institutional, and legal environment, be enforced in a cost-effective manner."*

A natural component of a differentiated approach is systematic land registration of certain areas with high land values in support of economic development and permit generation of public funds to the potential benefit of the whole society, while in other areas other approaches may be used to secure tenure and to upgrade the areas.

In large, dense informal settlements with micro units, irregular and inter tangled structures a classical approach of geometric delineation and surveys of plots and a complex administrative procedure would be impossible or meaningless even from an operational or economic point of view.

While tenure security is important, it is also generally recognized, that poverty cannot be adequately addressed by single sector projects or programmes alone. In searching for suitable

models of alleviating poverty, land tenure specialists could take inspiration from development specialists recommending a livelihoods approach, which is a holistic view of the poor, their assets and vulnerabilities. As an example, the so-called Sustainable Livelihoods Framework (SLF) is an analytical model to look at livelihoods, which has been adopted by DFID and others. It has the advantage of putting poor people at the centre, and to build on what they have (assets) rather than on what they lack (needs). The whole process is built on participatory approaches, which do help to empower the poor.

In support of urban upgrading efforts it is suggested that orthophoto maps combined with disaggregated statistics and various types of local records on neighbourhood level could serve a number of planning and administrative functions and provide necessary information for decision makers, locally and centrally. These tools are low cost compared to the cost of titling programmes.

Within the range of different land regularisation options, a criteria for when individual titling is appropriate relates to the administrative set-up and future maintenance of the system. Titling programmes require simultaneous implementation of administrative structures for maintenance of the land registration system in order to be sustainable.

*“The requirements associated with maintenance of land registration systems have often been underestimated. As the economic incentives for such maintenance are related to land values, this would favor adoption of a differentiated approach that integrates rural and urban areas.” Deininger (2001).*

Alternatively, other models of land registration need to be developed based on the existing social organisation and community engagement in land registration activities based on principles of transparency, participation and social control. However, local solutions need to take advantage of modern technology, as well, as manual systems can be exploitative. In India a remarkable computerization system, "Bhoomi", has been implemented in the Karnataka State covering about 20 million agricultural land holdings and servicing farmers in about 27.000 villages through the existing administrative system of Village Accountants. Under the scheme computerized land record kiosks have been set up in 140 sub-district offices from where farmers can obtain land record copies and submit requests on-line. At these kiosks a second computer screen connected to the kiosk computer faces the clients, so that they can see the transaction being performed. The Bhoomi software is protected against tampering or hacking by using a bio-logon metrics system, which authenticates all users of the software on the basis of their fingerprint and therefore makes offices accountable for their decisions and actions. Among the recorded and tangible benefits of the system are significant savings in time and bribes spent by users (farmers), ref. to Lobo and Balakrishnan, 2002.

While keeping this vision in mind, land registration can also be regarded as an incremental activity, which over time can be upgraded in respect to format, detail and technology as the situation permits and requires. The initial establishment of basic data for planning and upgrading can be regarded as a first step facilitating further development of the land registration system.

## 7. BETTER INFORMATION AND THE ROLE OF STATISTICAL DATA

As it can be seen from the above, data and information services may represent more than mere technicalities through providing a vehicle for democratisation and qualitative improvements of systems far beyond the narrow scope of improved operational efficiency. Nevertheless, basic information and data is still in short supply or difficult to access in many developing countries.

The urgent needs for land information and land tenure security has been forcefully expressed by Dr. Anna Kajumulo Tibaijuka, Executive Director, United Nations Human Settlements Programme (UN-HABITAT) in her keynote Address to the XXII Congress of FIG, 2002, in which she argued that the ability of cities and other human settlements to manage their growth is very much dependent on availability of and access to adequate spatial or land information for planning, land development, infrastructure and services, environmental protection and tenure security. She called for simpler, more cost-effective and accessible survey and land information technologies and processes as aid to more effective planning, development, and management of towns and cities.

It can be noted that Dr. Tinaijuka mentioned different levels of application of land data: The individual property level (Level 1), and: The land information needed for effective planning, project implementation, slum upgrading and management of towns and cities (Level 2).

Fourie (Augustinus), 2001, has also pointed out that *"Given that most developing countries, and especially in sub-Saharan Africa, have very little cadastral coverage, the emphasis should be on the generation of more appropriate forms of large scale spatial information, rather than on the production of a few accurate cadastral parcels."*

Currently, the most important source of data for small geographic areas are censuses of population and housing, which hold the one virtue that no other socio-economic data set possesses: full, simultaneous coverage in a given country. National censuses are taken in nearly all countries every 10 years (or 5 years) and census taking entails census enumerators visiting all households and filling in questionnaires for every household and every person in the country through a huge field operation conducted in a short period. The latest rounds of censuses have taken place around year 2000. The housing questionnaires used in many countries contain interesting questions related to tenure of housing, and at times also related to the land holding.

It is expected that the need for land information at Level 2 may to a large extent be met through clever use of census data and future support to the statistical censuses and surveys. The resulting data will facilitate establishment of level 1 property data in two ways serving as:

- housing information and tenure indicators for use in physical planning, urban management, etc., and

- as input to development of a land registration system with different models depending on the status of the legal-institutional framework, the specific land tenure situation, and the needs in an area.

Information on demography on one side, and land and property information on the other has tended to be established in completely different environments, in different forms and through processes without interaction. The natural linkage between land and population is attracting growing attention with the scarcity of resources and massive urbanisation process taking place.

Location is a common link between population data and land data, and spatial data is in growing demand, stimulated by the technological advances. Censuses like cadastral works depend on availability of suitable base maps and the spatial definition of administrative areas, communities and sub-areas. The household or the house is a basic unit of censuses, and many census questionnaires have included questions on housing related to status of land tenure or property type. Cadastral data relate to a holding or property typically inhabited by one or more households.

Timing and costs are central issues of the suggested use of statistical data. The potential for increased efficiency and cost saving is illustrated by the fact that census operations cost in the order of 1-2 USD per inhabitant in the developing world, compared to land titling programmes with a price tag per title in the order USD 30. However, the data is of course different and complementary.

On this background of complementary challenges a convergence in interests appears to be emerging between the cadastre and statistics establishments, which can be argued roughly by the observations that both cadastral implementation and censuses relate to the household as a basic entity, and depend on administrative boundaries at all levels and sub-areas, and use of updated and detailed base maps suitable for field operations. The use of GIS will call for integration of all types of relevant data in a common reference system.

In cases of titling activities, one of the management challenges is to estimate the number and type of holdings in each area, as many costs and operational factors depend on these parameters. Therefore availability of data on housing and households disaggregated on the smallest spatial unit, EA's, well defined and enclosed within administrative territories, would facilitate planning of titling projects, help target intervention and reduce the risks of implementation. When planning diversified strategies of land tenure regularisation such data may underpin the setting of priorities.

To conclude, a basic level on information can be established by the use of small area statistics, and land tenure and housing indicators derived from the latest round of censuses of population and housing. Such GIS data digitised at census tract level (city blocks or smaller) is valuable as a support for physical planning, and the targeting of differentiated intervention and land tenure regularisation programmes in the first instance. Furthermore, using the network of smallest census units could constitute the basis for the establishment of structured

spatial, low-cost information for administrative purposes, and be improved gradually e.g., through introduction of locators - addresses. A good system of addresses is useful for identification of needs and provision of services in informal areas like in fully developed areas.

## 8. CONCLUSION

The challenge of finding better models of land tenure regularisation takes place in an environment of contrasts and conflicting interests condensed in space, but with actors living as on different planets: Rich and poor; Owners, tenants and squatters; Central and local administration; Market forces and public regulation; to mention a few dimensions of divergence.

While there is a need for more differentiated approaches, some common denominators of actions can also be identified, which underpin poverty alleviation strategies, e.g.:

- Decentralisation and deregulation;
- Safeguarding and upgrading public space;
- Settlement of administrative and community boundaries;
- Registering and managing public land and common land resources;
- Establishment of basic information accessible and open for the general public;
- Incremental improvements of tenure security in informal areas, especially slums.

Generally the biggest task is to reform the State and its agencies, so that laws, policies and programmes may better serve the interests of the poor. Titling programmes have so far focused on supporting the land market, while the poor also needs protection against the market forces through appropriate public regulation and public spaces.

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