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Brazil Land Assessment

Legalizing Brazil:
Brazil's New Push for Land Regularization, Land Governance and Land Management
What it Means for Affordable Housing, Urban Development and the Last Frontier of the Amazon

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Table of Contents

List of Figures

List of Maps

List of Text Boxes

List of Acronyms

AGU	Federal Attorney General's Office
ANOREG	Association of Notaries and Registras
APP	Areas of Permanent Preservation
BNDES	The Brazilian Development Bank
BNH	National Housing Bank
CAR	Rural Environmental Cadastre l
CCIR	Certificate of Registration of Rural Holding in Rural Cadastre (not in CAR)l
CDHU	Housing and Urban Development Company
CDRU	Concession of Real Rights of Use
CEHAP	State Company of Popular Dwellings
CLEP	Commission on Legal Empowerment of the Poor
CNIR	National Rural Properties Cadastre
COHAB-ST	Companhia Meteropolitana de Habitação de Santos/ Metropolitan Housing Company of Santos
CONAMA	Conselho Nacional do Meio Ambiente / National Environmental Council
CUEM	Concession of Special Use for Housing Purpose
DARF	Document of Federal Tax Collection
GPS	Global Positioning System
IBGE	Brazilian Institute for Geography and Statistics
ICT	Information and Communications Technology
INCRA	National Institute for Settlement and Land Reform
INSS	Social Security National Institute
IPTU	Imposto Predial e Territorial Urbano/ Urban Property Tax
IRIB	Instituto de Registro Imobiliário do Brasil / Brazilian Institute of Property Registration
ITD	Inheritance and Donation Tax
ITERPA	Instituto de Terras do Pará/ Land Institute of Pará
ITERRAS	State Land Institutes
MCMV	Minha Casa, Minha Vida
NFUR	National Forum for Urban Reform
NRPP	Natural Resources Policy Subprogram
OEMA	Orgãos Estaduais de Meio Ambiente/ State Environmental Agencies
PAC	Growth Acceleration Program
PEMAS	Municipal Strategic Plan for Precarious Settlements
PLHIS	Plano Local de Habitacao de Interesse Social/ Local Plan for Social Housingl
PPG7	Pilot Program to conserve the Brazilian Rain Forests
RFFSA	Rede Ferroviária Federal, Sociedade Anônima/ Federal Railroad Network
RL	Legal Reserve Areas
SEMA	Secretaria Especial do Meio *Ambiente* / Special Secretariat for the Environment

SIAPA	Patrimony Administration Integrated System
SLAPR	Environmental Licensing in Rural Properties System
SMF	Municipal Secretariat of Finance
SMHAB	Municipal Secretariat of Housing
SNCR	National System of Rural Cadastre
SNFHIS	National System for Social Housing Finance
SPIUNET	Management System for Real Estates of Special Use
SPU	Union's Patrimony Secretariat
SRF	Secretaria da Receita Federal/ Inland Revenue Service
TNC	The Nature Conservancy
ZEIS	Special Zones of Social Interest

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Executive Summary

The Context and Costs of Land Informality

The landscape of Brazil is changing: the country is consolidating its urbanization and its historic hinterlands are becoming better integrated with the domestic and global economy. With growth strong, a favorable economic forecast and poverty levels declining, the country is turning increasing public policy attention to addressing its housing problem, to planning for future growth in cities, and to converting the Amazon into an engine of green growth through agriculture and environmental services. But the legacy of accumulated problems in housing supply, urban planning, land governance and management of the Amazon region are daunting overhangs which the society has only begun to address. These include: a housing deficit of 5.6 million homes and half of the Amazon without clear property rights including clear definition of the public domain (PNAD 2008). Additional challenges are built into the future as cities and regions strive to maintain their growth and resource bases.

Informality begets many challenges related to the efficiency and functionality of urban spaces, sustainable land and natural resource management, productivity and natural disaster vulnerability. Unplanned settlements create severe logistical and taxation revenue constraints to the systematic expansion of infrastructure needed to increase welfare and productivity in cities. Globally, land use change associated with deforestation for agricultural expansion is the largest singular contributor to climate change. The generation and equitable distribution of rents from environmental services in a climate-conscious world is also badly hampered by informality in land use and property claims. Lack of recognized property rights is associated with more constrained access to credit thereby affecting the extent of productivity and welfare enhancing private investments in both urban and rural areas. Meanwhile, the vulnerability of human life and built-environment capital on the one hand and the location of informal settlements on the other are strongly linked.

Focus on Land Governance

This Report assesses progress in addressing these challenges from the perspective of land governance because it is the governance framework which produces both the incentives for individual and organizational behaviors as well as the labels (formal/informal) for the resulting outcomes, with implications for resource access. Policies, legislations, regulations, programs, organizational roles and relationships and implementation capacity come into focus. Land governance plays a fundamental role in housing creation, urban management, agricultural productivity and environmental outcomes, but despite the cross-cutting nature of these themes they are often only treated through narrow sectoral perspective. The Report is organized in four chapters.

Informal Land Use: Institutional Corollaries and Remedies

Chapter 1 examines three areas of the land governance framework that have been culpable in creating and sustaining informality and outlines remedial steps that have been taken in each case to date. The areas of governance addressed are the legal framework; land information systems; and the delivery mechanisms for land use planning and management.

The Legal Framework and Informality

With respect to the Legal Framework and Informality, three issues are particularly problematic. Firstly under the earlier constitutions and jurisprudence, strong preference was accorded to the private function of property thereby neglecting its broader social function especially in relation to the need of the poor to gain legitimate access to land. Secondly, the reconciliation of the environmental and social functions of property is institutionally complex with a distribution of environmental mandates across all tiers of government within the federation. Properties which do not comply with planning and environmental requirements cannot be registered and thus are not fully legal. Thirdly, burdensome regulatory standards and institutional protocols for formal subdivisions have inadvertently encouraged informal sub-divisions and settlements and made regularization difficult. Land use and subdivision regulations are identified as the principal cause of the low elasticity of housing supply and the widespread recourse to informal housing provision. Favelas have been daily formed in urban areas, now including peripheral areas which are often outside of municipal land use plans and the subject of rural cadasters in which land use control is minimal.

The Statute of Land of 1964 addressed the issue of the rights of occupants of rural public lands, filling a gap which the 1850 Land Law had left open for more than a century. It entitled those who occupy productively and continuously inhabited plots of public land for ten years without contestation, access to the means to acquire tenure rights. The regularization of possessions upon public lands was subsequently regulated further by Law 6,383/76 and by subsequent laws that broadened its application in the Amazon.

For urban land, regularization of informal settlements advanced with the approval of the 1988 Federal Constitution and the 2001 City Statute. The 1988 Constitution recognized the right of the residents to regularization in given situations, through special *usucapião* adverse possession rights in private areas, as well as mentioning the "concession of use" of public areas. Constitutional Amendment no. 26/2000 eventually included housing among the list of recognized social rights. The widely acclaimed 'City Statute' reinforced the new constitutional approach to urban property rights, namely: that the right to urban property is ensured provided that a social function is accomplished. This interpretation is determined by (municipal) urban and environmental legislation. Federal Law no. 11,977/2009, besides creating the *Minha Casa, Minha Vida* (MCMV) national housing program, created a framework for widespread land regularization and public land management, entrusting the Ministry of Cities with an important role.

Land Information Systems and Informality

In this institutional panorama, the land information system is a critical tool but Brazil's cadastral and registration base is quite weak. Available information suggests that 4.5 to 5.1 million landholdings are registered in INCRA's National System of Rural Cadastre (SNCR), comprising nearly 500 million hectares of agricultural lands. However, just two thirds of these parcels hold land titles and they comprise only 41% of the national territory. In spite of the set of rules and institutions which operate the local land governance and administration system, there is no legally defined cadaster which can be referenced and no requirement for municipalities to maintain one. What exist rather are technically deficient cadasters developed by each municipality for their multiple purposes, typically built up from subdivision maps. Adding to this complexity, to be formally possessed, property rights must be recorded in the notaries' land registries, a system of privately administered public registries (*cartorios*) which many times is incomplete and not linked to updated geographic information about the parcels. Moreover, federal government, states and municipalities also have their own land registries and they administrate their land assets with a certain degree of autonomy.

Changes are afoot. The creation and operation of the National Rural Properties Cadastre (CNIR) was clarified and updated in the 2001 Law on Cadaster which requires that all properties whose registration is not current re-register in order to reveal their physical and legal descriptions and show compliance with environmental requirements. This law also makes it obligatory for Registries of Immovable Property to exchange information with the cadastral system on a monthly basis. It also obligates the CNIR to work with the *Secretaria da Receita Federal* (SRF) in order to make the cadastral information compatible with other public information. Amid the growing sociopolitical concerns about the role and legitimacy of *cartórios*, the hereditary rule was abolished and public selection has been gradually introduced. There has also been a progressive "publicization" of the service in recent years.

Delivery Mechanisms (for land use planning and management) and Informality

Because of their proximity to the citizenry and their strong local mandate under decentralization rules, the 5000+ municipal governments are the actors in land governance and management in Brazil with arguably the most responsibility but they are under-resourced. Municipalities are responsible for urban territorial management and in rural areas they are the presence which articulates the actions of state and federal agencies. Municipal resources and capacity to administer land has traditionally been weak however, creating incentives for private and public rent-seeking within local property markets. Complimentary land management roles, regarding federal lands within municipal territory, are meant to be performed by the federal government through the Union's Patrimony Secretariat (SPU), however the SPU's limited presence in the States is a significant constraint on its ability to perform these functions.

With the approval of the City Statute, the legal framework for Brazilian cities was consolidated and land tenure assured as a guideline to the national urban development policy (Article 2, XIV, Law 10,257/2001) and Law 11,124/2005 (National System for Social Housing). In 2004, the mission of SPU was redesigned. The priority changed from a fundraising function to the execution of housing projects of social and environmental interest on federal lands. With this, in 2007 the government approved Law 11,481 (Law of Land Regularization of the Federal Patrimony) which reviewed the legal framework of federal patrimony, expanding the instruments to assure land tenure of federal lands. The review of the role of the SPU created new challenges for managing the Union's assets. Thus, the costly transfer of federal land is gradually being replaced by free transfer as a way of recognizing the claims of low-income families and traditional communities (*quilombolas, indigenas, ribeirinhos*) living informally in federal areas.

The Statute of Land mandated the land reform agency—the *Instituto Nacional de Colonizacao e Reform Agraria* (INCRA) created by Decree Nº 1.110, July 9, 1970—, to map and identify the public lands occupied, in order to regularize the conditions of use and possession of the land and to issue ownership titles. In this way INCRA came to be responsible for allocation and use of federal rural public lands, regularization of federal public lands and for the rural cadaster for the whole country in the form of the National System of Rural Cadastre (SNCR) which operates the National Rural Properties Cadastre (CNIR). State governments remained the owners of state public lands and maintained the responsibility for the allocation, regularization and management of state public lands through the state land agencies (*Institutos de Terras Estaduais*—ITERRAS). However, the enactment of the *Terra Legal* legislation in 2009, (Federal Law No. 11,952/2009) transferred the specific function of public land regularization to the Ministry of Agrarian Development for 4 years.

The City Statute provided legal support to those municipalities committed to confronting urban, social and environmental problems. Municipal government was given the power to determine the balance between individual and collective interests over the utilization of urban land through laws and several urban planning and management instruments and participatory mechanisms. New tools to intervene in the pattern and dynamics of formal and informal urban land markets were created. Among them are compulsory subdivision/edification/utilization orders, extra-fiscal use of local property tax progressively over time; expropriation-sanction with payment in titles of public debt; surface rights; preference rights for the municipality; onerous transfer of building rights; capture of surplus value; and the creation of special zones of social interest. The City Statute also improved on the legal order regarding the regularization of consolidated informal settlements in private and public urban areas, as it recognized legal instruments to enable the municipalities to promote land tenure regularization programs.

Making Urban Land Regularization Work - Implementation Experiences

Chapter 2 profiles informal land settlement in six urban municipalities and reviews their implementation experiences with regularization programs. In the municipalities selected for this study, anywhere from 20 to 50% of the population lack formal recognition of their land rights. Some live in favelas, other in informal/illegal subdivisions, others still in housing projects

in need of regularization. Some housing projects such as those built within the framework of *É Pra Morar* in João Pessoa were poorly planned and/or partially executed. This is also true for many informal/illegal subdivisions. Finally, public authorities, among them the Ministry of Cities, have invested a tremendous amount of resources to improve living conditions in many of these favelas and some are now better equipped than many housing projects or informal/illegal subdivisions.

Between Regularization and Resettlement

Urban land regularization is nearly always only a component of a broader intervention that combines massive investments in urban infrastructures and resettlement schemes. In João Pessoa, according to the Municipal Secretariat of Planning, it has been projected that 18 precarious settlements would need to be removed. In other words, at least 7.000 families would need to be resettled. These families are located along the rivers *Marés, Sanhauá, Mandacaru* in the Northwest part of the city, as well as along the *Jaguaribe* Rivers and next to the *Buraquinho* natural reserve. In Paranaguá, it was similarly estimated that 7.000 families would need to be resettled. Considering that between the early 1960s – when the National Housing Bank (BNH) was instituted – and the 1990s – when the first wave of subsidized housing production stopped in Paranaguá – about 4.000 housing units have been built, accommodating these 7.000 families means producing nearly twice has much housing units as those built over a period of 30 years. In Santos, 5.547 families have been targeted for resettlement. Even when families can be regularized in-situ, a substantial amount of resources needs to be allocated to urbanize the settlements as part of the process to get them formally approved and registered. Hence the importance of federal programs such as the Growth Acceleration Program (PAC) – to finance urban infrastructure development, or *Minha Casa Minha Vida,* for which the Ministry of Cities is responsible – to finance the construction of housing projects.

Land regularization processes

Depending on the land domain they occupy, the beneficiaries of land regularization programs may not receive the same type of rights, the allocation processes they go through may not be the same, and they may not engage the same actors or encounter the same delays. In addition, having formal rights also means having obligations, be they civil, fiscal or administrative. Depending on the domain they occupy and the type of rights they receive, beneficiaries will not have the same obligations. Finally, many informal occupants need to be resettled. In this case, the questions of land reallocation and the nature of the domain on which these families are resettled, and the type of rights they receive, matter as much as for families who are regularized *in situ.*

On whose land are informal settlements located?

Despite the importance of the domain occupied in the land regularization process, except for the settlements that are already targeted by land regularization programs, it is often difficult to know who actually owns the land. That said, the available information suggests that land regularization is closely related to the question public land administration, and more precisely federal and municipal land administration. In João Pessoa, based on a sample of 58 precarious settlements out of a total of 100, 64% of them are entirely located on the public

domain, 10% are partially on the public domain, while 26% are entirely on the private domain. In the insular part of Santos, 42% of the informal settlements are entirely on the public domain, 33% are partially on the public domain, and 25% are entirely on the private domain. In Paranaguá, it is by far the federal domain that is the most often occupied, with 76% of the informal settlements entirely or partially located on it, including 4.000 families in the *Ilha dos Valadares*

Regularizing the occupation of the private domain

When private land is occupied, it is first of all necessary to look at who formally owns the land and whether the occupation is the source of a conflict between landowners and occupants. This information is partly retained by the notaries. If the occupation is contested, and the parties have failed to reach an agreement, landowners may bring the case in front of the judiciary to retake possession of their rights or receive fair compensation. The problem is that it takes several years, often more than a decade, for the judiciary to settle a land dispute. There are however, many cases where the occupation is not contested. Firstly, many informal settlements are informal subdivisions and occupants have already acquired the land, but just did so informally. Secondly, even in the case of invasions, when land has been occupied for decades, the initial land owners, or their heirs, may have renounced their rights or already secured an informal agreement with the occupants. In other words, private land occupation is commonly peaceful and uncontested. In this case, families who are able to prove that they have occupied the land for more than 5 years may acquire it via usucaption. The pace of regularization is however dampened by the time and resources required to urbanize the area and the limited resources of families.

Regularizing the occupation of the federal domain

It was observed that within the framework of land regularization programs of social interest, the SPU is moving away from the emphyteutic leases, that has been traditionally its main allocation instrument, and is today increasingly favoring the allocating of concessions, particularly CDRU and CUEM. One of the key reasons for this is that the emphyteutic leases focused on land transfer to middle and high income households, given their burdensome nature. The CDRU and CUEM, on the other hand, are free concessions for social purposes provided by law to low-income families (up to 5 minimum wages). The CDRU may be applied on "land regularization for social interest, urbanization, industrialization, building, farming, sustainable use of wetlands, preservation of traditional communities and their livelihoods or other forms of social interest in urban areas" (art. 7 of Decree-law N. 271/1967, amended by Law 11,481/2007). CUEM is exclusively applied to regularize urban housing and is a right that can be claimed administratively or in court Brazilian authorities prefer CDRU and CUEM to full property rights also because the very limitations on formal transferability associated with these instruments is seen as a way of minimizing the re-concentration of land at the expense of the poor. The approach adopted by Brazilian authorities based on the allocation of concessions of rights of use – as opposed to full land ownership – is considered by many researchers and policymakers as exemplary. It is pragmatic and seems to build on many informal pre-existing systems.

A further observation from the cases is that in practically no situation was regularization a

finished business which suggests that regularization at scale is a programmatic undertaking with incremental steps towards affording settlers greater security of tenure and services.

Regularizing the occupation of the municipal domain

Although municipal governments have similar disposal mechanisms as federal government, it seems that municipal governments do not allocate emphyteutic leases anymore. Another notable difference with the regularization of the federal domain is that, from administrative and judicial points of view, the regularization of the municipal domain is simpler for the obvious reason that many decisions don't need to be approved by the central government. Local governments have various tenure arrangements that they can use to formalize the occupation of their domain from simple authorizations of use to full privatization. Municipalities generally prefer to allocate CDRU or CUEM. Municipal land concessions are generally allocated for a specific use and a defined term but usually with an allowance for renewal. When CDRU are of finite duration, the terms of the concession generally include a clause for renewal. When allocated to low income families, CDRU are free. Although CDRU are supposed to be recorded in the notaries' land registries, local governments and occupants often do not do so.

Mainstreaming the urban land regularization processes

There is no 'quick fix' to urban land informality, hence the law no. 11,977/2009 that enables public authorities to allocate a land possession document before the settlement is completely urbanized, is a very significant step to confer some benefits to households in the interim. Measures can be taken in order to ease land use and subdivision restrictions and facilitate the recognition of these informal settlements as formal neighborhoods. To fast track the land regularization processes, it is not only necessary to inject a huge amount of resources in infrastructure development and resettlement schemes, but also to mainstream land regularization procedures. In the case of the private domain, it means using alternative mechanisms to resolve conflicts and instituting credit lines and subsidies to help families acquire the land they occupy. It could also mean facilitating land acquisition by the public authorities. As for the regularization of the federal domain, it means speeding up delimitation and registration works, as well as going further in the decentralization process.

Regularizing the Amazon Region - Converging Land Regularization and Environmental Regulation Enforcement in Pará.

Chapter Three focuses on the land regularization program in Pará and its close linkages to environmental regulation enforcement. It shows that an integrated land tenure regularization and environmental compliance process can be accomplished at reasonable cost by leveraging municipal, state and federal resources within a single program and spatial data management system. It examines the pathways and practical land governance tools for achieving the inter-related goals of macro-scale planning, control of deforestation, land use intensification and the social stability of the land tenure system based on an integrated land regularization and environmental compliance program using an integrated data model and a municipal scanning technique.

Brazil's expanded set of policy tools and resources to address the land policy challenges of the Amazon have allowed major strides, especially in the reduction of rates of

deforestation. During the last five years in particular, an unprecedented series of steps has been taken to deepen land governance in the Amazon through a variety of programs including a significant expansion of the protected area system, macro zoning, environmental regulation enforcement and most recently, land regularization. But the remaining challenges of unplanned land use, lack of tenure security for lawful occupiers, unclear definitions of property rights for both public and private holders, lack of enforcement of environmental regulations, and the sustainable development of agrarian and forest-based extraction activities linked to global markets are daunting and spatially dispersed across a large area.

Achieving convergence of land regularization and environmental regulation: Federal legislation and State-level implementation

Two new programs in the land governance framework for the Amazon are contributing to Pará's process. Federal Law Nº 11,952/2009 set in motion a massive land tenure regularization program called *Terra Legal* (Legal Land) and influenced the update of State laws for state land regularization. Also in 2009, a series of measures were taken to compel landholders' compliance with the requirements to be registered in the rural environmental cadastre (*Cadastro Ambiental Rural*--CAR). These two systems of overlapping land information can be naturally interconnected into a single spatial data model. This spatial data model can be used for multiple planning, monitoring and enforcement purposes in addition to initial registration and recording of environmental compliance. Part of its monitoring functionality can include near real-time tracking of deforestation, as is being done in Mato Grosso.

Compliance by private landholders is at the heart of monitoring and control of forest cover by federal and state environmental agencies. Environmental licensing (introduced through The National Environment Policy Law 6,938 of 1981) in rural holdings was first applied by Mato Grosso State in the context of the Natural Resources Policy Subprogram (NRPP) of PPG7. The State´s Environmental Licensing in Rural Properties System (SLAPR) started to be implemented in 1999 and became operational in 2000, with the aims of environmental licensing and enforcement of the Brazilian Forest Code. SLAPR includes the identification of the holdings and their owners, of their boundaries, of Reserve Land (RL) and Areas of Permanent Preservation (APPs), as well as the licensing of agricultural or livestock activities.

Pará state land regularization processes: allocation and environmental registration

The first step in a land tenure regularization program carried out by ITERPA in Pará is to grant access to land and natural resources appropriation to different social segments and economic activities partly to minimize concentration of land in a few hands. Although the focus of the land tenure program is the small property, this. does not exclude the possibility to sell lands to medium and large land holders. The second step (or parallel action) is the inscription of the property in the rural environmental cadastre, whose main aim is to ensure compliance of private properties with the Forest Code.

Pará regularization criteria for occupied public lands

Although occupation is the most basic criterion for land tenure regularization on public lands, there is a hierarchy of claims. Indigenous groups' lands, even if occupied by third

parties cannot be regularized. Similarly, *quilombolas* communities' occupations, as long as they do not conflict with an indigenous interest, are second in the legal priority of ownership rights recognition. After these two groups, protected areas are third but people occupying such areas will only have their areas regularized if their occupation is compatible with the creation of a protected area. Fourth in the list of priorities are rural settlements and small properties. Next are medium and large occupations. Municipal donations take priority over land tenure regularization for agrarian purposes, as long as municipal requests do not conflict with conservation units, indigenous and quilombola's territories.

Compliance with environmental law regulations is managed at the same time as land regularization. Thus, the areas to be regularized must be registered, prior to the issuance of any title, in the CAR, under the authority of the State Environmental Agency (SEMA). In practice the documentation requirements for CAR are the same as for land regularization, up to the point of demonstrating environmentally compliant use and clarification of ownership.

Municipal land use scanning: an integrated methodology

The new approach developed by ITERPA in Pará in coordination with INCRA and SEMA, consists in scanning the whole municipal territory, identifying the land occupation using GPS regardless of the existence of property rights or compliance with environmental regulations. It is seen as a potential model in federal and state land tenure regularization programs throughout Brazilian Amazonia.

Improvements of the State's administrative apparatus

In order to implement the land tenure regularization program in Pará, ITERPA also had to bolster the State's bureaucratic apparatus. Federal Government is currently contracting private companies to geo-reference land holdings of approximately 100,000 properties in Brazilian Amazonia. In Pará these contracted companies began working with federal funds in 2010, as part of the *Terra Legal* Program, under which they identify and geo-reference land holdings in over 23.4 thousand square kilometers. To further expedite land tenure regularization, the Federal Government withdrew responsibility for Federal land regularization from INCRA through the *Terra Legal* program. To almost eliminate the real estate transaction risks caused by *grilagem* in Pará, integration with the public registries is also being pursued.

The Continuing Agenda

The limited reach of existing regularization programs

Despite the progressive legislative steps and the growing political momentum for regularization, the current reach of existing programs is very limited compared to the scale of the challenge. By the end of 2008, the land regularization programs coordinated by the Ministry of the Cities were targeting 2.239 urban informal settlements throughout the country. These amount to an estimated 1.4 million people of which 324.000 had already received a land document, a legal proof of the existence of their land rights. Given the lack of accurate data on

urban informality and urban land regularization programs, it is difficult to say precisely what share of the informal population these programs target. However, based on the Brazilian Institute for Geography and Statistics's (IBGE) estimates of informality, it is safe to say that these programs currently target only a minority of Brazil's informal settlements.

Generally speaking, the tenure policies implemented within the context of *favela* regularization have been more consistent, systematic and successful than those proposing the regularization of irregular/illegal *loteamentos*. On the whole, most regularization programs have also been relatively successful regarding the undertaking of upgrading works and service provision, but they have largely failed to promote land legalization, especially in those *favelas* occupying private land, given the high financial costs and legal and technical difficulties involved.

Adaptation of land laws and implementation capacity at decentralized levels of government remain weak

At the federated-states' level, few states have specific constitutional provisions on land use and development control and even fewer states have enacted urban legislation, including the adaptation of Federal Law no. 6,766. Sao Paulo's "*Cidade Legal*" program is potentially a model for the country in its support of municipal land regularization efforts. At the municipal level, few municipalities have formulated their own municipal organization laws such as determined by the 1988 Constitution. Some 1,450 municipalities have approved some form of a master plan but most of those municipalities that have approved urban legislation including the main capital cities, do not have the full capacity to monitor its enforcement.

Challenges and innovation in land tenure regularization

The backlog of informality is mammoth in scale given Brazil's advanced state of urbanization and large population. This implies that incremental approaches to regularization achieved through intermediate forms of land tenure now being adopted by government and modest infrastructure standards are particularly valid, as the alternative would postpone any benefits indefinitely for very large sections of the population. The approach adopted by the Brazilian public authorities based on the allocation of concessions of rights of use – as opposed to full land ownership – is considered by many researchers and policy makers as exemplary. It is pragmatic and appears to build on many informal pre-existing systems. Beyond pragmatism, however, Brazilian public authorities prefer CDRU and CUEM to full property rights also because the very limitations on formal transferability associated with these instruments is seen as a way of minimizing the re-concentration of land at the expense of the poor.

To a lesser extent, the new tenure policies have also considered the economic implications of regularization programs on the land market and on the financial capacity of the residents in informal settlements. They are supposed to make the socio-spatial integration of the areas and communities possible and afford permanence to the original occupiers of the land once it has been upgraded and regularized. Such policies also have a basic gender dimension, as they support the notion that regardless of their legal marital status, women should be given

priority treatment once the recognition of titles is promoted. As a rule, tenure titles have been issued on the names of both partners.

Reconciling Brown and Green Agendas

Large scale regularization if done responsibly is an opportunity to check the environmental degradation often associated with informal settlement or natural resource exploration by: (i) creating a stronger, more permanent connection between settlers and producers on the one hand and the land itself on the other; (ii)introducing hard and soft infrastructures that help mitigate environmental damage associated with settlement and production activities; and (iii) rationalizing land use to reduce areas of severe infringement through planning and relocation when necessary.

The City Statute has upheld in an exemplary fashion the proposal for folding urban and environmental rights into urban planning activities by municipalities. The idea of ensuring that the 'green agenda' and the 'brown agenda' of cities are compatible is, for example, one of the reasons why the City Statute has received broad international acclaim. Whether the City Statute eventually gives rise to laws and public policies and effective strategies and urban-environmental action programs will depend crucially on the actions undertaken by municipalities and Brazilian society - within and outside the state apparatus. In many cities a conflict is evident between the burgeoning occupation of areas of permanent preservation or other *non-edificandi* areas and the social right to housing. Both values are constitutionally protected, with both rooted in the concept of the social functions of property and the city.

It has proved equally difficult to deal with the issue of simplification of legal procedures, particularly those involving *collective usucaption* interventions. The problems, as well as the costs, have been substantial. It is clear that approval of collective rights makes no sense if the procedural channels for recognizing such rights are not addressed. Part of the problem stems from the lack of reconciliation between jurisdictional responsibilities and land conversion that is the substance of urbanization. INCRA is responsible for the rural cadaster, covering the rural part of a given municipality and the local government for the urban part. But the decision to convert rural lands into urban ones is the exclusive competency of the municipal executive and council.

More than skilful legal drafting, the emergence of an appropriately balanced planning regime requires a deeper policy dialogue in communities about substantive matters related to property values and land use. Although one of the principles of urban policy defined by the City Statute is participation by communities in the value increment generated by the urban planning process, in the majority of Brazilian cities, communities have not been involved in the debate about rising property prices generated by interventions by the public authorities, in spin-off value capture from public works and services that have increased the value of private property, or in the formulation of urban legislation targeted at altering the ways of using and occupying land.

Making new subdivisions easier and cheaper: a key to reducing future informality

An important gap still to be filled is the need for redefining the legal framework on urban land subdivision (Federal Law no. 6,766/1979 i.e. Lehman Law). An important bill of law on

these matters has been discussed by the National Congress for a decade. Although the bill has not been passed, an entire section on land regularization was appended to the Minha Casa, Minha Vida legislation and passed into law

Federal Law no. 6,766 established a set of technical criteria and obligations to be met by land developers deemed by many to be excessive and too costly for the affordability levels of the broader population. Although Federal Laws no. 9,785/1999 and no. 11,977/2009.dispensed with some of the original legal requirements, including the minimum percentage of public land, and introduced some mechanisms to better facilitate the regularization of irregular land subdivisions, more is needed to make a significant impact. One of the main claims supported by powerful groups of land developers concerns the need for the revised federal law to regulate the widespread practice of urban condominiums (gated communities), which had not been covered by Federal Law no. 6,766. Size definitions and obligations of developers are among the issues to be addressed with respect to these communities. Moreover, a comprehensive treatment of the subdivision process for all economic segments of the society is still lacking.

A Growing Land Administration Challenge

Urban land regularization in Brazil is not just about providing families with a formal land document, it is also about reforming land institutions so that they are accessible to all segments of society. In the municipalities selected, it was seen that it is often the public domain that is informally occupied, and more precisely the federal and the municipal domains. It is publicly recognized that the federal government always had difficulties administrating its domain. The SPU itself recognizes the need for putting an end to what it calls a long historical process of loss of control of the federal patrimony. All of this poses challenges to Brazil catching up with an emerging international trend over the last decade that looks more critically at public land assets and seeks to apply standards of economic efficiency and effective organization management. Considering these challenges and the Provisional Measure N. 335/2006 enacted by President Lula, Federal Law N. 11,481/2007, known as the Federal Land Regularization Law, was approved. The democratization of federal patrimony legislation under the management of SPU was the result of an inter-ministerial effort, in which the Ministries of Cities and Finance, among others, participated. Since then, the SPU has been successful in increasing the regularization of informal settlements and allocation of federal property to social housing, benefiting thousands of families. However, there still remains much to be done.

As regularization programs are executed, land administration needs are rapidly increasing but current public policies mainly focus on the initial step of granting recognition and do not address the issues of ongoing compliance with the terms of allocation or subsequent land transactions. Thousands more CDRU, CUEM and authorizations of occupation are going to be allocated by the federal government in the near future. If the state does not have the capacity to administer these rights, or if those who hold these rights do not have the capacity to use the system, it is likely that future land transactions will be informal. This challenge remains despite significant steps by federal government to mainstream land regularization procedures, as well as transfer and decentralize responsibilities.

Closing the last frontier

There is an increasing pressure from international and national markets and consumers to increase trade restrictions over products originating from environmentally and socially predatory activities and to securitize forest carbon. Pará's promotion of equitable and environmentally sound economic activities through its public policies is a direct response. In this scenario, the present federal and state land tenure regulation programs are leading to the convergence of land governance and environmental policy for an integrated territorial management for Brazilian Amazonia. The generation and maintenance of such a comprehensive land tenure database is a long-term project, which can only be accomplished with ample resources, careful planning, and the joint efforts of legislative, judicial and executive branches from all spheres as well as civil society. However, what exists thus far is mostly an effective methodology to orient this process and to promote an integrated territorial planning.

Remote sensing, GPS and ICT will expedite the achievement of a full multi-purpose cadastre and integrated data model. This is no longer prohibitively expensive or technically very difficult. In Brazil, state governments like those of Pará and Mato Grosso, assisted by NGOs like The Nature Conservancy and Imazon, are leading the innovation curve and taking the process to the municipal level. The systems like those which Pará and Mato Grosso are currently building will fully account for space, forest cover /inventory and resource inventory. This approach to land governance including real incentive-compliant enforcement can play a large role in the pre-emption of the race for speculative private rights in forested areas through helping to create viable markets for intensifying agricultural production, organizing payments for ecosystem services, and assisting credible public actions for land use enforcement.

A hopeful outlook

What is new and potentially transformative in land governance and administration in Brazil is that in the last few years, a number of measures have been introduced to regularize land tenure in the country on a large scale, with particular attention to urban settlements and the rural lands of the Amazon region. Furthermore, in the Amazon, federal authorities from a variety of agencies and mandates have begun to intervene in land governance and administration. The progress which is being made in this area during the last few years shows the way towards accelerating and consolidating these efforts at sufficient scale to change the adverse effects and put land governance and administration into the service of achieving the goals of low-cost housing, efficient land use and environmental sustainability. New innovations and experiences show promise for institutional coordination, better use of technology and "smart" flexibility in the application of planning and environmental regulation enforcement. Significant challenges remain at the policy and implementation levels to achieve these objectives.

Chapter1: Informal Land Use: Institutional Corollaries and Remedies

The landscape of Brazil is changing: the country is consolidating its urbanization and its historic hinterlands are becoming better integrated with the domestic and global economy. With growth strong, a favorable economic forecast and poverty levels declining, the country is turning increasing public policy attention to addressing its housing problem, to planning for future growth in cities, and to converting the Amazon into an engine of green growth through agriculture and environmental services. But the legacy of accumulated problems in housing supply, urban planning, land governance and management of the Amazon region are daunting overhangs which the society has only begun to address. These include: a housing deficit of 5.6 million homes and half of the Amazon without clear property rights including clear definition of the public domain. Additional challenges are built into the future as cities and regions strive to maintain their growth and resource bases.

Public authorities at all governmental levels and the Brazilian population are beginning to recognize that informality especially in urban areas, is no longer the exception, but increasingly the rule. Although the available data is imprecise – largely because of variability in the definition of what is meant by "informal settlement"- a growing body of literature produced on the subject suggests that, depending on the municipalities, it can be anywhere from 20% to more than 50% of the population who lives in the "informal city". Moreover, the Ministry of Cities has indicated that informal land development has also increased in middle-sized and even in small cities. Additionally, INCRA estimates that in 2003, there were 1.2 million occupied land possessions of public land in Brazil, comprising more than 66 million ha (or 16% of the area of rural landholdings). Most of them were located at the Legal Amazon Region.

Informality begets many challenges related to the efficiency and functionality of urban spaces, sustainable land and natural resource management, productivity and natural disaster vulnerability. Unplanned settlements create severe logistical and taxation revenue constraints to the systematic expansion of infrastructure needed to increase welfare and productivity in cities. Land use change associated with deforestation for agricultural expansion in an increasingly food scarce planet, much of which is happening informally, is the largest singular contributor to climate change. The generation and equitable distribution of rents from environmental services in a climate- conscious world is also badly hampered by informality in land use and property claims. Lack of recognized property rights is associated with more constrained access to credit thereby affecting the extent of productivity and welfare enhancing private investments in both urban and rural areas. Meanwhile, the devastating floods and associated mud-slides in Rio de Janeiro in 2010, once again exposed the linkage between the vulnerability of human life and built-environment capital on the one hand and the location of informal settlements on the other. In short, rampant informality in urban and rural land use contribute to production losses, welfare loses, taxations losses and natural disaster losses

This paper assesses progress in addressing these challenges from the perspective of land governance because it is the governance framework which produces both the incentives for individual and organisational behaviors as well as the labels (formal/informal) for the resulting outcomes, with implications for resource access. Policies, legislations, regulations, programs, organisational roles and relationships and implementation capacity come into focus. Land governance plays a fundamental role in housing creation, urban management, agricultural productivity and environmental outcomes, but despite the cross-cutting nature of these themes they are often only treated through narrow sectoral perspective.

This opening Chapter examines three areas of the land governance framework that have been culpable in creating and sustaining informality and outlines remedial steps that have been taken in each case to date. The areas of governance addressed are the legal framework; land information systems; and the delivery mechanisms for land use planning and management.

The Legal Framework and Informality

Issue 1: Under the earlier constitutions and jurisprudence, strong preference was accorded to the private function of property thereby neglecting its broader social function especially in relation to the need of the poor to gain legitimate access to land

A key issue in the legal framework is the tension between private property rights and the social function of land. The first Brazilian Civil Code was instituted in 1916 and stood until 2002. While the 1916 Civil Code guaranteed the right to property (article 524) and the right of government to expropriate private property for public purposes (article 590), it did not include any provisions regarding the social function of property. By contrast, the Constitution of 1988 and supporting legislations gave recognition to both these functions of property but their reconciliation is seldom straightforward.

Issue 2: Reconciliation of the environmental and social functions of property

Although local governments play an important role in defining what can, and can't, be done with land via Master Plans and corresponding local land use plans, other rules of the game, especially those related to preservation of the environment are a shared domain of Federal, state and municipal governments. For instance, at the federal level, the law no. 4,771/1965, also known as the Forestry Code, defines use restrictions for Areas of Permanent Preservation (APP). These are areas that play a significant role in preserving water resources, landscapes, geological stability, biodiversity, fauna and flora or soils. Municipalities define local land use restrictions, but they must observe those established at the federal and state levels.

The effective enforcement of a growing number of urban and environmental laws, especially at municipal level, has been seriously undermined not only by the perseverance of several political, financial and institutional factors, but also by longstanding legal

factors. In particular, properties which do not comply with planning and environmental requirements cannot be registered and thus are not fully legal. This creates a credibility gap and opportunities for rent seeking as areas are zoned for environmental protection, then occupied, and then granted amnesty and regularized.

Issue 3: Burdensome regulatory standards and institutional protocols for formal subdivisions have inadvertently encouraged informal sub-divisions and settlements and made regularization difficult

Land subdivisions norms are also defined by a set of Federal, State and Municipal laws. The federal law no. 6,766/1979 also known as the 1979 urban land subdivision law is at the top of this legal structure. It establishes that plots must be at least 125m2 and that 35% of the subdivided area must be reserved for common uses such as streets, places or public facilities. These norms can however be altered by state and municipal laws, so as they meet regional and local specificities. States and municipalities may decide to increase the minimum plot size for instance. Municipalities may also decide to reduce it but they will only be able to do so in areas that are identified in the local land use plan as being of "specific urbanization", or for the construction of social housing projects. In these particular cases, norms specific to the area are established by municipal law.

According to the law, whoever intends to subdivide, an urban area must first of all submit a subdivision project to the local government. After checking that the proposal observes the land use and subdivision restrictions, which may require consulting relevant federal and state agencies, the municipal government rejects or approves it. If approved, the project must be submitted within 180 days to the public notary that verifies, among other things, the land right situation of the area to be subdivided. If things are in order, the notary registers the subdivision project. A record is generated for each new plot and areas that have been reserved for common use become the property of the local government.

This is the *dejure* process through which urban subdivisions are formally created in Brazil, but in practice, things are different. Hence there are over 50,000 informal settlements of various types. Some of them were approved and registered but not executed as planned. Others were approved, they couldn't be– or were not – registered, but, still, they were executed, sometimes as planned, sometimes not. Other sub-divisions were submitted to the local authorities. Then, for one reason or another, they weren't approved, but were executed anyway. Finally, some subdivisions were simply never submitted for approval, because entrepreneurs didn't find it necessary, or simply because the area was occupied spontaneously. Though the most well known type of informal/illegal subdivision is the favela, there is in fact a huge array.

This situation indicates the presence of a wedge between effective demand and supply in housing markets. Studies have found that there is a very low price elasticity of housing supply in Brazil (between 0.2 and 0.5) demonstrating that the formal market is unable to respond to increases in demand. Land use and subdivision regulations are identified as the principal cause of

the low elasticity of housing supply and the widespread recourse to informal housing provision. Therefore, the kind of development which is economically attractive for low-income and lower-middle income groups is the *loteamento clandestino* or the *favela*. In the former case, the developer provides un-serviced or minimally serviced land for self-build housing outside of the land approval process, usually in an area still zoned as rural land use. The developer makes money on the sale of the land and the housing consumer obtains affordable access. The *favela* formation model is characterized by the occupation of public land within an urban boundary, and usually involving a space which was previously not built on, either because of environmental reasons (e.g., mountains, flood plains, garbage dumps), or because of legal problems with a given parcel of land.

Favelas have been daily formed in urban areas, now including peripheral areas which are often outside of municipal land use plans and the subject of rural cadasters in which land use control is minimal. Through these dynamics more and more people have had to have recourse to informal means of access to urban land and housing over the last two decades. In the main cities, even the acquisition of plots in illegal subdivisions has not been an affordable option to an increasingly larger number of people.

Land Information Systems and Informality

In this institutional panorama, the local land information system is a critical tool but Brazil's cadastral base is quite weak. Available information suggests that 4.5 to 5.1 million landholdings are registered in INCRA's National System of Rural Cadastre (SNCR), comprising nearly 500 million hectares of agricultural lands.[1] However, just two thirds of these parcels hold land titles and they comprise only 41% of the national territory. INCRA´s cadastre thus represents an incomplete mapping of the mosaic of rural land in any specific locality. It does not register the history of transactions associated with a given farm and it is not open to public access.[2] It has mainly been used as a database for imposition and collection of land property tax and a planning and implementation tool for the land reform and settlement programs.

In spite of the set of rules and institutions which operate the local land governance and administration system, there is no legally defined cadaster which can be referenced and no requirement for municipalities to maintain one. What exist rather are technical cadasters developed by each municipality for their multiple purposes, typically built up from subdivision maps. Consequently there is no parcel by parcel map which shows the geographical boundaries of every plot of land in a jurisdiction and which links the parcel depiction to information about rights and obligations.

[1] Comparatively, data from IBGE's Agrarian Census 2006 refer to 5.2 million rural producers and a total area of nearly 355 million hectares.

[2] SERPRO keeps a gate in the Web to the SNCR (https://portalsncr.serpro.gov.br/). The link cannot be accessed however.

To be formally possessed, property rights defined by the Civil Code [3] must be recorded in the notaries' land registries, a system of privately administered public registries (*cartorios*) which many times is not linked to updated geographic information about the parcels. The inscription of these rights in the notaries' land registries is mandatory and constitutes the ultimate proof of their existence. Since the adoption of the law no. 6,015/1973, or law on public registries, services relating to public registries are normalized. This law establishes a set of norms from the format of the registries, to the way they should be administrated, the order in which registration demands should be processed, and the work schedules public notaries should observe. Still, among the main systemic problems have been detected are: the high costs of registration; the erratic procedures adopted by the registration offices; and the nature of frequent practices on the part of these offices, which have long hindered the development of municipal and federated-state regularization programs.

The coverage of the notaries land registries is also incomplete as the states do not need to record their rights in the notaries' land registries, unless they purport to transfer them, or part of them, to other parties. Instead the federal government, states and municipalities also have their own land registries and they administrate their land assets with a certain degree of autonomy.

Moreover, even though they have the fundamental task of providing legal security to all sorts of socioeconomic relations, including property relations, many Brazilian *cartórios* have long been powerful remnants of a highly anachronistic political system based on clientelism and patronage. Until recently, *cartórios* were hereditary family businesses, often created by, and given away for, political reasons, or even as wedding presents by traditional politicians or by the military. Property registration *cartórios* were, and still are in parts of the country such as the rapidly growing Amazon region, historically instrumental in the configuration of Brazil's concentrated land structure, which has to no small part resulted from land invasion and illegal transactions, imprecision of land demarcation (made possible by the fact that there is in the country no tradition of land surveys), falsification of documents, and all sorts of bureaucratic tangles.

The actual technical cadasters themselves suffer from various deficiencies. These include out of date and non geo-referenced base mapping which gives rise to imprecision about the physical position of properties. There is lack of investment in cadastral updating and the registry and cadastre are not integrated. Additionally, there is a shortage of qualified staff in municipal governments to manage cadastral information.

This deficient cadastral system severely limits effective land management. Firstly it makes it difficult to efficiently and reliably distinguish public and private land thereby compromising public land management. The lack of comprehensive, up to date and legally determinative cadasters which can be used to determine rights also makes the informal or extra-legal occupation of lands (both public and private) difficult to prevent and complicates the collection

[3] The Civil Code of 1916 is regularly updated as recently as 2002.

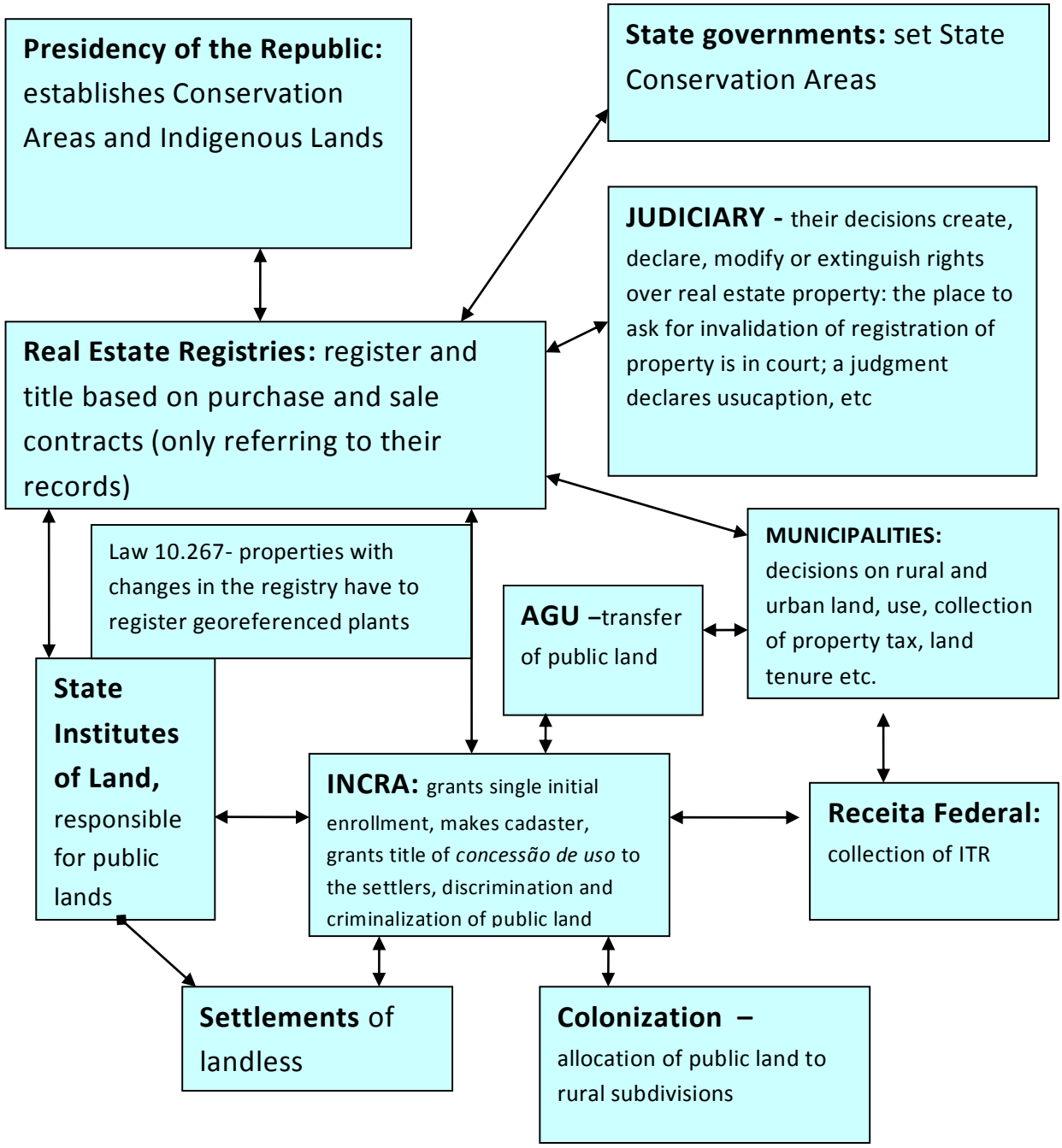
of property taxes and spatial planning. It also adversely affects the time and costs spent by firms to register transactions as evidenced by Brazil's relatively low place in the imperfectly matched, comparative Doing Business ranking of the World Bank Group.

Land planning and management delivery mechanisms and informality

Because of their proximity to the citizenry and their strong local mandate under decentralization rules, the 5000+ municipal governments (known as prefectures/ *prefeituras*) are the actors in land governance and management in Brazil with arguably the most responsibility. Municipalities are responsible for urban territorial management and in rural areas they are the presence which articulates the actions of state and federal agencies. There is a large body of rules for the prefecture controlling the process of urban planning and governing the implementation of fiscal instruments. Brazilian-prefectures participate in a complex system of rules and regulations for regulating land (see Figure 1 and Annex 1). In addition, there are regulatory instruments that may be used by municipalities for managing the distribution of land, including vacant lands. There are legal procedures governing the allocation of municipal land and commercial land transactions. Public policies for expropriation and settlement also are regulated by well-established federal law, but must be implemented in concert with municipal agencies.

Municipal resources and capacity to administer land has traditionally been weak however, creating incentives for private and public rent-seeking within local property markets. The problem is that there is a natural articulation between the establishment of rules which are partly fulfilled, and which allow high economic rents, and the lack of capacity of the State (particularly at the municipal level) to effectively regulate the use of land.

Figure 1 - Current Situation of Land Administration in Brazil



Source: Current legislation and REYDON, Bastiaan Philip "Mercados de terras no Brasil estrutura e dinâmica", 12/2006, ed. 1, MDA/NEAD, 2006.

The creation of protected areas falls into the executive branch jurisdiction, so the Presidency and the State Executive power do NOT need the assent of their respective Legislative. With regards to indigenous lands, they belong to the Union. Yet, natives are entitled to the enjoyment of natural wealth, with the exception of that underground. The recognition of their rights is given in order to maintain the dominance of the Union. This is why the tenure procedure is so unique, taking into account: anthropological studies, demarcation, and ratification. Thus, when recognizing indigenous land, it should not be referred to the Federative State.

As per the Real Estate Registries, they were meant to be the gateway into the Registration System, but there was no communication between the two. Until 2002, Real Estate Registries only had descriptive information, and then went on to demand for geo-referencing. In theory, Real Estate Registry records should only register any disposition of property rights that would observe the manner prescribed by law, such as: as a public deed of sale and purchase, formal sharing, etc..Yet, they record anything, anyway. It has improved somewhat in the capitals, but in most places the public service is still under private ownership.

The federal government also has responsibility and experience in managing real property assets through the Union's Patrimony Secretariat (SPU) attached to the Ministry of Planning, Budget and Administration. The SPU is responsible for managing a huge land portfolio[4], but it is not the only managing unit of Federal land, since most of the land plots are under INCRA administration**..** The federal government also regularly acquires land, and allocates or reallocates parts of its domain. For instance, following the extinction of the Federal Railway Company (RFFSA) in 2007, the federal government assumed all its assets and liabilities. Since then, the Ministry of Transportation, that is responsible for inventorying the assets of the RFFSA, systematically transfers to the SPU those that are non-operational so that it can sell them, allocate them for the construction of social housing projects or for the execution of land regularization programs of social interest, as well as rehabilitation programs for inner city areas and preservation of the memory of railway history in Brazil and associated public institutions.. This brought a huge new challenge for SPU, resulting in an unprecedented action under the Federal Government, in view of the volume of assets to be inspected, evaluated, regularized, incorporated and finally allocated by the agency for considering the specific vocation of each one. The diversity of these assets is considerable, involving, among others, vacant urban land, railway stations, warehouses and areas occupied by low-income households, mostly located in urban areas in the vicinity of railway lines. Besides the legal imperative, including the requirement to sell part of the assets to pay liabilities from RFFSA, the recognition that the incorporation of non-operating property of the extinct company will determine its (re)allocation

[4] According to the 1988 Federal Constitution, the federal government is entitled to land that is indispensable for the protection of national borders, fortifications, military constructions, federal communication infrastructures and environmental preservation. It also owns continental islands located close to national borders, oceanic beaches, oceanic islands – except those that host the seat of municipal governments, *terrenos de marinha*, *acrescidos de terrenos de marinha*[4] as well as the lands that were traditionally owned by native populations.

guides the work of the SPU.

The SPU's limited presence in the States is, however, a significant constraint on its ability to perform these functions. From 2003, there was significant institutional strengthening of the SPU by the hiring of new servants and the creation of units in the states of Acre, Amapá, Roraima, Rondônia and Tocantins, located in the Brazilian Amazon. As of February 2010, it was an agency of about 1.000 employees spread between its headquarters in Brasilia and 27 superintendencies, one in each state capital. For geographically large States, a single office carries many limitations especially with respect to the accessibility of the population to the SPU. The structure is still insufficient for the enormous size of federal assets in Brazil.

Addressing the Deficiencies in the Legislative Framework

- ***Rural Land:***

The Statute of Land of 1964 addressed the issue of the rights of occupants of rural public lands, filling a gap which the 1850 Land Law had left open for more than a century. It entitled those who occupy productively and continuously inhabited plots of public land for ten years without contestation, access to the means to acquire tenure rights[5].

The regularization of possessions upon public lands was subsequently regulated further by Law 6,383/76. Initially this applied to areas up to 100 ha. A change was introduced in this rule with respect to the Legal Amazon region by Law 8,666/93, with the maximum area for regularization increased to 500 ha. Later, Law 11,763/08 increased this limit still further to 1,500 ha.

- **Urban Land**

The discussion on the regularization of informal settlements advanced with the approval of the 1988 Federal Constitution. This recognized the right of the residents to regularization in given situations, through special *usucapiao* adverse possession rights in private areas, as well as mentioning the "concession of use" of public areas. Constitutional Amendment no. 26/2000 eventually included housing among the list of recognized social rights.

The 2001 Urban Policy Law: a pioneering new statute for Brazilian cities[6]

[5] The law also required that eligible occupannts extract from their and their families' work on the land, the conditions of their subsistence, social and economic sustainability.

[6] Recife was a pioneer in urban land tenure and formulation of urban policies in Brazil, with the Law of Land Use and Occupation. It acknowledged the rights to the regularization of the inhabitants of the oldest and most consolidated urban settlements (slums). The program of regularization of Recife reached its twentieth anniversary in 2007. It was a laboratory for a good part of the programs of the Ministry of Cities for urban land regularization. In the 1990s, many of the devices and instruments of the City Statute were inserted in chapters of urban policies in state constitutions and municipal organic laws, ensuring their progress by their inclusion in other regulations, until the law was voted.

Following the sociopolitical mobilization around urban issues throughout the 1990s, and especially due to the lobbying efforts of the National Forum for Urban Reform (NFUR), Brazil enacted the internationally acclaimed "City Statute" in 2001. Also known as Federal Law no. 10,257, it regulates the chapter on urban policy in the 1988 Constitution. Its international renown is a good example of how national governments can materialize the principles and proposals of UN-HABITAT's Global Campaigns on Good Governance and Secure Tenure for the urban poor. The potential impact of the new law on Brazil's urban land governance is enormous, once its possibilities are fully understood and its provisions effectively put into practice, which is now work-in-progress.

The City Statute has four main dimensions. Namely these are: a conceptual one, providing elements for the interpretation of the constitutional principle of the social functions of urban property and of the city; the regulation of new legal instruments for the construction of a different urban order by the municipalities, including the financing of urban development; the initiation of processes for the democratic management of cities; and the identification of legal instruments for the comprehensive regularization of informal settlements in both private and public urban areas.

In conceptual terms, the City Statute broke with the longstanding, individualistic tradition of civil law and set the basis of a new legal-political paradigm for urban land use and development control. It did this especially by reinforcing the new constitutional approach to urban property rights, namely: that the right to urban property is ensured provided that a social function is accomplished. This interpretation is determined by (municipal) urban and environmental legislation.

Both the City Statute and Provisional Measure no. 2,220 of 2001, consolidated and widened the legal order, especially by regulating the special concession of use for housing purposes, applicable to public land, as a subjective right of the residents, as well as by recognizing the possibility of collective utilization of all such legal instruments. The new federal laws strengthened the existing municipal regularization programs such as Favela-Bairro in Rio de Janeiro and Resolo in Sao Paulo. And while the new Civil Code of 2002 reiterated the right to private property (article 1228) it incorporated the idea of social and economic purposes of property (article 1228, paragraph 1) established by the various Constitutions enacted after 1916 and by several recent Federal laws.

Opening a new phase of urban land regularization: Federal Law 11,977/2009 and the main legal aspects of land regularization, titling and registration programs

Approved in 2009, Federal Law no. 11,977/2009, besides creating the *Minha Casa, Minha Vida* (MCMV) national housing program, created a framework for widespread land regularization and public land management. The main legal principle underlying social interest regularization policies is to guarantee – for pragmatic, financial, sociopolitical, and legal reasons – that the communities remain on the land they have occupied, naturally under better living and housing conditions, and that they have their land rights recognized. This does not mean that there are no specific cases where the removal of the communities is necessary, but,

should this happen the contemporary legal orientation determines that acceptable alternatives have to be offered and properly discussed with the affected residents. This progressive legal framework has broken with the longstanding tradition that initially rendered *favelas* and other informal settlements invisible – until recently, they were not even indicated on the maps and plans of the local authorities.

According to this growing legal tradition, regularization programs aim to promote, at once, both the security of tenure of the residents and the socio-spatial integration of the informal areas and their communities. In other words, it is not sufficient to simply legalize the settlements, and it is not sufficient to just upgrade them: these two dimensions of regularization policies need to be articulated, their full success also requiring the adoption of policies aimed at generating job creation and income opportunities for the long excluded communities. In urban contexts part of the new wave of innovation involves special treatment of certain areas with respect to planning legislation. In the Amazon, a new environmental cadaster is providing a different approach to environmental compliance for landholders.

Annex 2 gives a historical account of prior developments in the legal framework relating to both urban and rural lands.

Addressing Deficiencies in Land Information Systems

Amid the growing sociopolitical concerns about the role and legitimacy of *cartórios*, the hereditary rule was abolished and public selection has been gradually introduced. One of the national entities representing the registration offices – the Brazilian Institute of Property Registration (IRIB) – has led a process of modernization of *cartórios* and some related legal provisions such as the possibility of extra-judicially rectifying the terms of existing registrations which do not express physical realities. There has also been a progressive "publicization" of the service in recent years. However, more structural changes still face strong opposition. Among these are calls for the registration system to be totally redefined, including by its municipalization and replacement by the municipal land cadastres, thus questioning the very existence of private *cartórios*. Some bills of laws with this purpose have been discussed.

The creation and operation of the CNIR was clarified and updated in the Law on Cadaster, *Lei* No. 10,267/2001 and its regulations in Decree N. 4,449 (30/10/2002 which require that all properties whose registration is not current re-register in order to reveal their physical and legal descriptions and show compliance with environmental requirements. A survey of all parcels in the CNIR is required using the national coordinate system and conforming to the precise survey standards of INCRA (0.5m accuracy for boundaries). Once the parcel is registered by INCRA in the National Public Registry of Rural Properties, INCRA issues a cadastral certificate (*Certificado de Cadastro de Imóvel Rural*—CCIR). The CCIR is required for any type of land transaction. Possessors (*posseiros*) of land can be granted CCIRs and are also responsible for the rural land tax. This law also makes it obligatory for Registries of

Immovable Property to exchange information with the cadastral system on a monthly basis. It also obligates the CNIR to work with the *Secretaria da Receita Federal* (SRF) in order to make the cadastral information compatible with other public information.

Addressing Deficiencies in Delivery Mechanisms

The Statute of Land mandated the newly-formed land reform agency—the *Instituto Nacional de Colonizacao e Reform Agraria* (INCRA) to map and identify the public lands occupied, in order to regularize the conditions of use and possession of the land and to issue ownership titles. In this way INCRA came to be responsible for allocation and use of federal rural public lands, regularization of federal public lands and for the rural cadaster for the whole country in the form of the National System of Rural Cadastre (SNCR) which operates the National Rural Properties Cadastre (CNIR). State governments remained the owners of state public lands and maintained the responsibility for the allocation, regularization and management of state public lands through the state land agencies (*Institutos de Terras Estaduais*—ITERRAS). However, the enactment of the *Terra Legal*[7] legislation in 2009, (Federal Law No. 11,952/2009) transferred the specific function of public land regularization to the Ministry of Agrarian Development.

The City Statute provided legal support to those municipalities committed to confronting urban, social and environmental problems. Under this law it is the task of municipal governments to control the process of urban development through the formulation of territorial and land use policies in which the individual interests of landowners necessarily co-exist with other social, cultural and environmental interests of other groups and the city as a whole – in other words, a form of territorial legal responsibility. For this purpose, municipal government was given the power to determine this balance between individual and collective interests over the utilization of urban land through laws and several urban planning and management instruments.

In order to concretize and widen the scope for municipal action, the 2001 City Statute regulated the legal instruments created by the 1988 Federal Constitution, as well as created new ones. All these instruments are intended to be used in a selective as well as in a combined manner aiming not only to regulate the process of land use development, but especially to induce it according to a "concept of the city" to be expressed through the local master plan. All municipalities with more than 20,000 inhabitants, among other categories, were given a deadline of five years to create and approve their master plans.

Municipalities were given more tools to intervene in the pattern and dynamics of formal and informal urban land markets, especially those of a speculative nature, which have long brought about social exclusion and spatial segregation in Brazil. The new instruments include: compulsory subdivision/edification/utilization orders; extra-fiscal use of local property tax progressively over time; expropriation-sanction with payment in titles of public debt; surface

[7] *Terra Legal* is a federal program designed to work primarily on lands of the Union, but can act on state lands in the States where land management support is needed. Yet, the *Terra Legal* program did not assume the responsibilities of the state land entities' over their lands.

rights; preference rights for the municipality; onerous transfer of building rights; capture of surplus value; and the creation of special zones of social interest. In combination with traditional planning mechanisms such as zoning, subdivision and building rules, they open a range of possibilities for the construction of a new urban order which is potentially economically more efficient, politically fairer and more sensitive to the existing gamut of social and environmental questions.

Several mechanisms were emphasized to ensure the effective participation of citizens and associations in urban planning and management: public audiences, consultations, creation of councils, reports of environmental and neighborhood impact, popular initiatives for the proposal of urban laws, and above all the practices of the participatory budgeting process. Moreover, the new law also emphasized the importance of establishing new relations between the state, the private and the community sectors, especially through partnerships and urban/linkage operations to be promoted within a clearly defined legal-political and fiscal framework.

The City Statute also improved on the legal order regarding the regularization of consolidated informal settlements in private and public urban areas, as it recognized legal instruments to enable the municipalities to promote land tenure regularization programs. As well as regulating the constitutional institutes of special *usucapiao* (prescription) rights and concession of the real right to use (a form of leasehold), to be used in the regularization of informal settlements in, respectively, private and public land, the new law went one step further and admitted the collective utilization of such instruments. The section on the concession of special use for housing purposes, was vetoed by the then President Fernando Henrique Cardoso on legal, environmental and political grounds. However, again responding to pressure from the active mobilization of the NFUR, the Provisional Measure no. 2,220 was signed by the President on 4 September 2001, recognizing the subjective right (and not only the prerogative of the Public Authorities) of those occupying public land until that date, under certain circumstances, to be granted the concession of special use for housing purposes.

The Provisional Measure (which has all legal effects of an ordinary law) also established the conditions for the municipal authorities to promote the removal of the occupiers of unsuitable public land to more adequate areas. This is a measure of extreme social and political importance, but its application has required a concentrated legal, political and administrative effort on the part of the municipalities to respond to the existing situations in a legal manner that is compatible with other social and environmental interests.

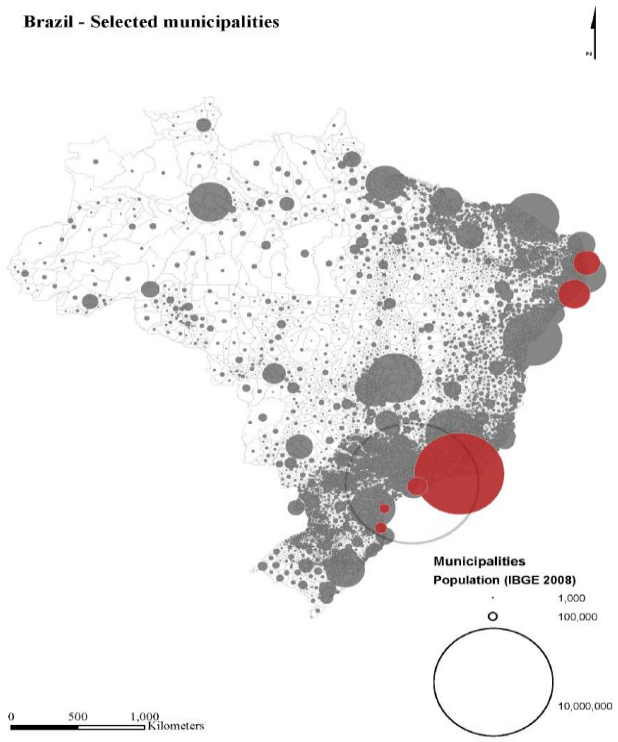
The City Statute has been complemented by important new federal laws enacted subsequently, namely those regulating public-private partnerships (2004) and inter-municipal consortia (2005). More recently, several federal laws were enacted in 2008 and 2009, aiming to facilitate the regularization of informal settlements, particularly those occupying federal land. There has also been a nationwide discussion on the proposed, thorough revision of the 1979 Federal Law, which governs the subdivision of urban land.

Chapter 2: Making Urban Land Regularization work - A Review of Implementation Experiences in Six Brazilian Municipalities

The Selected Municipalities

Six urban municipalities were selected for more careful study of informal settlement and regularization initiatives. Annex 3 describes the selection methodology. With 693.083 inhabitants, João Pessoa is the capital and largest city of the state of Paraíba, in the northeast region of Brazil. Located 350 km south of João Pessoa, Maceió is the capital of the state of Alagoas, with 924.143 inhabitants. 2.000 km further south, Rio de Janeiro is the capital of the state of the same name. With 6.161.047 inhabitants, it is Brazil's second largest city. 500 km southwest of Rio de Janeiro, and less than 100 km southeast of São Paulo, Santos is Brazil's largest port with a population of 417.518 inhabitants. Further south, about 450 km from Santos, Paranaguá is another major Brazilian port. With a population of 138.748 inhabitants, it is a medium municipality but the largest one of the coastal area of the state of Paraná. Finally, further south, at 250 km, in the state of Santa Catarina, Itajaí is also a port city with 169.927 inhabitants. Map 1 shows their location. These municipalities account for 4.5% of the population of Brazil but 24.3% of the population of municipalities located on the country's coastal area.

Map 1: Location of selected municipalities.



The different types of informal settlements and their location

In the municipalities selected for this study, we see that anywhere from 20 to 50% of the population lack formal recognition of their land rights (see Figure 2). Some live in favelas, other in informal/illegal subdivisions, others still in housing projects in need of regularization. Some housing projects such as those built within the framework of *É Pra* in João Pessoa were poorly planned and/or partially executed. This is also true for many informal/illegal subdivisions. Finally, public authorities have invested a tremendous amount of resources to improve living conditions in many of these favelas and some are now better equipped than many housing projects or informal/illegal subdivisions. More detailed descriptions of the informal settlement characteristics in the five cities are found in Annex 4.

Figure 2: Informal Settlement Characteristics in Case Study Municipalities

Location	Approx. Number of Informal Settle-ments	Estimated proportion of population living in informal settlements	Observable pattern in Informal Settlements	Remarks
João Pessoa, Paraíba	100	20%-34% excluding housing projects in need of regularizatio n	Informal settlements are spread all over the city.	
Maceió, Alagoas	135	46%	Most located on the abrupt slopes which connect the upper and lower parts of the city. Many are located in the SW close to housing projects	Based on 2001 estimates
Santos, Sao Paulo	At least 57 of which about 20 were housing projects	23%+	Clustered in two distinct areas: 1/3 in the hilly region in the center of the insular part of the city; 1/3 in the NW on river banks and close to most housing projects	Based on 2010 estimates
Paranaguá, Paraná.	At least. 57	50%	Mostly located along water bodies, in areas initially covered by mangrove or *restinga*, and often close to housing projects. Large number also located in the W about 10 km from the center. Large number of informal/illegal subdivisions mostly on the public domain: while some were spontaneously occupied, others were informally subdivided by the local authorities. *1/3 to1/4 of occupants live in Ilha dos Valadares (*an island of about 450 hectares close to the city center)	*Based on 2010 data.*
Rio de Janeiro	unknown	28%+ excluding housing projects in need of regularizatio n	Mostly favelas but also over 900 informal/illegal land subdivisions. Many favelas are located on hills next to the center of the city and most are in the north. Some (including *Rocinha* – the largest favela in Latin America) are located in the Southern part of the city, close to the wealthy neighborhoods Informal/illegal land subdivisions are all located in the periphery, 85% in the western part, 8% in the northern part and 7% in the *Baixada Jacarepaguá*.	

Between regularization and relocation: Resource Implications

Given the location and occupation pattern of most informal settlements, land regularization is scarcely a "simple" land tenure issue. Land use and subdivision restrictions often need to be adjusted while a huge amount of resources need to be allocated to urbanize the occupation. Sometimes due to precarious location, resettlement is the necessary course for public intervention but it is a very complicated, disruptive and expensive process. In this Section we briefly report on the divide between resettlement and in-situ regularization in four of the municipal areas being studied.

In João Pessoa, according to the Municipal Secretariat of Planning, 18 precarious settlements would need to be removed. In other words, at least 7.000 families would need to be resettled. These families are located along the rivers *Marés*, *Sanhauá*, *Mandacaru* in the Northwest part of the city, as well as along the the *Jaguaribe* rivers and next to the *Buraquinho* natural reserve. As for the other precarious settlements, the prefecture was proposing to urbanize them, which means anything from paving roads to totally reorganizing the occupation. For instance, the *Jaguaribe* valley urbanization project – a R$73 million intervention launched in 2008 within the framework of the Growth Acceleration Program (PAC) – plans to remove 2.300 families.

In Paranaguá, in early 2010, it was estimated in the preliminary version of the PLHIS[8] that 7.000 families would need to be resettled. Considering that between the early 1960s – when the National Housing Bank (BNH) was instituted – and the 1990s – when the subsidized housing production stopped in Paranaguá – about 4.000 housing units have been built, accommodating these 7.000 families means producing nearly twice as much housing units as those built over a period of 30 years. Within the framework of the federal housing program *Minha Casa Minha Vida* (MCMV), as of February 2010, 384 housing units were under construction in Paranaguá, and an additional 600 are to be constructed. Still, a thousand housing units only account for 14% of the housing stock required to resettle these families. Based on the unitary cost of the housing units that are being constructed – R$45.000 – building the stock of housing units required to resettle these 7.000 families would cost about R$315 million. Since vacant land is getting scarcer in Paranaguá, the actual cost is likely to be much higher.

As of early 2010, Santos was the only selected municipality that had finalized its PLHIS. According to this document, out of a total of the 17.262 families[9] who live in its informal settlements, 11.715 families are likely to be regularized, while 5.547 would need to be resettled[10]. The PLHIS distinguished three types of regularization: 1) land tenure regularization;

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8 Plano-Local-de-Habitacao-de Interesse-Social/ local plan for social housing which is the strategic document normally used to plan these interventions and access the resources of the National System for Social Housing Finance (SNFHIS).

9 This figure does not take into account an estimated 6.500 families who informally occupy the housing projects of the COHAB-ST.

10 It was then planned that 1.792 families would be resettled in their neighborhood but that the 3.755

2) simple regularization – when deficiencies in urban infrastructures are minimal; and 3) complex regularization – when deficiencies in urban infrastructures are substantial. While a case of land tenure regularization would cost R$300, a case of simple regularization would cost R$7.000, against R$14.000 for a case of complex regularization. The PLHIS identified 4.492 cases of simple urbanization and 3.338 cases of complex regularization. If we consider that the 3.885 remaining cases are pure judicial regularization, regularizing the occupation of these 11.715 families would cost R$79.341.500.

To have a more accurate estimate of the cost of these interventions, it is necessary to add an estimated R$332,820,000 required to build the 5,547 housing units that will accommodate the resettled families[11]. Finally, the PLHIS also refers to the need for building an additional 11,320 housing units to meet the dispersed demand[12], which would require an extra R$679,200,000. The pace at which land regularization programs will be executed will largely depend on the capacity of local government to leverage these resources. According to Santos' PLHIS, by 2020, between 12,322 and 17,621 housing units could be built, depending on the contribution of the state and federal government. In the most optimistic scenario, by 2020, the prefecture would receive R$357,909,000 from the federal government, R$71,034,000 from the state government and would allocate R$295,107,000 from its own resources.

As of December 2009, in Maceió, it was yet uncertain how many families would potentially have to be displaced. The prefecture had yet to formulate its PLHIS. Still, considering that 46% of the population of Maceió lives in informal settlements, and that a large number of them are located on the abrupt slopes and bottom of valleys, or near the *Mandaú* lagoon, this number is likely to be significant.

The pace at which informal settlements will be regularized will inevitably depend on the resources available to finance their urbanization and build the housing stock required to accommodate the families who need to be displaced. This observation is not specific to the case study municipalities. In São Paulo, 60% of the favelas are located along water bodies and 30% in areas of abrupt slopes. In Natal, out of the 68 favelas identified in 1993, 34% were in the dunes, 18% in mangroves, 6% in abrupt areas and 3% along canals. In Recife, where 494 settlements had been identified in 1998, 49% were in areas initially colonized by freshwater swamp forests or mangrove, 5% on top of hills and 18% in abrupt slope areas. In São Vicente, next to Santos, 27 out of the total of 46 precarious settlements are located in areas associated with important environmental restrictions. In Curitiba, finally, 252 out of a total of 397 settlements are in Areas of Permanent Preservation.

To conclude, it is important to understand that urban land regularization is nearly always

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remaining would have to be resettled in other areas.

11 This figure is based on a unitary cost of R$60,000, which is what is estimated in the PLHIS.

12 The housing stock required to receive families living in overpopulated housing units, squats or isolated improvised constructions.

only a component of a broader intervention that combines massive investments in urban infrastructure and resettlement schemes. Measures have been taken to facilitate the land regularization process. For instance, CONAMA's February 2006 resolution authorized, in specific cases, urban land regularization in APP. Even when families can be regularized, before they can actually have their rights formally regularized, a substantial amount of resources needs to be allocated to urbanize the settlements and get them formally approved and registered. Therefore the importance of federal programs such as the Growth Acceleration Program (PAC) – to finance urban infrastructure development; or *Minha Casa Minha Vida* – to finance the construction of housing; or law 11,977/2009 – to document the land tenure situation at the beginning of the land regularization process.

Land regularization processes

Land use and subdivision restrictions aside, regularizing urban land tenure primarily means identifying who legally owns the land and how occupants' land rights can be recorded in the notaries' land registries. Land can be owned by the Union, States, municipalities or it can be privately owned. Depending on who legally owns the land, land tenure arrangements available to regularize the occupation are different, and so are the mechanisms through which these arrangements are formalized. Notably, regularizing occupation of the public domains means first of all recording occupants' rights in the appropriate public land registry.

The federal government can decide to completely alienate its domain, that is, to renounce all of its right to the property in question, or only transfer part of the bundle of rights[13]. When land can't be alienated – as is the case for the *terrenos de marinha* for instance – or when the federal government is not interested in alienating it, it can allocate, among others, an authorization of occupation, a concession of real rights of use (CDRU), a concession of special use for housing purpose (CUEM) or an emphyteutic lease. These rights generate obligations. When opting for the emphyteutic lease for instance, the federal government renounces the *dominio útil* but it remains the owner of the *dominio real*, which gives it specific rights such as the right to collect an annual land tax – the *foro*, the right to collect a tax on the transfer of the *dominio util* – the *laudemio* – and the right of first refusal.

Rights retained over the federal domains are registered in the Patrimony Administration Integrated System (SIAPA), while some specific rights – notably those retained by government agencies – are registered in the Management System for Real Estates of Special Use (SPIUNET). Superintendents are responsible for administrating the SIAPA and SPIUNET. Once recorded in the land registries of the SPU, if these rights are real rights, they also need to be recorded in the notaries' land registries. In 2005, 578,373 real properties were registered in the SIAPA and 26,926 in the SPIUNET. That is a total of 605,301 real properties.

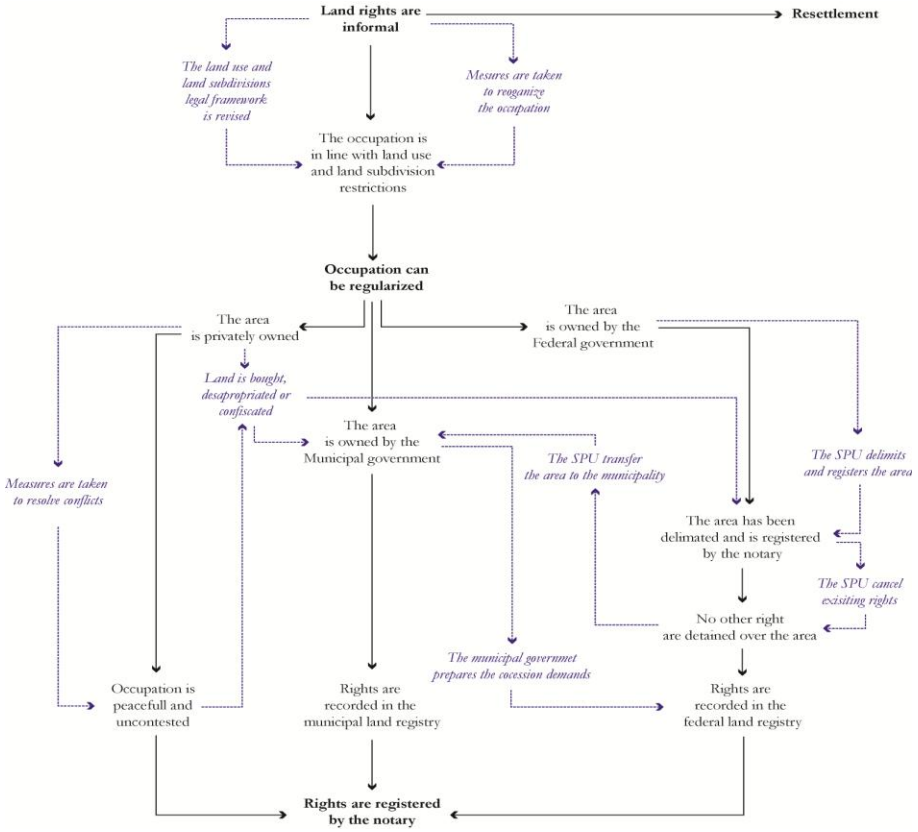
[13] Mechanisms through which the federal domain is allocated are defined by a large body of laws and decrees that was comprehensively revised by the law no. 11,481/2007.

Tenure arrangements that state and municipal governments can use to administer their land are relatively similar to those available to the federal government but practices vary from place to place. Brazil has 27 states and 5546 municipalities and the way state and municipal domains are administered varies from one state to another and from one municipality to another, according to size, resources, experience, and indeed politics. While a municipality like Rio de Janeiro has a long experience in administering real property assets, many municipalities administer their land in a much less systematic way.

Like the federal government, state and municipal governments are entitled to specific land assets. For instance, all urban public areas – streets, places, parks, etc – are owned by local governments. When a land subdivision is recorded in the notaries' land registries, these areas are automatically municipalized. Like the Union, States and municipalities keep incorporating and alienating real assets. They may even receive CDRU or an emphyteutic leases from the federal government. They may themselves allocate authorizations of occupation, CDRU or CUEM. Here again, when real rights are allocated, once recorded in the municipal land books, they also need to be recorded in the notaries' land registries.

To sum up, depending on the land domain they occupy, the beneficiaries of land regularization programs may not receive the same type of rights, the allocation processes they go through may not be the same, and they may not engage the same actors or encounter the same delays. In addition, having formal rights also means having obligations, be they civil, fiscal or administrative. Depending on the domain they occupy and the type of rights they receive, beneficiaries will not have the same obligations. Finally, many informal occupants need to be resettled. In this case, the questions of land reallocation and the nature of the domain on which these families are resettled, and the type of rights they receive, matter as much as for families who are regularized in situ.

Figure 3 – Urban land regularization processes



On whose land are informal settlements located?

Despite the importance of the domain occupied in the land regularization process, except for the settlements that are already targeted by land regularization programs, it is often difficult to know who actually owns the land. In the municipalities selected, although the knowledge about the land situation changes from one municipality to another, it is generally weak. None of the surveyed municipalities had systematically analyzed the land situation of their informal settlements. To identify the domains occupied, it is necessary to know both the delimitation of the informal settlements and the land domains. While local governments had already delimited at least part of their informal settlements, it was extremely difficult to obtain accurate information about the land domains. Information was spread among agencies, often textual (not graphic) and, even when maps were available they were usually incomplete, inaccurate and outdated.

In Maceió and Itajaí, local governments have accumulated very little information about their informal settlements, in general, and their land situation, in particular. In Maceió, a land regularization unit was created in 2005 to carry out Maceió's first land regularization project. By late 2009, it had yet to characterize the land situation of most informal settlements. The only thing known for sure is that there were two informal settlements targeted by land

regularization programs, one located on the federal domain – *Joaquim Leão* – and the other on the municipal domain – *Denisson Menezes*. It tends to be easier to identify informal settlements that are on the federal domain because they have been partially delimited by the SPU. In the selected municipalities, it had partially identified the lines formed by the average level of the high tides of 1831 (LPM) and the average level of the ordinary floods (LMEO), which are the reference line to delimit part of the federal domain. In Maceió, however, around the *Mandaú* lagoon, where *Joaquim Leão* and an additional 20 informal settlements are, the federal domain had yet to be delimited. This is due to the fact that the SPU had traditionally focused exclusively on delimiting its domain in highly valued areas, where it could make profits in *foro*, *laudêmio* and occupation tax.

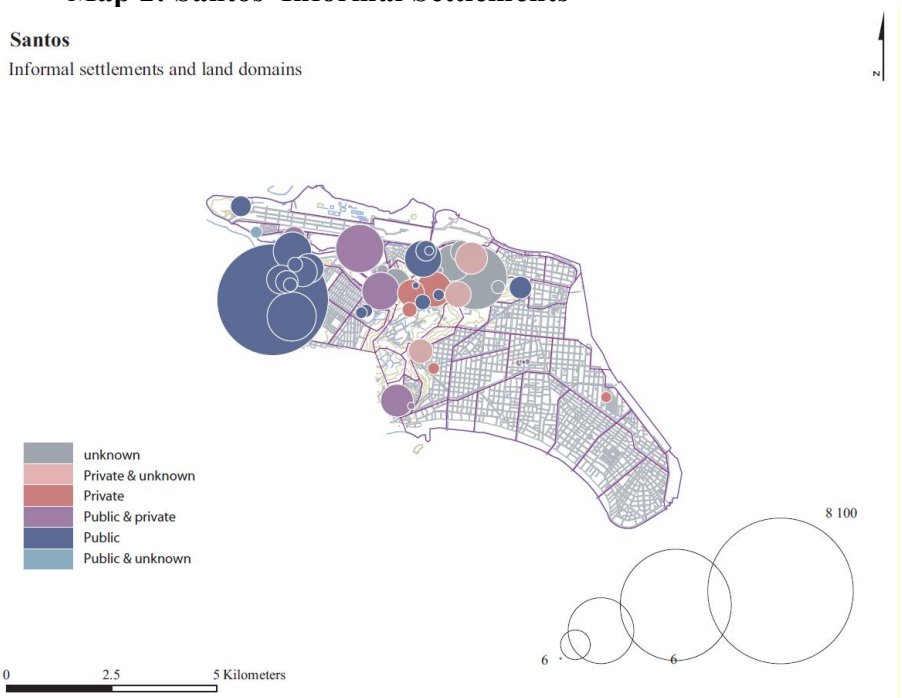
In João Pessoa, based on a sample of 58 precarious settlements out of a total of 100 – including the 30 largest ones, almost two thirds (64%) are entirely located on the public domain, 10% are partially on the public domain, while 26% are entirely on the private domain. When the public domain is occupied, it is mainly the federal or the municipal domains. 26% of the settlements are entirely located on the federal domain and 5% are partially located on it. As for the settlements entirely or partially located on the municipal domain, these figures are respectively of 24% and 7%. Since the exact delimitation of these land domains wasn't available, we cannot make comparisons in term of surface informally occupied, or number of constructions.

In the insular part of Santos, 42% of the informal settlements are entirely on the public domain, 33% are partially on the public domain, and 25% are entirely on the private domain. 42% are partially or completely on the federal domain, while 33% are partially or completely on the municipal domain. Santos' largest favela, the *Dique da Vila Gilda*, is entirely located on the federal domain. These estimates are based on a sample of 65% of the informal settlements. Map 2 shows that the informal settlements for which we weren't able to obtain land information are located in the hills of Santos. It also shows that in this region, it is mostly the private domain that is occupied. It is therefore likely that more than a third of Santos informal settlements are on the private domain.

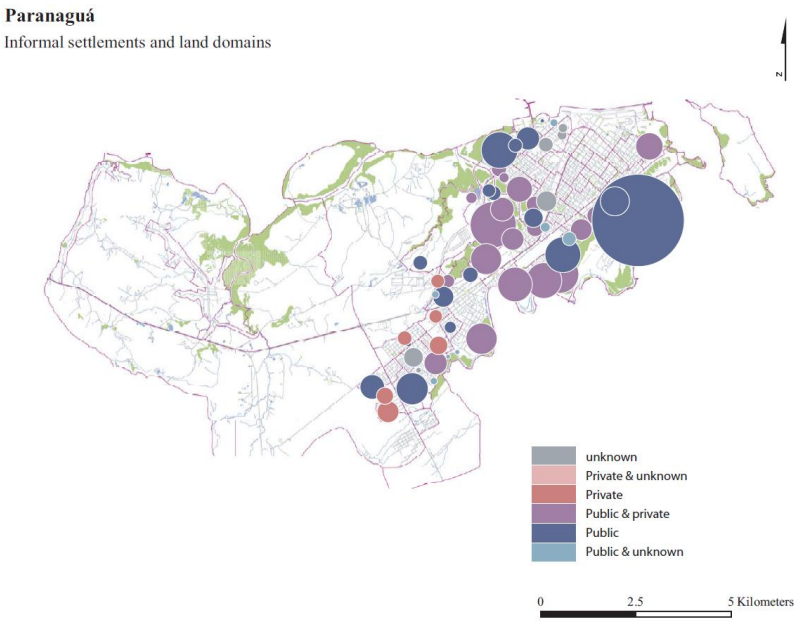
In Paranaguá, it is by far the federal domain that is the most often occupied, with 76% of the informal settlements entirely of partially located on it, including 4.000 families in the *Ilha dos Valadares* *(see Map 3)*. This is based on land information for 72% of the informal settlements, but which account for 95% of the area informally occupied. Then comes the private domain with 15% of the informal settlements entirely located on it and 39% partially. With 17% of the informal settlements entirely or partially located on the municipal domain, the informal occupation of this domain seems not to be as frequent in Paranaguá as it is in Santos and João Pessoa.

Overall, these figures suggest that land regularization is closely related to the question of public land administration, and more precisely federal and municipal land administration.

Map 2: Santos' Informal Settlements



Map 3 – Paranaguá's Informal Settlements



Regularizing the occupation of the private domain

When private land is occupied, it is first of all necessary to look at who formally owns the

land and whether the occupation is the source of a conflict between landowners and occupants. Some of this information is retained by the notaries. If the occupation is contested and the parties have failed to reach an agreement, landowners may bring the case in front of the judiciary to retake possession of their rights or receive fair compensation. The problem is that it takes several years, often more than a decade, for the judiciary to settle a land dispute. Take the example of *Clóvis Galvão de Moura Lacerda* an area of about 15 hectares in the southeast part of Santos that was invaded in the 1970s. In 1991, the legal owner of the area initiated judicial action to retake possession of the land. As the area had been occupied for decades, the following year, the local government declared the area ZEIS in order to guaranty to the occupants the right to stay. In 1995, the landowners were directed to sell the area to the occupants at a symbolic price, but as of December 2009, the land had yet to be sold to the occupants.

There are however, many cases where the occupation is not contested. Firstly, many informal settlements are informal subdivisions and occupants have already acquired the land, but just did so informally. Secondly, even in the case of invasions, when land has been occupied for decades, the initial land owners, or their heirs, may have renounced their rights or already secured an informal agreement with the occupants. In other words, private land occupation is commonly peaceful and uncontested.

In this case, families who are able to prove that they have occupied the land for more than 5 years may acquire it via usucaption. There are some restrictions such as the size of the plot that can't be larger than 250m^2, or the impossibility of acquiring more than one plot using this mechanism. To acquire land via usucaption, families may contract an attorney or use the services of the civil defense. Sometime, as is the case in the favelas of *Mata Machado* and *Vila São Jorge* in Rio de Janeiro, the prefecture assists the families.

When it is not possible to individualize the plots, usucaption may be used collectively. In this case, each family acquires land rights on a share of the area. A case of collective usucaption in the selected municipalities was not encountered in the course of this Study, but there was an attempt to use this land regularization mechanism on a block of *Paraisópolis*, a favela of in São Paulo. The initiative was taken by the prefecture and the School of Law of the University of São Paulo, both interested in piloting this mechanism. Soon, they realized that it was not that easy. First, given the number of families involved, it was difficult to mobilize them all. Second, it was not always possible to prove that families had occupied their land for at least 5 years, while some families simply hadn't. Third, families need legal assistance, but while there were provisions to help families in contracting attorneys and legal experts, resources allocated were insufficient. In São Paulo, the State makes its legal experts available, but this assistance is not totally free as they are entitled to request compensation. In the case of *Paraisópolis*, they asked R$8.000 and it is only after lodging a judicial request that families were eventually exempted.

Collective or individual, the problem with usucaption is that it may take more than a decade before the occupants actually acquire the land. Part of the process consists in intimating the legal landowners. If the occupation is decades old, as it is often the case, it may

mean identifying the heirs of the landowners, which can be time consuming. Then, the owners, or their heirs, may attempt to contest the usucaption process, which inevitably slows it down. According the Housing Municipal Secretariat of Rio de Janeiro, it would take on average 10 years just to complete the intimation process.

Since the adoption of the law 11,977 of 2009, public authorities are able to proceed with the demarcation of the area targeted by land regularization programs of social interest and provide their occupants with a *possession document*. This document is not a proof of property but, when private land is occupied, it can be converted into a full title after a period of 5 years. It is too early to say whether this instrument will work and under which circumstances, but it is likely to be faster because the demarcation act is an administrative procedure and the intimation process is mainstreamed.

Even when landowners and occupants have agreed on the terms of a land transaction, the actual land transfer is likely to be delayed by the urbanization process. Though this is not specific to the private domain, it tends to postpone the moment when land rights can be formally transferred from the initial owners to the occupants. Because of that, even when landowners have accepted to sell the land, and the occupants to buy it, the transaction may be delayed or done informally. This is the case of *Caminho Dona Adelaide documented in Box 1*.

Box 1: Informal transfer: The Case of Caminho Dona Adelaide, Santos

Caminho Dona Adelaide is, a small invasion in the southeast part of Santos. After having contested the occupation for years, in 1994, the landowners eventually agreed to sell the land to the occupants. To be formal, this transaction should have been executed once the urbanization process had been completed and the subdivision had been formerly registered. Alternatively, the occupants could have created an association and acquired the land collectively. In the case of *Caminho Dona Adelaide*, land was simply transferred informally. As of December 2009, 15 years later, the area had only been partially urbanized and the occupation had remained.

Another factor that tends to slow down the private land regularization process is the limited resources of the families. Occupants often face difficulties securing credit, in particular if the land subdivision is not formally registered. In this case, occupants alone, or with the help of the local authorities as is the case in Santos, may try to negotiate with financial institutions.

Alternatively, public authorities may decide to purchase or expropriate the privately owned occupied land. In Rio de Janeiro, local authorities agreed with the inhabitants of the favela *Coimbra da Luz* that it would expropriate the land and that occupants would acquire it from the prefecture. Land was sold at its actual value, as appraised by the Municipal Secretariat of Finance (SMF). Once acquired by the Municipality, families could either acquire directly the land or, for those who couldn't afford it, receive municipal CDRU that would be converted into a full title once they had honored their financial obligations. The problem with expropriation is that it can take time. In Santos, it took nearly 10 years for the prefecture to expropriate part of the area occupied by the favela *Caneleira III*.

Public authorities may decide to acquire the land when the urbanization project is extremely complex or the settlement needs to be reorganized. Sometime, occupation is so dense and chaotic that occupants can't be regularized *in situ*. Public authorities may decide to resettle families in other areas but they may also decide to "verticalize" the occupation. In other words, instead of resettling part of the families outside of the area, they may decide to accommodate them in temporary constructions for the time required to replace initial constructions by new ones. This is the case of the *Vila Santa Casa*, a small favela located in the southeast part of Santos. In 1994, the prefecture acquired the area from the *Santa Casa da Misericordia*. Since then, the COHAB-ST has been progressively replacing existing houses and shacks by 4 story buildings capable of accommodating all the occupants as well as other families. Selling housing units to other families is also a way to reduce the net cost of the intervention.

Public authorities may acquire the land through confiscation when the legal landowners fail to honor their fiscal obligations. In such cases, property is confiscated by the public entity to which the debt is owed. This is what happened in favela *Jacaré* in Rio de Janeiro and in *Vale do Sol* in Paranaguá. Box 2 documents that in the former case, the land was subsequently offered to the occupants via sale at a symbolic price whereas in the latter case the confiscated land was subject to public auction with existing occupants given the Right of First Refusal (Box 3).

Box 2: Confiscation and Reselling at Symbolic Value: the Case of favela *Jacaré* in Rio de Janeiro

In favela Jacaré land was confiscated and integrated into the federal patrimony as an asset of the Social Security National Institute (INSS). As the land was already occupied, instead of selling it via public auction, the SPU used the provision of the Law no. 11,481/2007 to transfer it to the Municipality with the obligation of selling it to the actual occupants at a symbolic value. The prefecture didn't donate it because it would have been more expensive for the occupants, as donations are subject to the inheritance and donation tax (ITD), a state tax equal to 4% of the value of the real property. Unlike the ITD, the real property transfer tax (ITBI) is a municipal tax, and families were exempted from paying it.

Once acquired by the municipality, land was appraised by the Municipal Secretariat of Finance (SMF). The SMF estimated that the value per square meter fluctuated between R$13 and R$34 depending on the areas, but in 2007 it was decided that land would be sold to the occupants at the symbolic value of R$2 per square meter. Families could however purchase only one plot at symbolic value and had to acquire the other plots they may have occupied at real price. As it was done for *Coimbra da Luz* , the families of *Jacaré* could either pay directly or over a period of time. In case they went for the second option, they received a municipal CDRU that would eventually be converted into full property rights. In any case, families were exempted from paying registration fees normally charged by the public notaries, as is the case in land regularization programs of social interest.

Box 3: Confiscation and Reselling through Public Auction: the case of Vale de Sol, Paranaguá

Vale do Sol is an informal settlement located in the western part of Paranaguá. A part of *Vale do Sol* is on the public domain and another part is on the private domain. According to the occupants living on the private domain, they had secured a purchase agreement with the landowner (some had even started paying for their plots) when the agreement fell apart. Then, as the landowners didn't pay the urban land and property tax (IPTU) for three consecutive years, the municipality confiscated the property. Unlike in the case of *Jacaré*, where the municipality negotiated a transfer with the occupants, plots were sold at public auction. In this case, occupants had the right of first refusal, which means that they could decide to match the highest bid. This is how many occupants of *Vale do Sol* would have acquired their plot. The problem is that a few occupants, those who couldn't afford to pay upfront 30% of the values asked, were not able to match the highest bid and, thus lost the land.

There are many cases where land has already been informally purchased by the occupants. An area may have been informally subdivided and commercialized. Examples abound. This is for instance the case of *Jardim São Manoel* in Santos. This subdivision project was approved by the local government in 1958. It proposed to subdivide an area of 131 hectares into 23 blocks and 358 plots. The subdivision was never registered but was executed as planned and commercialized informally. In the process, an area that was actually owned by the federal government was also commercialized. Today 317 families live in *Jardim São Manoel* but an additional 780 families took informal possession of the nearby areas, mainly areas of permanent preservation (APP) that belong to the federal government. As is often the case when occupation is both on public and private land, the regularization process tends to be delayed by the difficulties encountered when trying to delimit the different domains.

Sometimes, a group of families form an association to collectively acquire a plot of land and subdivide it. In this case, it may be necessary to resolve conflicts that have emerged among families. See Box 4 for a case example from Morro Santa Maria, Santos.

Box 4: Collective Acquisition and Internal Conflicts: The Case of Morro Santa Maria, Santos

In Santos, in 1991, a group of families formed the Nova Cintra Neighborhood Association and collectively acquired an area of about 9 hectares in *Morro Santa Maria*. The following year, they informally subdivided the area but conflicts started emerging as there was not enough land for everyone. In 1995, the association tried to register the land subdivision but it wasn't approved by the prefecture because various land use and subdivisions restrictions were not followed. The same year, a group of families lodged a judicial action against both the neighborhood association and the prefecture. The same sequence of events was repeated by another group of families that acquired a nearby plot of land. In 2000, the prefecture was directed to regularize the area within a period of two years following the conclusion of the judicial action against the association. As of December 2009, the judgment of the Tribunal of Justice of the State of São Paulo was still pending.

Regularization efforts can be further complicated by pre-existing land rent arrangements between the land owner and occupants. In Santos, there were attempts by the prefecture to moderate a dialogue towards regularization but progress has been slow (see Box 5). Moreover, any public investment made in these areas is likely to benefit the landowners who may end up charging higher rents thereby leading to displacement of the most vulnerable.

Box 5: Land Rents and Prefecture Intermediation - the case of Santos

In the hills of Santos, several private landowners who collect a land rent (*aluguel de chão*) from the families who informally occupy their land were identified. In 2004, when it created a land regularization unit, the prefecture initiated a dialogue with the landowner of a plot located in the *Vila Progresso* that is occupied by 362 families, most of whom pay a land rent. In 2005 it initiated a negotiation with the *Santa Casa de Misericórdia* that also charges a land rend to the families who occupy its land in *Morro do Pacheco* and de *Morro José Menino*. In *Morro do Pacheco* in 2009, the prefecture started negotiating with another landowner who also informally rented his land out. Finally in *Nova Cintra*, since 2008, the prefecture is also pressurizing the owner of *Torquato Dias I* to stop collecting informal land rents and sell the land to the occupants.

In Santos, it seems that landowners are not very cooperative and the local government is having a hard time putting an end to this practice. By late 2009, the prefecture had secured an agreement with the *Santa Casa de Misericórdia* but it still had to find a way to finance the land acquisition. Negotiating with the landowners of *Vila Progresso* and *Torquatro Dias* had been particularly complicated, as they were showing little interest in renouncing their land rights and the source of incomes they procure.

Finally, given the current interest in urban land regularization, some private entrepreneurs have positioned themselves to provide coordination services. For example, in Paranaguá, the first land regularization program wasn't initiated by the local government but by Terra Nova, a private company. Contracted by the heirs of the landowner on whose land *Vila Marinho* is located, Terra Nova is responsible for regularizing the area, which includes getting the subdivision approved and registered, as well as selling the land to the occupants. In exchange, Terra Nova receives a percentage of the land transaction. However, the regularization of *Vila Marinho* slowed down when Terra Nova discovered that part of the land was owned by the federal government. As of December 2009 it had initiated a dialogue with the Superintendency of the Federal Patrimony in the State of Paraná, but an agreement had yet to be reached.

Regularizing the occupation of the federal domain

When the federal domain is informally occupied, the regularization process must be done by, or in partnership with, the Secretariat of the Federal Patrimony (SPU). In João Pessoa, Maceió, Paranaguá and Santos, 58 informal settlements were identified in the federal domain, including 14 that were targeted by land regularization programs. These interventions target favelas (*Vila Pantanal*, *Vila Alemoa* or the *Dique da Vila Gilda* in Santos), areas occupied spontaneously but not as chaotically as some favelas (*Valadares Island* or *Vila Marinho* in Paranaguá) and housing projects (*Vila Ayrton Senna* and *Vila Esperança* in Santos, or *Joaquim*

Leão in Maceió). There are also specific cases such as *Jardim São Manoel*, an informal subdivision approved by the prefecture of Santos in 1958, that was never registered but which was informally commercialized, even though it was partly located on the federal domain.

The SPU is however an agency with limited capacity and ability to administer the public domain. It has about a thousand employees, spread between its headquarters in Brasilia and its superintendencies in state capitals. It is only since February 2008, when it inaugurated the superintendency in the state of Acre, that the SPU was represented in each state capital. Yet in the selected municipalities, there are surely many more than 57 informal settlements that are located on the federal domain, as the land situation of only 123 informal settlements was characterized out of a total of 400. It is safe to say that across the country, there are thousands of them. In addition to supporting urban land regularization programs, the SPU has to identify and delimit its domain, administrate the non-operational real assets of the extinguished RFFSA, allocate land to support the execution of a series of federal initiatives such as the construction of social housing projects, the execution of the agrarian reform or the implementation of Terra Legal, a huge land regularization program executed in the Legal Amazon.

As a coping strategy, the SPU has been transferring land to local governments so that they can regularize the settlements. This practice is part of a reform process based on the principles of decentralization and transfer of responsibility. As far as urban land regularization is concerned, it means that the SPU is multiplying technical cooperation agreements with local governments. Various legal instruments are available to operationalize this transfer but within the context of land regularization of social interest, municipal government almost always receives either an emphyteutic lease or a CDRU. In the terms of the concession, the purpose is always specified, in this case, land regularization. Land rights may also be transferred temporarily. If the municipal government does not honor the terms of the concession, or if the timeframe expires, land rights automatically revert to the SPU in such cases.

Once local governments have received a CDRU or an emphyteutic lease, they are responsible for carrying out the land regularization process. This includes doing the socio-economic survey, screening beneficiaries and urbanizing the area. Depending on the terms of the agreements, families may receive CDRU, CUEM or emphyteutic leases. The local government can't allocate rights that are “higher” than those it received.

Since all these land rights are real rights, once they are registered in the SIAPA, they also need to be recorded in the notaries' land registries. To ease the registration process, the federal government signed an agreement with the Brazilian Association of Notaries and Registras (ANOREG) and the Instituto de Registro Imobiliário do Brasil (IRIB) that exempts beneficiaries of these programs from paying registration fees.

Of the programs identified in the selected municipalities, there are a variety of conditions. Boxes 6 through 11 highlight particular cases of regularization and some of the emerging lessons that may be of use to other efforts. They include a more advanced case of regularization where

the underlying land was already in the hands of the SPU; a case where part of the area had been previously allocated to a private company; another where active demarcation of the public domain was required; one of allocation of CDRU; another of collective CUEM; and finally one where the broader municipality was itself informal. Although only the first case was advanced in implementation, a review of the SPU website identified an additional 22 programs that had been partially or fully completed after 2008.

It was observed that within the framework of land regularization programs of social interest, the SPU is moving away from the more recognized 'rights' option of emphyteutic leases, that has been traditionally its main allocation instrument, and is today increasingly favoring the allocating of CDRU and CUEM. One of the key reasons for this seems to be that the terms of these concessions can be tailored so that they do not generate excessive obligations. Generally, the cases show a trend towards finding a legal way to reduce the burdens that regularization brings to low-income households. These burdens may be direct costs, documentation requirements or logistical costs associated with visiting government offices (see for example, the case of Kilometer 3 in Box 4) or even the scope for legal contestation as in Conceiçãozinha (Box 10).

Box 6: Land Already in the Public Domain -The Case of Joaquim Leão

Joaquim Leão in Maceió is one of the first informal settlements to be partially regularized within the framework of an agreement between the SPU and a local government. In the late 1970s the federal government had transferred to the municipality of Maceió an area located near the *Mandaú* lagoon for the execution of a series of housing projects. *Joaquim Leão,* a complex of 3.700 houses, was the largest of them. The project was executed, but land rights reverted to the SPU and occupation remained informal. In 2005, the SPU transferred once again the area to the municipality of Maceió so that it could regularize it. For *Joaquim Leão,* being Maceió's first urban land regularization project, the municipality instituted a special unit to coordinate land regularization work. Two years later, in December 2008, 2,329 families, out of a total of 3,700 had received an emphyteutic lease.

Joaquim Leão can be considered as a rare case of 'simple' land tenure regularization. The area was already urbanized and no family needed to be resettled, which is not the case in most regularization projects. Yet *Joaquim Leão* highlighted a few issues. In this case, beneficiaries received an emphyteutic lease which couldn't be allocated to couples who hadn't formalized their relationship. It was eventually decided that rights would be allocated preferentially to women, as international best practice recommends. Additionally, a series of concession demands prepared by the prefecture were incomplete and couldn't be processed by the Superintendency of Patrimony of the Union in the State of Alagoas. Finally, about 500 families missed the deadline for the submission of concession demands. This is why, by September 2009, only 63% of the targeted families had received an emphyteutic lease.

Box 7: Dealing with Already Allocated Land -The Case of Dique da Vila Gilda

When land has already been allocated to other parties, the SPU needs to cancel the rights so constituted. In the case of the *Dique da Vila Gilda,* Santos' largest favela, part of the area had been allocated to a private company. When the prefecture of Santos planned an intervention in a part of the favela in the early 1990s, which was then occupied by 3000 families, it asked the SPU to formally allocate it the targeted area. In 1994, the SPU declared the area of public

interest, canceled the existing rights and transferred it to the municipality for the time required to execute the project. The project was executed but families were not regularized and the land reverted to the SPU. In 2006, taking advantage of the PAC, the prefecture initiated a new intervention that, this time, targeted the entire favela. It is a complex intervention to regularize 2.000 families and resettle another 2.000. Once again, the prefecture asked the SPU to transfer the area. In November 2008, the SPU declared the area of public interest, but as of December 2009 the land hadn't been transferred

The cases also demonstrate a modality of learning by doing when it comes to regularization. Sometimes as in the case of Joaquim Leão, this was evidenced by changing postures toward ensuring women were not onlookers as their male counterparts received property rights. In Dique da Vila Gilda (Box 7), the learning took the form of land reverting to the SPU even though it had earlier been allocated to the prefecture of Santos. While the experience in Ilha dos Valadares (Box 8), saw an innovative solution emerge using the 'Act of Demarcation' to de-constitute private 'property rights' erroneously recorded by notaries.

Box 8: Demarcating the Public Domain -The Case of Ilha dos Valadares in Paranaguá

The SPU can allocate real rights on its domain only so long as it has recorded it under its name in the notaries' land registries. The federal domain being only partially identified and delimited, part of the land regularization process may consist in doing so. This case is illustrated by the experience of the *Ilha dos Valadares* in Paranaguá. Occupied by an estimated 4,000 families in 2009, the necessity to regularize this island was first raised in 1990, when Paranaguá adopted a new master plan. According the SPU, it was then impossible to regularize the island because it couldn't de-constitute private land rights that had been erroneously registered by the notaries.

This impediment was eventually tackled by the law 11,481/2007 that instituted the "act of demarcation", an administrative procedure through which the SPU can quickly delimit and register the portions of its domain predominantly occupied by low-income families. Once prepared and approved by the Secretary of the SPU, the demarcation act is submitted to the public notary for registration. The notary verifies whether titles have already been registered in the area and, if it is the case, he tries to notify the parties concerned. If he doesn't manage to contact them, the SPU has 30 days to announce the demarcation act twice in the local newspapers. 15 days after the last publication, if the act hasn't been contested, the notary cancels the existing rights and registers the area under the name of the SPU. This is how the *Ilha dos Valadares* was registered in 2008. In February 2010, the Ministry of Planning, Budget and Administration authorized the SPU to transfer the island to the prefecture, but at the time of this study, it was still unclear which rights the SPU would allocate, when it would do so and under what conditions.

Box 9: Allocation of CDRU – The Case of Kilometer3, Santa Maria, Rio Grande do Sul.

The colonization of the area called Kilometers3 in the municipality of Santa Maria in the State of Rio Grande do Sul was initiated in 2001when a group of 80 families that had been evicted from nearby areas decided to settle there. The settlement grew and by 2008 it hosted 240 families. In 2007, within the framework of the PAC, the local government signed an agreement with the federal government to execute the Integrated Urbanization Program for the Favelas of the *Arroios Cadena* and *Vacacaí-Mirim* watershed, a R$71 million program of which 90% is financed by the federal government. For Kilometer3, the urbanization project combines infrastructure development and the construction of housing. Comprising 382 plots, part of it is meant to receive families that live in precarious and protected areas[1], while the rest will be commercialized.

Kilometer3 is located on a 21 ha plot initially owned by the RFFSA but which had been integrated with the federal patrimony in 2007 when the RFFSA was extinguished. In 2008 the SPU transferred the area to the municipality of Santa Maria. The municipal government received a CDRU of 2 years, with the possibility of extending the concession for another two years. Families already occupying the area were to receive free CDRU, but since the municipality was planning to build more housing units than those needed to accommodate the families that had to be resettled, the SPU authorized it to commercialize part of the area. One of the reasons why the SPU opted for the CDRU is that this program targets low income families. When they receive a CDRU, families can be exempted from paying the annual land tax which the SPU normally collects from the occupants of its domain, while families who have emphyteutic leases must prove every 4 years that their monthly incomes don't exceed 5 minimum wages. Santa Maria being at 290km from the Superintendency of the Union Patrimony in the State of Rio Grande do Sul, it was considered too far for such families to travel.

A further observation from the cases is that in practically no situation was regularization a finished business. In *Joaquim Leão (Box 6), about a third of beneficiaries were still without an* emphyteutic lease while in Dique da Vila Gilda it was the pending re-transfer of land from SPU to the prefecture (Box 7). And in the case of the Inconfidentes (Box 11) and elsewhere such as Conceiçãozinha, it was about outstanding registration issues (Box 10). These all suggest that regularization at scale is a programmatic undertaking with incremental steps towards affording settlers greater security of tenure and services.

Box 10: Allocation of Collective CUEM – the case of Conceiçãozinha

Conceiçãozinha, is located in the municipality of Guarujá, São Paulo. It is a settlement of about 1.702 families. Located along the Santos Canal, the area was already colonized in the 1950s. It is located on both private and federal land. The federal land comprises *terrenos de marinha* and *acrecidos de marinha*. The private part is a plot of 80ha that was declared of public interest for the expansion of the port in 1972. The expropriation process was initiated in 1973, but it stalled since then. In 2006, the SPU declared the area of public interest for the purpose of land regularization of social interest. The SPU decided that it would provide the occupants with the collective CUEM because the occupation was so dense and disorganized that it was virtually impossible to do it individually. Additionally, requiring extensive urbanization work and resettlement, it was still too early to say which families would be regularized *in-situ* and which ones would need to be relocated.

The SPU hesitated for a while as they didn't know whether they could allocate a CUEM on the entire area, including the part that was being expropriated. On the one hand, the SPU didn't want to allocate the CUEM only on the part it already owned because it feared that it would be a source of social tensions among occupants. On the other hand, it didn't want to wait for the expropriation process to be completed, as that would mean postponing the land regularization process for an unknown duration. The SPU eventually decided that it would allocate the CUEM on the entire area. Though it would be possible to record the CUEM in the notaries' land registry only once the expropriation process was completed, the SPU estimated that by recording the CUEM in the federal land registries it would better protect the rights of the families that occupied the area. Additionally there was limited scope for contestation of the expropriation. Compensation had already been deposited in an account and though the initial landowner didn't cash it, it was a question of time before the federal government legally acquired the land and the CUEM was recorded in the notaries' land registries.

Box 11: An Informal Municipality – the Case of Inconfidentes, Minas Gerais

In 1911, the State Government of Minas Gerais granted to the federal government an area located in the municipality of Ouro Fino for the creation of the settlement of Inconfidentes. By the time Inconfidentes was raised to the level of a municipality in 1969, the federal government had remained the only owner of the area, even thought thousands of families actually occupied it. In 1988, the SPU registered the land rights of the inhabitants of Inconfidentes. As it allocated authorizations of occupation, which are not real rights, according to the notaries' land registry, land remained the sole property of the federal government. As the city kept growing, this situation started being problematic as its inhabitants only retained precarious land rights, which meant that they could neither benefit from the judicial protections real rights offer, nor use their land assets as collateral to secure credits.

No solution was found until 2007 when the law 11,481/2007 defined new disposition to regularize the occupation of the federal domain. The SPU decided that families whose monthly incomes didn't exceed 5 minimum wages, and didn't own another real property, would acquire at no cost the full plot that they occupied. According to the SPU, it chose to fully privatize its domain, and not allocate CDRU as it often does for low income families, because of the peculiarity of this situation. The privatized areas in Inconfidentes were already fully consolidated and there was, therefore, no risk of displacement of families benefited by the intervention. In reasoned that since the entire city was informal, allocating full property rights could not possibly accelerate the gentrification process. Given the peculiarity of the case, the SPU wasn't sure whether it had to first subdivide the area in the notary's land registry and then privatize it, or could directly grant the land and register the rights in the same notary's land registry. While the first alternative required two acts, the second alternative required only one, which makes a huge difference given that the SPU was planning to grant thousands of titles. The SPU decided to adopt the second approach because it considered it legal and faster. The first grant was allocated in June 2008. From February 2010, individual titles began to be issued for low-income families, already in a position to be recorded. It is worth noting that the law allows the first record to be done for free. Today more than 1,500 families have received titles to their homes, in a universe of more than 5,000 to be delivered.

Regularizing the occupation of the municipal domain

Although municipal governments have similar disposal mechanisms as federal government, it seems that municipal governments do not allocate emphyteutic leases anymore. This instrument was commonly used in the past. In Rio de Janeiro, in early 2010, about 30.000 municipal real properties were held under emphyteutic lease, but these leases were all allocated before the adoption of the last version of the Civil Code of 2002. In this version of the Civil Code, references to this type of tenure arrangements have been suppressed[14]. Now that the prefecture of Rio de Janeiro has stopped allocating emphyteutic leases, and since it offers to its lessees the option of acquiring the *dominio direto* this type of tenure arrangement is likely to disappear progressively.

Local governments have various tenure arrangements they can use to formalize the occupation of their domain from simple authorizations of use to full privatization. Authorizations of use are the most precarious type of rights. They can't be recorded in the notaries' land registries, and local governments use them when they are interested in reserving an area for a specific purpose but don't want to let it stand vacant. In the case of the land regularization programs, the objective being to better protect the rights of the beneficiaries, authorizations of use are not considered a suitable option.

Municipalities generally prefer to allocate CDRU or CUEM. These concessions essentially are contracts between prefectures and families. The concession can be individual or collective, free of charge or not, for an indefinite or a definite period of time. The exact terms of the concession are specified in a document signed by both parties. They are not the same from one municipality to another, or even, in a same municipality, from one family to another.

Municipal land concessions are generally allocated for a specific use and a defined term but usually with an allowance for renewal. Some municipalities may authorize a "mixed" use, meaning that even thought land is primarily allocated for housing purposes families can also use it to run their business. In Maceió, at the time of the study, the municipal government was allocating 15 year concessions, while Paranaguá opted for 50 year concessions. Santos, Itajaí and João Pessoa were allocating 90 years concessions. As for Rio de Janeiro, after having allocated concessions of finite duration, it eventuality decided to grant them for an infinite duration. When CDRU are of finite duration, the terms of the concession generally include a clause for renewal.

When allocated to low income families, CDRU are free. Each family is however entitled to only one CDRU and must certify that the plot that is the object of the concession is the only one they possess. They are not allowed to rent it out. Some municipalities, Rio de Janeiro for instance, may be more flexible and allow beneficiaries to possess other real properties, as long as they are not located in the municipality or neighboring municipalities. This is because many favela dwellers are migrants from other regions of the country, where they may own a house.

14 *Terrenos de marinha* and *acrecidos de marinha are exceptions*.

Concessions can be transferred, but since municipalities own the land, transactions need to be approved by the local authorities, generally the Housing Municipal Secretariat.

Municipalities rarely privatize their domain. Privatization is sometimes mentioned as a possible option in the future, but it is not the preferred alternative today. The only examples of privatization of the municipal domain encountered during the Study are *Jacaré* and *Coimbra da Luz*, two favelas of Rio de Janeiro. In reality, these are not "real" cases of privatization of the municipal domain. Initially, these areas were privately owned. They were only temporally minicipalized to facilitate the land regularization process. The prefecture of Rio de Janeiro prefers granting CDRU because it is relatively simple to allocate, easy to administer and adapted to the reality of its favelas. In order to privatize the municipal domain, the municipality of Rio de Janeiro needs to individualize each plot and register it in its fiscal cadastre. In many informal settlements, it is difficult to individualize plots. It takes time and requires resources, while, in the end, most families end up being exempted of paying the local land tax (IPTU). When the prefecture allocates CDRU, it doesn't need to register them in its fiscal cadastre. It can even allocate a right to a share of the total area occupied.

When an area is targeted by land regularization programs of social interest, the SMF transfers its responsibility to the Municipal Secretariat of Housing (SMHAB). While the area is recorded in the registry of the SMF, CDRU are registered in another land registry administrated by the SMHAB. In practice, the SMHAB only registers CDRU for residential use and solicits the SMF when it needs to allocate other types of rights such as authorizations of use for commercial purposes.

As far as the regularization of the municipal domain is concerned, Rio de Janeiro is one of the most experienced prefectures and usually regularizes only the land, not the buildings. According to the SMHAB, regularizing constructions would raise another set of issues. One constraint is that, in order to regularize constructions of more than $70m^2$, occupants must present a series of documents some of which are expensive to get[15]

Although CDRU are supposed to be recorded in the notaries' land registries, local governments and occupants often do not do so. According to the SMHAB of Rio de Janeiro, this decision is justified by the fact that public notaries' system does not take into account the reality of the favelas. Theoretically, families who acquire a house would need to record their rights in the municipal land registry and in the notaries' land registries. While the inscription in the municipal land registry is free, notaries charge fees and ask for additional documents, which end up discouraging families. There are also specific issues related to the fact that some favelas are controlled by gangs. When two factions fight over the control of a favela, the victorious faction often ends up evicting the families who were close to their rivals. When it happens, recorded in the notaries' land registries or not, the state is relatively powerless. For such reasons, municipalities often do not necessarily encourage families to register municipal concessions in

15 When constructions are larger than $70m^2$, families must present a *certidão negativa de débito*. Delivered by the INSS, it proves that they don't owe anything to the INSS.

the notaries land registry, even thought the first registration is free of charge.

As it largely depends on decisions taken by local governments, regularizing the occupation of the municipal domain is typically faster than any other type of regularization. From administrative and judicial points of view, the regularization of the municipal domain is simpler.

The case of *Clóvis Glavão de Moura Lacerda* (Box12) illustrates that the regularization of the municipal domain is typically faster than the regularization of the private domain. The case of *Joaquim Leão* and *Dênisson Menenez* (Box 13) also shows a favorable comparison with regularization of the federal domain. In Santos, hundreds of municipal CDRU were allocated in the early 1990s within a period of two years. In João Pessoa, according to the Housing Municipal Secretariat, by September 2009, about 4500 municipal CDRU had been allocated to families living in 40 informal settlements, both favelas (*Ipês* et *Padre Zé*) and housing projects (*Mabgabeira*, *Anatolia*, *Cristo Redentor* and *Bela Vista*). CDRU were even allocated to the occupants of the housing project built within the framework of *É Pra Morar*, though this project has been criticized for the precarious conditions. In Itajaí, it took less than 2 years for the local government to allocated almost a thousand municipal CDRU, the only type of land rights allocated thus far. In Paranaguá the first land documents allocated were municipal CDRU. However, there is good reason to believe that by early 2010 most of these CDRU had not been registered by the notaries.

Box 12: Municipal vs. Private Regularization: the case of Clóvis Glavão de Moura Lacerda

Clóvis Glavão de Moura Lacerda is a small invasion in the southeast par of Santos. In 1970, the prefecture of Santos approved a subdivision project for the area. The project was registered by the notary and the areas that had been reserved for public use became the property of the municipality. The subdivision project was not executed as planed and the entire area ended up being informally occupied, even the areas that had been municipalized. In 1991, the owner of the area lodged a legal action to retake possession of his rights, but in 1992 the local government declared the area ZEIS, cutting short the landowners' expectation to get his land back. In 1996, those who were occupying the areas owned by the municipality received a CDRU while, as of December 2009, those occupying the private domain had yet to be regularized.

Box 13: Municipal versus Federal Regularization: the case of Joaquim Leão* and *Dênisson Menenez

Joaquim Leão and *Dênisson Menenez* are two housing projects in Alagoas, but while the first one was built on the federal domain, the second one is located on the municipal domain. The regularization process of *Dênisson Menenez* was initiated in 2005, a few months after the regularization of *Joaquim Leão* started. By march 2006, the prefecture had allocated the first municipal CDRU to the habitants of *Dênission Menenez* while in *Joaquim Leão* the first emphyteutic leases were allocated in December 2008. In other words, it took 6 months for the prefecture to allocate CDRU on the municipal domain against 46 months for the Superintendency of the Union Patrimony in the State of Alagoas to allocate emphyteutic leases on the federal domain.

Mainstreaming the urban land regularization processes

More than executing a country scale land rights documentation program, the real challenge Brazil is currently facing is to rethink a land administration system that was conceived without taking into account the socio-economic characteristics of the Brazilian society. The above analysis of the operational details of urban land regularization programs has highlighted a series of barriers that tends to slow down their execution. In addition to underlining the need to mainstream the land regularization processes, this analysis pointed to deeper issues linked to the way land rights are administrated in Brazil.

As of December 2009, a minority of the informal settlements identified in Itajaí, João Pessoa, Maceió Paranaguá, and Santos were targeted by land regularization programs. Given the lack of reliable data on urban land informality and regularization, figures are not accurate, but in these municipalities, anywhere from 5% to 40% of their informal occupants are targeted by land regularization programs. In Maceió, while 46% of the population lives in informal settlements, less than 10% of its informal occupants were targeted. By contrast, in Paranaguá, where about half of the population lives in informal settlements, nearly 40% of its informal occupants were contemplated for regularization. This latter figure is however inflated by the fact that, in Paranaguá, one informal settlement – *Ilha dos Valadares* – accounts for a third of its informal occupants. Most of these interventions have been initiated over the last 5 years. Many other interventions are likely to be initiated over the next few years, but still, there is a long way to go before all occupations are targeted.

As of December 2009, 8.500 families, or 27% of the 32,000 targeted families, had received a land document. In the regularization programs identified 38% of beneficiaries were targeted to receive an emphyteutic lease, 34% a municipal CDRU, and 17% full land ownership. As for the remaining 11%, though it had yet to be decided, they would most likely receive a CUEM or a CDRU. 58% of the municipal CDRU had been allocated, against 19% for the emphyteutic leases and none of the private property rights.

There is no quick fix to urban land informality hence law no. 11,977/2009 that enables public authorities to allocate a land possession document before the settlement is completely urbanized, is a significant step to confer some benefits to households in the interim. Measures can be taken in order to ease land use and subdivision restrictions and facilitate the recognition of these informal settlements as formal neighborhoods. Still, given the location and lack of planning of most informal settlements, land regularization often means first urbanization and partial resettlement. Since occupants can only receive real rights once the urbanization process is completed, the pace at which land regularization programs are completed is largely established by the pace at which these settlements are urbanized. Given the resources and work required to urbanize these settlements, it is likely to take several decades.

To fast track the land regularization processes, it is not only necessary to inject a huge amount of resources in infrastructure development and resettlement schemes, but also to mainstream land regularization procedures. In the case of the private domain, it means using alternative mechanisms to resolve conflicts and instituting credit lines and subsidies to help families acquire the land they occupy. It could also mean facilitating land acquisition by the public authorities. As for the regularization of the federal domain, it means speeding up delimitation and registration works, as well as going further in the decentralization process.

Chapter 3: Regularizing the Amazon Region - Land Regularization Policy and Environmental Compliance in Pará.

Brazil's expanded set of policy tools and resources to address the land policy challenges of the Amazon have allowed major strides, especially in the reduction in rates of deforestation. During the last years in particular, an unprecedented series of steps has been taken to deepen land governance in the Amazon through a variety of programs including a significant expansion of the protected area system, macro zoning, environmental compliance and land regularization.

However, the remaining challenges of unplanned land use, lack of tenure security for lawful occupiers, unclear definitions of property rights for both public and private holders, lack of enforcement of environmental compliances, and the sustainable development of agrarian and forest-based extraction activities linked to global markets are daunting and spatially dispersed across a large area[i]. The immediate implementation challenge is acute, as potential super-rents to land occupation linked to Brazil's economic boom, road network expansion and the integration of the region with the global economy create a very dynamic *de facto* situation. In this so-called race for property rights, the region's future landscape is being determined.

This chapter focuses on the land regularization program in Pará, the most populous state in the north and the second largest in area overall, and its close linkages to environmental compliance. It shows that an integrated land tenure regularization and environmental compliance process would be accomplished at reasonable cost by leveraging municipal, state and federal resources within a single program and spatial data management system. It examines the pathways and practical land governance tools for achieving the inter-related goals of macro-scale planning, control of deforestation, land use intensification and the social stability of the land tenure system based on an integrated land regularization and environmental compliance program using an integrated data model and a municipal scanning technique.

The chapter first sets out the issues at the regional level of the Amazon biome, and then examines recent experience in Pará in greater methodological detail. The review illustrates how the creation of a spatial data management model for land regularization and the requirements of the environmental cadastre are nearly fully overlapping processes. The experience in Pará in municipal scanning of the full mosaic of land types generates useful examples for a fully integrated land and environmental data system for the region and merits comparison with approaches being taken in other states.

The emerging vision of land governance in Pará State

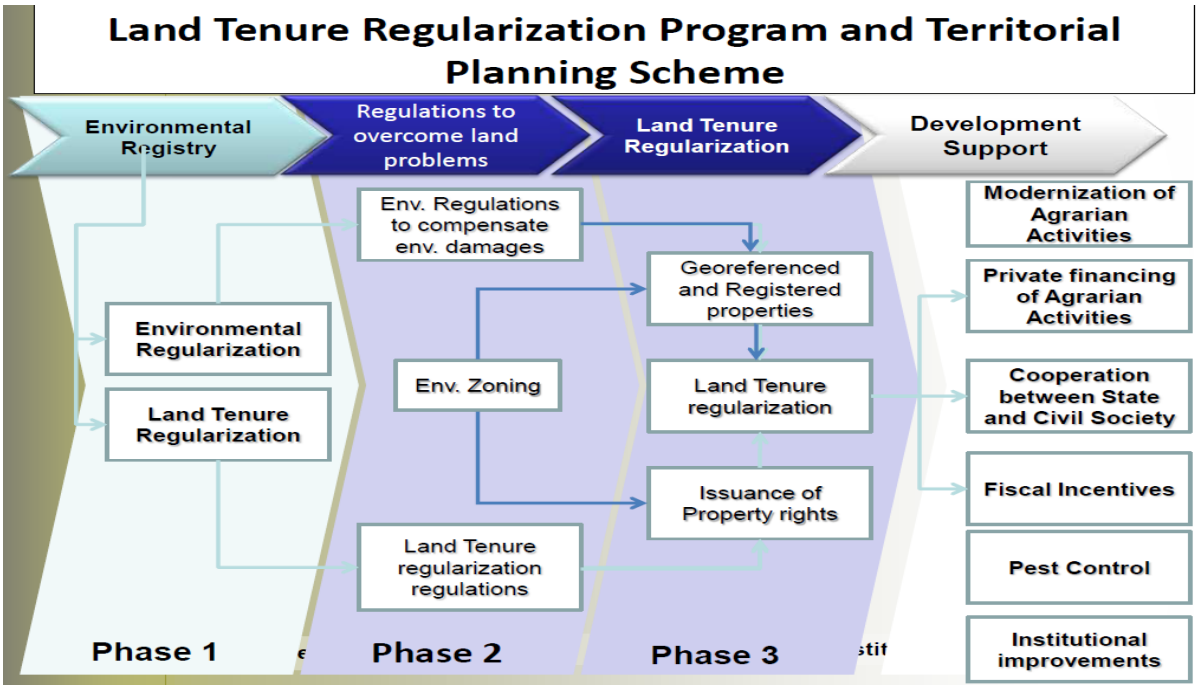
State authorities are banking that improving land governance in the region will be politically popular, economically sound and ensure long-term sustainability goals. Taken together, the environmental compliance, land regularization and economic-ecological zoning

policies outlines a macro policy or vision for land governance and management in Pará and the Brazilian Amazon. It comprises three components:

1. State-wide or road corridor zoning establishes land use priority and protected areas—urban zones, production agriculture zones of lower and higher intensity, forest reserves and agrarian reform settlements are planned
2. Land regularization gives ownership or use rights to existing small and medium holders (up to 2,500 ha.) with environmental licensing required - with a focus on the intensification of land use; states and Federal government work together to regularize occupation using *Terra Legal* and state program funding (as in the Pará Rural project)
3. Land occupations over 1500 hectares will be more difficult to rectify. In addition to complying with legal requirements (minimum occupancy - five years - and land use), they must get approval from the Legislature.

Making Pará's vision a reality requires manifesting the planning priorities at the municipal level and putting in place parcel-level compliance plans and legal land regularization procedures. Figure 4 depicts the conceptual approach Pará State has employed. To examine how the overall construction of an integrated data model of land regularization and environmental compliance can occur, the rest of this chapter focuses on integrated land regularization processes in the state.

Figure 4. Phases of a strategic plan for land regularization and territorial planning in Pará State



Source: Benatti (2010)[16]

[16] Benatti, J. (2010) Implementation and enforcement of environmental planning in Para: Lessons for others and next steps. Annual Conference on Land and Poverty, April 26-27, 2010, The World

Achieving convergence of land regularization and environmental compliance: Federal legislation and State-level implementation

Two new programs in the land governance framework for the Amazon are integral to Pará's process: Terra Legal and the Rural Environment Cadastre (CAR). Federal Law Nº 11,952/2009 set in motion a massive land tenure regularization program called *Terra Legal*. (Legal Land) and influenced the update of State laws about state land regularization. Also in 2009, a series of measures were taken to compel landholders to comply with the requirements to be registered in the CAR.[ii]

The measures for achieving 'forest-friendly' agricultural production are now incentive-compliant. In 2009, under pressure from state prosecutors, BNDES, the development bank that accounts for most financing for the agricultural sector in Brazil, announced it would reform its lending policies, making loans contingent on environmental performance. The major super-market chains also agreed to a moratorium on purchase of meat whose origins were not environmentally certified. The cattle industry in the Brazilian Amazon was galvanized, leading major meatpackers and traders to agree to a moratorium—modelled on the 2006 soy moratorium—on deforestation. The industry is now moving quickly to come into compliance with the requirements of the Rural Environmental Cadastre.

These two systems of overlapping land information can be naturally interconnected into a single spatial data model. This spatial data model can be used for multiple planning, monitoring and enforcement purposes in addition to initial registration and recording of environmental compliance.[17] Part of its monitoring functionality can include near real-time tracking of deforestation, as is being done in Mato Grosso (Souza et al 2009)[18].

With these two new regulatory milestones in place, parcel-level land tenure recognition and environmental regularization programs can become standard practice for the Amazon. While both Terra Legal and CAR are both in early stages of implementation, it is valuable to assess their operational strategies and ask questions about integrated spatial data management for

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Bank. http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTARD/0,,contentMDK:22537817~pagePK:148956~piPK:216618~theSitePK:336682,00.html

[17] This near real-time monitoring is done throughout the Amazon by INPE through the DETER system. What the Federal Government (IBAMA / MMA) may not have yet is the data of the State System, to find out if deforestation (detected in near real time) is legal or illegal, or if it is or not in a legally protected area (i.e. APP-Area of Permanent Protection or RL-Legal Reserve) and whether or not authorized by the State Environment Agency.

[18] Deforestation alerts for forest law enforcement: The case of Mato Grosso, Brazil . *Carlos M. de Souza, Jr., Sanae Haiashy, and Adalberto Veríssimo, in, Deininger, Augustinus, Enemark and Munro-Faure, eds.* Innovations in Land Rights, Recognition, Administration and Governance: Joint Organizational Discussion Paper—Issue 2 THE WORLD BANK, GLTN, FIG, AND FAO, PROCEEDINGS FROM THE ANNUAL CONFERENCE ON LAND POLICY AND ADMINISTRATION (2010) http://siteresources.worldbank.org/INTARD/Resources/335807-1174581646324/InnovLandRightsRecog.pdf

land governance. These should cover sequencing and resolution of problematic cases, linkages with macro-planning and future protected area formation and municipal capacity.

Federal Law No. 11,952/2009 and Pará's state law No.7,289/2009 and the debate about social justice and environmental protection

Federal Law Nº 11,952/2009 presents the criteria for land tenure regularization on federal lands in Brazilian Amazonia for areas up to 15 fiscal modules[iii] occupied since December, 2004. The innovation of this law has enabled the direct sale of the land to the occupant instead of subjecting him to the risk of losing it through the possibility of a third party bidding higher in a public auction[iv]. However, this measure was severely criticized under the arguments that it would favor consolidation of *grilagem* in the region and would increase deforestation[v].

To address concerns that the law would encourage *grilagem*, it is important to analyze the context in which this law was enacted and the substance of its intervention. In reality, Federal Law Nº 11,952/2009 is part of a new political context, where state and federal agrarian and environmental agencies are focused on a joint approach to combat *grilagem*, environmental violations, and the enforcement of human rights. It is possible to achieve land tenure regularization, even if there has been illegal deforestation. Yet, landowners would have to recover environmental liabilities, as provided by law. Its goal is to give rural producers the possibility to legally exploit their properties, complying with its social function. Significant among the causes of *grilagem*[vi] and illegal deforestation are the restricted definition of property rights in Brazilian Amazonia. What this law proposes is a broad land tenure program to abate illegal deforestation and to strengthen public control over public and private lands.

Nowadays, one fifth of Brazilian Amazonia is still legally defined as *terra devoluta*[vii] and a considerable part of identified public areas in the 1970's and 1980's was not distributed and used as planned.. The State's identification of different types of occupation of public lands is an important step in enabling itself and civil society to control the use of land and natural resources in the region.

Disputing the second most frequent criticism regarding this federal law, it is not the granting and recognition of property rights that will create land concentration. Land concentration is already a reality, despite all land reform actions implemented in the last couple of decades, mainly because there are no limits to land market transactions. Thus, as long as there is no restriction to buy and sell rural properties, it is more likely that land concentration will increase. The Pará approach taken by the Land Institute of Pará (ITERPA) is to selectively grant and limit property rights based on specific criteria designed to control land concentration and assist smallholders.[viii]

The Pará State Law no. 7,289/2009 was strongly influenced by the enactment of the Federal Law. It followed the Federal law's principles and guidelines, establishing a plural access to State owned lands and natural resources for multiple users and uses[ix]. The State Law's proposed land tenure regularization model tries to reconcile the principles of agrarian production and environmental protection.

The Rural Environmental Cadaster (CAR) as a tool to monitor and enforce the forest code on private lands in Pará

Private, rural landholders are required by law to preserve a very large part of their land under natural/native vegetation. The piece of legislation relevant to use and conservation of forests in private landholdings is the Brazilian Forest Code of 1965, which was last changed in 1996. The Forest Code requires that rural landholders maintain the natural vegetation of part of their private rural holdings, particularly all land on steep slopes, along water courses (up to a certain distance from the margin) or in the vicinity of springs. These areas are APPs (Area of Permanent Preservation). In addition the private holdings must also set aside and area called Legal Reserve (*Reserva Legal* – RL). The required size of the RL differs according to the biome. In the Amazon biome, the **Forest Law** requires that 80% of the private landholding should be maintained with native vegetation (except in areas where de state Ecological Economic Zoning indicates 50%)[19].

Compliance by private landholders with these requirements is at the heart of monitoring and control of forest cover by federal and state environmental agencies. Thus, it should be noted that deforestation (forest clearing) is not all illegal; it can be authorized on up to 20% of a private holding, but not on land on steeper slopes, along water courses, or in the vicinity of springs.

The National Environment Policy, Law 6,938 of 1981, introduced the environmental licensing of polluting activities, including agriculture and livestock private operations and use of natural (forest) resources. Progressively, since the late 1990's, the Federal Government has been delegating licensing responsibility, of rural activities in private landholdings, to State Environmental Agencies (*Orgãos Estaduais de Meio Ambiente* - OEMAs).

Environmental licensing in rural holdings was first applied by Mato Grosso State, in the context of the Natural Resources Policy Subprogram (NRPP) of PPG7. The state´s Environmental Licensing in Rural Properties System (SLAPR) started to be implemented in 1999, and became operational in 2000, with the aims of environmental licensing and enforcement of the Brazilian Forest Code. SLAPR includes the identification of the holdings and their owners, of their boundaries, of RL and APPs, as well as the licensing of agricultural or livestock activities.

In 2007 a series of measures was announced aimed at intensifying the enforcement of laws to combat deforestation. A Federal Decree of 2007 required the Ministry of the Environment to publish an annual list of Amazon municipalities with highest contributions to deforestation. In March 2009 the list included 43 municipalities which together are responsible for about 55% of deforestation in the Brazilian Amazon ("blacklist").

[19] The percentage is 20% in the rest of Brazil, and 35% in Cerrado bioma (savanna) in the so called Legal Amazon. In the current legislation, an Area of Permanent Preservation can be summed up with the Legal Reserve, as long as it does not imply deforestating.

Municipalities can be taken off the black list if: (i) 80% of holdings are registered under the Rural Environmental Cadastre (CAR); (ii) deforestation in 2009 was less than 40 km^2; and, (iii) mean deforestation in 2008 and 2009 has been less than 40% of what it was during the period 2004-2007. In March 2010, Paragominas municipality was struck from the list, having fulfilled the required criteria. Paragominas was taken off the "blacklist" as a result of a joint effort between the local government, the Rural Producers Union of Paragominas, Pará's Environmental Agency (SEMA-PA), and The Nature Conservancy (TNC do Brasil). As result of its efforts over 85% of the landholdings were included in the CAR.

Other measures are being applied in Pará's municipalities. They include: (i) a requirement for landholders in these municipalities to re-register their property in the National Cadastre of Rural Holdings (CNIR)[20], aimed at addressing the widespread phenomenon of fraudulent land claims to facilitate deforestation; and (ii) a directive to banks to cut off credit to rural businesses found to be breaking environmental laws. This is in addition to the publication of a "dirty list" of deforesters whose land will be subject to embargo with a ban on the commercialization of products originating from those areas. The municipalities on the list get priority attention in terms of intensive monitoring of land use and forest cover.

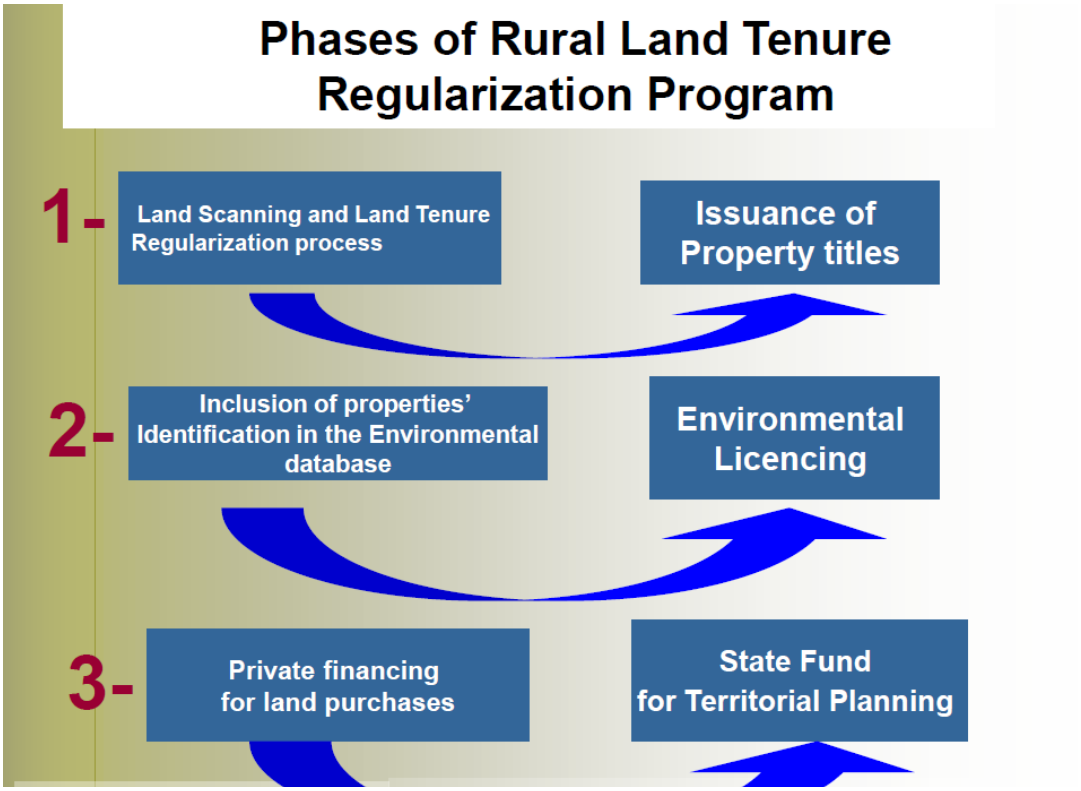
Pará state land regularization processes: allocation and environmental registration

The first step in a land tenure regularization program carried out by ITERPA in Pará is to grant access to land and natural resources appropriation to different social segments and economic activities partly to minimize concentration of land in a few hands. Although the focus of the land tenure program is the small property, this does not exclude the possibility to sell lands to medium and large land holders.

The second step (or parallel action) is the inscription of the property in the rural environmental cadastre (CAR), **with the main aim being to ensure compliance of private properties with the Forest Code, while step 3 may involve private financing for land purchases.** The overall process is summarized in Figure 5.

20 The land tenure legislation is detailed identifying the methodology to be used in defining the borders of land holdings. The precision of geodesic surveys of property boundaries required by INCRA is about 0.5 meter.

Figure 5: Phases of Rural Land Tenure Regularization



Depending on the targeted social segments and land size, which are differently affected by market laws, the land tenure program uses different rules and restrictions when granting land rights. Thus, depending on type of regularization ITERPA issues titles (definitive property titles) or concessions. The first type corresponds to the document issued in the regularization of municipalities, and individual properties, whether small, medium or large areas. A collective property title may also be issued to *quilombolas* communities, but in this case this title cannot be sold or have its area subdivided. Concessions, the second instrument, are only granted for the beneficiaries of rural settlements[x] or urban land tenure regularization programs for low income communities. In both cases, depending on the type of land occupation, these concessions can be individually or collectively granted.

The key differences between a concession and a conventional property title consists in restrictions on the concession beneficiary's ability to acquire other areas (thereby enlarging the area already occupied) and to sell it without the State's prior approval. The concession is also transferable through succession, as long as the new grantee meets the same criteria for the concession and does not pursue different land use from what is established in the contract. These restrictions have the goal of minimizing land speculation and concentration, while allowing low income rural and urban families, who are normally excluded from the legal land market, to have legal protection of their possessions and real estate transactions.

Pará regularization criteria for occupied public lands[xi]

Although occupation is the most basic criterion for land tenure regularization on public lands, there is a hierarchy of claims. Indigenous groups' lands, even if occupied by third parties cannot be regularized. Similarly, *quilombolas* communities' occupations, as long as they do not conflict with an indigenous interest, are second in the legal priority of ownership rights recognition. After these two groups, protected areas are third but people occupying such areas will only have their areas regularized if their occupation is compatible with the creation of a protected area. Fourth in the list of priorities are rural settlements and small properties[xii]. Next are medium and large occupations[xiii]. Municipal donations take priority over land tenure regularization for agrarian purposes, as long as municipal requests do not conflict with conservation units, indigenous and quilombola's territories.

Compliance with environmental law regulations is managed at the same time as land regularization. Thus, the areas to be regularized must be registered, prior to the issuance of any title, in the CAR[xiv], under the authority of the State Environmental Agency (SEMA). In practice the documentation requirements for CAR are the same as for land regularization, up to the point of demonstrating environmentally compliant use and clarification of ownership.

Although there is no specific article in the Constitution that establishes a maximum limit for rural properties in Brazil, there are several constitutional obligations that prohibit the State from favoring the concentration of land[xv]. Thus, the larger the land to be regularized, the more stringent the requirements are to grant ownership rights. Box 14 summarizes the differences across land sizes.

Box 14: Pre-requisites for Land Tenure Regularization by Land Holding Size

To regularize small land holdings up to 100ha, the beneficiary must fulfill the following requirements to receive a land donation: (a) continuous possession; (b) effective use of the land for no less than one year; (c) inexistence of opposition of a third party; (d) inexistence of other rural ownership rights; (e) non-receipt of other concessions of land or any incentive from the agrarian reform program; and (f) an adequate use of natural resources.

To regularize medium and large land holdings, the requisites for land tenure regularization are: (a) the beneficiary must exploit the area for over a year according to the environmental law; (b) the beneficiary must reside in the area or near it; (c) the beneficiary must have, as main activity, farming and extraction of forestry products; (d) the beneficiary must not have a public function; (e) the beneficiary cannot have received any incentive from the agrarian reform; (f) inexistence of opposition of a third party, regarding the occupation; and (g) the beneficiary has to be legally capable to purchase land.

Both donated and sold public areas are issued property titles containing clauses to direct beneficiaries to maintain, conserve, and in certain situations, to restore the environment. Besides, all issued titles/concessions and existing environmental limitations must be registered in the public property registry.

Municipal land use scanning: an integrated methodology to regularize rural landholdings in Pará.

Previous land tenure programs in Para provide some important lessons. One is that isolated land tenure regularization contributes to land concentration, with limited overall improvements for beneficiary families of land donations or the surroundings. Another lesson relates to landowners who are surrounded by public lands whereby the property title gains a separated economic value from the land, because it is often used to legalize timber products extracted from public areas and indigenous lands or to dispossess non title holders, who are occupants of public lands.

The new approach developed by ITERPA in Pará in coordination with INCRA and SEMA, consists in scanning the whole municipal territory, identifying the land occupation (individual farmers, *quilombola* communities, protected areas, indigenous lands, urban areas, etc.) regardless of the existence of property rights or compliance with environmental compliance. GPS technology is used to build a land use scenario and propose an integrated land tenure and environmental regularization program. It is seen as a potential model in federal and state land tenure regularization programs throughout Brazilian Amazonia,

This methodology is divided in four phases: (a) predecessor stage (*fase precursora*), consisting of data collection about the territory and informing the population regarding the program that will be developed in the location; (b) registry phase (*fase de cadastro*) when land holdings are inventoried and social and economic data from land holders' families are collected; (c) geo-referencing phase (*fase de georreferenciamento*), when all land holdings, in private and public areas, are located using GPS technology; and (d) land tenure regularization phase (*fase de regularização*), when, based on the information gathered, ITERPA proposes a land tenure regularization program for state areas or a joint program for state and federal areas.

As a result of this scanning the State seeks: (a) to identify the type of predominant land use in the municipality; (b) to establish the exact location of protected areas; (c) to identify all indigenous and *quilombolas* communities and their territories; (d) to identify and donate consolidated urban occupations to the local authority, as well as preferred areas for urban expansion according to municipal ordinances; (e) to identify the amount and location of public (state and federal) areas, as well as the exact location of previously issued property titles; (f) to promote a broad land tenure and environmental regularization program for all land holders (small, medium and large farmers), giving priority to rural settlement projects; (g) to obtain updated social and economic data about each of the 144 municipalities in the state; and (h) to improve agrarian and environmental law enforcement programs, and after the program is finalized, to monitor progress, improving land regularization strategies[xvi].

With this policy, the State aims to implement a process of continuous, transparent and democratic territorial management, legitimated by each of the different key actors - federal, state, municipal and civil society.

Figure 6: Process for digitizing property registry data and including it in the integrated data model

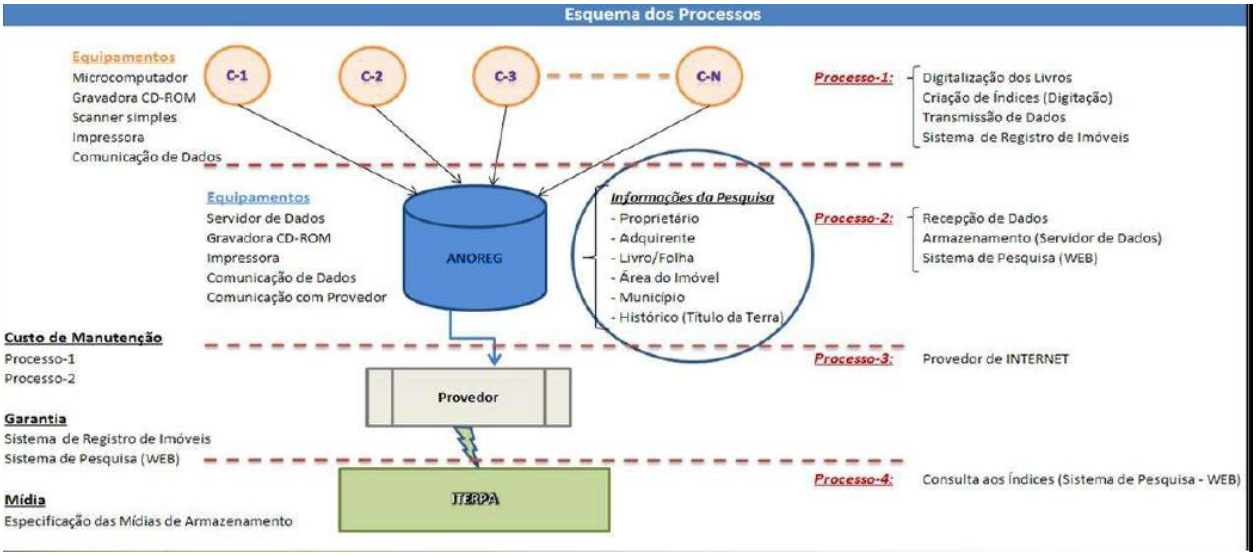


Figure 7: Technicians preparing registry documents for scanning

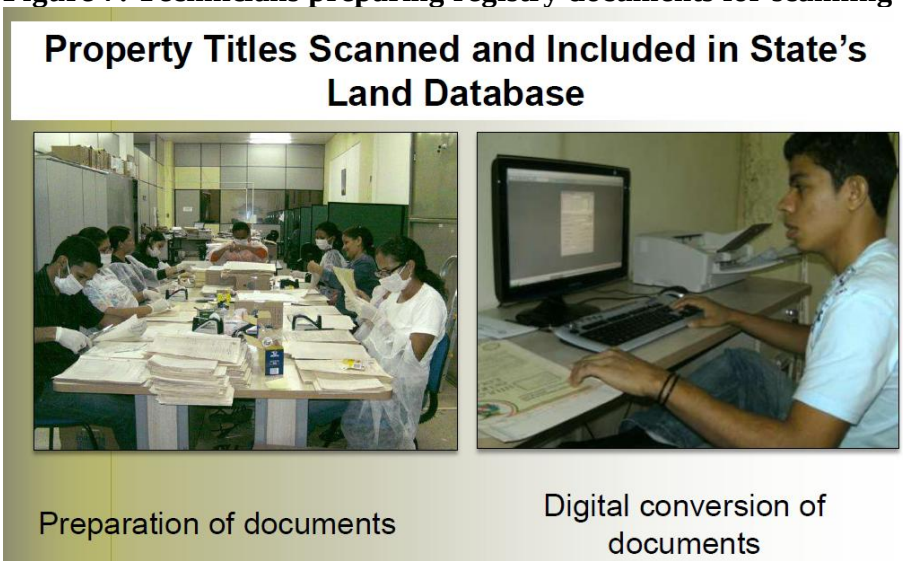


Figure 8: Conversion of registry documents into a digital database

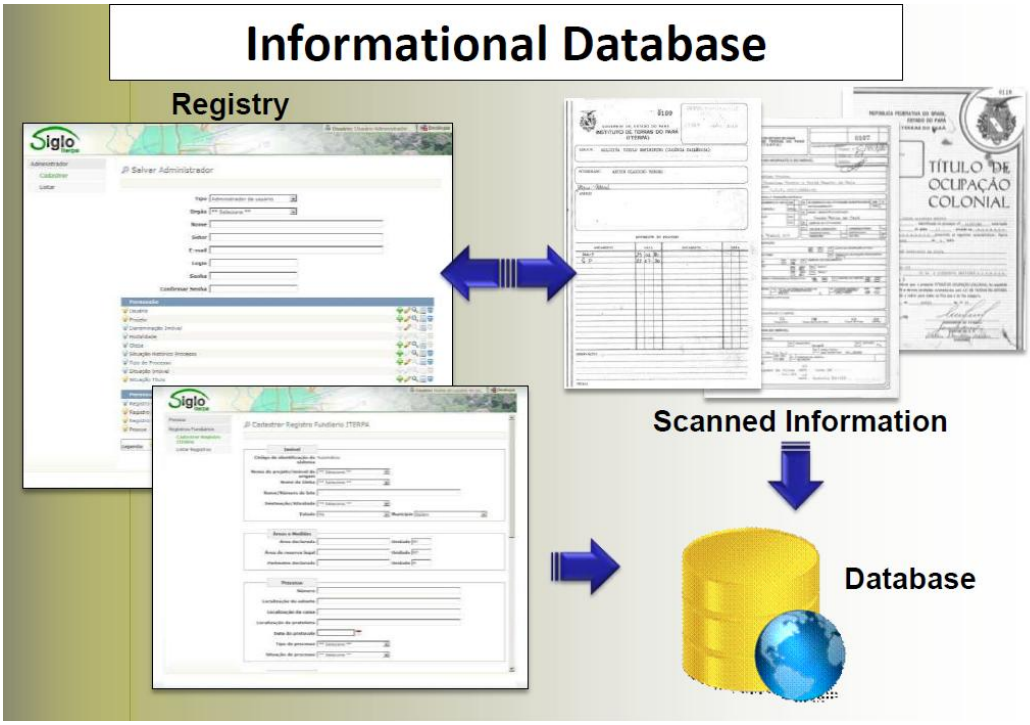
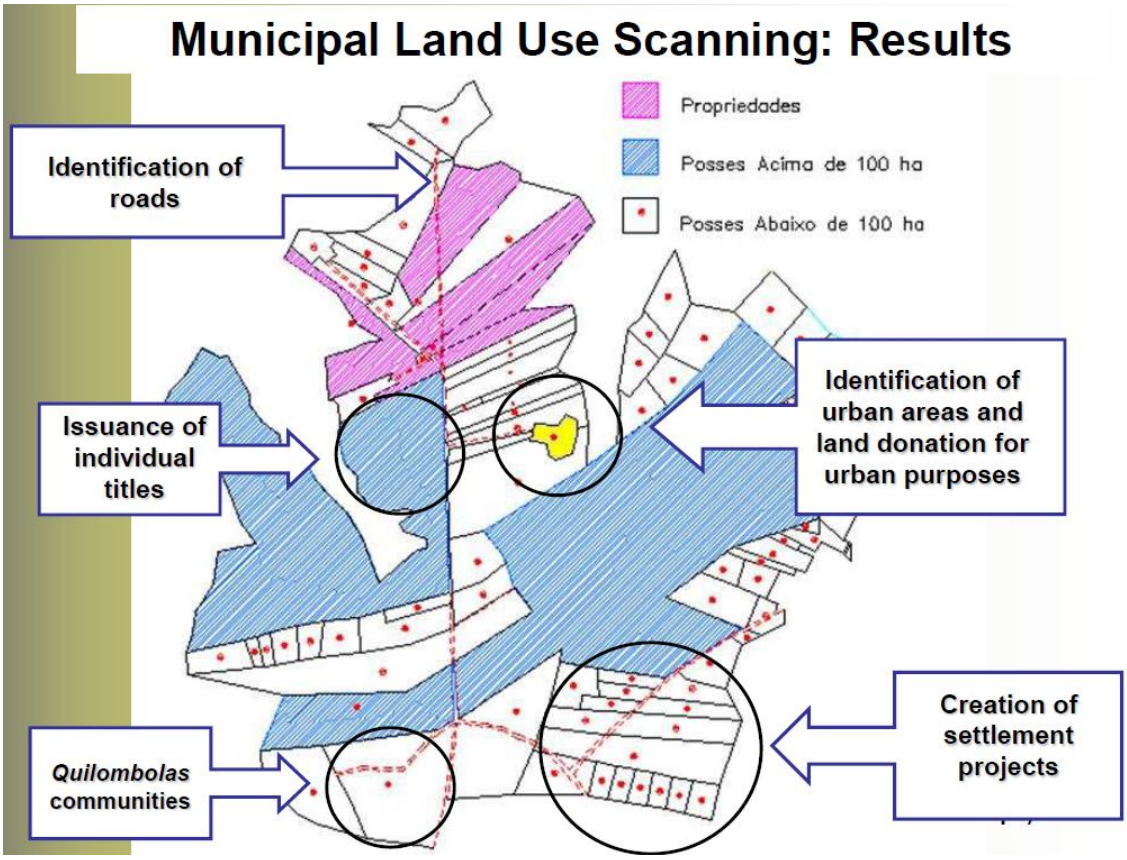


Figure 9: Municipal Land Use Scanning - Results



Legal changes and improvements of the State's administrative apparatus to implement land tenure regularization in Pará

In order to implement the land tenure regularization program in Pará, ITERPA also had to bolster the State's bureaucratic apparatus. At the State Level, ITERPA updated its regulations, trained its personnel, acquired new equipment, including GPS, computers, and vehicles and took steps toward acquiring an appropriated location to develop its activities. Besides the improvements in infrastructure and capacity building, this existing structure is still insufficient to implement in a few years, the proposed land tenure program in occupied federal and state areas.

To further bolster implementation capacity, the Federal Government is currently contracting private companies to geo-reference land holdings of approximately 100,000 properties in Brazilian Amazonia. In Pará these contracted companies began working with federal funds in 2010, under the *Terra Legal* Program coordination. They will identify and geo-reference land holding in over 23.4 thousand square kilometers in the municipalities of northeastern Pará (*Aurora do Pará, Capitão Poço, Irituia, Mãe do Rio, Santa Luzia do Pará, São Domingos do Capim* and *Viseu*).

This approach is further augmented by World Bank-financed State efforts. Using the same strategy, the state government of Pará, mainly with World Bank funding, is investing over $1 million to geo-reference rural land holdings in the municipalities of *Tailândia*, *Rondon do Pará, São Felix do Xingu* and *Dom Eliseu*. This combined approach has the objective to overcome land tenure chaos in Brazilian Amazonia and, at the same time assure Federal and State Agencies receive proper investments to continue a long-term land tenure program, especially after most labor-intensive activities have been finalized.

To expedite land tenure regularization, the Federal Government withdrew responsibility for Federal land regularization from INCRA through the *Terra Legal* program. This separation has enabled INCRA to focus on agrarian reform and on the creation of rural settlements, as well as on granting ownership rights to *quilombolas* communities. This federal land institute is also in charge of the rural properties registry, which will be integrated in the near future with the public land registry, crossing data related to rural economic activities with ownership rights.

Other actions have been taken under state authority to improve control over the existing information of land registries. As a complimentary activity in the land tenure regularization process, all Federal and State land titles issued in Pará since colonial times are being scanned and included in ITERPA's land database, reducing the risks of data loss and issuance of multiple property titles over the same area[xvii].

Finally, in the last few years the real estate national registry system has been modified to restrain *grilagem*. This process started in 2001, with Federal Law 10,267, which modernized the demarcation specifications for private properties[xviii]. This law enabled the comparisons of different public land databases[xix], which generated the first approximations of the *grilagem* scenario in Brazilian Amazonia.

When this process is completed, Pará will have for the first time a unified geo-referenced land tenure database with federal and state information. It will include the location of all legally issued property titles, their forest law compliance data, as well as the municipal urban limits, recognized indigenous and *quilombolas* communities, federal and state conservation units, roads and rivers. It is envisioned that this complete data will be continuously updated with the land scanning process in Pará's municipalities, and will be accessible to public registries in Pará, as well as all public and private institutions through the internet.

To almost eliminate the real estate transaction risks caused by *grilagem* in Pará, integration with the public registries is also being pursued.[xx]**.**ITERPA and the Federal Government are financing the digitization process of public registries in Pará, which in the near future will be integrated with the unified public land database that is already under construction.

The use of available technology to increase security in real estate transactions will also benefit state control over its territory, enabling prompt responses in identifying land owners responsible for environmental and human rights violations and/or land concentration.

This complimentary modernization program is the most comprehensive cooperation strategy involving federal and state agencies and the judiciary ever seen in the Brazilian Amazonia. It is already serving as a model to other Brazilian regions, where the *grilagem* problem is less severe, but still a problem

Chapter 4: The Continuing Agenda

What is new and potentially transformative in land governance and administration in Brazil is that in the last few years a number of measures have been introduced to regularize land tenure in the country on a large scale, with particular attention to urban settlements and rural lands of the Amazon region. Furthermore, in the Amazon, federal authorities from a variety of agencies and mandates have begun to intervene in complimentary ways. The progress which is being made in this area during the last few years shows the way towards accelerating and consolidating these efforts at sufficient scale to potentially mitigate adverse effects and put land governance and administration into the service of achieving the goals of affordable housing, efficient land use and environmental sustainability. New innovations and experiences show promise for institutional coordination, better use of technology and "smart" flexibility in the application of planning and environmental regulation enforcement. However, significant challenges remain at the policy and implementation levels to achieve these objectives

The limited reach of existing regularization programs

Despite the progressive legislative steps and the growing political momentum for regularization, the current reach of existing programs is very limited compared to the scale of the challenge. By the end 2008, the land regularization programs coordinated by the Ministry of the Cities were targeting 2.239 urban informal settlements throughout the country. These amount to an estimated 1.4 million people of which 324.000 had already received a land document, a legal proof of the existence of their land rights. Given the lack of accurate data on urban informality and urban land regularization programs, it is difficult to say precisely what share of the informal population these programs target. However, since the Brazilian Institute for Geography and Statistics (IBGE) estimated that in 2000, there were 22.881 informal subdivisions, 16.751 illegal subdivisions and 11.754 favelas, it is safe to say that these programs currently target only a minority of Brazil's informal settlements.

Generally speaking, the tenure policies implemented within the context of *favela* regularization have been more consistent, systematic and successful than those proposing the regularization of irregular/illegal *loteamentos*. This is probably partly due to the fact that there has been a greater degree of sociopolitical mobilization in *favelas* over the decades - which can be explained by the fact that *favela* dwellers have always had a more precarious legal status and thus forced to organize themselves.

On the whole, most regularization programs have been relatively successful regarding the undertaking of upgrading works and service provision, but they have largely failed to promote land legalization, especially in those *favelas* occupying private land. This may be largely due to the high financial costs and legal and technical difficulties involved. Bureaucratic

requirements and high transaction costs have been aggravated by the obstacles created by the registration offices and by the action of judicial power. The judiciary has often reduced the scope for state intervention in the domain of individual property rights, even in situations where the land occupation has been consolidated for a long time.

In the next section, one of the main reasons for the limited reach of existing programs is discussed. It is related to the legal framework and implementation capacity at decentralized levels of government.

Adaptation of land laws and implementation capacity at decentralized levels of government remain weak

At the federated-states' level, few states have specific constitutional provisions on land use and development control and even fewer states have enacted urban legislation, including the adaptation of Federal Law no. 6,766. As a result, few states have State Secretariats for Urban Development or suchlike agencies, and given the fact that they have traditionally dealt with sanitation and environmental matters there is a growing potential conflict with the action of municipalities on these matters. Some states like Sao Paulo and Rio Grande do Sul have made a consistent effort to have a say in the land use and urban development control process by formulating state-level urban and land policies.

The federated-states-led metropolitan apparatus in force between 1973 and 1988 was dismantled by the 1988 Federal Constitution and few states have replaced it with some kind of functioning institutional arrangement, such as the case of Minas Gerais. Sao Paulo's "*Cidade Legal*" program is potentially a model for the country in its support of municipal land regularization efforts. The organization and control of the property registration offices takes place at the states' level and the conditions vary enormously nationwide. More recently, *Defensores Publicos* (Public Defenders) has played a significant role in the defense of the housing rights of the urban poor, as on the whole the members of Ministerio Publico have tended to be more responsive to environmental concerns.

At the municipal level, few municipalities have formulated their own municipal organization laws such as determined by the 1988 Constitution. While some municipal organization laws do have specific provisions on land use control, adapting federal Law no. 6,766 or the City Statute, few municipalities have significant urban or environmental laws other than very traditional Building Codes and *Codigo de Posturas* ("Behaviours' Code") As a result they lack a specific institutional apparatus to deal with land use and development control. Moreover, few municipalities have formed inter-municipal associations or consortia.

S**ome 1,450 municipalities have approved some form of a master plan but most of those municipalities that have approved urban legislation including the main capital cities, do not have the full capacity to monitor its enforcement.**

Federal Law no. 11,977/2009 that governs the MCMV program will likely contribute towards making it easier to promote the legalization of informal settlements in a speedier

and more efficient manner, as a result of the significant changes it promoted in several urban, environmental, registration and procedural laws. In particular, the new notion of "urban demarcation" has already made it possible to promote important progress in some municipalities.

Legalization policies will likely continue to advance with renewed social mobilization of the affected groups, especially by their taking legal actions necessary for the declaration of their land rights, be they freehold (*usucapiao)* or leasehold (concession of use). The practice by both the municipal and the federated-state governments to offer so-called **"eviction-vouchers"** to the residents of informal settlements – many of whom already have nominal rights to remain on the land, but which have not been declared by the courts, so that they "accept" to leave the areas - is a likely candidate for such action. This is because households do not typically receive sufficient compensation to be adequately re-housed in a suitable location and because rights constituted over time are ignored in the process.

Challenges and innovation in land tenure regularization

In so far as the question of land titling is concerned, following Belo Horizonte's lead many regularization programs promoted by local government are still based on the recognition of individual freehold rights to the occupiers - which has proved to be one of the main factors determining their failure. However, some following the lead of Recife, Porto Alegre and other municipalities have formulated innovative tenure policies[21] taking into account the difficulties involved in promoting the legalization of invaded public and private land through the transfer of individual property titles. They have also taken into consideration the known situations in which legalized plots had been immediately sold by the original occupiers - who then moved on to invade other peripheral areas, thus starting the whole process all over again.

Innovative tenure programs have at their core a broader goal of integration. Policies implemented in municipalities such as Recife and Porto Alegre have been based on the assumption that even if it may create individual security of tenure in more immediate terms, the mere attribution of individual property rights does not necessarily achieve the main goal of most tenure regularization programs, that is to say, the full integration of informal areas and communities into the broader urban structure and society. They have also been based on the principle that tenure regularization policies have to be reconciled with the need to improve conditions of sociopolitical citizenship.

The new tenure policies formulated in Porto Alegre and Recife, for example, have supported the notion that the recognition of social housing rights does not entail the

[21] There is in the Brazilian legal system a gamut of alternative legal-political options to be considered apart from the transfer of individual freehold ownership, ranging from diverse forms of leasehold to still largely unexplored forms of collective ownership, allowing for varying degrees of state control. Until the enactment of the 2001 City Statute, the most "innovative" approach to tenure rights in urban areas in Brazil, as applied in both Porto Alegre and Recife, concerned the utilization of Concession of the Real Right to Use as the means of recognizing security of tenure. This was done within the context of broader municipal programs aimed at the legalization and upgrading of *favelas*.

privatization of public land, especially in the Brazilian urban context in which the amount of existing public land in urban areas is negligible in most cities.

In both Porto Alegre and Recife, tenure policies have favored the recourse to the legal institute of *usucapiao* as the principal means of promoting the improvement of tenure conditions and the legalization of settlements in private areas. Such policies are based on the political notion that, whenever possible, the original landowners should not benefit -through the payment of compensation by means of public money from the fact that, having failed to fulfil its social function, their vacant/under-utilized land has been occupied by people whose housing needs had not been met by either the state or the market.

They have also supported the legal notion that time creates rights as much as it abolishes rights, and that the occupiers of private land should be recognized as subjects of property rights of their own - and not as the beneficiaries of property rights forged by the state through expropriation followed by sale or donation. In other words, whenever possible the role of the local state in private areas should be restricted to facilitate, and possibly help mediate, the confrontation between the occupiers and the original landowner for the judicial recognition of the occupiers' freehold rights acquired through *usucapiao***.**

To a lesser extent, the new tenure policies have also considered the economic implications of regularization programs on the land market and on the financial capacity of the residents of informal settlements. The tenure rights recognized are supposed to promote legal security of tenure as well as minimize distortions on the land market. They are supposed to make the socio-spatial integration of the areas and communities possible and afford permanence to the original occupiers of the land once it has been upgraded and regularized.

Such policies also have a basic gender dimension as they support the notion that regardless of their legal marital status, women should be given priority treatment once the recognition of titles is promoted. As a rule, tenure titles have been issued in the names of both partners.

A more complicated category consists of the more controversial regularization of specific situations of illegal land development not covered under the social housing right, especially settlements on private or public land not occupied by the urban poor.

The approach adopted by the Brazilian public authorities based on the allocation of concessions of rights of use – as opposed to full land ownership – is considered by many researchers and policy makers as exemplary. It is pragmatic and appears to build on many informal pre-existing systems. For example, in the favelas of Rio de Janeiro, many Neighborhood Associations play the role of pseudo notaries. In the Rocinha, the largest favela in Latin America, the Neighborhood Association offers to the residents the possibility of documenting their land rights. It instituted standardized procedures to warranty the reliability of its land records and established fees to recover administrative costs. The provision of land right documentation services is actually a substantial source of revenues for the Association. Though this alternative documentation system is not recognized by financial institutions, thousands of families use it.

Since the backlog of informality is mammoth in scale given Brazil's advanced state of urbanization and large population, incremental approaches to regularization achieved through intermediate forms of land tenure now being adopted by government and modest infrastructure standards are particularly valid, as the alternative would postpone any benefits indefinitely for very large sections of the population.

The flip-side of this good practice is that concessions of use fall short of allowing real property to realize its fuller potential of empowerment. As the Commission on Legal Empowerment of the Poor (CLEP,[22] 2008 p35) observe: "The assets of the poor may be documented through informal local arrangements that provide some protection and liquidity. But these are rarely recognized by national institutions and do not allow capital to be leveraged more widely. Owners cannot use their assets to get loans, enforce contracts, or expand beyond a personal network of familiar customers and partners. Their property is often vulnerable to seizure through force or law." This quote underlines some of the limitations of informal land institutions and arrangements patterned after them.

Beyond pragmatism, however, Brazilian public authorities prefer CDRU and CUEM to full property rights also because the very limitations on formal transferability associated with these instruments is seen as a way of minimizing the re-concentration of land at the expense of the poor. There is a strong conviction that in Brazil, a very unequal society, where real assets have traditional been appropriated by the wealthiest minority, the state has an important role to play in protecting the real assets of the poor. In this light, CDRU and CUEM may be seen as part of a larger scheme of social reengineering of society.

Reconciling Brown and Green Agendas

Large scale regularization if done responsibly is an opportunity to check the environmental degradation often associated with informal settlement or natural resource exploration by: (i) creating a stronger, more permanent connection between settlers and producers on the one hand and the land itself on the other; (ii)introducing hard and soft infrastructures that help mitigate environmental damage associated with settlement and production activities; and (iii) rationalizing land use to reduce areas of severe infringement through planning and relocation when necessary.

The City Statute has upheld in an exemplary fashion the proposal for folding urban and environmental rights into urban planning activities by municipalities. The idea of ensuring that the 'green agenda' and the 'brown agenda' of cities are compatible is, for example, one of the reasons why the City Statute has received broad international acclaim. Whether the City Statute eventually gives rise to laws and public policies and effective strategies and urban-environmental action programs will, once again, depend crucially on the actions undertaken by municipalities and Brazilian society - within and outside the state apparatus. In many cities a

[22] Commission on Legal Empowerment of the Poor (2008). Making The Law Work for Everyone. http://undp.org/legalempowerment

conflict is evident between the burgeoning occupation of areas of permanent preservation or other *non-edificandi* areas and the social right to housing. Both values are constitutionally protected, with both rooted in the concept of the social functions of property and the city.

The problems engendered by some existing consolidated informal settlements point to the need to minimize further human occupation of environmentally sensitive areas. This will require not only closer monitoring and enforcement by local authorities but also parallel efforts to reduce the costs of access to land, urban services and housing in cities. Brazil also needs to formulate a policy for the appropriate preservation and conservation of duly demarcated areas by upgrading management and monitoring strategies.

Something also has to be urgently done about existing environmentally hazardous situations with regard to housing and settlements. This is a task that needs to be approached pragmatically, requiring maximum mitigation of, and compensation for, environmental damage. Removing or relocating people from the settlements should be a last resort only in extreme cases and subject to the provision of acceptable alternatives.

A more concentrated effort of doctrine, jurisprudence and practice needs to be promoted so as to reconcile the ever-growing environmental legislation in the country with the less developed urban development legislation, especially by proposing a more adequate framework – that of the socio-environmental function of property. In practice, this would likely include a balance between promoting the affordability of formal shelter access through better designed regulatory and land use planning interventions and land management practices on the one hand and increasing strict control and credible enforcement action on the most environmentally sensitive areas on the other. Only with such a combination can the long-term dynamic be altered. All of this requires a greater ability for metropolitan areas to work in a unified manner and the possibility to make subdivision requirements flexible and able to be fulfilled on an incremental basis, not necessarily at the moment of project inception.

It has proved equally difficult to deal with the issue of simplification of legal procedures, particularly those involving *collective usucapiao* interventions. The problems, as well as the costs, have been substantial. It is clear that approval of collective rights makes no sense if the procedural channels for recognizing such rights are not addressed. Given that fast track (*rito sumário*) legal procedures are not sufficient, there is a need to establish more flexible collective legal processes to take better account of the issues at stake. Finally, a more wide-ranging debate needs to be had with regards to reform of the judiciary and the Civil Procedure Code.

Part of the problem stems from the lack of reconciliation between jurisdictional responsibilities and land conversion that is the substance of urbanization. INCRA is responsible for the rural cadaster, covering the rural part of a given municipality and the local government for the urban part. But the decision to convert rural lands into urban ones is the exclusive competency of the municipal executive and council.

While inspired by an agenda of social inclusion, the urban reform movement in Brazil is still learning how to relate to both formal and informal land developers and promoters, as well as responding effectively to the dynamics of land markets, other than by imposing a

fictional urban order through urban legislation. On the one hand, the tradition of technocratic, comprehensive planning which wants to regulate all spatial development processes in detail, is still a strong presence in municipal governments. It inadequately considers the ability of the most vulnerable social groups to participate in that order and overlooks other socio-environmental concerns, including the fast-paced growth dynamics in rural peripheries. On the other hand, the growing pressure that pushes for total flexibility of the rules of the game constrains the space for dialogue about pragmatic solutions which involve public-private blends.

More than skilful legal drafting, the emergence of an appropriately balanced planning regime requires a deeper policy dialogue in communities about substantive matters related to property values and land use. Although one of the principles of urban policy defined by the City Statute is participation by communities in the value increment generated by the urban planning process, in the majority of Brazilian cities, communities have not been involved in the debate about rising property prices generated by interventions by the public authorities, in spin-off value capture from public works and services that have increased the value of private property, or in the formulation of urban legislation targeted at altering the ways of using and occupying land.

Making new subdivisions easier and cheaper: a key to reducing future informality

An important gap still to be filled is the need for redefining the legal framework on urban land subdivision (Federal Law no. 6,766 of 1979 i.e. Lehman Law). An important bill of law on these matters has been discussed by the National Congress for a decade. Although the bill has not been passed, an entire section on land regularization was appended to the Minha Casa, Minha Vida legislation and passed into law. The important bill of law (no. 3,057) currently at the Chamber of Deputies aims to reform Federal Law no. 6,766 of 1979 which governs the subdivision of urban land nationally.

Federal Law no. 6,766 of 1979 established a set of technical criteria and obligations to be met by land developers deemed by many to be excessive and too costly for the affordability levels of the broader population. These criteria included the stipulation of a number of infrastructure works and the determination that at least 35% of the land to be subdivided had to be reserved for public use and thus incorporated into the municipal patrimony. Municipal administrations generally lacked the capacity to cope with the bureaucratic procedures established by the law. The 1979 law also had a chapter dedicated to the regularization of existing irregular land subdivisions. This chapter on regularization failed to have an impact, however, given the fact that it did not address the variety of existing situations, did not remove longstanding legal obstacles, and did not reflect the socio-political dynamics existing in informal settlements.

Although Federal Laws no. 9,785 of 1999 and no. 11,977 of 2009.dispensed with some of the original legal requirements, including the minimum percentage of public land, and introduced some mechanisms to better facilitate the regularization of irregular land subdivisions, more is needed to make a significant impact on the realities determining the conditions of urban land development. One of the main claims supported by powerful groups of land developers concerned the need for the revised federal law to regulate the widespread

practice of urban condominiums (gated communities), which had not been covered by Federal Law no. 6,766. Size definitions and obligations of developers are among the issues to be addressed with respect to these communities. Moreover, a comprehensive treatment of the subdivision process for all economic segments of the society is still lacking. The following areas need to be addressed in the revised framework for sub-divisions:

Firstly, a new federal law needs to provide the conditions for the effective regularization of consolidated informal settlements on land directly or indirectly belonging to the Union, in general and particularly on *terrenos de marinha* (coastal land), by removing the existing obstacles to municipal and state regularization programs.

Secondly, a good solution needs to be found regarding the regularization of consolidated informal settlements on areas somehow subjected to environmental laws. The role of the *Ministerio Publico* in this process should be clearly defined, especially in those cases where there exists a right to regularization.

Thirdly, a great deal needs to be done to improve the provisions for registration of regularized settlements. Although it is necessarily a complex matter, given the many legal aspects and technicalities involved, it is imperative that the new law confront the longstanding problems. It may be that the registrars would need to be brought into the integrated licensing process in a more systematic manner.

Fourthly, from the viewpoint of the municipal management capacity, it can be argued that the existing bill of law still does not express the national realities. In fact, not many municipalities would be capable of coping with the proposed requirements of compulsory geo-referencing and complex administrative procedures for the approval and monitoring of the process of land subdivision. Combined, these two challenges could provide a recipe for further informality.

Fifthly, and related to the above point, there is the need to define a precise timetable for the municipal administrations to decide on land subdivision applications, as the current situation - in which the average process takes between three and five years – creates strong incentives for circumvention. . The current dichotomy between often conflicting urban and environmental legal requirements and separate licensing procedures can no longer be sustained. A good idea, launched but still under-explored in the bill of law, would be the creation of the legal category of compulsory owners' associations who would be involved in the social control of the licensing and implementation processes. The regulation of the matter of contracts also deserves better attention, and its implications from the viewpoint of consumers' rights have been strongly criticized.

Sixthly, the provisions for regularization need to be revisited following the enactment of Federal Law no. 11,977/2009. Successive changes in the bill of law have tried to promote a clearer legal and political distinction between the two existing situations, namely, informal settlements occupied by low-income people where there is a collective right to regularization, and informal settlements where regularization is still a matter for the discretionary action of the public authorities. Especially in the former case, a broad discussion needs to be promoted in

order to define the most appropriate technical criteria (particularly regarding the minimum size and width of plots) and the obligations particularly with respect to infrastructure works to be solely or partly implemented by the developer. Part of this solution may entail more flexible conditions for the incremental implementation of urban infrastructure, the nature of the guarantees to be required from the developer and the very definition of who can promote land subdivision (including by involving housing co-operatives and encouraging public-private partnerships, etc.). On the whole, despite the widespread criticism of Federal Law no. 6,766/1979, the bill of law currently has a broader and more demanding set of regulations and requirements than that of the law in force. Special attention needs to be given to the discussion as to how the combined requirements will impact on land prices, given the socioeconomic realities prevailing in the country.

Finally, the bill of law also needs to consider in proper detail the variety of existing situations of consolidated informal settlements on urban land, including those in regions of Brazil other than the South and South-East, as well as indicating their different legal implications. In all such cases, though, the bill of law would probably need to further reinforce the importance of creating ZEIS (Special Zones of Social Interest) corresponding to the settlements to be regularized.

A Growing Land Administration Challenge

Urban land regularization in Brazil is not just about providing families with a formal land document, it is also about reforming land institutions so that they are accessible to all segments of the society. In the municipalities selected, it was seen that it is often the public domain that is informally occupied, and more precisely the federal and the municipal domains. One reason for that is obvious: the state owns a lot of land[23]. A second reason is linked to the actual way the public domain is administered. If public land allocation mechanisms had been more functional, it would not be necessary to regularize the *Ilha dos Valadares*, *Joaquim Leão*, and many other informal settlements that are located on parts of the federal domain suitable for residential use. In these cases, informality is caused by dysfunctional institutions, excessive bureaucracy and judicial constraints.

It is publicly recognized that the federal government always had difficulties administrating its domain. The SPU itself recognizes the need for putting an end to what it calls a long historical process of loss of control of the federal patrimony. The SPU/MPOG does not have data about Federal property effectively vacant. However, there is information that there are still many federal vacant or idle properties. For this reason their allocation is being prioritized for federal housing programs. The SPU is allocating about 10 million m2 of federal areas for programs such

23 This is due to historical and geographical factors. Historically, since 1831, the federal government, then imperial government, is entitled to the *terrenos de marinha*, and this entitlement was later on extended to the *acrecidos de marinha*. Geographically, these municipalities have an important part of their territory that is delimited by hydrography and their urban growth has systematically been accompanied with the colonization of swamps and flooded forests. These areas automatically become property of the federal government and, since the federal constitution prohibits their alienation, they remain the property of the federal government.

as Minha Casa, Minha Vida. In addition, it has yet to place thousands of kilometers of LPM and LMEO. As of December 2009, in the selected municipalities, the LPM and LMEO had only partially been placed, and often where land value was the highest – which is not where low income families have generally settled. Delimitation works continue, but the methods used to place the LPM are questionable. According to some sources, the LPM is often illegal because engineers who obviously have a hard time identifying the average level of the sea in 1831 use the current average level of sea or the line of jundo24. All of this poses challenges to Brazil catching up with an emerging international trend over the last decade that looks more critically at public land assets and seeks to apply standards of economic efficiency and effective organization management (Kaganova and McKellar, 2006)25. Facing these challenges, SPU in recent years greatly increased the identification in areas of land regularization and social housing projects, such as the PAC - Growth Acceleration Program. The delimitation of the LPM (Terrenos de Marinha) rose from 42% to 64% off the Brazilian coast and LMEO (Terrenos Marginais) from 3% to 25% in federal rivers, especially in the Amazon. In addition, approximately 10 million m2 of vacant properties have been directed to housing programs.

Even though the current capacity of the state to administer its domain as well as the level of accessibility of the public land administration system are questioned in this Study, it doesn't mean that privatizing this domain is necessarily the solution. First of all, the privatization of the public domain in general, and the federal domain in particular, is a sensitive political issue. As the experience of Vitória shows, it is likely to face legal challenge[26]. Amounts collected in *foro, laudêmio* and occupancy tax are not negligible, and in fact they are significantly increasing in some parts of the country[27], while public assets play an important function in increasing public authorities' borrowing capacity.

Other sources of controversy regarding the administration of the federal domain are the use of emphyteutic leases, the constitutional interdiction to alienate the *terrenos de marinha* and *acrecidos de marinha*, and more generally a certain reluctance of the federal government to alienate its domain. The Civil Code of 2002 prohibits the constitution of new emphyteutic leases. As noted earlier, within the framework of current land regularization programs of social interest, instead of using the controversial emphyteutic leases, the SPU prefers to allocate CDRU and CUEM. Regardless of the type of rights allocated, in all these

24 The line of vegetation that marks the end of the beach.

25 Kaganova, Olga and James McKellar (Editors). Managing Government Property Assets: International Experiences, The Urban Institute Press, Washington DC, 2006.

26 In 2005, some argued that with the constitutional amendment no.46 – that took out from the federal patrimony islands where seats of the municipal prefectures are established – the federal government had lost its rights over a large part of Vitória, Espirito Santos, where a third of the real properties are owned by the federal government. The case was brought to the federal tribunal as in the federal constitution it is also stipulated that the federal government owns what it already owns and what it will own. The federal tribunal ruled in favor of the federal government that retained its rights.

27 Between 2005 and 2008, the amount collected in *foro*, *laudêmio* and occupation tax collected in the State of Paraíba jumped from R$3.6 millions to R$6.6 millions. Over the same period of time, amount collected in the State of Alagoas increased form R$3 millions to R$4.9 millions.

cases, the federal government only transfers part of its rights. It remains the actual land owner.

As regularization programs are executed, land administration needs are rapidly increasing but current public policies mainly focus on the initial step of granting recognition and do not address the issues of ongoing compliance with the terms of allocation or subsequent land transactions. The number of CDRU, CUEM, and authorizations of occupation that the federal government has to administer is fast increasing. Between December 2006 and September 2009, the number of emphyteutic leases and authorizations of occupation administered by the SPU in the State of Alagoas rose from 7.395 to 12.144. In the State of Paraíba it increased from 8.748 to 10.175.

Making the current formal land rights documentation system simpler and more accessible is a real challenge that is currently facing the government of Brazil. Thousands more CDRU, CUEM, emphyteutic leases and authorizations of occupation are going to be allocated by the federal government in the near future. It means that an increasing number of people are going to have to fulfill the civil, fiscal and administrative obligations that come along with these rights. If the state does not have the capacity to administer these rights, or if those who hold these rights do not have sufficient accessibility to the system, it is likely that future land transactions will be informal. As the Commission for the Legal Empowerment of the Poor (CLEP, 2008) points out: while the poor often resort to informal means because their affordability level effectively excludes them from the formal economy, they sometimes choose to operate informally because formal institutions are dysfunctional or inaccessible.

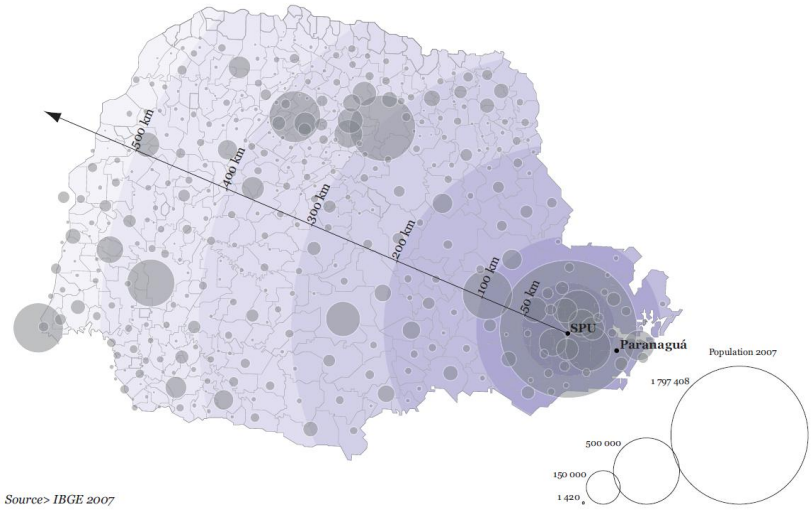
The federal government has made real efforts to mainstream land regularization procedures, as well as transfer and decentralize responsibilities. The SIAPA is computerized and managed by the superintendencies in the state capitals. Many documents can be downloaded from the website of the SPU. It is very easy to obtain a proof of registration (RIP). Individuals who acquire land rights retained on the federal domain can download the Document of Federal Tax Collection (DARF) and pay the transfer tax from most ATMs.

At the same time, the SPU is only represented in the state capitals. Map 4 shows that in the state of Paraná, several medium and large cities are more than 300 kilometers from the SPU, located in Curitiba. Since Brazil has 5564 municipalities and the SPU has 27 superintendencies, the SPU is not easily accessible from most municipalities. Additionally, once they have registered their rights in the SIAPA, occupants of the federal domain also need to record them in the notaries' land registries which adds to the delays and cost of the registration process.

Most municipalities do not have extensive experience in public land administration with established routines and standardized procedures to warrant the legality and reliability of information. To increase its accessibility, the SPU could open local representations or delegate to the local governments the responsibility of administration of the parts of its domain that have been declared ZEIS, the same way that, in Rio de Janeiro, the Municipal Secretariat of Finance

does with the Municipal Secretariat of Housing[28]. The federal government could then play a role of assistance and supervision. Of course, the objective is not to add to the existing bureaucracy, but to find a right balance so that public land registries are administered according to the basic principles land registries need to follow, such as continuity, legality and publicity. Many municipalities already struggle with their fiscal cadastre and there is reason to believe that some sort of assistance would be welcome.

Map 4: The SPU in the State of Paraná



Ending the race for property rights - closing the last frontier

There is an increasing pressure from international and national markets and consumers to increase trade restrictions over products originating from environmentally and socially predatory activities and to securitize forest carbon. Pará's promotion of equitable and environmentally sound economic activities through its public policies is a direct response. In this scenario, the present federal and state land tenure regulation programs are leading to the convergence of land governance and environmental policy for an integrated territorial management for Brazilian Amazonia. The central aims of this policy include not simply economic development, but also: improvement in the quality of life of the population in general; a reduction in violence related to land disputes in Amazonia as well as violations of human rights; recognition of property rights for the full spectrum of social segments; and a reduction of illegal deforestation.

[28] To implement and monitor this reform process, and to "democratize" the way federal real assets are administered, the SPU instituted national and state working groups. State working groups are responsible for identifying federal real assets that could be used to support public programs of social interest. The national working group comprises representatives of the central body and the superintendencies.

The generation and maintenance of such a comprehensive land tenure database is a long-term project which can only be accomplished with ample resources, careful planning, and the joint efforts of legislative, judicial and executive branches from all spheres. The civil society also needs to be directly involved. The first results of ITERPA's project in Pará reinforce this position. However, what exists thus far is mostly an effective methodology to orient this process and to promote an integrated territorial planning. The allocation of sufficient funds and balancing of conflicting social interests remain key ingredients for implementation success.

Remote sensing, GPS and ICT will expedite the achievement of a full multi-purpose cadastre and integrated data model. This is no longer prohibitively expensive or technically very difficult. In Brazil, state governments like those of Pará and Mato Grosso, assisted by NGOs like The Nature Conservancy and Imazon, are leading the innovation curve and taking the process to the municipal level. The systems like those which Pará and Mato Grosso are currently building will fully account for space, forest cover /inventory and resource inventory.

These systems make their land/resource information databases transparent and accessible and they permit Federal, State and local governments to cooperate in monitoring land governance and resource use in near-real-time. This type of mutual monitoring based on transparent cooperation and unified data is already showing results in the Amazon, especially through the linkage of embargoes on beef sales to compliance with the CAR. With the on-set of these multi-use data models, Brazil is moving from a tenure concept based on a "bundle of rights" to one based on a "bundle of interests" in which land tenure over a given space is a complex mixture of rights and obligations, constantly monitored and subject to change.

This approach to land governance including incentive-compliant enforcement can play a large role in the pre-emption of the race for speculative private rights in forested areas through helping to create viable markets for intensifying agricultural production, organizing payments for ecosystem services, and assisting credible public actions for land use enforcement.

Annex 1: Summary of land governance functions

Category	Regulatory instruments
Planning	Municipal Development Plan (*Plano Diretor*)
	Administrative boundaries of rural and urban areas (*Fronteira rural/urbana*)
	Zoning (*Zoneamento*)
	Use and occupation of land (*Uso e ocupação do solo*)
	Supervision of Construction Codes (*Códigos de Construção*)
	Urban site planning of informal settlements (*Planejamento da urbanização dos assentamentos informais*)
	Sectoral programs of infrastructure and transport (*Programas setoriais de infra-estrutura e transporte*)
Fiscal policy	Urban Property Tax (*Imposto Predial e Territorial Urbano* (IPTU))
	Contributions for improvements (*Contribuição de melhoria*)
	Other contributions and levies (*Outras contribuições e taxas públicas*)
Legal	Compulsory Territorial Development and Constructions (*Desenvolvimento Territorial compulsório e construções*)
	Preemption Rights of transfer and construction (*Direito de Preempção, de transferência e de construção*
	Expropriation for social or cultural purposes (*Desapropriação para fins sociais ou culturais*);
	Acquisition of additional construction rights for the government (*Aquisição de direitos para construções adicionais do governo*)

	Collective land management (*Gestão Fundiária coletiva*)
Administrative	Use right concessions, (*Concessão de direito de uso*), Public-Private Partnerships (*Parcerias Público/Privado*), Urban development funds (*Fundos de desenvolvimento urbano*), Zones of Social Interest for purposes of regularization and titling (*Zonas especiais de Interesse Social para fins de regularização e titulação*)

The constitutional and legislative framework for land governance and management has generated the institutional framework which carries out the on-going governance and management of land relations in Brazil. The current institutional picture for the Brazilian Agrarian Administration is composed of the following the nine sets of main institutions:

a) Federal government with approval of legislature - the creation of the Units of Conservation of different types (National Extrativistas Reserves, Forests)

b) State governments with approval of legislature - the creation of the Units of Conservation of different types (State Extrativistas Reserves, State Forests and Others)

c) National institute of Reforma Agrária (INCRA) Ministry of Agrarian Development and the Economy, is responsible for:

i) Create and inform about the unique parcel number in the property registry

ii) Discrimination of vacant public lands; i.e, the differentiation of vacant public areas from areas of occupation and private ownership.

iii) Create the cadaster of immovable properties in rural areas (although this is incomplete and many areas only have an auto-declaration for purposes of the rural land tax)

iv) Granting of occupation rights for agrarian reform settlements. The emancipation of these rights to settlers has not yet been defined.

v) Utilize vacant public lands for diverse objectives such as colonization, agrarian reform settlements and others.

d) State land institutes –Responsible for the governance and administration of public lands belonging to the States of the Federation.

e) System of registries of notaries– supervised by the Ministry of Justice, this is an autonomous system of private notaries who are responsible for the control of purchase-sale and other contracts relating to immovable property;

f) System of registries of immovable property – Also supervised by the Ministry of Justice, this system maintains the property books in which all transactions associated with rural and urban properties are recorded. These registries are not necessarily associated with cadastral maps except in certain areas where Law 10,267 has been implemented, making it difficult to reliably identify public land and to clarify the location of some private rights.

g) Municipalities – Comprised of local executive and legislative powers which define and establish:

i) The Municipal Development Map (*Plano Diretor Municipal*) which establishes which areas in the municipality are classified as rural and urban, and which will be transformed from rural to urban,

ii) The municipal technical cadaster for multiple purposes, chiefly for planning and the charging of the Property Tax - IPTU (Imposto Predial e territorial urbano)

iii) Calculation of the valuation rates of lands for purposes of charging the Property Tax.

iv) Preparation of all policies for use, management and enforcement of the land policies, among others those of the Law of Cities.

v) Charges and collections for the Rural Property Tax in accordance with the agreement with Federal government. The discrimination of the Rural Property tax after the updated cadaster of owners of rural properties permits 100% of the property tax collection to go to the municipality. [1]

h) Union's Patrimony Secretariat (Secretaria do Patrimônio da União (SPU)) – Ministry of Planning—is responsible for all properties belonging to the Union, i.e., the Federal government, including vacant public lands (terras devolutas) It is responsible for transferring information about vacant public lands to INCRA in order for them to receive their unique registration number. It focuses its efforts principally on regularization of urban lands and special cases of rural lands. Except for the areas managed by INCRA for federal support for Agricultural Development, the SPU is responsible for managing federal property, including land, water and forests that are directed to various federal, district, state and municipal levels, to support local development in coastline and inland, especially in support of projects of land regularization and housing, with emphasis on the regularization of traditional communities in the Amazon.

i) Federal Receipts (Receita Federal) - Ministry of Finance; it is responsible for the collection of various direct taxes, principally the income tax. It received the mandate to collect the rural property tax during the first Cardoso government in 1986. [1]

Annex 2: The Evolution of Land Administration and its Legal Instruments

Land governance in modern Brazil originated at the outset of colonization with the treaty of Tordesilhas signed between the Portugal and Castille en 1494. The treaty resolved the dispute between these kingdoms and agencies of the Catholic Church regarding territorial dominion and legal claims to the newly "discovered" American continent before the Portuguese actually occupied the Brazilian coast beginning in 1500.

Once the Treaty of Tordesilhas was established, Portugal began its process of the military occupation of the Brazilian coast and began to make legal designations about land. This process became more formalized beginning in 1530 with the advent of absolute control by Portugal and its assertions of sovereignty. The political dominion of Brazil belonged to the King of Portugal and the totality of its lands was designated as property of the Crown and of the Order of Christ, an agency linked to the Catholic Church, whose chief was the King of Portugal. The King legally considered all the land of the territories then called Vera Cruz, Santa Cruz and Brazil as empty, thus excluding the applicability of any property rights within the Portuguese legal system to indigenous populations which inhabited those areas.

At this time the colonial Portuguese state began to utilize legal instruments already existing in the Kingdom to regulate the concession of lands to its subjects residing in Brazil. The most important instrument for the granting of land was the *Sesmaria*, or land grant, usually of considerable size, "a parcel or portion of land the granting of which entitlement to a grantee depended on symbolic occupation of the land by the grantee, followed by an act of granting sovereignty and subsequent registration in a *tabelionato*" (a registration book).

In the legal regime of Sesmarias, beneficiaries who did not effectively make the land productive by cultivation during a period of five years were supposed to return it to the Crown. But this condition was not applied in Brazil and the beneficiaries of Sesmarias were almost never subject to any sanction for not cultivating land. The business of colonial Brazil was the extraction of natural resources, not cultivation. Many observers have pointed to this historical situation as part of the origin of unproductive latifundios in Brazil.

The Sesmaria system in Brazil continued to be the formula applied for the transfer of land under the control of the Portuguese Crown to individuals, until Independence in 1822. The Sesmarias that had been measured, recorded, demarcated or confirmed remained valid and were recognized after Independence. Few owners met all the use requirements or legal requirements which supposedly regulated Sesmarias, but lands were not returned or re-nationalized by the Crown as the beneficiaries of these concessions occupied prominent positions in the administrative apparatus of the colonial State.

The legal instruments of the kingdom were adapted to the needs of the colonial system and the essential features of governance around land granted based on these instruments were validated by subsequent laws of the Empire, constituting the basis of property ownership in Brazil, and setting the stage for the current legal regime. Indeed, the system of registration in private, local

offices called *cartorios*, derives from the system originally adopted for the recording of Sesmarias through local Catholic parishes.

The Law of land in 1850: State recognition of private property.

After Independence in 1822, the legal regime governing the original Sesmarias was abolished, but the Brazilian Empire continued to grant titles to individuals, through royal letters of concession, that in all aspects resembled the Sesmarias and whose registration was performed by the Catholic parishes in their capacity as the official religion of the Empire. In addition to the areas granted by means of Sesmarias or royal letters, there also appeared spontaneously occupied areas, whose holders sought legal recognition from the imperial administration, since all the land-titling continued under the legal domain of the Crown of the Brazilian empire.

Recognition of land tenure rights became more legally systematized with the *Lei de Terras* of 1850 (i.e, the Land Law, Law 601/1850). The Land Law of 1850 abolished the rules of land donation through the Sesmaria and royal letter regimes and established the purchase of public lands as the only legal form of land acquisition from the State. It further conferred titles of private property of land to all those who lived and produced on occupied land, and defined all unoccupied land as State property that could be acquired only through purchase. This law is often viewed as having consolidated the land rights of a small, propertied elite, while closing off options for an egalitarian distribution of land in rural areas. The first amendments to this legislation did not occur until in 1930, when the State was authorized to expropriate land for public interest with compensation of the land owners. Thus all non-indigenous, private land rights in Brazil can be traced back to either a Sesmaria or a subsequent allocation of public land based on purchase or occupation.

Constitutions, Civil Codes and Land Rights, 1850-1988:

While the Land Law of 1850 remained on the books, the fundamental framework for land governance and land management in Brazil continued to be modified at the national level through the various Constitutions and Civil Codes of the nineteenth and twentieth centuries. Crown land became public land which was ceded to the State of the Federal Republic, except for certain areas along river banks and coasts, in a fringe along borders, and in areas reserved for Federal government installations and military uses. Early Constitutions guaranteed the right to property and the right of government to expropriate private property for public use with just compensation. A new concept of the social purpose of land was established in the 1967 Constitution, although the right of government to expropriate private property for social purposes had been first mentioned in the Constitution of 1946[1]

Prior to the 1988 Constitution, the Brazilian state – at all governmental levels - had little legal scope for regulating the process of urban land development, other than was determined by its elite-controlled, largely undemocratic nature**.**[1] In the context of Brazil's historically contradictory federal system, the lack of a proper constitutional treatment of urban and territorial jurisdiction issues led to endless legal controversies and conflicts between federal, federated-state and municipal governments concerning the power to enact urban legislation and implement urban land policies. While municipalities have always had basic legal powers to promote territorial

organization, effective state intervention in urban areas to implement more significant infrastructure and equipment, particularly during the years of authoritarian rule between the 1964 military coup and the 1988 Constitution, which corresponded to the peak of urbanization in the country, was largely decided at the federal and federated-state levels under conditions of weak political and fiscal accountability. This corresponded with the attrition of the autonomy of more than 5,000 municipalities, which lacked legal, technical and financial resources and instruments to tackle the many socio-environmental problems brought about by rapid urbanization.

The vast majority of municipalities did not have – and still do not have – land development control legislation other than precarious perimeters laws based on unreliable data and out-dated cadastres. Municipal services and infrastructure tended to be concentrated in the regulated urban areas, while residential areas produced through illegal processes by the urban poor were long treated and even tolerated by the public authorities as if they were invisible, including in the official maps, when they were not directly confronted through forced eviction or removal policies.

Those few municipalities, especially the capital cities, which tried to build more solid urban-legal orders through the enactment of land use and subdivision legislation, as well as more articulated zoning schemes, had to face the longstanding opposition of conservative legal doctrine and jurisprudence favoring an unqualified approach to individual property ownership rights in the terms of the 1916 Civil Code – which was in fact the main legal document in force throughout the process of rapid urban development in Brazil. It was not altered until 2002. Many attempts at urban planning were undermined, jeopardized, constrained or plainly rejected on the grounds of their alleged "unconstitutionality" in the face of the civil legislation.

This longstanding civil law approach to property ownership - largely considered as a commodity, the economic content of which is to be determined by the individual interests of the landowner - significantly reduced the scope for state action in the domain of property rights to impose socio-environmental and other collective values during the period of Brazil's most rapid urban growth. This civil law paradigm was aggravated further by an excessive bureaucratization of contractual and commercial practices regarding land use and development, especially insofar as the requirements of land registration and access to formal credit are concerned. An intricate and self-contained legal system was created around the cycle of titling-registration-credit through intertwined provisions governing formal socio-legal land relations. The expense and exclusiveness of the system obligated the majority of Brazil's citizenry to step outside of the law to have access to urban land. Moreover, in legal-political terms, the urban population was virtually excluded from the law- and decision-making processes on urban questions at all levels, especially in the nine institutionalized metropolitan regions, which were administered in a largely authoritarian fashion between 1973 and 1988.[1]

The 1988 Federal Constitution: a new legal-political order for the cities

The urbanization process in Brazil started in the 1930s and had its peak in the 1970s, during which period several federal constitutions were promulgated – 1934, 1937, 1946, 1967 and the 1969 general amendment. However, until the 1988 Federal Constitution came into force there were no specific constitutional provisions to guide the processes of land development and urban

management. It was the original chapter on urban policy introduced by the 1988 Constitution that set the legal-political basis for the promotion of urban land policy reform in Brazil.

The innovative constitutional chapter on urban policy resulted in a significant improvement to the conditions for the political participation of the urban population in the law- and decision-making processes. Much of this constitutional chapter resulted from the "Popular Amendment on Urban Policy" that had been formulated, discussed, disseminated and signed by more than a 130,000 social organizations and individuals involved in the Urban Reform Movement.

This Amendment defined the notion of the **social function of property** in such a manner that it would impose itself as a new legal paradigm, replacing the liberal one established by the 1916 Civil Code. The main claims put forward by this "Popular Amendment" were: the recognition of the social right to housing; the right to the regularization of informal settlements; the democratization of the access to urban land through the recognition of the social function of property and the adoption of measures to combat land and property speculation. The Amendment also gave autonomy of municipal government and specified the adoption of a democratic and participatory form of urban management.

Several compromises were eventually agreed upon and a groundbreaking chapter dedicated to urban policy was eventually inserted in the 1988 Constitution, in which most of the content of the Amendment was recognized, creating the **social function of property and municipal autonomy** as new principles for urban policy and property rights.

At that juncture, however, there was still no political consensus on the recognition of the social right to housing. This right was not recognized in the 1988 Constitution. The Constitution makes no specific mention of *favelas*, and simply considers the provision of housing as a matter for the concurrent power of the federal union, federated-states and municipalities. Each should "promote housing construction programs and the improvement of the existing conditions of housing and basic sanitation". They should also "combat the causes of poverty and the factors of marginalization, promoting the social integration of the less favored sectors" (1988 Federal Constitution, Article 23, IX and X). The need to regulate land and property speculation in cities was explicitly addressed, however, and new legal instruments were created for this purpose, namely, subdivision, utilization and compulsory orders; progressive property taxation; and a punitive form of expropriation.

The right to the regularization of consolidated informal settlements was promoted through the **approval of new legal instruments aiming to render such programs viable**. Concerning settlements formed on private land (*usucapiao* rights), this entailed **adverse possession rights** for those occupying less than 250m² of private urban land for five consecutive years. Proposed with the situation of *favelas* and *loteamentos* dwellers in mind, this change aimed to render regularization policies more viable, thus strengthening the local regularization programmes that had been initiated in 1983 by Belo Horizonte and Recife. Applicable in theory to perhaps half of all existing *favelas*, it was a major step towards recognizing *favela* dwellers as citizens. Regarding the informal settlements on public land, the 1988 Constitution also made a vague reference to the instrument of the **concession of the right to use**, a form of leasehold.

The other important innovation of the 1988 Constitution of land governance is the establishment of the autonomy of the municipal government. The autonomy of municipal government was recognized in legal, political and financial terms, to such an extent that Brazilian federalism is considered to be one of the most decentralized in the world. The 1988 Federal Constitution reserved for the municipalities the most important role in the process of urban land development control through the creation of the **municipal territorial plan**. Although both the federal and federated-state governments have concurrent power to enact laws and to formulate policies and programs on the matter of land use and territorial development, their scope is limited to very generic directives or related to specific situations that cannot be solved at local levels. Municipal government is responsible for the actual enactment of urban legislation and for the implementation of specific urban policies. It has the real authority in urban land governance. However, while it strengthened the individual municipalities, the 1988 Constitution did not spell out directions on the matter of metropolitan or regional administration, transferring to the federated-states the power to do so.[10]

According to the new urban framework introduced by the 1988 Federal Constitution, the economic content of urban property is to be largely decided by municipal government through a participatory legislative process, and no longer by the exclusive individual interests of the landowner. The creation of new legal instruments such as compulsory edification, progressive taxation and flexible expropriation, together with other instruments to be created by local legislation, aimed to put the local government in the lead role of the urban development process. The local population is now entitled to participate in decision-making over the urban order, both through their elected representatives, and directly, through the action of urban CBOs and NGOs. By doing so, the 1988 Federal Constitution recognized that the decision-making process of urban questions is an important local political process. For the first time, the urban population was to some extent considered to be a political agent for purposes of land governance. While the local authority was confirmed as the preferential promoter of the urban growth process, a new collective right was also recognized: "the right to urban planning". Much more than a mere faculty of the municipal administration, it is one of its main legal obligations, as well as an expression of social citizenship.

Whereas the main prevailing difficulties preventing the recognition of security of tenure in irregular/clandestine *loteamentos* have a financial nature (i.e., the costliness of making remaking subdivision plans and surveys and installing minimal infrastructure), it might have been expected that all legal controversies around *favela* legislation and regularization programs would have ended with the inclusion of the "social function of property and of the city" in the 1988 Federal Constitution. However, while there is decreasing resistance to the approval of general zoning laws and master plans in most cities, those laws supporting *favela* regularization programmes still face fierce opposition, especially when it comes to the legalization of the invaded plots.

The provisions of the urban policy chapter of the 1988 Constitution marked a turning point in land governance and administration, with potentially significant consequences for low-income housing and informal settlements which are now beginning to be realized. However, it left many open questions which still had to be answered, such as the compatibility of the new provisions with economic, environmental and fiscal policies, regularization of tenure procedures, and establishment of the legal instruments to implement the new policy

Institutional reform: the creation of the Ministry of Cities and the National Council of Cities

This gradual, fundamental process of legal reform has also been supported by a significant process of institutional change, in which the creation of the Ministry of Cities in 2003 deserves special mention.

Only with the election of President Lula in 2003 was an original decision made to create the Ministry of Cities. The fact that the Ministry's creation was a response to the social claim long defended by the NFUR and other stakeholders, has conferred a special form of social legitimacy on the Ministry of Cities.

The Ministry consists of an Executive Secretariat presiding over four National Secretariats, namely, housing; environmental sanitation; public transportation and mobility; and land and urban programmes. Among other tasks, the Executive Secretariat has focused on building the capacity of municipalities to act, initially through a national campaign for the elaboration of multipurpose municipal cadastres. As well as formulating national programs on their respective subjects, the four Secretariats have been involved in several negotiations with the National Congress to promote further changes in the regulatory framework in force, with a relative degree of success so far.

Two important ongoing initiatives implemented by the Land and Urban Programs Secretariat are the National Program to Support Sustainable Urban Land Regularization and the National Campaign for Participatory Municipal Master Plans.

The National Campaign for Participatory Municipal Master Plans has been instrumental in boosting the discussion and mobilization nationally around the above discussed issues. Over 1,600 municipalities were under the constitutional obligation to formulate and approve their master plans by October 2006, and for this reason there is currently a significant nationwide process involving some 1,450 municipalities which, in different ways and to differing extents, have been formulating or (in a few cases) updating their master plans. It is the political and technical quality of this process that will eventually determine the extent to which the possibilities of the new legal-urban order proposed by the City Statute will be realized.

For this gigantic task to be properly fulfilled there was an enormous need for municipalities to be provided not only with capacity building and financial resources, but also with adequate technical information and conceptual formulations. Educational "kits" have been widely distributed, grants have been given to municipalities and registered consultants committed to the urban reform agenda; a "bank of experiences" has been created, organizing materials from more than 700 ongoing experiences; a virtual network disseminates experiences and information; and seminars and all sorts of meetings have been promoted throughout the national territory, always in partnership with local institutions.

In the same legislation that established MCMV, **Federal Law no. 11,977/2009,** new regulations for urban land regularization were included, finally creating the legal enabling framework to implement more fully the regularization concepts established by the City Statute.

Annex3: Methodology for Selecting Urban Case Study Municipalities

In this Study urban informal settlements are areas located within the urban municipal perimeter (as defined by municipal law) that have been informally or illegally subdivided and which are predominantly used for housing purposes[1]. The Study examined regularisation practices in a sample of municipalities Ideally, this sample would have been selected randomly from a list of all Brazil's 50,000 plus informal settlements, but such an inventory does not exist. Also documenting widely dispersed informal settlements was beyond the resource constraints of the Study. Instead, a non-random sample of municipalities was used. At the moment of the study, Brazil had 5564 municipalities. The Study's analysis was limited to the medium and large municipalities – municipalities of more 100.000 inhabitants – of the coastal area. While these municipalities account for only 1% of the total number of municipalities, they concentrate 15,3% of the national population. Additionally, these municipalities are characterized by the presence of vast Areas of Permanent Preservation (APP) – notably mangrove or reminiscences of the Atlantic Forest, and since a large number of informal settlements are located in these areas, environmental stakes are high.

There are 54 municipalities of more than 100.000 habitants in the coastal area of Brazil. This study focused on a sample of them that was semi-randomly selected. This analysis requiring detailed information on informal settlements and land regularization programs, Paranaguá (PR) and Itajaí (SC) were selected because of established contacts there. Then, to improve representation of the medium and large municipalities of the coastal area of Brazil, 5 of them were randomly selected. They are João Pessoa (PB), Maceió (AL), Salvador (BA), Santos (SP) and Vitória (ES). Salvador and Vitória were excluded later on because of time and budget constraints. Additionally, Rio de Janeiro (RJ) was included because of its particularly rich and interesting experience.

Data were collected between September and November 2009. Each municipality was visited for a period of two to three weeks during which as many informal settlements were identified and characterized as possible and the land regularization programs were documented. There was great difficulty in obtaining accurate information on urban land informality. If available, information was always spread among agencies, sometimes incomplete or outdated, and not always easy to access. One of the difficulties is that an informal settlement can be a favela, an informal/illegal land subdivision or even a housing project. While it is generally easy to identify favelas[1], some informal/illegal subdivisions and housing projects are akin to formal neighborhoods. In many cases, the fact that families lack formal recognition of land rights goes unnoticed even to the most expert eyes, while local governments rarely have a consolidated list of all their informal settlements. It is therefore likely that a number of informal settlements were omitted.

Annex4: Informal Settlement Characteristics in 5 Cities

João Pessoa

According to prefecture of João Pessoa, in 2007, 131.600 people, or 19.5% of its population, lived in its 100 precarious settlements[1], as favelas are also called. According to another source of information, in 2004, 34% of the population of the city was hosted in favelas. João Pessoa also has an unknown number of housing projects that need to be regularized. According to the Housing Company of the State of Paraíba in 2009, 222 housing projects would need to be regularized throughout the state, including 4 in João Pessoa: *Matriz I*, *Matriz II*, *Matriz III* and *Cidade Verde*, which were all built within the framework of the program *Matriz* between 1996 and 2000. There are probably more housing projects that need to be regularized, such as those built by the local government, as well as number of informal/illegal subdivisions we weren't able to identify.

A number of João Pessoa's informal settlements are clustered in the north-west part of the city, along the *Marés*, *Sanhauá* and *Mandacaru* rivers, in the neighborhoods of *Alto Mateus*, *Ilha do Bispo*, *Alto do Ceu*, *Ipes* and *São José*. Other concentrations of informal settlements can be noticed in Mangabeira – a neighborhood where most CEHAP housing projects were built, or along the river *Jaguaribe* and next to the *Buraquinho*, a natural reserve located in the heart of the city. João Pessoa's coast possess beautiful beaches, their proximity is procured by wealthy families and private investors, which explains why there is no informal settlement in this part of the city. This phenomenon can also be observed in the northern coast of Maceió. Unlike in cities like Paranaguá and Santos, where the localization of informal settlements follows clear geographic patterns, it seems that, in João Pessoa, informal settlements are spread all over the city.

Maceió

In Maceió, the most recent and comprehensive source of information about informal settlements is the Municipal Strategic Plan for Precarious Settlements (PEMAS) that was prepared in 2001 within the framework of the federal program *Habitar Brasil*. According to this document, Maceió had more than 135 precarious settlements, occupied by 364.470 people, or 46% of its population. These settlements include at least 20 housing projects and informal subdivisions such as *João Sampaio II*, *Joaquim Leão* and *Virgem dos Pobres*. Though there may be more of them, these housing projects and subdivisions would accommodate more than 11.000 families. As for the others precarious settlements, most of them are identified as favelas or *grotões*, the word that is used in Maceió to design favelas that are located on the steep slopes and bottom of valleys.

Most of Maceio's informal settlements are located on the abrupt slopes that connect the upper part of the city – a tableland at an average altitude of 60m – to the lower part, mostly in narrow

valleys formed by the rivers that run through the tableland. Many informal settlements are located in the south west part of Maceió, near the *Mandaú* lagoon, a huge area that has been progressively cleared and filled, and where many housing projects were built in the 1980s.

Santos

In 2010, Santos had at least 57 informal settlements, out of which 20 were social housing projects constructed by the *Baixada Santista*'s Housing Company (COHAB-ST). Santos has a number of informal/illegal subdivisions, but, with few exceptions such as *Jardim São Manoel*, most of them were poorly planned and are akin to favelas. Santos informal housing projects would host 6.500 families, while its informal/illegal subdivisions and favelas would be populated by an estimated 17.000 families. Based on these observations, at least 22.5% of the population living in the insular part of Santos would lack formal recognition of their land rights. Only 1% of Santos' populations live on the continental part of the municipality, but the great majority lack formal recognition of their land rights too. As we weren't able to document the land situation of the housing projects built by the Housing and Urban Development Company (CDHU), it is possible that our figures slightly underestimate the reality.

In Santos, informal settlements are clustered in two distinct areas as shown on Map2. The first one is the hilly region in the center of the insular part of Santos, where about 8.000 families live, or a third of Santos informal occupants. The second area is the northwest part of Santos, where another third of its informal occupants settled on the banks of the *Bougres*, the *Furado* and the *São Lenheiros*. This area is also where most housing projects were built.

Paranaguá

In Paranaguá, in the preliminary version of the Local Plan for Social Housing (PLHIS), the prefecture estimates that nearly 50% of its inhabitants lack formal recognition of their land rights. Between 1966 and 2007, 29 housing projects – or 3.972 housing units – were built in Paranaguá, but, according to the prefecture, their occupants' land rights would be duly registered. Paranaguá's informal settlements are called invasions, a generic term used to qualify few favelas and a large number of informal/illegal subdivisions. In 2010, there were at least 57 invasions, including the *Ilha dos Valadares* that hosts alone about 4.000 families, or between a third and a fourth of Paranagua's informal occupants. Here again, the distinction between favelas and informal/illegal subdivisions is subtle. Most of these invasions are on the public domain, but while some were spontaneously occupied, others were informally subdivided by the local authorities.

Paranaguá is located on a peninsula formed by the *Itibérê* in the south, the *Emboguaçu* in the west and the bay of Paranaguá in the east. Map 3 shows that Paranaguá's informal settlements are mostly located along these water bodies, in areas initially covered by mangrove or *restinga*, and often close to housing projects. *Emboguaçu* and *Morro da Cocada*, for instance, are both on the banks of the *Emboguaçu* close to *Jardim Araça*, a complex of 177 houses built in the early 1970s. Similarly, *Beira Rio* is located next to *Padre Jackson* and *Vila Guarani*, two housing projects built in the late 1960s and early 1970s. A large number of informal settlements are also

located in the western part of Paranaguá, about 10 kilometers away from the center. These areas were colonized in the 1990s, when the local authorities built *Prefeito Cominese* and *Neves Nislon*, two housing projects of a respective capacity of 492 and 488 houses. A particularity of Paranaguá is that 4.000 families informally occupy the *Ilha dos Valadares*, an island of about 450 hectares close to the city center.

Rio de Janeiro

In Rio de Janeiro, in 2001, it was estimated that 1.092.783 people lived in favelas, that is 18,7% of the then population of the city. Five years later, it was estimated that Rio de Janeiro had also 907 informal/illegal land subdivisions. While a large number of favelas are located in the central parts of the city, these subdivisions are mainly in suburban areas. They would comprise 188.000 plots and host 550.000 inhabitants, or approximately 9% of the population of the city. Rio de Janeiro also has an unknown number of housing projects that would need to be regularized. Based on these observations, we can conclude that at least 28% of the population of Rio de Janeiro lack formal recognition of their land rights, most of them living in favelas but also a significant number in informal/illegal land subdivisions.

Many of Rio de Janeiro's favelas are located on hills next to the center of the city. Some are located in the Southern part of the city, close to the wealthy neighborhoods of *Copacabana, Ipanema* and *Leblon*. The southern part of Rio de Janeiro is also were the *Rocinha* – the largest favela in Latin America – is. The large majority of Rio's favelas are, however, located in the northern part of town. As for the informal/illegal land subdivisions, they are all located in the periphery, 85% in the western part, 8% in the northern part and 7% in the *Baixada Jacarepaguá*. Closer to the center of the city, the northern periphery has better access to public services, as opposed to the western part. This region of lower density population was still in the 1960s considered as rural, and up to this date, many areas remain vacant and are prone to invasions or informal/illegal subdivisions.

ENDNOTES

[i] It is important to mention that the absence of such policy has not restrained unlawful land occupation or the use of natural resources. A spontaneous form of "territorial planning" has taken place in the State, complemented with isolated administrative measures to control its adverse effects, resulting in *grilagem* (Portuguese term for unlawful appropriation of public lands), impoverishment of local communities and human rights violations.

[ii] The Rural Environmental Registry (CAR) is required for all rural properties in the state of Pará even for those not engaged in any economically productive rural activity and will be issued one time only. It contains a unique number which will appear on all licenses, permits and other documents issued for the environmental regulation of rural property. The CAR-PA is mandatory and is linked to rural property, regardless of transfer of ownership, possession and control.

[iii] The fiscal module (*módulo fiscal*) is a land unit established by the National Institute of Colonization and Agrarian Reform (INCRA) mainly for rural real estate taxations according to Federal Decree Nº 8.485/1980. In Pará most municipalities have fiscal modules between 55 ha and 75 ha, with the exception of the metropolitan area. The Amazonas State has the largest fiscal modules of Brazil, varying from 80 to 100 ha. In Acre State it varies from 70 to 100 ha; in Amapá State from 50 to 70 ha; in Rondônia State the average is 60 ha and in Roraima State it varies from 80 to 100 ha.

[iv] Before the Federal Law Nº 11.952/2009 the only way to acquire public lands in Brazil was through public auctions (*licitação*). The occupant of the land had the preference to acquire it as long he could afford paying for the highest bidding for the area.

[v] According to this argument the possibility to regularize the present occupation of public land would reward people who illegally occupied it. Moreover, the present possibility of regularization would be an incentive to new occupation and the increase of illegal deforestation under the premise that in the future a new Law would be enacted to regularize this new demand.

[vi] The illegal privatization of public lands is a constant in Amazonia. Data from the Brazilian Ministry of Land Use Policy and Agrarian Development give the dimension of *grilagem* phenomenon: more than 30 million hectares of land were illegally appropriated only in Pará.

[vii] This legal term was first employed in the 18th century regarding public unused lands. Nowadays it is used to identify all lands that are state owned but not used for a specific public purpose.

[viii] In the process of regularization the occupation of vacant public lands must be respected. By this mean occupation is expressed by the effective use of the land and customary habitation. Then, it is a *sine qua non* condition that the area is occupied. To be apt to regularize his/her small possession (until 100 hectares), the beneficiary must prove: (a) continuous possession; (b) effective use of the land for no less than a year; (c) inexistence of opposition of a third party; (d) inexistence of other propriety in his/her name; (e) that he/she did not receive any other concession of land or any incentive from the agrarian reform program; and (f) adequate use of natural resources.

[ix] This Law replaced various sparse State Laws, which were confusing even for lawyers. This new state legal milestone presents simplified clear criteria for the State and general public to engage in land tenure regularization programs.

[x] A factor that must be observed is, when the Government creates a rural settlement to promote agrarian reform, this area is designated for family agriculture. Thus, the creation of rural settlement projects is an instrument of intervention in the land use structure and, at the same time, a settlement of dispossessed rural workers. Therefore, this process is part of the agrarian reform policy. In order to maintain families in rural settlements, financial expenditures are justified to offer technical, social and environmental support, and support for the construction of minimal infrastructure to assure the success of the enterprise.

[xi] The Federal Law Nº 11.952/2009 presents the criteria for land tenure regularization in federal lands in the Brazilian Amazonia and the State Law Nº 7.289/2009 presents the criteria for land tenure regularization in Pará.

[xii] The regularization of land holdings with areas inferior to the minimal dimensions established in law for a productive rural property is prohibited. The minimal area for agrarian exploration (*módulo rural)* is the area large

enough to provide elementary security for the farmer and his/her family, as well as, their social and economic development. This module varies according to the region and type of agricultural activity.

[xiii] The State regularizes small properties and areas occupied by traditional populations free from any charge. In all other cases the land tenure process is partially or totally refunded by the beneficiary.

[xiv] This registry is an internet-based system where all rural properties of Pará must be registered, even if not in use. Based on the system's information all environmental permits are issued. This registry indicates GPS coordinates from registered properties, improving the identification of private properties inside indigenous lands, protected areas or superposition among private properties. The registry also enables the control of illegal deforestation through satellite images' analysis. This registry is also mandatory for land tenure regularization of occupations with over 300 ha, when it is necessary to present the occupation's GPS coordinates. The main purpose of this registry is to integrate environmental and land tenure data in the State, improving territorial planning and environmental enforcement.

[xv] A large land occupation in Pará varies mainly from 1025 ha to over 2500 ha, depending on the municipality where it is located. Areas from 500 ha to 2,499 ha need prior approval from the state legislative to be regularized. To purchase areas over 2,500 ha it is necessary to obtain prior approval from the Congress.

[xvi] According to ITERPA estimates in Pará, 66% of its territory are composed of indigenous and *quilombolas* lands, conservation units, urban areas and private properties. Consequently, this land tenure program will be necessary in over 42 million hectares or 34% of the state's territory.

[xvii] This project is financed by the Federal Government (more than US$ 3 million) and its estimated conclusion was November, 2010.

[xviii] Before this Law there was no legal criteria do identify and describe the private properties' location in public land registries. This omission favored *grilagem*. Since GPS coordinates were adopted there is certainty of private properties' location.

[xix] Geo-referenced data enable the comparison of two public databases: (a) real estate public registry; and (b) rural properties registry. The first registers real estate transactions. The latter has information regarding the area of rural properties with GPS coordinates and is used for rural real estate taxation

[xx] This public registry modernization process was established due to two agreements. The first was created among the Agrarian Development Ministry (*Ministério do Desenvolvimento Agrário*)/ Lawful Land Program (*Programa Terra Legal*), National Institute of Colonization and Agrarian Reform (*Instituto Nacional de Colonização e Reforma Agrária*) and ITERPA at the total cost of US$ 4.7 million. The latter was signed in February, 3rd, 2010 by the Agrarian Development Ministry (*Ministério do Desenvolvimento Agrário*), the National Justice Council (*Conselho de Justiça Nacional*), National Institute of Colonization and Agrarian Reform (*Instituto Nacional de Colonização e Reforma Agrária*), ITERPA and the State Court of Justice (*Tribunal de Justiça do Estado do Pará*), responsible for inspecting public registries. This process was estimated to start in July, 2010 with the duration of 12 months.