



Land tenure in Brazil: The question of regulation and governance



Bastiaan Philip Reydon^a, Vitor Bukvar Fernandes^a, Tiago Santos Telles^{b,*}

^a Institute of Economics, University of Campinas, Rua Pitágoras 353, CEP 13083-857, Campinas, São Paulo, Brazil

^b Agricultural Research Institute of Paraná, Londrina, C.P. 481, CEP 86001-970, Londrina, Paraná, Brazil

ARTICLE INFO

Article history:

Received 25 February 2014

Received in revised form 31 July 2014

Accepted 11 September 2014

Keywords:

Property rights

Land ownership

Land policy

Land economics

Agricultural policies

ABSTRACT

This paper addresses the serious problems involving land regulation in Brazil and stresses the urgent need to solve the country's agrarian issues. The historical background of landholding and land property regulation in Brazil is analyzed in parallel with the overall institutional framework of land regulation. In addition, it interprets the connection between regulation of land use in Brazil and the various social, economic and environmental impacts. After discussion of recent land policies, a new sustainable and participative proposal for municipal land governance is outlined.

© 2014 Elsevier Ltd. All rights reserved.

Introduction

In spite of the economic growth and social improvements experienced in Brazil in the early years of this century, the country still faces the challenge of solving serious agrarian and land tenure problems. Among these are the high levels of land concentration, the numerous confrontations and violence (some of which have led to fatalities) and the deforestation of the Amazon Forest. The main causes of these problems are the existing set of rules for land ownership that hold back adequate land regulation due to the lack of a cadastre, to the potential for delivering adverse land possession and to continuous speculation in rural property.

One of the main agrarian problems in the country is land concentration (land monopoly), with one of the highest rates of unproductive *latifundios* in the world (Deininger and Byerlee, 2012; Paulino, 2014) simultaneously with a large number of people demanding land (Reydon, 2011a). Data from the 2006 Agricultural Census conducted by the Brazilian Institute of Geography and Statistics (IBGE) show that land concentration, estimated by the Gini index at 0.872, was higher than in 1975 (0.855), 1985 (0.857) and 1995 (0.856). It also shows that, in 2006, 50 percent of the smallest farms occupied 2.3 percent of the total farm area, whereas 5 percent of the largest farms occupied more than 69.3 percent.

These data demonstrate the substantial land concentration in Brazil and reinforce the historical need to solve its agrarian problems.

This high degree of land ownership concentration is closely related to socioeconomic inequality, rural poverty and social exclusion (Griffin et al., 2002). Furthermore, as urban land occupation patterns are also highly concentrated, people leaving rural areas face a process of urban exclusion and poverty.

Another problem caused by extreme land concentration is the ongoing situation of social conflict and violence in the countryside (Hammond, 2009) that has left hundreds of victims over the last few years, with deaths on both sides – farmers and their workers, and the landless. According to the Pastoral Land Commission (CPT), there have been around 1.000 conflicts a year since 2010, with more than 300 thousand people involved between 2010 and 2012.

Furthermore, the persistently high deforestation of the Amazon Forest may also be linked to the lack of land tenure regulation, which is convenient for the large landowner (Young, 1998), because without effective governance to control deforestation, the large landowners can increase their potentially productive areas (Araujo et al., 2009), which increases land value, leading to the possibility of using the land for speculative purposes. Reydon (2011b) reports that 2010 FAO data state that Brazil has lost an average of 2.6 million hectares of forest per year over the last 10 years. Moreover, in the last few years, between 6.4 and 7.4 million hectares of the Amazon forest have been lost to deforestation. Amazon deforestation is a consequence of the continuing expansion of the traditional agricultural frontier in Brazil. It occurs through the occupation of public and private lands under native vegetation, timber extraction, introduction of pastures for extensive cattle raising

* Corresponding author. Tel.: +55 43 3376 2290; fax: +55 43 3376 2101.

E-mail addresses: basrey@eco.unicamp.br (B.P. Reydon), oparana@gmail.com (V.B. Fernandes), telles@tiapar.br, tiagotelles@yahoo.com.br (T.S. Telles).

(Fearnside, 2005) and, subsequently, development of a more modern agriculture. These economic activities provide income and legitimize land occupation by new possessors of land in the short term, with little need for financial resources. In the long term, the land either remains under more intensive cattle raising, or is used to cultivate crops or for other economic activities, depending largely on the expected demand. The land's potential for future use causes prices to rise, the more productive it is the higher its value (Reydon, 2011a).

Within any of these processes there exists the possibility of real estate speculation, one of the most profitable and lowest risk activities in the Brazilian economy (Wilkinson et al., 2012). There are three main types of profit from land speculation. The first is the autonomous appreciation of the portfolio, where land brings high profits or at least maintains investment values (Sauer and Leite, 2012), and sometimes land can be more profitable than any other form of investment (Lynn et al., 2011). The second is the change in land use from forest to pasture where the price of land, which is determined by the expected gains in agricultural production, rises immediately after deforestation – the profit can be even higher with unclaimed land, where most of the deforestation occurs, and which represents a high percentage of the Amazon Forest (Fasiaben et al., 2009; Reydon, 2011b). The third type of profit from land speculation is directly related to the transformation of rural property into urban property, which significantly increases land value in both legal and illegal settlements – on the outskirts of towns the transformation from rural areas to illegal housing developments can guarantee the real estate agent a rate of return on investment over a hundredfold (Reydon, 2011c).

The main reason for the origins of the Brazilian agrarian problem and its continuance is the lack of mechanisms for effective regulation of land ownership, considering either rural or urban land use and occupation. The rules for effective regulation of the land market by means of legislation were frequently ignored or not enforced or verified, leading to numerous situations that permitted speculation. This is a historical problem, dating back to the time of the Portuguese colonization, which has either not been confronted or remains unsolved. The lack of an adequate institutional framework and political will perpetuate the agrarian problems, which can only be solved with changes to the institutional spectrum of land governance.

The legal and institutional mechanisms developed in the 21st century to deal with the critical agrarian situation in Brazil have been based on the historical pattern of occupation and development in Brazil, and seem to be insufficient to improve this situation. Formal regulations, which have never been completely enforced, make land access in Brazil both fragile and inchoate.

The objectives of the 1850 Land Law, namely to organize land appropriation in Brazil, stop illegal land possession, prepare land registration and make land a reliable guarantee for loans, have never been accomplished. If legislation has never been able to regulate land ownership, it has much less been able to regulate land use. Brazil lacks a register of both privately owned and public unclaimed land (as defined in the 1850 Land Law) and the existing social regulation is inadequate. Land reform in Brazil has not been able to eradicate landlessness or poverty (Kay, 2006).

Land can be used by its owner for production or simply for speculation. The rules for effective regulation of the land market would require Brazilian society to engage in land governance and decide on the most suitable use for the land, balancing social and economic development with environmental protection (Ducrot et al., 2005, 2010). However, the first step towards improving land governance in Brazil is to understand the present structure of the land market or agrarian policy and its potential for change.

The objective of this study is to show that Brazil has not yet effectively tackled its agrarian problems, that the land continues to

be monopolized by too few large landowners, that the State has not been able to regulate land ownership from a historical perspective, that a significant portion of the chronic problems in rural land use and occupation is due to lack of proper land market regulation and governance and that the major responsibility for effective land governance in the country lies with the municipalities and their joint efforts with local society.

Historical approach to the legal framework of land occupation and ownership in Brazil

The Portuguese Crown used the system of hereditary captaincies created by João III, King of Portugal, in 1530. In this system, the King would transfer possession of the land (the land belonged to the Portuguese Crown) to the beneficiary, who would occupy and use them (Johnson, 1972). The beneficiaries did not pay taxes, were allowed to keep part of the profits obtained from production and to enslave and sell Indians to Portugal ('sesmaria' system) (Dean, 1971). Decades passed between the time the 'sesmaria' system was brought to an end by the Prince Regent in July 1822 and the Land Law was proclaimed in 1850 (Linhares and Silva, 1999).

Land Law no. 601, passed in September 1850, represents the State's attempt to stop public land being taken over by private occupation, regaining control over land transactions by distinguishing public land from private land and determining that only land acquisition gave access to land (Silva, 1996). This represented the end of the "conditional donation" arrangement practised up until that point in time (sesmaria regime). Also, by determining that only land acquisition granted access to land, public lands could be sold to immigrants, thereby allowing the State to fund immigration costs. The implicit intention was to delay the immigrants' access to land while creating a supply of salaried rural workers for the plantations, potentially solving the workforce problem as the end to slavery was drawing ever closer.

The Land Law, however, was not successful in replacing land possession by acquisition, mainly because to do so, it was required that all private land owners should voluntarily demarcate their properties so that public land could subsequently be demarcated, by process of elimination. Nevertheless, it offered a chance for both 'sesmeiros' and the possessors of the land, with their conflicting interests, to become landowners (Silva, 1997).

In 1864, a new institutional obligation established a tradition that lives on to the present day, leading to greater uncertainty and inability to regulate the land market effectively: the need for notary registration of land occupation and ownership (Guedes and Reydon, 2012). This made real estate possession apparently legal but actually it lacked guarantee mechanisms.

After the 1889 military coup that led to the Republican system, the administration of unclaimed land passed from the Union to state governments, which did not alter the trend of increasing incorporation of unclaimed land by private capital (Smith, 1944). State autonomy meant that each state could measure its unclaimed areas and grant property titles. Although the intensity of this process varied from state to state, it created one more ambiguity in the provision of land title and consequently, greater inability to regulate the real estate market.

So, the institutionalization of the 1900 Public Land Registry was probably the first step towards the current system of notary land registration (Reydon, 2011a). According to the new rules, everyone was to measure and register their rural and urban property, though without any inspection or cadastre. This obligation increased the possibility of fraud in the public notary registers. Furthermore, according to the new law, State responsibility in measuring and registering unclaimed land could not be carried out and these tracts of land were defined by process of elimination.

It was the proclamation of the 1916 Civil Code which occasioned the State's inability to regulate the land market effectively in Brazil, both by confirming the notary as the land registration institution and by introducing the possibility of acquisitive prescription, whereby public lands would become private after a number of years of occupation. This completed the framework for the transformation of the State into a landowner like any other agent, thus confirming the doctrine of prescription of unclaimed lands or, in other words, the possibility of the adverse possession of unclaimed lands.

Therefore, the Civil Code eventually established the overall institutional framework for access to land in Brazil due to reasons not necessarily related to the interests of landowners, by defining the need for the notary registration of real estate (sometimes the only requirement) to prove property title (Holston, 1991).

The Registration Law, in effect since 1916, determined that the landowner must present some documents to the notary for validation of real estate ownership. The main documents include adjudication, land bought from local, state or federal governments, letter of authority, private acquisition and sale, concession for use by the municipal, state or federal governments, payment in kind, expropriation, donation, fee farm rents or emphyteusis, incorporation, inheritance, acquisitive prescription or usufruct.

As described in the history of rural property regulation in Brazil up to the 1930 Revolution, the territorial occupation pattern was based on land concentration and the occupation of unclaimed land, regardless of existing laws or with the acquiescence of the authorities.

By the 1950s, the call for land redistribution was growing louder. In the 1950s and 1960s, an impressive social mobilization demanded core changes, including to the *latifundio* system (Mueller et al., 1994). Large estates were seen as a barrier to the modernization of both rural and urban areas. Agrarian reform increasingly became a crucial part of the structural transformations to end traditional domination in the rural areas, improve income distribution and stimulate the process of industrialization by energizing the internal market (Silva, 1997). The topic dominated the debate over the agrarian issue and brought greater challenges and insecurity for large landowners.

The highest priority at the time was the intervention in property rights and relations with the goal of increasing the number of landowners and carrying out changes to modernize the pattern of land ownership in Brazil. In 1955, at the same time as these developments in Congress, frustration and mobilization was growing amongst rural workers who were organized into Peasant Leagues. In 1960, peasants were also structuring unions in the countryside and so the need for some level of agrarian reform was considered to be a response to the growing frustration among the masses of poor rural workers and their increasing level of organization. This reform was still thought to be within the bounds of liberal and democratic principles (Dos Santos, 1999).

The internal and external contexts of Brazil in the early 1960s enable us to understand that the Land Statute was a response to two factors: social mobilization in the countryside, halted by the March 1964 military coup and North-American pressure for a land reform programme. The Land Statute represented rural modernization "within law and order", by "destroying" peasant organizations through military and police repression in the 1960s and 1970s, clearly benefiting the large landowners. As a consequence, the violence dispensed by the dictatorship on peasant organizations, rural workers and their representatives put an end, for instance, to every demonstration for agrarian reform by the Peasant Leagues (Hammond, 2009). The Leagues' main leaders were either killed, put in prison or sent into exile (Montenegro, 2008). Immediately after the military coup, only meagre, small organizations of small farmers remained and even so, were clearly

compromised by the repression that benefited the large landowners.

Agrarian reform in Brazil remains a challenge. The Land Statute, for so long the subject of analysis and discussion, was only proclaimed by the military dictatorship at the end of 1964, incorporating some of the former elements of agrarian reform such as land expropriation and distribution (Guedes and Reydon, 2012), particularly in regions of social conflict.

As Silva (1996) argues, at first glance, the military government seemed to solve some legal constraints to agrarian reform. For instance, it replaced prepayment in cash with Constitutional Amendment no. 10, dated September 11, 1964, which determined payment to be made in inflation-adjusted public bonds, and payable within a maximum period of 20 years. The next step was the proclamation of the Land Statute (Law no. 4.504, dated November 30, 1964), where the terms *latifundio* and smallholding were defined regionally and land reform would be implemented either by remedial or preventive measures. The remedial strategy consisted of eliminating the unproductive lands by expropriation in the social interest and facilitating land access to small farmers. The preventive measures consisted of progressive taxation to inhibit the formation of new *latifundios* after expropriation and division by agrarian reform. The Rural Land Tax (ITR) was re-established by the states, 80 percent of which was to remain with the municipalities. The remaining ITR was to be added to 3 percent of the overall federal aid and geared toward financing agrarian reform and rural development programmes.

Although in legal terms, the Brazilian government had all the tools required to begin agrarian reform, in practice it hardly moved in that direction. The fact that this legal progress did not translate into practice should be of no surprise because some of the main social alliances supporting the military regime were the landlords and their allies.

Considering the established political structure where large landowners had a strong influence, the unfolding of the actions adopted went against agrarian reform. Only now can we appreciate the importance of recalling the Latin American political context at that time to understand why a government, born out of a military coup, which prohibited freedom of speech and the organization of social forces striving for agrarian reform, was also the first government in Brazilian history to pass an agrarian law whose main goal was the redistribution of land ownership.

With the end of the military regime, the 1988 Constitution revived from the Land Statute the concept of the social interest of rural property (Reydon, 2011a). However, this legal tool did not lead to development and solution of the agrarian challenge, becoming instead an even more cumbersome bureaucratic constraint. The introduction of the complete content of the Land Statute into the new Constitution made it dependent on underlying measures to implement regulation (Silva, 1997).

The permanent difficulty the government had to transform the ITR tax into a substantial volume of funding and a mechanism for progressive taxation independent of specific laws, shows the government's inability to counter the interests of large landowners. The main anachronism of the new Constitution is the way progressive taxation, introduced by the Land Statute, will be applied. In the Land Statute, ITR was supposed to stop the formation of new, non-productive *latifundios* and not consider them as privileged means for change in the agrarian structure (Silva, 1996).

Recently, Law 10.267 of 2001, changed the 1973 Public Registration Law, being the first to control Land Property Registry and the National Cadastre of Rural Property (CNIR) based on georeferencing and replacing the former system based on topography. The federal government programme, called Rural Cadastre and Land Tenure Regulation, had the goal of registering millions of properties within a period of nine years and also identifying and

regularizing all unclaimed federal and state land to halt land invasions.

In order to prevent the overlapping of properties and to clearly identify each property, the first article of the 2002 INCRA Act no. 954 requires a high precision of 0.5 m when determining the area of property. This method, however, is purely based on technical variables and ignores economic, cultural and social parameters and has become the main factor in the increasing cost of land regularization in the country (Guedes and Reydon, 2012).

Institutional framework of Brazilian land regulation

The current institutional framework for Brazilian land administration is formed by a number of organizations working independently of each other (Fig. 1).

The main organizations are: (1) the Federal government, which presents proposals for change in legislation and institutions after approval by Congress and has efficiently created different kinds of Conservation Units (Extractivist Units, National Forests) and Indian Preservation Areas; (2) the State government, after approval by the House of Representatives, also creates Conservation Units (Extractivist Units, State Forests) and Quilombola Preservation Areas; (3) INCRA, part of the Ministry of Agrarian Development, has several responsibilities: creating and notifying the individual national property registration numbers; determining unclaimed lands; registering real estate (based on a cadastre filled in by landowners, which serves as the basis for the calculation of the ITR tax¹); granting land use in agrarian reform settlements²; using unclaimed land for colonization or settlement projects; (4) the State Land Institutes manage state public lands; (5) the Notary System is subordinated to the Ministry of Justice, is autonomous, and controls contracts for the acquisition and sale of property and provides legal signatures; (6) the Land Property Registry Notary is also subordinated to the Ministry of Justice and keeps registration books where all rural and urban property transactions are registered. Because property registration is not based on maps, it is impossible to identify and register unclaimed land and the preparation of a cadastre³; (7) at the Municipality level, the Executive and the City Council define the Municipal Development Plan containing specifications of the rural land to be transformed into urban property and may establish urban areas independently of a Development Plan; it maintains a cadastre of urban lands for several purposes, including planning and taxation (Urban Land and Buildings Tax – IPTU); it establishes land values for IPTU; defines criteria for urban land use and inspection based on the Municipal Statute; and charges ITR jointly with the Federal Revenue Service. Once the ownership of every rural property is registered, 100 percent of the ITR will remain in the municipality; (8) the Department of National Heritage (SPU), under the Ministry of Planning, is responsible for all national properties in the country, including unclaimed land, and for transferring unclaimed areas to INCRA for registration. However, the SPU reports available show that most efforts have been concentrated on land regulation for urban use and on registration of rural properties. As far as expropriation of unclaimed land is concerned, the Federal Attorney's Office (AGU) defends actual cases involving rural property. It also aims to have the Supreme Federal Court (STF) enforce the social,

productive and environmental functions of land as established by the 1988 Constitution, so that identification, acknowledgement, delimitation, demarcation and entitlement can be carried out. The AGU may expropriate unproductive land and land used in contravention of environmental laws; (9) the Federal Revenue Service, part of the Treasury, collects several direct taxes, mainly Income Tax. In 1986, President Fernando Henrique Cardoso added ITR collection as well, based on the INCRA cadastre. ITR⁴ collection has been far lower than initially planned due to inadequate inspection.

The institutional framework of the Brazilian land regularization system shows that the fact that INCRA and the municipalities do not work together, causes several land possession and ownership problems between rural and urban land. Moreover, Brazil lacks an institution to centralize the cadastre and connect all the legal organizations responsible for issuing real estate titles. Several rural and urban land tenure problems in Brazil end up in legal disputes after administrative management failures. Due to the overwhelming number of lawsuits at every level of the judicial system, any claim could take years to be settled, often resulting in a *fait accompli*.

Lack of land regulation and governance

The Brazilian State has been incapable of regulating the land market effectively. INCRA Ministerial Directive 558/99 required all landowners with properties over 10,000 ha to submit supporting documentation of their property. However, there are two constraints to State enforcement of the Directive. Firstly, the State must ask landowners for information about their property, whereas the State should already have it. Secondly, 1,438 (46.9 percent) of the 3065 properties did not respond to the State's inquiry and therefore, an area of approximately 46 million hectares was not included in the national cadastre. Most of these areas are located in the Northern and Mid-Western regions, with a large portion in the Amazon Forest. In addition, apparently illegal land occupation was observed in every state.

Under President Fernando Henrique Cardoso, several initiatives led to publications showing the land tenure problems caused by the regulation of private property, or rather the lack of it. One of the most important outcomes is the INCRA report "The White Book of Illegal Land Appropriation in Brazil" based on a preliminary survey of the land tenure situation in Brazil, clearly showing a lack of land property regulation. The report points to the causes of the problem considering that fraud has historically found loopholes in institutional organizations, such as the absence of one exclusive cadastre. The State's land tenure apparatus at the three levels (national, state and municipal) is not articulated. Unlike other countries, Brazil has no specific registers for large properties. National and state data cannot be cross-checked and according to current legislation, the national cadastre is by declaration. In addition, inspection of the notary system is poor. As a consequence of these government studies, the judicial system has cancelled several land titles registered with the notaries.

The lack of legislation concerning land ownership in Brazil is one side of the agrarian issue and consists, in practice, of continuing illegal land invasion, particularly in the Amazon region. The existing cadastrals, based on information provided by those landowners registered with INCRA, show that in 2003, 35 percent of the 509 million hectares in the Legal Amazon were privately occupied, either as registered private properties or illegally. Barreto et al. (2008) states that the recent creation of different kinds of national and

¹ The ITR tax is collected by the Federal Revenue Service (Law no. 9393 dated December 19, 1996), but since 2006, based on Normative Instruction SRF 643, dated December 4, 2006, the Federal Revenue Service may, by agreement, pass tax collection to the municipality.

² The emancipation of settlers (concession of property title) has not yet been defined.

³ Law no. 10.267 is an attempt to develop conditions for gathering information by collecting data and making them available for INCRA, which will prepare a map of all property.

⁴ The under-reporting of both the land value and the amount of taxable land can be stopped by the Federal Revenue Service by cross-checking information on land values declared for ITR purposes and the value filed for Individual Income Tax purposes if the Federal Revenue Service were willing to check for discrepancies.

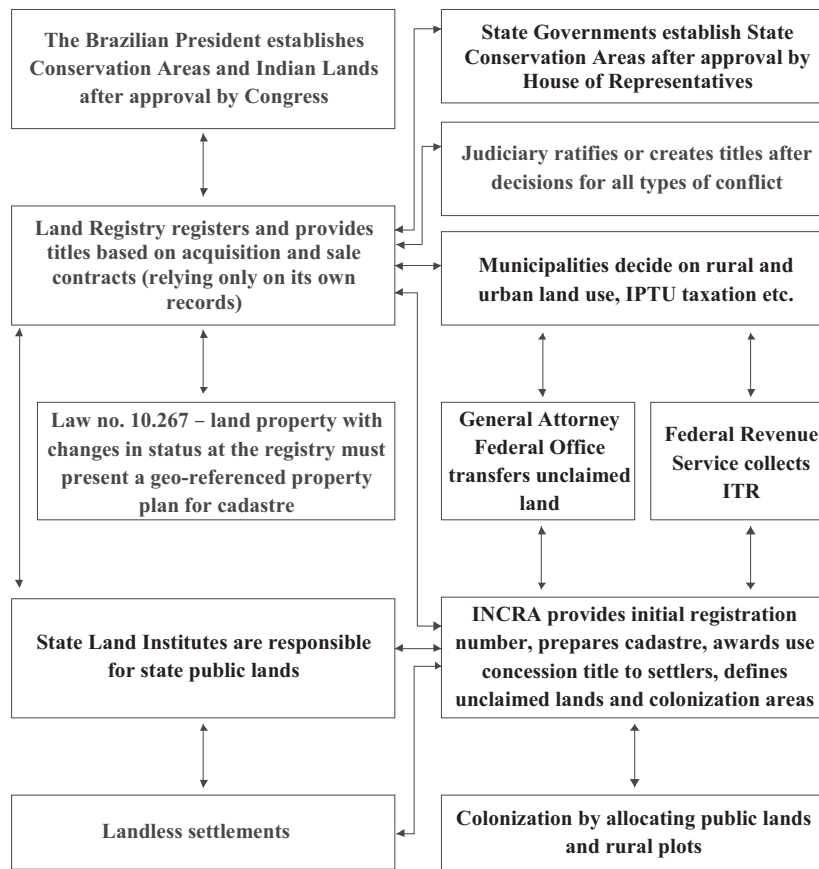


Fig. 1. Institutional framework of the Brazilian land tenure administration.

Source: Reydon (2011a).

state preservation areas has led to a situation where 43 percent of the Legal Amazon is under some kind of protection. Approximately half of it is Indian land and the other half Preservation Units. For Barreto, only 4 percent of the private areas (20 million hectares) have INCRA validated cadastres. In other words, only 4 percent of the private land in the Amazon is legalized. More than 158 million hectares (32%) of the land supposedly under private ownership have no valid cadastre. The remaining 21 percent do not fall into any of these categories and cannot therefore be considered public land.

In addition, many of the Protected Areas are physically occupied by private land users whose demands may or may not be valid. There are doubts as to the large area described as private. One hundred of the 178 million hectares declared as private property may have fraudulent documentation. Another 42 million hectares of the same area are classified according to cadastre declarations such as land occupation, which may or may not qualify for land regularization depending on size, history and location. Therefore, 30 percent of the area may be legally uncertain and/or questionable. Within this context lie the contradictions surrounding land ownership, the main one being the constant possibility of occupying and registering public land.

Land tenure policies to address the Brazilian agrarian issue

Deininger and Feder (2001) and Reydon (2011a) among others, propose that a set of policies be enforced in order to solve the agrarian question and democratize access to land: modernizing the land property registration system, creating a cadastre of private properties, issuing land titles for tenants in possession,

taxing land property, colonizing areas under use, providing loans for land acquisition and implementing agrarian reform.

The first three policies will be needed to create the land register and implement all kinds of policies related to land tenure, particularly regulating its use and access, to ensure property rights and transparency of the land market to make the economy more dynamic and to bring together and control public land. According to current legislation, private land must be registered in the cadastre in order to define public lands in order to attain some form of control over private property in Brazil.

The taxation of land will regulate land use and reduce the potential for high profits from land speculation. The ITR tax should be one of the main tools to control land speculation and make land regulation effective, but it has undergone changes throughout the 1990s. Unfortunately, the intended goal of R\$ 4.2 billion in revenues in 2004 was much lower than the amount actually received, approximately R\$ 250–500 million, according to Reydon (2011c).

Other countries have solved land taxation issues and receive significant amounts of real estate revenues. The low ITR revenue is due to the under-declaration of bare land value for tax purposes as well as under-declaration of taxable areas. Law 11.250/2005 was passed to solve such problems by granting municipalities 100 percent of the revenue⁵ obtained. The conditions for obtaining such benefits are that the municipality must be registered with the Federal Revenue Service and have administrative tools to conduct a reliable census and charge taxes. This was a significant change in ITR policy because municipalities are certainly more competent in

⁵ Without this tool, municipalities would retain 50 percent of the ITR collected locally by the Federal Revenue Service.

collecting taxes. Furthermore, municipalities will have to prepare a land ownership cadastre as a condition for keeping the revenues, becoming a first step towards effective land governance.

This results in increasing lack of control of the territory and the poor quality of public registration of land, particularly public land. As such, neither the amount of uncollected taxes nor the possible impact of the new law during this period can be calculated with any precision.

Colonization of public land can only be carried out when the land has been obtained and subsequently registered. Public land can then be sold to interested groups as opposed to the current situation of plain possession and use.

The last two abovementioned policies are geared towards land democratization, credit to buy land and agrarian reform as ways to decrease land concentration and rural and urban poverty.

It should be noted that the main argument is that there must be effective coordination of all policies to be created and enforced in a synchronized fashion, with the main goal of solving the agrarian question.

Below are analyses of some successful policies undertaken so far this century, showing that the main bottleneck to solving the Brazilian agrarian issue is the regulation/governance of the land tenure system.

The main contribution to the land cadastre and the entitlement of tenants in possession was Law 10.267/2001, proposing a reorganization of the land tenure system by means of the National Cadastre of Rural Property (CNIR), regulated by Decree no 4.449 (October 30, 2002). The law is the result of previous INCRA decisions, particularly notifications by the two Ministerial Directives 558/1999 and 596/2001. Directive no. 558/1999 requires registration of real estate over and above 10,000 ha and Directive no. 596/2001, for real estate between 5000 ha and 9999.9 ha, in 68 municipalities.

The overall concept of Law 10.267 is that any changes in real estate registration with the notary (land disposal, sale, lease or mortgage) must be communicated by the notary to INCRA with a geo-referenced plan of the property. Based on this information, INCRA intended to update the rural property cadastre and issue titles, solving the entitlement problems mentioned earlier and also recover unclaimed land for the State, to be used for land policies, including agrarian reform. Notaries have demanded that the larger landowners present updated plans of their properties, which have been sent to INCRA.⁶ INCRA has not processed this information nor has it registered real estate up to 400 ha, which is one of their responsibilities, probably due to the high costs involved.

The major innovation in land democratization programmes is the National Land Credit Program (PNCF) created in November 2003 by combining programmes implemented or modified since 1997. The PNCF has two main goals and policies. The first is the Combating Rural Poverty programme (CPR), for the poorest rural workers and the second is the Consolidation of Family Agriculture (CAF), focusing on landless family farmers and small farmers. Credit for land acquisition is available according to the needs of each community or association, as are investments in community projects, training, consultancy and technical support. This programme is less expensive for the State than traditional agrarian reform as a means for land access due to its lower legal costs,⁷ although

there is evidence that beneficiaries have difficulty in paying for the land.

The main agrarian reform policy undertaken by recent Presidents has been expropriation and the settlement of the landless, not just because of the volition of the State but mainly due to the political pressure by social movements, particularly the MST. Until 1994, Agrarian Reform programmes were insignificant compared to the wide range of Brazilian agrarian problems, where millions of landless families and small farmers live in conditions ranging between poverty and misery. From 1990 to 1994, approximately 160 thousand families have benefited (Schneider et al., 2010).

The post-1994 agrarian situation became very delicate due to land invasions (and eventually expropriations by INCRA), characterizing the lack of State control over the process and due to landowners' pressure to maintain their privileges. Although until then an unacceptable proposal, intervention in the land market started to be accepted both by INCRA and the population involved. From 1994 onwards, favourable political conditions for important modifications and greater land market efficiency, in addition to the goal of the Executive sector and strong social pressure, culminated in the "March of the Landless" in April 1997.

According to INCRA data, 909,949 families have been settled on 84,326,312 hectares⁸ between the proclamation of the Land Statute in 1964 and 2009, a demonstration of the intensification in the agrarian reform process in the country.

It is also important to note that the argument, involving the lack of security of property rights in conjunction with the land reform policies leading to conflict without solving the problem of land distribution, is mistaken (Alston et al., 2000). The problem is that these authors take the initial distribution of landownership for granted and, moreover, regard it as immutable. While so many land conflicts exist in the context of land reform, the origins of the conflicts do not derive solely from the existence of these policies, but due to the correlation of forces between large landowners and the masses of landless in the definition of the overall pattern of land distribution.

Proposals and perspectives for the development of a land governance system

After almost 20 years of democratic governments committed to the poorer populations, the agrarian question is still one of the main bottlenecks in Brazilian actuality. There are still landless families, still large landowners taking over unclaimed land, still deforestation in the Amazon, numerous illegal occupants without land title, notary registration of non-existent real estate and foreigners buying land (Wilkinson et al., 2012). At the same time, the Brazilian economy has performed extremely well with growth in food production, energy, financial resources and greater participation at the international level. However, uncertainty over land ownership remains a significant problem, both in rural and in urban areas and its solution depends on adequate governance (Deininger, 2011).

The benefits that may be obtained with an adequate system of territorial management depend on the clear identification of registered property and on a simple and effective mechanism for collecting and updating information. This process should start independently of information of land title or other formal documents, which could be required whenever conflicts over ownership arise. The first step should be an entitlement process that

⁶ The rules, particularly the kind of equipment required for geo-referencing, are very expensive and inhibit wider use. The cost of registering the total area of agricultural land in Brazil is estimated at R\$ 11 billion.

⁷ The high compensation costs are mainly due to costs incurred during the legal process in the states of Paraná, Santa Catarina, Mato Grosso and Rio Grande do Norte.

Evaluations of expropriated land within the administrative realm equate to market values.

⁸ According to IBGE data, 9.9 percent of the country and 25.5 percent of the agricultural land.

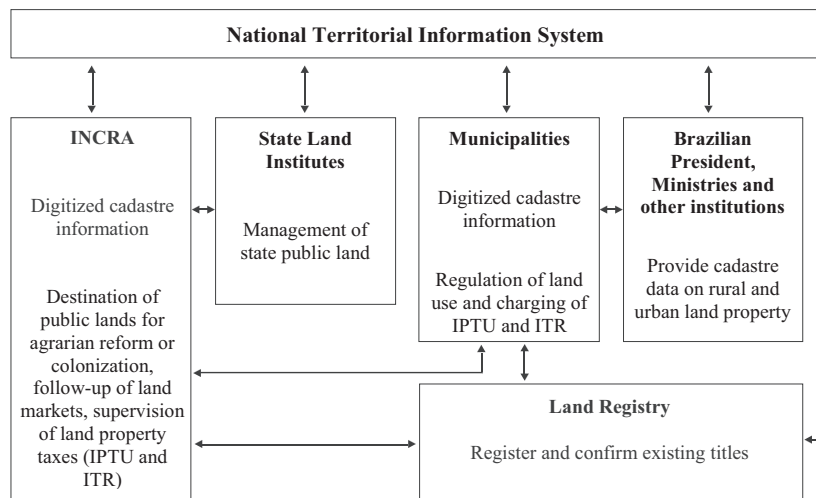


Fig. 2. Institutional proposal for a territorial management system.

Source: Reydon (2011a).

combines property information obtained from satellite images⁹ with the information provided by landowners and legal possession by tenants (easy possession).

Only with the effective governance of land, primarily with the creation of a modern and self-sustaining cadastre, will it be possible to ensure private property rights for different goals, such as business, rental, or as guarantee for credit, means of receiving payment for environmental services, among others; identifying public land and ensure its adequate use for areas of preservation, settlement or colonization; establishing more realistic land policies for agrarian reform, land taxation and credit; regulating the processes of land acquisition to limit access by foreigners (Wilkinson et al., 2012), large landowners or other landowners; conducting land-use zoning, with limitations on agricultural and livestock production in specific regions; controlling the conversion of agricultural land into urban land and maintaining an updated IPTU cadastre; and keeping updated cadastres to allow fair and effective taxation (ITR).

The ideal situation would be the complete integration of all the main land institutions. The path to such integration is both political and managerial and will have to be defined as the process advances. The institutions may remain as they are but information must be shared and integrated. It will certainly take some time for overall integration to be achieved although the need for improvement is immediate. In Fig. 2, we present the way institutions should work in the long run, based on the current situation and the necessary improvements. All five institutions will have to work together and their information systems will have to be updated automatically.

The institutions in Fig. 2 should work together and their information systems must be automatically updated. The Land Registry Notaries must continue to work with the Judiciary. Initially, cadastres should be conducted jointly. Eventually, cadastres may become more consolidated and be carried out by municipalities capable of performing the required tasks. Local responsibilities should increase gradually and municipalities should not only provide a cadastre but also conduct all activities related to land use and regulation once they have the resources, facilities and trained personnel. Among these activities are the collection of the IPTU and the ITR taxes.

Almost every country has a system for real estate identification but most systems are based on historical information registered using traditional technologies such as maps and handwritten documents. Such systems must adapt to new electronic technologies. However, such adaptations are difficult and expensive because they require re-engineering of the current practices as well as conversion of the handwritten registers.

However, such changes are necessary for the data processing requirements of this century. Furthermore, the changes themselves may bring technological innovations allowing radical changes in the way real estate is registered, an important and necessary element for effective land governance policies.

Concluding remarks

Developing a socially fair and economically sound land tenure system is one of the greatest challenges for Brazilian society, as the historical reasons that partly explain the unequal distribution of land have not yet been overturned.

The current institutional framework which regulates land allows for a variety of land uses by landowners, including speculation, production or exploitation. To date, the location and area of State public land and even unclaimed land, as defined by the 1859 Land Law, remain unknown.

As discussed earlier, the Brazilian agrarian problem started in 1850, when slave traffic was coming to an end and the Portuguese Empire changed the private property system, under pressure from large farmers. Before this change, people occupied the land and then asked the Emperor for a title of possession. From this point on, access to land was by acquisition due to the risk of slaves and immigrants becoming landowners. The consequences of this process are far-reaching, from the division between rich and poor, the definition of sectoral technological development, the organization of production, to the definition of overvalued or undervalued and/or preserved urban areas.

Since the late 20th century, the combination of a process of democratization in Brazil, with governments committed to social and environmental challenges, has resulted in actions and policies leading to greater land regulation. These have, however, been very specific, local and of limited impact. Due to this array of actions undertaken in the recent past, it has become possible to understand the actual dimension of the problem and implement several actions, but both still need further harmonization.

⁹ Technological innovations for capturing information by satellites bring progress that can drastically change the registration system of existing real estate, according to Deiningner (2011).

The reality of Brazilian land tenure is a formal regulation that is not completely enforced, making the rules for land access very fragile and simplistic. This is the reason why information on public land and the occupation of this land for different purposes, including speculation, are still unknown. The lack of a national cadastre also allows for illegal land occupation and, consequently, leads to conflict over land possession.

The problems discussed above can only be solved as a result of a process where society and the applicable government institutions work together and take on the effective governance of the land market.

The first step to improving land governance in Brazil requires an understanding of the current structure of governance and the potential for its transformation in order to attain the abovementioned goals.

References

- Alston, L.J., Libecap, G.D., Mueller, B., 2000. Land reform policies, the sources of violent conflict, and implications for deforestation in the Brazilian Amazon. *J. Environ. Econ. Manage.* 39, 162–188.
- Araújo, C., Bonjean, C.A., Combes, J.-L., Motel, P.C., Reis, E.J., 2009. Property rights and deforestation in the Brazilian Amazon. *Ecol. Econ.* 68, 2461–2468.
- Barreto, P., Pinto, A., Brito, B., Hayashi, S., 2008. Quem é dono da Amazônia? Uma análise do recadastramento de imóveis rurais. Imazon, Belém, PA, pp. 72.
- Dean, W., 1971. Latifúndia and land policy in nineteenth-century Brazil. *Hisp. Am. Hist. Rev.* 51, 606–625.
- Deininger, K., 2011. Challenges posed by the new wave of farmland investment. *J. Peasant Stud.* 38, 217–247.
- Deininger, K., Byerlee, D., 2012. The rise of large farms in land abundant countries: do they have a future? *World Dev.* 40, 701–714.
- Deininger, K., Feder, G., 2001. Land institutions and land markets. In: Gardner, B.L., Rausser, G.C. (Eds.), *Handbook of Agricultural Economics: 1A Agricultural Production*. North-Holland, Amsterdam, pp. 288–331.
- Dos Santos, A.M., 1999. Desenvolvimento, trabalho e reforma agrária no Brasil, 1950–1964. *Revista Tempo* 7, 29–46.
- Ducrot, R., Bueno, A.K.S., Reydon, B.P., 2005. Institutional arrangements for articulating land and water management in peri-urban catchment: example of the metropolitan region of Sao Paulo, Brazil. *Int. J. Water* 3, 186–203.
- Ducrot, R., Bueno, A.K.S., Reydon, B.P., 2010. Integrating land tenure, infrastructure and water catchment management in São Paulo's periphery: lessons from a gaming approach. *Environ. Urbanization* 22, 1–18.
- Fasiabem, M.C.R., Andrade, D.C., Reydon, B.P., Garcia, J.R., Romeiro, A.R., 2009. Estimativa de aporte de recursos para um sistema de pagamento por serviços ambientais na floresta amazônica brasileira. *Ambiente Sociedade* 12, 223–239.
- Fearnside, P.M., 2005. Deforestation in Brazilian Amazonia: history, rates, and consequences. *Conserv. Biol.* 19, 680–688.
- Griffin, K., Khan, A.R., Ickowitz, A., 2002. Poverty and distribution of land. *J. Agrarian Change* 2, 279–330.
- Guedes, S.N.R., Reydon, B.P., 2012. Direitos de propriedade da terra rural no Brasil: uma proposta institucionalista para ampliar a governança fundiária. *Rev. Econ. Sociol. Rural* 50, 525–544.
- Hammond, J.L., 2009. Land occupations, violence, and the politics of agrarian reform in Brazil. *Latin Am. Perspect.* 36, 156–177.
- Holston, J., 1991. The misrule of law: land and usurpation in Brazil. *Comp. Stud. Soc. Hist.* 33, 695–725.
- Johnson Jr., H.B., 1972. The donatary captaincy in perspective: Portuguese backgrounds to the settlement of Brazil. *Hisp. Am. Hist. Rev.* 52, 203–214.
- Kay, C., 2006. Rural poverty and development strategies in Latin America. *J. Agrarian Change* 6, 455–508.
- Linhares, M.Y., Silva, F.C.T., 1999. Terra prometida: uma história da questão agrária no Brasil. Editora Campus, Rio de Janeiro.
- Lynn, D.J., Wang, T., Mehlum, C., 2011. Investing in emerging markets: China, India and Brazil. *Real Estate Issues* 36, 21–26.
- Montenegro, A.T., 2008. As Ligas Camponesas e os conflitos no campo. *Saeculum* 18, 11–31.
- Mueller, B., Alston, L., Libecap, G.D., Schneider, R., 1994. Land, property rights and privatization in Brazil. *Q. Rev. Econ. Finance* 34, 261–280.
- Paulino, E.T., 2014. The agricultural, environmental and socio-political repercussions of Brazil's land governance system. *Land Use Policy* 36, 134–144.
- Reydon, B.P., 2011a. The agrarian issue in Brazil requires land governance. *Land Tenure J.* 2, 127–147.
- Reydon, B.P., 2011b. O desmatamento da floresta amazônica: causas e soluções. *Política Ambiental* 8, 143–155.
- Reydon, B.P., 2011c. A questão agrária brasileira requer solução no século XXI. In: Teixeira, E.C., Mattos, L.B., Leite, C.A.M. (Eds.), *As questões agrária e da infraestrutura de transporte para o agronegócio*. UFV, Viçosa, MG, pp. 3–48.
- Sauer, S., Leite, S.P., 2012. Agrarian structure, foreign investment in land, and land prices in Brazil. *J. Peasant Stud.* 39, 873–898.
- Schneider, S., Shiki, S., Belik, W., 2010. Rural development in Brazil: overcoming inequalities and building new markets. *Riv. Econ. Agraria* 65, 225–259.
- Silva, L.O., 1997. As leis agrárias e o latifúndio improdutivo. *São Paulo em Perspect.* 11, 15–25.
- Silva, L.O., 1996. Terras devolutas e latifúndio: efeitos da lei de 1850. UNICAMP, Campinas, SP, 373 pp.
- Wilkinson, J., Reydon, B., Di Sabbato, A., 2012. Concentration and foreign ownership of land in Brazil in the context of global land grabbing. *Can. J. Dev. Stud.* 33, 417–438.
- Young, C.E.F., 1998. Public policies and deforestation in the Brazilian Amazon. *Planejamento e Políticas Públicas* 18, 201–222.
- Smith, T.L., 1944. Land tenure in Brazil. *J. Land Public Utility Econ.* 20, 194–201.