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Factors influencing land fractioning in the context of land market deregulation in Ecuador

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ABSTRACT

Land fractioning is a continuous process that could lead to land abandonment. In this work, the relationship between the speed of land market dynamics and land fractioning were studied and compared in two rural parishes of Ecuador. For this study, a database with relevant information extracted from land property deeds was generated for both study areas. Additionally, 193 land buyers and sellers were surveyed to determine the factors influencing/motivating land transactions. We observed a gradual increment of land fractioning with the mean 'fractionated parcel surface' independent of the speed of land market dynamics. Instead, the purpose assigned to the land by the actors involved in the land market seems to be the factor influencing the mean fractionated parcel surface and average parcel surface the most. The similarities of the studied areas with others inside and outside Ecuador makes the study relevant in a wider context. Our results could aid local governments in improving their land administration strategies in a deregulated land market context.

1. Introduction

In Ecuador, a formalized land market was started in 1994 with the Agricultural Development Act (Francescutti, 2002). Under this act, the land market was deregulated and communal properties were dissolved. These changes came as an unfortunate consequence of government bureaucracy and its attempts at agrarian reform (Brassel et al., 2008). Conducting an in-depth analysis of the evolution of the land market, its dynamics and its associated consequences for Ecuador is a rather difficult task because the available data are old and much of the secondary research is anecdotal or limited to discussions of general trends (USAID, 2015). In this sense it is important to understand the levels of formality and informality in the land markets and the actors involved in land transactions as well as to quantify the number of titleholders and registered parcels. An important body of literature on these topics came from the work of Martínez (1998, 2000) and the FAO (2012). The FAO (2012) describes an increasing process of foreign ownership of land in Ecuador, especially in places where demographic pressure is low. As more citizens from developed countries in the north seek attractive places to retire, Ecuador is a highly competitive destination within South America because of its natural amenities, low cost of living and social security. The aforementioned citizens that are moving to Ecuador are part of a 'life-style migration' process (Gascón, 2015; Hayes, 2015; Janoschka, 2009). Such types of migration promote local inhabitants displacement, land use changes, transformations of the territory, and an implicit social change. As consequence of life-style migration, foreign ownership of land is being consolidated in Ecuador, a process that is still poorly studied in places already known for their international reputation, such as Cotacachi, Vilcabamba and Cuenca city (Hayes, 2015).

The irruption of foreign actors in the Ecuadorian land market facilitated the ejection of small farmers from rural areas (Martínez, 2000). After observing the devastating effects of neoliberal policies applied to the land market, small farmers had no other escape route than to accept the failure of the agricultural-based economy they relied on. This situation favored land fractioning: idle land parcels left behind by bankrupt farmers changed owners, and the new owners had, in most cases, other uses for the land than agriculture. Without the pressure of making land parcels profitable from the agricultural point of view, these parcels were subsequently subdivided into smaller ones. Land fractioning was more intense on parcels located in areas with tourist value. With this, a process of

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land use change began in Latin America boosted mainly by the lack of regulations on the allowed minimum parcel surface by land registry offices (Anstey, 2009; Teófilo et al., 2003). Inhabitants of urban areas with relatively high incomes became key actors in this process of land use change. They were able to buy idle land parcels for housing and leisure purposes, accelerating the process of land use change (Carte et al., 2010). Another driver of land fractioning in Ecuador was the "pattern of inheritance". According to article 1025 of the Ecuadorian civil code, family assets (including properties) should be proportionally divided among all family members. Complying with this law promotes land fragmentation, as noted by Martínez (2000).

In general terms, and across the Latin American countries where market liberalization was imposed, land prices were highly variable and susceptible to the intensity of land fractioning and market dynamics, i.e., the speed of buy/sell transactions. In addition, whenever the productive land was in a territory with natural amenities and loose regulations applied to the market, processes such as land fractioning and land use changes took place in those countries. This has not only been reported in the Latin American region but also in China, as observed by Wang and Liu (2013) in Hainan Province. Despite the proven relationship between market liberalization, land fractioning and land use change, the dynamics of this relationship are not yet well understood, e.g., what accelerates land fractioning, could the surface of fractionated land parcels be self-regulated, in which circumstances could land use change be reversible? To answer such questions, we studied land market dynamics, land fractioning and land use change together with the variables that might influence the relationship among them in Ecuador. The present study was carried out in two contrasting parishes of Ecuador. The first location is Vilcabamba (Loja province, southern Ecuador), an area with renowned natural amenities, formerly dedicated to agricultural activities, but that has experienced an accelerated process of land transactions during the last 20 years. The second place is Timbara (Zamora-Chinchipe province, Ecuador), an Amazonian parish with marginal tourist interest, with land extensions mainly dedicated to primary farming activities and with a much slower rate of land transactions than Vilcabamba.

Our results showed a gradual increase in land fractioning processes in both areas and, more importantly, that the mean 'fractionated parcel size' is independent of the speed of the land market. However, the mean size of fractionated parcels is influenced by other interesting factors, such as the final purpose of the acquired land during the transaction.

2. Materials and methods

2.1. Study areas

The presented study was conducted in two rural parishes of Ecuador (Fig. 1): (i) Vilcabamba, with an approximate surface of 155 Km^2, located 40 Km south of Loja city (Loja province), and (ii) Timbara with an approximate surface of 128 Km^2, located 11 Km from Zamora city (Zamora-Chinchipe province).

As observed in Table 1, both study areas were selected based on their contrasting characteristics in all of the social, economic and environmental dimensions. Timbara, on the one hand, represents a control site in our comparison that is more typical of other Ecuadorian locations than Vilcabamba, which enables the acceleration of the land market in Vilcabamba to be more clearly observed (see below). Timbara's economy is mainly based on primary sector activities, such as farming and cattle ranching, which are the most common activities for the vast majority of Ecuadorian rural parishes. Vilcabamba, on the other hand, has a tourism-centered

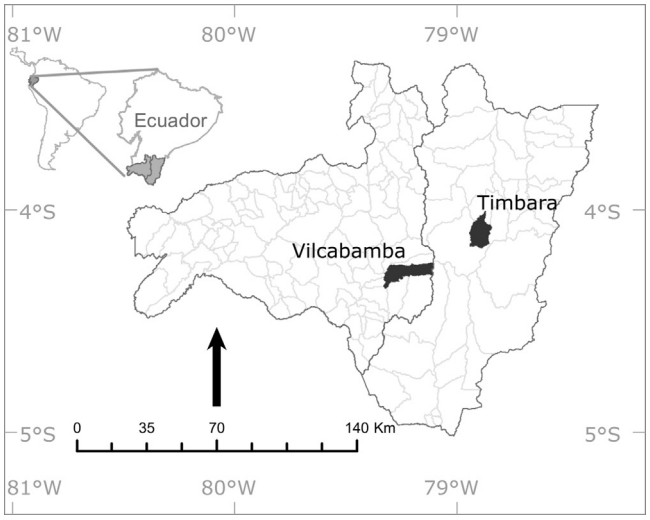

Fig. 1. Geographical location of Vilcabamba and Timbara parishes within Ecuador. All of the parishes of the Loja Province (where Vilcabamba is located) and of the Zamora-Chinchipe (the province of Timbara) are highlighted with grey borders.

economy, where activities, such as farming and cattle ranching, have been displaced.

We paid special attention to five factors that we hypothesized could influence land market dynamics and land fragmentation and show differences between Vilcabamba and Timbara (see Table 1). In addition, the spatial closeness of Timbara and Vilcabamba was purposefully given a large weight in selecting the factors because it highlights the heterogeneity of the Ecuadorian reality, as well as the challenges associated with properly managing land resources at the national level. Despite being small territories, Timbara and Vilcabamba have many "equalities" within Ecuador that makes them amenable for extrapolating the conclusions that could be derived from the present work. This is because:

i Timbara possesses slow land market dynamics that are representative of most of the Ecuadorian localities.
ii Vilcabamba is an outlier within Ecuador in terms of its fast land market dynamics. Land market acceleration in Ecuador has caught the attention of other researchers that have reported it according to localities, such as Cotacachi (Gascón, 2015) and Cuenca city (Hayes, 2014).

A comparative study of Timbara and Vilcabamba was performed to investigate the relationship between the speed of land market dynamics and the extent of land fractioning that result from such dynamics, e.g., the evolution of the mean fractioned parcel surface over time. We further investigated the factors that might be responsible for the acceleration of the land market dynamics in Vilcabamba. A detailed description of the methodology used in each case can be found in the following sections.

2.2. Land market dynamics analysis

To exactly quantify differences in the speed of land market dynamics between Vilcabamba and Timbara, we started by building a database from land registry title deeds (available at the Land Registry Offices of Zamora and Loja municipalities). Land registries were collected from January 2000 until April 2009 for Vilcabamba and from January 2001 until December 2008 for Timbara. The databases consisted of 1678 and 442 title deeds from Vilcabamba and Timbara, respectively. In each case, the type of transaction was identified and recorded, e.g., buy/sale, donation or adjudicated property.