

# **Small in a world of big properties: a case study of the factors that explain the continuity of small rural properties in Brazil<sup>1</sup>**

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## **ABSTRACT**

This paper has the objective of presenting and discussing the methodology used for data collection and analysis that seek to identify the factors that explain the continuity of productive activities in small rural areas in a Brazilian municipality. It is intended to investigate not only the qualitative characteristics of small rural properties but also the quantitative factors that allow describing how a small producer elaborates the strategies to survive in rural areas. In short, how can one 'small property survive in a world of big ones'. This paper is part of a broader research, still under construction, which will investigate the economic and social conditions that can lead to the permanence of people in small rural properties in the municipality of Candido Rodrigues, São Paulo state, Brazil. There are a large number of variables that may explain the survival of a small rural property. It can be assumed as conditioning variables the fact that the owner is not prepared to act in another economic activity; the inheritance of a rural property; personal attachment to rural activity; autonomy and freedom concerning work by his own; the role of property as a financial reserve; and the enjoyment of contact with nature. It should also be considered that there is a set of factors related to the internal organization of the productive activity: the type of activity developed; the use of a certain technique or technology of production or cultivation; the existence of multiple productive activities; labor structure. These variables are mainly reflected in the cost of production. There are also factors that are exogenous to the property and in very little depend on the rural producer, synthesized in price. Besides these, another variable that can affect rural property is the economic scale of production. The analysis of these exogenous and endogenous factors of rural property enables small farmers to adopt productive strategies appropriate to the size of their rural property. Therefore, rural development can be considered as having an interaction and an interdependence with the economic and social factors that interfere in the profitability and survival of these agents in market. Through the interaction of these factors, questions of sustainability, and economic and social inclusion of the small properties can be improved. Thus, small rural producers can increase their participation in economic, social and political life, improving their life conditions.

**Key words:** Small rural properties; Rural development.

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## **Introduction**

This paper has the objective of presenting and discussing the methodology used for data collection and analysis, that seek to identify the factors that explain the continuity of productive activities in small rural areas in a Brazilian municipality. It is part of a broader research, still under construction, which will investigate the economic and social conditions that can lead to the permanence of people in small rural properties in the municipality of Candido Rodrigues, São Paulo state, Brazil. It is intended to investigate not only the qualitative characteristics of small rural properties but also the quantitative factors that allow describing how a small producer elaborates the strategies to survive in rural areas. In short, how can one 'small property survive in a world of big ones'.

With this in mind, this paper will begin to present the background discussion about what can be considered 'rural' in Brazil and what are 'small rural properties'. After making these clarifications, it will be explained the methodology that will be used in the broader research and its objectives. Some final considerations will be proposed at the end.

## **Small rural properties in Brazil**

Brazil was a former colony of Portugal, 'discovered' in 1500. For three and a half centuries of colonial domination, the main role imposed by Portugal to Brazil was being a producer of primary goods with commercial interests in Europe. During this period, all social, cultural and political support was established to maintain profit generation process going on. After independence, occurred in 1822, once again a primary good was encouraged and supported by national government. Coffee production was the center of Brazilian economy until 1930, being responsible for almost 10% of national Gross Domestic Product and more than half of exports. Throughout all XX century and in this beginning of XXI, Brazil kept its dependence on the export of agricultural commodities. An important percentage of Brazilian trade balance is related to primary goods, most of them agricultural ones.

According to Kageyama (2008), the most used criteria to define what a rural area is are population size or population density. However, there are many controversies about these simplification criteria on the definition of what is rural. Demographic aspects are necessary but not sufficient for this definition, since it varies greatly when more or less densely a region is. Besides the demographic aspects must also consider economic, social and cultural elements.

Dirven (2004:51), when analyzing nonagricultural rural employment and rural diversity in Latin America, presents five definitions of what rural is, considering population censuses and household surveys in Latin America. In some countries the definition of rural areas are based on the maximum population of the locality (around 2,000 people) that is used by the majority of countries. On the other hand other countries consider the number of contiguous dwellings (Peru); definitions legally stated (Brazil, Ecuador, Guatemala, Uruguay); area outside the “city fringes” (Colombia, Dominican Republic, El Salvador, Paraguay); and those based on “rural and non-rural characteristics” (Costa Rica and Haiti). Kageyama (2008) mention that in Latin America there is no consensus on what a rural area is, but all definitions contain the idea that ‘rural’ is an area of low population density and great distances from the most urbanized nuclei.

In Brazil, Demographic Census defines as rural “the area outside the urban perimeter of a district” (IBGE, 2010). Currently IBGE classifies households into eight categories, three of which are urban and five are rural. Kageyama (2008:38) considers that almost all Brazilian statistics define the rural as opposition, complement or residue of what is urban. In Brazil, according to Kageyama (2008), the problem of classification of what is rural and urban has been influenced since 1938, when was defined as “town or city” the seat of the municipality. Besides that it is still possible for municipalities to determine what is rural by law. For this author there was an exaggeration about urbanization, once it is considered urban all the municipal offices, small districts and little towns.

For a better understanding of the definition of a small rural property in Brazil, it is necessary to understand what a ‘fiscal module’ is. Federal Decree 84,685, of May 6, 1980, defines that one ‘fiscal module’ of each municipality must be determined by the National Institute for Colonization and Agrarian Reform (INCRA), considering the predominant type of agricultural exploration in the municipality (livestock, permanent or temporary production, forest, etc) and must be expressed in hectares (10,000 square meters). ‘Fiscal module’ is also an important dimension in accounting, tax payment and credit access. Then, a small rural property in Brazil also considers the concept of ‘fiscal module’ as defined in Federal Law 8,629, of February 25, 1993 and Federal Law 11,326, of July 24, 2006. These laws consider a small rural property as the total arable area between one and four ‘fiscal modules’. Thus, nowadays more than 90% of all rural properties in Brazil can be considered small ones. We must remember that for the municipality of Candido Rodrigues one ‘fiscal module’ is 14 hectares; a small rural production area is between 14 and 56 hectares. There are 400 rural properties in this town; 98% of then can be considered small ones.

In Brazil, there is a big debate about the disappearance of small farmers. Authors such as Eliseu Alves and Zander Navarro (Alves et al. 2010; Alves et al. 2012; Buainain et al. 2013; Navarro 2015) make an entire argument based on the gross income and technology to prove that the small rural production unit is not economically viable and tends to disappear in the long run.

Buainain et al. (2013) suggests that due to the economic dynamics of production, there will be an increasing deepening of social differentiation between small and large producers and intense selectivity among rural producers. According to these authors “at no other moment in agrarian history [in Brazil] small rural settlements had been so close to the frontier of marginalization”. The conclusion of these authors is based on the gross value of production transformed into monthly minimum wages. It was possible to observe that three million productive farms appropriated only 3.3% of total gross income and that 0.62% (30,000 rural establishments) accounted for half of the total production value.

More than just quantitative information, current agricultural structure focused on primary goods strengthens agribusiness, keeps the agrarian structure untouched, and hinders the development of family agriculture and small production units. According to Delgado (2005), quoted by Mattei (2014), “this situation makes impossible the construction of a sustainable growth of the country and no significant changes in the agrarian structure”.

On the opposite side, quantitative evidence does not confirm this point of view. Data from official and national agricultural census of 1970, 1980 and 2006 (conducted by the Brazilian Institute of Geography and Statistics, IBGE) show that the number of small rural properties has remained stable in this period. What can be observed during this period is an intensification of migration from rural to urban areas.

### **What can explain the survival of small rural producers?**

Rural development has an interaction and interdependence with these economic and social factors that interfere in the profitability, sustainability, and survival of these farmers in the market and therefore in their life conditions. Although rural activity is subject to market rules, just like any other, it is assumed that small rural properties will play an additional role in terms of economic development, jobs maintenance, and social and environmental responsibility. “The economic reproduction capacity of different types of production units can be estimated by

calculating their aggregate value and the existing labor productivity. A minimum level of productivity is considered necessary to ensure a satisfactory performance of production systems in the short term (to ensure the purchase of inputs and maintenance of equipment and facilities) and in the long term (to ensure replacement of equipment and facilities) and still satisfy the consumption needs of farmers” (Basso et al. 2003:83).

Thus, an analysis of importance attributed to these small properties must extrapolate the simple notion of ‘profit maximization’, combining social and environmental issues. In order to better understand this situation, one must take into account that “Brazilian economy is historically a dual economy. Not all depend on monetary income to live. There are still many [people] in the countryside, for whom the monetary gains are not, in fact, decisive in the survival of the family. In these properties, the subsistence of the family is ensured primarily by the direct production of livelihoods. So, yes, it can be understood that a family lives without any monetary income in this peculiar economy that I call surplus (and not subsistence) economy, where part of own production is consumed at home and part is taken to the market. It would be fiction try to measure in monetary terms what has not circulated in the market” (Martins 2011:7).

The comprehension of the main factors that help to understand the survival of small rural properties is important both for the planning of future activities and for a systemic analysis of the results obtained. This diagnosis allows not only the decrease of the instability in rural activity, but also in the reduction of the impacts of these oscillations on the economic activity developed in small farms.

Norton & Alwang (1993) mention the institutional and human conditions that are out of control of small rural producers (exogenous factors). Such characteristics are considered uncontrolled to the productive process, but can affect its development. Marketing systems; norms and beliefs; institutional environment; employment opportunities and remuneration in non-rural environment; as well as other market opportunities – affecting the supply and demand of agricultural products – are examples of these exogenous variables as well as the pluriactivity of farming families (Blad 2015; Schneider 2003) or the competition with ‘urban’ activities with higher remuneration. These authors also emphasize the role of public policies in agriculture in fixing minimum prices; subsidies; availability, interest rates and access to credit; public incentives to certain crops and production. Macroeconomic changes may also affect agricultural activity, without any interference by the rural producer.

Norton & Alwang (1993) also mention endogenous characteristics of rural property: family work; administrative abilities; formal education and knowledge. All of these factors affect not only the choice of rural activities that will be developed but also the profitability and survival of these small properties.

Considering the analysis of these exogenous and endogenous factors will allow small farmers to adopt their productive strategies to the size of their production unit, making it closer to current economic and social reality.

This work may also assess whether the technology and the marketing amplitude or scope are (or are not) responsible for small rural profitability. With this answer, it is possible to establish priorities for technical research and public policies concerning local and regional commercialization of productive surplus.

For Basso et al. (2003) the small unit must be understood as an agent that participates actively in local development. This author considers the theory of 'agrarian systems' to understand the complexity, diversity and changes in the socioeconomic environment of agricultural production. An agrarian system is characterized by an analysis of the elements that compose it, such as the agricultural production system allied to the environmental characteristics, quality and availability of work in the region of the rural property. The combination of these elements enables the definition of the different production systems implemented in small rural units, affecting the economic and social development of the different Brazilian productive regions.

Authors also consider that in each agricultural production system, crop and/or breeding systems must be defined according to how each 'fiscal module' of production is being used over time. According to necessary technical operations, it is possible to implement an operational logic of use of the productive resources and stimulate the activities that present higher income. Thus, rural producer can ensure its social reproduction over time, making him/herself an agent of transformation of the regional agrarian system itself.

Small rural producers must also be concerned with obtaining and maintaining economically viable productivity through the application of production techniques that increase production and financial income. The viability of many small farmers necessarily involves a change in structures, productive techniques, and reallocation of factors of production.

Analyzing the size of agricultural properties Mundlak (2001 apud Helfand et al. 2014), establishes that returns to scale in agriculture can be considered constant, and are directly linked to technological and administrative level of the production unit. Changes in the technological level (agrobiodiversity, no-tillage farming, use of irrigation, and/or precision agriculture) and in rural property management alters the optimal size of the productive unit.

Poulton et al. (2010) highlight collective actions as a way of overcoming obstacles related to small production. State organizational support, associativism, cooperativism, and the integration of industry with small production units can reduce transaction costs and facilitate access to a higher level of technology, and markets for inputs and products. According to Helfand et al. (2014), based on a study of Eastwood et al. (2010) about the size of farms and the opportunity cost of labor, conclude that there are economic forces that increase the size of production units with economic growth. Gardner (2002), apud Helfand et al. (2014), shows that there is a correlation between the increase in nonagricultural wages and the size of properties. Even with all these evidences of increasing the average size of agricultural establishments, Helfand et al. (2014) do not believe in the disappearance of small and medium producers in Brazil, especially if producers are able to increase their productivity.

Another important factor is the rural diversification of possible production activities and revenues. New productive and/or processing activities (as dairy, sausages, pasta, sweets) in rural property make it possible to improve the income conditions of small farmers.

According to Schneider (2003:174) the activities of transformation or internal processing of primary products in rural properties is a strategy adopted to add value to the product of agricultural origin. This process of adding value to the product can raise the income of rural families. In addition, Baumel and Basso (2004) also highlight the diversification of crop and livestock production on rural properties. Diversification allows the production and commercialization of products at different moments of time, maintaining a more stable cash flow, and residences in rural areas.

Pluriactivity can also be understood as seeking other forms of revenue outside the rural environment; members of rural families can look for extra income in non-agricultural activities (industry, commerce, or public services).

For Helfand et al. (2014) what may explain this maintenance in the number of properties may be the resilience of the rural producer in adapting his/her survival needs and production activities or the inexistence of job opportunities out of rural areas.

Property size and productive scale are still a significant component of income and poverty, but we must not forget that land use, technology and inputs are necessary to the process of agricultural production and the determination of rural income. However, this was not enough to justify the disappearance of the small production unit. For Helfand et al. (2014) there are three reasons that help explaining the non-demise of small and medium-sized establishments. First, a small share of small and medium-sized producers is competitive in the market. Second, despite the low rural income, the lack of alternatives can keep these producers in rural areas, producing what they can. Finally, the existence of public policies focusing on small producers (legal support to governmental purchases based on familiar agriculture - Pronaf) and/or of income transference (as retirement revenue, *Bolsa Família*) that will allow the permanence in rural areas.

### **Methodological procedures**

The main project aims to investigate the economic and social conditions that lead to the permanence and maintenance of small farmers in rural activities in the countryside of the municipality of Candido Rodrigues, Sao Paulo state, Brazil. It will intend to investigate not only the qualitative characterization of a small farmer, but also determine factors that will allow describing more properly how a small producer elaborates his/her strategies to remain in business. In short, how a 'small survives in a world of big ones'. In order to do so, this research must consider some methodological steps.

The first step is to identify some important characteristics that can be listed as determinant factors related to the survival of small rural areas. Despite theoretical approaches to this subject, as mentioned in short before, we must search for genuine opinions of Brazilian rural producers and, more than that, what local producers think about. This will be possible applying the methodology of focus group.

Focus group methodology serves to obtain information of a qualitative nature, seeking to capture the understanding of people on a given subject (Bader & Rossi 1999; Carlini-Cotrim 1996; Gondim 2003; Silva et al. 2014; Westphal et al. 1996). In short, a focus group can be understood as a 'group interview' or a moderated 'discussion group'. According to Silva et al. (2014) "focus groups have generated relevant data both for the originality of some emerging themes and for their significant contribution to the subsequent phases of the research process". In addition, the authors highlight the speed of this technique when compared to the scope and



volume of generated information and data. It is possible to obtain data from a group of people faster and with lower costs than the individual interviews. It is also a flexible method of obtaining information and can be adapted to the different varieties of individuals, areas of knowledge and the different phases of the research project. However, we have to point out that the transcription of all the data and its respective analysis are quite more laborious when compared to the application of questionnaires.

Focus groups are discussion groups that allow data to be obtained at different stages of the research process (Silva et al. 2014). It can be used in initial phases to obtain arguments for a questionnaire, for example; intermediate phases (in interpreting the results obtained with the application of a questionnaire); or in final phases, in presenting and discussing with the participants the results obtained, which may lead to new ideas and further researches.

A focus group begins with planning. What we want with the focus group? What structure will be available? Who will be the focus group participants? How many groups will be held? Therefore, planning has to be linked to the objectives of the research project.

Then, next phase is related to preparation for the focus group: recruitment of participants and local setting. According to Silva et al. (2014), “although the most ‘visible’ phase of the process is the moderation of the groups, it begins well before the planning phase and ends well after the disclosure phase”.

Recruitment of participants is one of the most difficult aspects in focus group methodology because it is not possible to have complete control over the selection of participants. When there is no possibility of a prior identification, a “snowball” recruitment strategy can be used. When the researcher is not directly responsible for the recruitment, it is possible to develop screening criteria for the recruitment.

‘Snowball’ is a non-probabilistic sampling technique used in social surveys where the initial participants of a study indicate new participants, which in turn indicate new participants and so on until the proposed goal or sample size is obtained. The saturation point is obtained when the new interviewees do not add new relevant information to the survey. According to Vinuto (2014:204), ‘snowball’ sampling take advantage of identified social networks to provide the researcher with a growing set of potential contacts. It is used to obtain a better understanding of a subject, to test the feasibility of carrying out a larger study, and to develop the methods to be employed in subsequent studies or phases. It is important to emphasize that ‘snowball’ sampling is not an autonomous method *per se* once it is not automatic the fact that after the first

interviewed indicate names, the network of respondents increases by itself. This may not occur because not all the people indicated will agree to be part of the research, what can hamper the network of contacts necessary for the survey.

After conducting focus groups with small rural producers in order to search for opinions that can be synthesized in questions to be submitted to individual interviews. An statistical significant sample of local rural producers will be interviewed and their answers will be submitted to factor analysis.

The methodology of factor analysis comprises a statistical method of multivariate data analysis. The methodology enables the synthesis of information, made possible by observing patterns of regularity in the behavior of the data. The so-called 'factors' are nothing more than the gathering of variables with similar characteristics, that is, variables strongly correlated with each other.

The advantage in using the factor analysis process is the possibility to consider only a small number of factors, which are representative of the broader set of variables. It should be emphasized that the originality and pertinence of the information contained in the factors do not lose the similarity with the behavior of the original variables.

### **Final considerations**

There are a large number of variables that may explain the survival of a small rural property. It can be assumed as conditioning variables the fact that the owner is not prepared to act in another economic activity; the inheritance of a rural property; personal attachment to rural activity; autonomy and freedom concerning work by his own; the role of property as a financial reserve; and the enjoyment of contact with nature.

It should also be considered that there is a set of factors related to the internal organization of the productive activity: the type of activity developed; the use of a certain technique or technology of production or cultivation; the existence of multiple productive activities; labor structure. These variables are mainly reflected in the cost of production. There are also factors that are exogenous to the property and in very little depend on the rural producer, synthesized in price. Besides these, another variable that can affect rural property is the economic scale of production.

The analysis of these exogenous and endogenous factors of rural property enables small farmers to adopt productive strategies appropriate to the size of their rural property. Therefore, rural development can be considered as having an interaction and an interdependence with the economic and social factors that interfere in the profitability and survival of these agents in market. Through the interaction of these factors, questions of sustainability, and economic and social inclusion of the small properties can be improved. Thus, small rural producers can increase their participation in economic, social and political life, improving their life conditions.

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