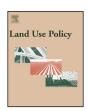
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# Agrarian reform and cooperation between settlers in the Midwest of Brazil: An institutional approach



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#### ARTICLE INFO

Article history:
Received 21 June 2013
Received in revised form 11 February 2014
Accepted 18 March 2014

Keywords: Institutional arrangement Institutions Cooperation Opportunism

#### ABSTRACT

Cooperation is an important factor in improving the efficiency of agrarian reform, but hardly occurs, which is a serious problem in Brazil. This research tries to explain why cooperation is so difficult in Brazilian settlements. It focuses on the Midwest of Brazil, a region with a high concentration of land, located in the main region for production of commodities. Research combines a New Institutional approach with aspects from the economic sociology. The model developed in the paper is original and highlights factors responsible for cooperation. Research differentiates institutional arrangements according to asset specificity and sunk costs. Beside associations for representation with public authorities, where cooperation is easier, cooperative arrangements need specific investments from the settlers, who require warranties before participating. Institutions serve as warranties for adopted governances. In the case of cooperation in Brazilian settlements, these warranties should come from informal institutions, which can be a problem in some communities. Leadership of a producer can also have an important role in hierarchical networks.

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#### Introduction

Agribusiness represents nearly 30 percent of Brazil's GDP and is responsible for just over a third of exports and domestic jobs. One third of the Brazilian agribusiness comes from small family farms (Brazilian Agrarian Development Ministry – MDA, 2006).

Small family farming can be considered, according to Fauth (2008), as one of the best forms of occupation of rural land, because it favors the fulfillment of social and economic demands, with the generation of jobs and income. The preservation of family farmers also allows for the reduction of rural exodus, which prevents greater disequilibria in the urban environment, an aspect very important in Brazil.

Bernstein (2009) points out that it is very common to find papers in the scientific literature that consider that small farms have higher land productivity than larger ones, and generate more jobs. This has been a central argument to incentive redistributive land reform, based on the notion of efficiency and equity. From these findings, Brazil tried to develop agricultural policies that favored the maintenance of small producers in the field and to practice a land reform

that favored the return in the agriculture of individuals in a precarious situation, installed in the periphery of large cities.

In Brazil, the agrarian reform policy is essentially based on the distribution of land from unproductive farms, or farms with insufficient productivity, to "landless" producers. After this operation, producers become settlers and remain in the custody of the state<sup>2</sup> without the possession of the titles of property for the areas they received. This situation prevents, in theory, the marketing of land, and allows for the obtaining of various benefits such as non-refundable grants or loans with reduced rates, as well as technical assistance.

The Brazilian agrarian reform occurred in all Brazilian territory and increased significantly in recent years, with an increase in the area incorporated into the reform program from 21.1 million hectares of land between 1995 and 2002 to 48.3 million between 2003 and 2010 (National Institute of Colonization and Agrarian Reform – INCRA, 2010). In 2010, Brazil had 85.8 million hectares incorporated into the agrarian reform, with 8763 settlements attended by INCRA, where 924,263 families were living.

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<sup>&</sup>lt;sup>1</sup> Agriculture Sustainability Doctorate Program.

<sup>&</sup>lt;sup>2</sup> This is the case of the settlements created by the National Institute of Colonization and Agrarian Reform – INCRA, which represent the majority of settlements in Brazil and of the settlements created by the Brazilian states, such as *Mato Grosso do Sul* 

Despite the importance of agrarian reform, many questions still remain about its viability. The commercialization of lots, although forbidden, was over 30 percent in 2008 in the Brazilian state of *Mato Grosso do Sul* (Vilpoux and Oliveira, 2011). All around Brazilian territory, while many lots are turned over as individual units, others are abandoned or aggregated to neighboring lots to form a new, larger property (Ludewigs et al., 2009).

For GTZ (1998), land reform in Latin America has failed to remedy the problems of inequitable land distribution and squatting. The difficulties of many settlers prevent the consolidation and emancipation of the settlements.

Most of family farming is characterized by restricted access to modern technologies, which translates into lower productivity. Buainain and Garcia (2013a) confirm the backwardness of small production and claim that the process of modernization of Brazilian agriculture largely excluded small farmers. Only a small portion of them took advantage of the opportunities arising from the incorporation of technology in rural production, mainly producers located in the South and Southeast.

McCullough et al. (2008) stated that when there is an increase in the concentration of distribution networks and agro-industries, there are growing demands for quality and regular supply, together with increasing pressures on prices. These pressures encourage more competitive farmers, especially large-scale farmers, and force small producers to invest in ways to achieve new levels of quality and new scales of production. Otherwise, the patronal agricultural, more technified, should prevail, for it will be the only one able to keep up with new production needs.

For McCullough et al. (2008), De Souza Filho and Bonfim (2013) and Buainain and Garcia (2013a), one of the solutions for family farmers to overcome their problems of scale is the organization of collective action through the formation of groups of production or marketing. De Souza Filho and Bonfim (2013) reinforce the importance of associations and emphasize that one of the weaknesses of small farmers is the atomization and production scale, often inadequate to meet modern markets. The strengthening of cooperative arrangements also allows circumvent the problems associated with the lack of technical assistance, enables to structure new ways of coordinating transactions and facilitates the appropriation of income within the supply chains (De Souza Filho and Bonfim, 2013).

FAO (2009a) emphasizes similar aspects and indicates that the high transaction costs of family farming can be reduced through the establishment of collective actions, such as cooperatives and various forms of contracts. The importance of cooperation is even greater in agrarian reform settlements, often deployed in soils of low productivity, far from large centers of consumption and with reduced production areas.

For Van Der Ploeg (2010) co-operation and reciprocity can play an important role. Sharing specific and expensive machinery among groups of farmers brings down the monetary costs per farm. Lowering transactions costs through producer organizations will not only make more likely that the less endowed small farmers enhance their opportunities to access to agro industrial markets but also increase their net incomes once they are able to access these markets (Escobal and Cavero, 2012).

Despite the benefits of cooperation, FAO (2009b) remembers that most organizations of small producers in the world do not work satisfactorily and that contracts are more common with large than with small producers.

From this information, the research is based on two hypotheses. First, implantation of cooperative arrangements between settlers<sup>3</sup>

**Table 1**Settlements in each region of *Mato Grosso do Sul* state and number of visited ones.

Regions	No. of settlements	% of settlements	No. of visited settlements
North	6	3	1
West	26	13	3
East	30	15	4
South	59	29	4
Center	81	40	7

is one of the main factors for the viability of land reform in Brazil and to the survival of settlements. Second, this kind of arrangement is extremely difficult in many regions of Brazil, which represents a threat to the continuity of agrarian reform.

Consequently, the research objectives were to verify the existence of cooperative arrangements in the Brazilian settlements and to explain the factors responsible for the situation encountered. Due to the large size of Brazil and the differences between regions, the research is focused on the state of *Mato Grosso do Sul*, located in the Midwest, the main region for production of commodities, such as livestock, soybeans, corn and cotton and which recently expanded into sugarcane and eucalyptus productions.

In 2003, *Mato Grosso do Sul* was the state with the third highest concentration of land, with a Gini index of 0.81, equal to the state of *Bahia*, and just behind *Pará* and *Amazonas* in the north, with 0.82 and 0.84 respectively. *Mato Grosso do Sul* is the state with the largest average area per establishment, over 400 ha, similar to *Mato Grosso*, also in the Midwest, but in front of the northern states, with an average of 141 ha (Girardi, 2008). With a total size equivalent to Germany, the state had only, in 2010, 2.4 millions inhabitants (IBGE, 2010).

The concentration of land, the extension of farms and the importance of the agricultural sector, made *Mato Grosso do Sul* a state of choice for the Brazilian agrarian reform. In parallel, the low population density, with higher distances between places of production and markets, and the political power of large farms, which occupy most of the territory and are responsible for most of the GNP of the State, emphasize the need for small producers, including the settlers, to cooperate to survive.

#### Methods

Data collection was performed between 2008 and 2009. 498 producers were visited in 19 settlements from 18 municipalities located throughout the state of *Mato Grosso do Sul*. The selection of producers has been divided in two parts, a stratified sampling, for the selection of the settlements, and a systematic sampling of the producers in each selected settlement.

Before the selection of the settlements, the State has been divided in 5 regions: North, West, East, South and Center. The number of settlements visited in each region of the state was proportional to the percentage of settlements present in this region in relation to the total number of settlements in the state (Table 1). The settlements visited in each region have been randomly selected.

After the selection of settlements has been realized a systematic sampling of the producers. Once selecting the first interviewed producer, randomly chosen between the 20th first producers encountered in the settlement, has been made the selection of every  $k^{\rm th}$  producer encountered, with k=(population size/sample size).

<sup>&</sup>lt;sup>3</sup> By studying the cooperative arrangements, we will focus on the implantation of cooperatives and associations with mercantile objectives, such as production, storage, purchase and selling organizations. These entities can all be formal or informal.

<sup>&</sup>lt;sup>4</sup> Implantation of cooperative arrangements is not the only important factor, but it occupies a prominent position in family farming, along with education, access to credit and to extension services, and purchase programs by Government, factors that, despite their importance, were not addressed in this paper.

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