

AGROECOLOGY AND FAMILY FARMING IN MATO GROSSO DO SUL, BRAZIL

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Abstract

Mato Grosso do Sul (MS) is a new state of center-west Brazil created in 1979 after the separation from the State of Mato Grosso. Generally, cerrado is the main type of vegetation that can be found in the state, even if due to its low degree of homogeneity is considered more like a transition area with interference of many types of biomes. The agrarian situation in MS had followed the national tendencies in terms of land distribution and land exploitation. The main characteristic of the state is the coexistence of monoculture production with family farming production. Mato Grosso do Sul is known mainly for the presence of large landowners and agribusiness. The presence of large protected areas and also of indigenous communities shaped the agricultural features of the state. The main consumed agricultural products in Mato Grosso do Sul have been produced by a small numbers of family farming agricultural establishments.

Key words: agroecology, family farming, Mato Grosso do Sul

INTRODUCTION

The potential of agroecology to transform Brazilian rural reality, especially family farmers have been highlighted at different levels ranging from the Brazilian public discourse to the academic literature. The modern family farmer, discover several advantages for agroecology, convinced by local belonging sense and a strong human nature relationship. The knowledge acquired over generations, as a direct result of continuous innovation embedded in local traditions represent assets which gives inspiration in current challenging world. In Brazil family farmers represent a significant share in the national agribusiness field. Family farming in Brazil was defined as a specific category first by the National Confederation of Workers in Agriculture (CONTAG), the traditional union for small farmers and rural laborers, followed by an academic study that contributed to the public dissemination of this category and subsequently as an important group that should be supported by public policies (Program to Strengthen Family Farming - PRONAF). Those stages, consolidated the family farms as an important social category and relevant political actors. Family farmers are responsible with the creation of a significant number of jobs in the countryside. Is important to note the contribution to local development, not only by retaining and employing family members to work on the family property, but also by living and spending locally. This determine and encourage other activities, such as the street markets that are

so important to small towns in the interior, the local retail trade, food supply, and the production of inputs integrated with agroindustrial value chains with a key role in the national economy.

According to the law 11.326 (2006) family farmers are defined by following things:

- they own no more than four 'tax modules ;
- their workforce consists mainly of family members;
- their income derives predominantly from the family property;
- the establishment is managed by the head of household or family.

MATERIAL AND METHOD

Quantitative method is selected as the research design for this chapter. This method is able to provide data needed to support the theory of family farming in MS. Through the extracted data from the national institute of statistics IBGE, it can be decrypted the status quo of agroecology in MS. The heterogeneous composition of the state, allows comparisons among the macroregions, microregions and municipalities. On the other hand, in the last decade it was conducted only one complex agricultural census in 2006, leaving space for supplementary analysis. A dissertation „Produção e comercialização de produtos orgânicos pela agricultura familiar em Mato Grosso do Sul” realized by Padua (2014), in a postgraduate program at Universidade Federal da Grande Dorados it was used in statistical data clarification.

The data for this chapter will be analysed using the work of Guanziroli (2013) as a guideline. Geospatial Analysis will be considered for the data treatment and cartographic representation. For the current research an open source GIS, respectively QGIS 2.12.3 will be used. The tool was chosen due to its facility in terms of application.

The data used in this chapter were collected in 2006 by IBGE and organized in data bank available online on their website. The data was extracted from IBGE data bank and organized in data base according to the research need. The 2006 agricultural census is the latest complete census, the latest census was realized in october 2017 and data were not available. The data analysis consists of three main phases operating at three different scales:

- within MS state at mesoregional scale;
- within MS state at microregional scale and;
- within MS state at municipality scale.

For each dataset, the features, attributes, and metadata were organized accordingly. This step is usually the most time-consuming. The feature geometry represented by vector data for all scales (in shapefile format) were

extracted from DIVA-GIS web platform. For the data conversion from one format to another it was used the incorporated geoprocessing tools

RESULTS AND DISCUSSION

The latest Census of Agriculture realized in 2006 is depicting the statistical reality of family farming in Brazil. In Mato Grosso do Sul there are 48.842 agricultural establishments of family farming (41104 in 2006) which covers 1190206.46 hectares. Comparing with other states Mato Grosso do Sul has the lowest number of agricultural establishments. Family farmers from Mato Grosso do Sul has the smallest surface (average) in Brazil. In average a family farm covers a surface of approximately 29 hectares, when the Brazilian average for a family farm is 18 hectares (figure 1).

On the other side, the non-familial farm agricultural establishment sums up 23758 units with an average of 1215 hectares, four times higher than the national average which represent 309 hectares (IBGE, 2006).

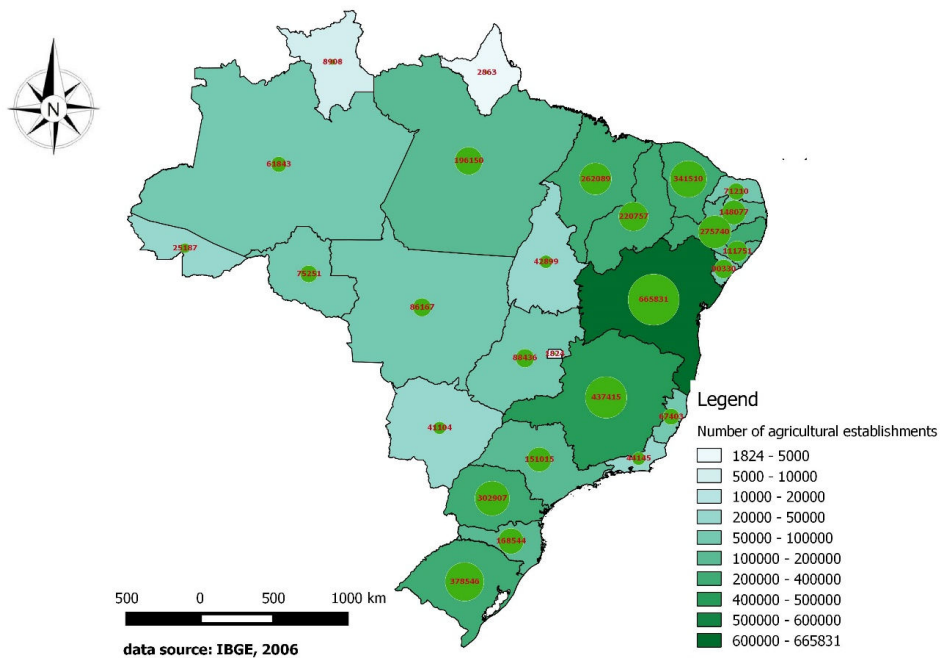


Fig. 1. Number of family farming agricultural establishments in the Brazilian states in 2006

At a mesoregion level, the western administrative, respectively Pantanaís Sul Mato-Grossense (PMS) has only 3257 family farming agricultural establishments which sum up 121704 hectares. Those statistical datas indicate an average surface for a family farm of 37 hectares.

Comparing with the average size of a family farm in MS, in the Pantanaís family farms size are bigger (29 ha in MS and 37 ha in PMS). In the same region there are 2064 agricultural establishments that belongs to other categories different than family farming spread across an area of 8616071 ha, which represent an average of 4147 ha/agricultural establishment. Those statistical evidence emphasize the region reality, where large landowners are representative. Large landowners play a major role on local land markets and due to the specificity of the region, tensions can arise between public and private interests. Nevertheless, one of the main socio-demographic characteristic of the Pantanaís region is the presence of indigenous communities. The land conflict between the Guaraní-Kaiowá indigenous people and large landowners in the state of Mato Grosso do Sul is becoming more accentuated. The tensions between landowners and indigenous are characterized by land occupation from one side and threats ended up with physical violence from the other side. As the current situation is sensitive, indigenous community claim that the Guaraní-Kaiowá have always lived from subsistence agriculture, which is becoming increasingly difficult because of their lack of access to their ancestral lands. The Kaiowá people's lands have been occupied for decades by settlers and ranchers. A continuous process of land restitution is going on, and family farming is encouraged.

The MST movement plays also an important role in new agricultural establishment emergence, being an active vector of family farming empowerment.

Another specificity of the region is represented by the presence of a large wetland system, being the world's largest tropical wetland area and which are classified as protect areas and listed as a "Wetland of International Importance" under the Ramsar Convention in 1993.

In which consist the Centro Norte de Mato Grosso do Sul (CNMS), the statistical data's reveals a higher number of family farming agricultural establishments respectively, 14167 units which accounts an area of 396057 ha, with an average of 29 ha/unit. Leste de Mato Grosso do Sul register 7340 family farming agricultural establishments with a total surface of 270858 ha, respectively an average of 37 ha/unit. The fourth mesoregion of MS has the half of the state family farming agricultural establishments (22361 units) totaling 531538 ha, respectively an average of 24 ha/establishment.

A closer look emphasizes a more complex situation at microregional level, depicting several characteristics. Even if the family farming agricultural establishments are higher than the non-family farming units, in term of surface large landownership is still dominant. In Baixo Pantanal the average size of an agricultural establishment is more than 6000 ha, when in the same microregion a family farm is extended in average on only 30 ha.

Alto Taquari, Cassilandia and Paranaíba are the microregions with the highest average size of family farms (around 60 ha). The microregions that include the biggest cities stands out with the smallest farm size (around 20 ha for family farms and 600 for non-family farms).

At a municipality level, the average size of a family farm varies from 12 ha/establishment in Campo Grande to 105 ha/establishment in Figueirao. The southern part of the state has the most numbers of agricultural establishments, at the other extreme stands the municipalities from north and east. In a survey conducted by EMBRAPA researchers, it was found that the southern region of Mato Grosso do Sul concentrates most of the settlements of Agrarian Reform, comprising the municipalities of Nioaque, Sidrolândia, Nova Andradina and Itaquiraí, housing more than two thousand families each. The strong presence of traditional family farmers in the region of “Antiga Colônia Federal”, in Grande Dourados, has caused the emergence of family farming (figure 2).

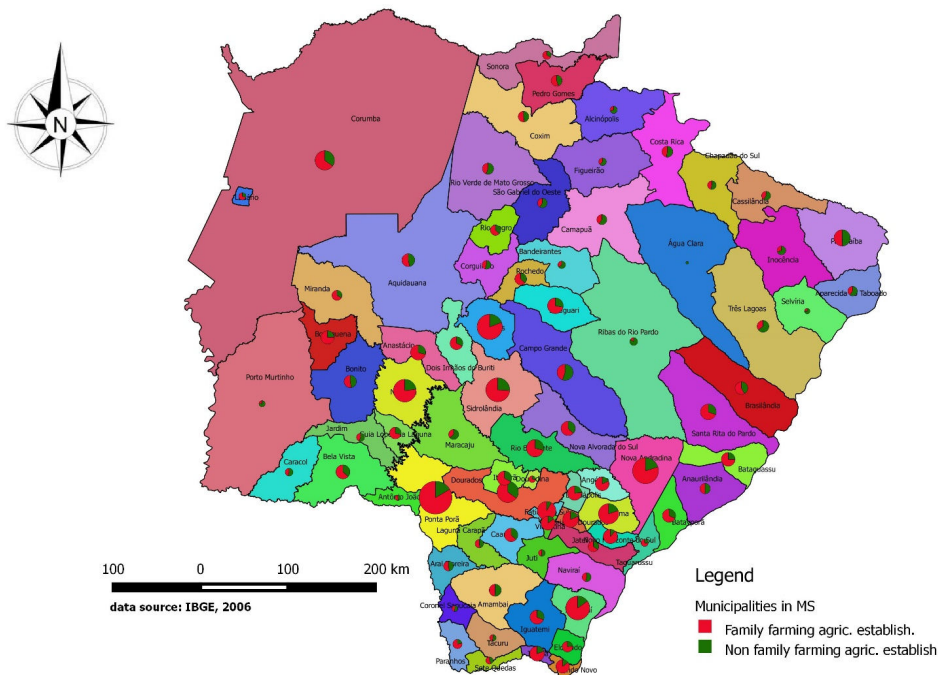


Fig. 2. Number of agricultural establishments in MS municipalities in 2006

Mato Grosso do Sul (MS) is characterized by the extensive agriculture, mainly represented by beef cattle and soybean, cotton and corn monocultures which coexist with the family farming. The land distribution in MS emphasize a huge gap, 55 % of land owners have properties with less than 100 ha and is totalizing only 2.2% of the total area. At the other extrem

2 % from the total number of land owners have properties larger than 5000 ha, representing 40% of the state total surface area. It is known that this land concentration, despite some good results in the productive performance, brings some undesirable consequences, such as social exclusion, unemployment and severe damage to the environment.

According to surveys conducted by INCRA and the IDATERRA, Mato Grosso do Sul has 22,753 traditional family farmers and 19668 farmers settlers for land reform, totaling more than 42,000 families. Regarding indigenous, Mato Grosso do Sul is home to the second largest population in the country, with 53900 people belonging to nine ethnic groups, distributed in 75 villages. The state has also around 18000 families of landless workers camped in canvas tents along the highways (Komori et al., 2007).

In the state of Mato Grosso do Sul, it can be identified dynamic of two natures in promoting agroecology. One is through government actions and other is represented by civil society, respectively farmers and social movements organizations, which brought significant contributions to the development of agroecology in the state (Padovan, 2005). The commitment of many farmers in the state is obvious and can be observed through their initiatives. These initiatives, organized under the forms of Assistência Técnica e Extensão Rural (Technical Assistance and Rural Extension) - ATER, creates an important environment for the construction and spread of knowledge in a participatory manner among the members. It creates strong links and trust between technicians and producers and implicitly a greater interaction between farmers (Pedrosa et al., 2010).

Family farmers are responsible for the production of the food consumed in the state. According to IBGE (2006), the main consumed products have been produced by a small numbers of family farming agricultural establishments (table 1).

Table 1

Main agricultural products realized by family farmers

Product	Number of establishments	State production %
Rice	829	22 %
Beans (feijão)	2093	56 %
Mandioca	5764	77 %
Coffee	813	68 %

Also, several animal products such as milk and egg (around 60 %) is delivered by family farming agricultural establishments.

CONCLUSIONS

As highlighted above, the structure, composition, development and performance of family farming varies from region to region being influenced by different historical events. Heterogeneity is one of the common characteristics of family farming in Mato Grosso do Sul. Different processes of evolution from peasantry to family farming, different political regimes and different organizations and forces, among others, explain in part the heterogeneity found in different regions within the state. In Brazil, a wide range of factors made it possible to launch a program for the strengthening of family farming in the 1990's.

Generally, family farming increased, albeit not very strongly, with relative growth in several municipalities. It is important to mention Mato Grosso do Sul is known mainly for the presence of large landowners and agribusiness.

Family farming continued to make more efficient use of land and capital but technological and land tenure limitations persist among a large group of family farmers, who represent a significant proportion of the total but own little land, and the statistical evidence shows this to be a constraint on income expansion for the group concerned.

The presence of large protected areas and also of indigenous communities shaped the agricultural features of the state. The main consumed agricultural products in Mato Grosso do Sul have been produced by a small numbers of family farming agricultural establishments.

Agroecology play an important role in strengthening agricultural autonomy, enabling the economic and social reproduction of family farming, and spread the sustainable benefits among a large group of people. And, more importantly, it allows the establishment of a new relationship with nature.

REFERENCES

1. Guanziroli C., Buainain A., Sabbato A., 2013, Family farming in Brazil: evolution between the 1996 and 2006 agricultural censuses. *Journal of Peasant Studies*, 40:5 pp.817-843
2. Padua J.B., 2014, Produção e comercialização de produtos orgânicos pela agricultura familiar em Mato Grosso do Sul, Master Thesis, Dourados, Brazil
3. IBGE, 2006, Instituto Brasileiro de Geografia e Estatística, Censo Agropecuário, Brazil
4. Komori O.M., Padovan M.P., Rangel M.A.S., Leonel L.A.K., 2007, Núcleo de Agroecologia de Mato Grosso do Sul. *Revista Brasileira de Agroecologia*, v.2, n.1, pp.1746-1749
5. Padovan M.P., 2005, Agroecologia em Mato Grosso do Sul: princípios, fundamentos e experiências. Embrapa Agropecuária Oeste

6. Pedrosa R.A, Komori O.M., 2010, Núcleo de Agroecologia Ivinhema: ATER diferenciada valorizando saberes, conhecimentos e experiências no Território do Vale do Ivinhema, MS. Cadernos de Agroecologia, v.5, n.1
7. Lei nº 11 326, de 24 de Julho de 2006, Agricultura Familiar, Legislação Federal e Marginália, Brazil