



Analysis of Methodology to Subsidy Environmental Regularization and Analysis of Informal Rural Settlements: Case Study Vale Do Mangaval – MT – Brazil

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Suggested Citation

Ferreira de Lima, D.M.D., Dalla Nora, G.G., Rossetto, O.C., Durante, L.C., da Silva Teixeira, R.F., Venere, P.C. & da Silva Rabelo, O. (2024). Analysis of Methodology to Subsidy Environmental Regularization and Analysis of Informal Rural Settlements: Case Study Vale Do Mangaval – MT – Brazil. *European Journal of Theoretical and Applied Sciences*, 2(2), 396-411.
DOI: [10.59324/ejtas.2024.2\(2\).34](https://doi.org/10.59324/ejtas.2024.2(2).34)

Abstract:

The project's overall aim was to establish a work proposal that may come to subsidize a state policy of environmental regularization of rural settlements in the state of Mato Grosso. The document is the final report and includes the activities and services provided, and the obtained results, and presents the accountability and financial information laid out in the work plan and budget established by mutual agreement. The project proceeded into 4 phases: i) Social mobilization to support the regularization of the National Land Credit Program; ii) Guideline for environmental regularization; iii) Capacity building on sustainable land and territorial management, database, and technical research; iv) Analysis of socioeconomic profile, cultivation, and environment of the Vale do Mangaval informal rural settlement in Caceres, Mato Grosso, Brazil.

Keywords: *Environmental regularization, production, settlements, RADIS/UFMT.*

Introduction

This report provides an overview of the methodology for environmental regularization subsidy and analysis of informal rural

settlements. The activities and services of this project were carried out by the Federal University of Mato Grosso (UFMT), the State Secretariat of Family Agriculture (in Portuguese,



“Secretaria de Estado de Agricultura Familiar” (SEAF-MT)).

These institutions ensure that achieved institutional and social results occurred in a collaborative and participatory manner. The project’s overall aim was to establish a work proposal that may come to subsidize a state policy of environmental regularization of rural settlements in the state of Mato Grosso. The document is the final report and includes the activities and services provided, and the obtained results, and presents the accountability and

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The project proceeded into 4 phases: i) Social mobilization to support the regularization of the National Land Credit Program; ii) Guideline for environmental regularization; iii) Capacity building on sustainable land and territorial management, database, and technical research; iv) Analysis of socioeconomic profile, cultivation, and environment of the Vale do Mangaval informal rural settlement in Cáceres, Mato Grosso (Table 1).

Table 1. Work Plan of “Drafting a methodology for subsidizing environmental regularization and analysis of informal rural settlements” Project

| Activity 1. Strengthening and institutionalization of the support network for environmental regularization of the National Land Credit Programme in Mato Grosso. | | |
|---|---|--|
| Activities | Dates/deadlines | Products/results |
| Meetings to define the work plan | Aug 19 2019 Aug 28, 2019 | Meetings held |
| Meetings to define training course proposals | Sep 11, 2019 Sep 24, 2019 | Meetings held |
| Meetings to define SEAF-MT demands related to the “Environmental and Occupational Supervision System” | Sep 11, 2019 Sep 23, 2019 | Meetings held |
| Meetings to define field research and prepare the Socioeconomic, Productive and Environmental Report and Diagnosis of rural settlement | Oct 19, 2019 | Technical visit and social mobilization held in the rural settlement |
| Preparatory meeting to perform the fieldwork | Oct 30, 2019 | Meeting held |
| Field research in Vale do Mangaval rural settlement in Cáceres – MT | Nov 4 to 11, 2019 | Fieldwork done |
| Activity 2. Development of Environmental and Occupational Supervision System methodology and adaptation to support environmental regularization actions. | | |
| Activities | Dates/deadlines | Products/results |
| Drafting of methodology and recommendation for adopting “Environmental and Occupational Supervision System” | October-November-December | Technical note prepared and delivered |
| Activity 3. Training of the executing team in the methodology to support environmental regularization actions. | | |
| Activities | Dates/deadlines | Products/results |
| Performance of the following courses: i – Training Course on Land Management, Geotechnology and Geoprocessing – 10 class hours. ii – Training Course on Territorial Management Systems and Database – 10 class hours, iii – Training Course on Agricultural and Social Research with practical activity – technical and social inspections in PNCF rural settlements – 10 class hours | Oct 23, 24 and 25, 2019 | Courses held and people trained |
| Activity 4: Drafting and delivery of socioeconomic, productive and environmental diagnosis carried out as a pilot project within the National Land Credit Programme in Mato Grosso. | | |
| Activities | Dates/deadlines | Products/results |
| Drafting and delivery of “Socioeconomic, Productive and Environmental Report and Diagnosis of Rural Settlement Report” | December 2019 and January-February 2020 | Report and diagnosis prepared and delivered |

Source: Authors.

Development of Project Activities: Phases and Actions Executed, Services Provided, and Results Obtained

The analysis of the project's activities development is based on the reports presented and sent, and considers its phases, mentioned above (Table 01), the actions implemented by the responsible institutions involved and the services provided to the target public and society.

Social Mobilization to Support the Environmental Regularization of Rural Settlements of the PNCF: Regulatory Framework and Inter Institutional Support Network

The project conducted an extensive and in-depth investigation of the state's agricultural, land, and environmental policies, focusing on the situation of family farming and rural settlements assisted by public authorities, as stated in the first project report the dissemination of measures conducive to sustainable development were prioritized. The agricultural environmental issues in family farming express the importance of land and natural resources in the current production and economic models. In Brazil, there is a legal micro-system that regulates these factors (land and natural resources) based on: Federal Constitution, Land Code (Law No. 4,504/1964), Forest Law (Law No. 12,651/2012) and other laws.

The legal and political tools help to better understand the country's policies on rural settlements (PNCF and National Agrarian Reform Policy - PNRA) as well as the land and environmental regulation of rural properties. The rural land and environmental factors are inseparable, affecting the lives of rural population and the sustainable development of rural settlements. Rural settlements are created through land policies, managed by public institutions, and comply with the legal requirements set out in government plans. PCNF and PNRA are Brazil's main land-use

plans. They have their own rules, and the competent public institutions and beneficiaries must observe these rules. Therefore, the establishment of rural settlements means the rights and obligations between the state and rural settlers.

The rural population living in rural settlements receive different legal treatments and are different from the public in PCNF and PNRA. The government's policies and actions should capture the particularities of the rural population and social groups. However, public authorities need to adopt systematic and strategic methods to meet social needs and seek specific and effective solutions. In this direction, to include those groups in government plans and actions aimed at promoting production and social environmental activities in the family agriculture, including: the standardization and development of rural settlements.

The Government of Mato Grosso estimates that there are 125,840,000 rural establishments in family farming (family farm rural properties) and 748 rural settlements in the state (SEAF-MT, 2017), only in the PNCF would there be 217 rural settlements and 7,830 rural families (SEAF, 2020). The Federal Government counts 549 rural settlements (federal, state and municipal) and 82,424 rural families inserted in the PNRA (INCRA, 2020). Despite the divergence of official data, it can be suggested that there is an audience of around 90,000 rural families settled in Mato Grosso that needs support for regularization and production in rural lots and for the generation of employment and income with respect to the environment.

Carefully examining the PNCF, the object of this project, it was found that the history of the program and its normative and procedural framework have undergone several changes, which explains the legal uncertainty and problems in rural settlements. The program has already been called *Banco da Terra* (the Earth Bank) and has recently received another name: *Terra Brasil* – PNCF. The PNCF was conducted by other federal government agencies, such as the former *Secretaria Especial da Agricultura*

Familiar e do Desenvolvimento Agrário (SEAD¹); today, it is the responsibility of *Secretaria de Agricultura Familiar e Cooperativismo* (SAF²), linked to the *Ministério da Agricultura, Pecuária e Abastecimento* (MAPA³). In fact, the PNCF had administrative procedures changed to enable the continuity of the program after the promulgation of Decree No. 10,126/2019.

On the other hand, the PNCF state's managing body has always been the *Unidade Técnica Estadual* (UTE) linked to SEAF-MT. Although endorsed with a lean administrative and technical structure and dependent on financial resources of the Secretariat and the Federal Government, SEAF-MT UTE was able to implement the program in Mato Grosso and meet the demand of rural workers and family farmers. The problems of the program in the state result from the administrative processes of obtaining and allocating land and the conclusion and implementation of contracts signed with the beneficiaries of the PNCF. SEAF-MT UTE has adopted technical management and care protocols to solve the problems presented by social actors (interested candidates, rural associations and rural settlers). It has also made efforts to modernize and professionalize the management of rural settlements of the PNCF and to better provide public services to the assisted.

SEAF-MT was able to implement its own institutional platform that overview on the situation of the rural settlements of the PNCF and the UTE's service charter for the program. This resource provides information in the public and social interest and also conducts surveys and land and socioeconomic diagnoses on rural settlements and the PNCF itself. Another outstanding tool of the platform is the presentation of the PNCF Support Network in Mato Grosso, which brings together names and

contacts of public and private institutions and their responsible for acting in defense of rural settlements⁴.

With the support of the PNCF Support Network, SEAF-MT can adopt government plans and actions in rural settlements and serve program beneficiaries and rural families interested in land acquisition. From this network, the project was able to mobilize public institutions and their collaborators to develop the proposal for a guideline for regularization and development of the rural settlement of *Vale do Mangaval*, in Caceres. It should be noted that participated in this initiative, in addition to the university itself, SEAF-MT, EMPAER⁵ – *Empresa Mato-Grossense de Pesquisa, Assistência e Extensão Rural*, FETAGRI⁶ – *Federação dos Trabalhadores na Agricultura em Mato Grosso* and *Associação dos Pequenos Produtores do Vale do Mangaval*⁷.

The project held meetings and workshops for the preparation, monitoring and implementation of the Work Plan, for the presentation and definition of issues and issues of interest to the entities and social actors involved (policy of environmental regularization, importance of environmental conservation in rural settlements, social participation, responsibilities of the public authorities and the community, among others). The meetings aimed to discuss the methods and techniques of the activities, especially the environmental regularization guideline, social mobilization and fieldwork, and the results of the project and for the analysis and approval of the project products (forms of surveys, surveys, mappings, development reports, social, economic, productive and environmental diagnosis of the project, final report), as shown in table 01.

¹ Translator's note: Special Secretariat for Family Agriculture and Agrarian Development.

² Translator's note: Secretariat of Family Agriculture and Cooperativism.

³ Translator's note: Ministry of Agriculture, Livestock and Supply.

⁴ <http://www.seaf.mt.gov.br/-/12183234-rede-de-apoio-e-parceiros?grupo=12367732.&categoria=12367739>.

⁵ Translator's note: Mato Grosso's Company of Research, Assistance and Rural Extension.

⁶ Translator's note: Federation of Agricultural Workers in Mato Grosso.

⁷ Translator's note: Association of Small Producers of Vale do Mangaval.

The first Project Development Report presented 03 (three) main products: i) the proposition of a rural environmental regulatory framework for rural settlements of the PNCF (survey of applicable legislation and analysis of legal and political instruments related to agrarian, land and environmental issues); ii) the formation of a support network by convening meetings and with the elaboration of the guideline of environmental regularization and analysis of informal rural settlements; iii) Guideline For Environmental Regularization And Regulatory And Operational Framework For Support And Development Of Rural Settlements Assisted By Public Bodies. In addition, the document presented the evidence of activity “Social Mobilization To Support The Regularization Of The National Land Credit Program”: records of the meetings, records of the technical visit, registration of the preparatory workshop, photographic records of the fieldwork.

Guideline for Environmental Regularization of Rural Settlements of the PNCF: Laws, Public Policies, Administrative Procedures and Institutional Projects

The project facilitated participants' discussion on the competencies and responsibilities of public agencies in the agrarian, land and environmental areas and on the involvement and social participation (stakeholder engagement) in environmental regularization and the development of rural settlements.

The Second Project Development Report presented an overview of the agro-environmental issue in family agriculture and the environmental regularization of rural settlements in order to elucidate the interfaces between public policies and the attributions of public and private institutions and social actors, as it can be seen (Table 2).

Table 2. Background on Public Policies in the Agro-Environmental Realm, Competent Institutions and Their Responsibilities in the Context of the Environmental Regularization of Rural Settlements

| Agro-environmental realm – Competencies, Policies and Public-Private Actions related to the environmental regularization of rural settlements | | | |
|---|---|---|--|
| | Non-Governmental Policies and Actions | Public Policies and Agrarian/Land Actions | Public Policies and Environmental Actions |
| Object | Implementation of partnerships, projects, and initiatives of public socio-environmental interest | Management of rural settlements, including their inclusion in other public policies | Environmental protection and environmental regularization of productive activities and rural properties |
| Institutions | Universities and Research Institutes | MAPA/SAF | MMA |
| | Rural Unions and Associations | SEAF/UTE | SEMA |
| Responsibilities | Acting proactively and cooperatively with other institutions promoting partnerships and academic and scientific projects of public and socio-environmental interest | Implementing policies to support family farmers and maintaining a system and database to monitor the situation of rural settlements and beneficiaries | Implementing environmental policy, enforcing environmental laws, implementing and managing the Rural Environmental Registration System (SIMCAR) within the spheres of competence |

| | | | |
|--|---|--|--|
| Action related to environmental regularization | Mobilization and training of individuals (rural workers) and collectives (unions and rural associations) for partnerships, projects, and actions that promote sustainability in the field | Receipt of the Rural Environmental Registration (CAR) of rural settlements (lot by lot), entering them in SIMCAR and monitoring the administrative process of environmental regularization of rural settlers | Receipt and analysis of CAR of rural settlements (lot by lot) and issuance of an administrative decision |
| | Conducting agro-environmental research and technical and field visits to collect socio-environmental data and preparing the Rural Environmental Registration (CAR) of rural settlements | Monitoring of environmental compensation and remediation measures in their rural settlements if rural settlers adhere to the Environmental Regularization Program (PRA) | Management of the Environmental Regularization Program (PRA), allocation of environmental compensation and remediation measures in properties with environmental liabilities |

Source: Authors.

The matrix of legal responsibilities in the context of the issue of environmental regularization of rural settlements establishes the attributions of environmental agencies, land agencies and rural settlers, and supports the government measures in favor of environmental regularization of rural

settlements of the PNCF. For a better understanding of the synergy between public and private institutions and social actors and responsibilities in the environmental regularization of rural settlements, find the figure that follows:

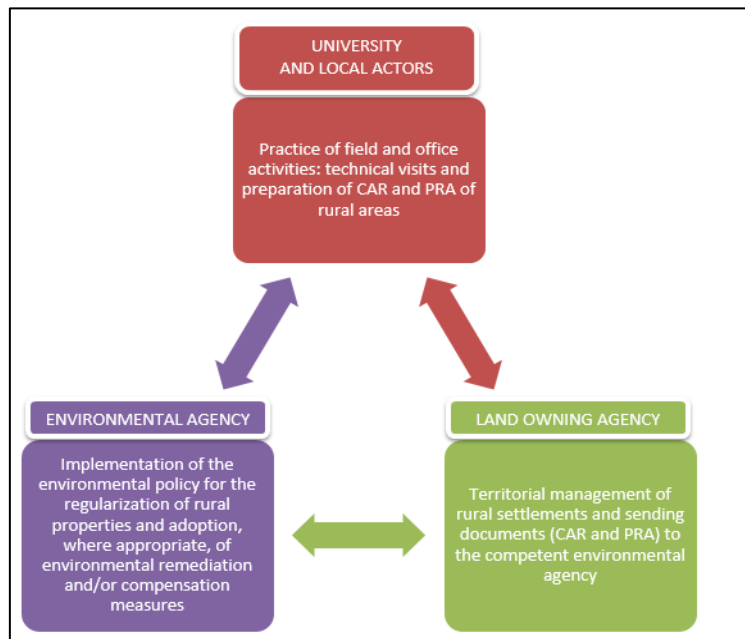


Figure 1. Institutional Initiatives and Local Actions for the Environmental Regularization and Development of PNCF's Rural Settlements.

Source: Authors.

Rural settlements have a legal nature, social, economic and environmental attributes and common needs, so it is necessary to build integrated policies. The environmental regularization guideline for rural settlements with a focus on PNCF based on an institutional initiative of UFMT and the Federal Government and a successful experience of the of the *Escritório de Inovação Tecnológica* (EIT) of UFMT to enable technical support for rural settlements of agrarian reform, managed by *Instituto Nacional de Colonização e Reforma Agrária* (INCRA).

The reference work cited is the “*Projeto Diagnóstico para Regularização Ambiental de Assentamentos da Reforma Agrária*”, better known as “*Projeto RADIS-UFMT*”, which develops the following activities: i) occupational surveys and collection of social, economic and environmental data and information of rural settlers; ii) preparation of technical products for environmental regularization purposes; iii) identification and characterization of agrarian systems; iv) knowledge production through extension actions, research and publications; v) establishment of geospatial database systems to support government policies in rural settlements; vi) formatting and dissemination of methodologies and geo technologies for the management of rural settlements.

That said, the structure of the environmental regularization guideline of rural settlements of the PNCF, proposed by this project, is supported by a strategy that is applied to the rural settlements of the Agrarian Reform, thus avoiding divergences and duplication sums of efforts in public policies. The intention of this project was to corroborate the adoption of an

integrated model of environmental regularization of rural settlements to be observed by the public institutions involved. The technical note consolidated a methodology that supports the performance of public agencies and social actors based on legal criteria (political, legal and administrative).

Therefore, the guideline of environmental regularization of rural settlements envisioned to help in the formatting of registration and environmental regularization systems aimed at rural settlements – an ongoing action taken by environmental agencies (federal and state) – and provided an environmental regularization methodology that can be implemented by SEAF-MT in PCNF. The guideline of environmental regularization of rural settlements shows the importance of a spatial database for territorial management, which has technological tools (software and programs/applications) for the generation of information and technical products, especially the forms of occupational and environmental surveys of rural lots, mapping of productive areas and environmental areas and multi-thematic diagnoses on rural settlements (diagnoses for regularization and development of rural settlements). The guideline for environmental regularization and analysis of informal rural settlements is included in the first report.

Technological Extension, Human Training and Professional Training in Environmental Regularization Actions of Rural Settlements of the PNCF in the State

This project used the technological extension⁹ for dissemination and implementation of the

⁸ Translator’s note: Diagnosis Project for Environmental Regularization of Agrarian Reform Settlements.

⁹ Boaventura Souza Santos (2004) points out that university extension should promote an “active participation in building social cohesion, deepening democracy, fighting social exclusion and environmental degradation, and defending cultural diversity”. By computing the challenges it faces, the university extension can and should be an instrument for strengthening society's relationship with the university by producing and disseminating knowledge for social change. The university

extension brings together people with different realities and at the same time expands the walls of the university reaching communities and social groups. The National University Extension Policy (2012), created within the scope of the Forum of Extension Pro-Rectors of Brazilian Public Universities (FORPROEX) in 2012, sets out some objectives for the action of the university extension, such as “restating the University Extension as an academic process defined and effective according to the demands of reality, in addition to being imperative in the education of the student, in the qualification of the professor and in the

environmental regularization guideline of rural settlements of PNCF, that is, the project implemented an educational strategy that proposes innovative approaches and application of technologies and combines teaching and research and institutional initiatives to solve social, economic, political and environmental problems. The project argues that academic and scientific research and technological innovation can contribute positively to access to public policies, including environmental regularization, the generation of employment and income, the better quality of life of populations, increased agricultural productivity, the reduction of socioeconomic inequalities and sustainable rural development.

The project developed a technological extension program (academic and university project) based on the theories and educational norms that discipline the subject and the good experiences adopted in universities, especially at UFMT. The technological extension program has conducted training and training courses in various areas

(agro-environmental law, public management, geography, geo processing and geo technologies) aimed at democratizing sustainable knowledge and practices in family agriculture and training public agents and social actors in the environmental regularization of rural settlements.

The technological extension program held 03 (three) training courses on October 23, 24 and 25, 2019 at the Geography Department of UFMT, Campus Cuiabá, being: i) Land Management Course (10 hours); ii) Territorial Management Course and Database (10 hours); iii) Course of Technical and Social Surveys. These courses had the collaboration and participation of managers and public servants and other professionals, especially teachers and researchers, and catered to a target audience of 113 people, which included the settlers of *Vale do Mangaval*, family farmers, representatives of rural associations and trade unions, among others.



Figure 2. Courses



Figure 3. Courses

exchange with society”; as well as “contributing so that the University Extension is part of the solution for the Country’s great social problems” (LIMA et al. Second development report of “Drafting Of Methodology For

Subsidizing Environmental Regularization And Analysis Of Informal Rural Settlements” project. UFMT. Cuiabá, 2020).

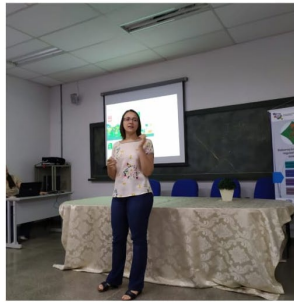


Figure 4. Courses

Figure 5. Courses

Source: Authors.

The courses focused on the following problems or challenges of family farming and environmental regularization of rural settlements in the state: i) the interfaces between public policies (environmental, agrarian and land) and administrative procedures in the competent public agencies; (ii) the importance of rural territorial management, spatial databases and geo technologies and existing data systems (environmental and land registers); and iii) social research in the field and occupational and environmental surveys for knowledge of rural contexts in the state. Figures 2, 3, 4 and 5 show the activities of the training courses carried out under the technological extension program of this project; these and other records and supporting documents are contained in the Second Project Development Report.

After completing the training courses, a work team was formed, composed of teachers, researchers and students, to carry out field research in the rural settlement *Vale do Mangaval*, in Caceres. The training of this team took place on October 30, 2019 in the Department of Geography of UFMT, was conducted by the Project Coordination and the technicians of EIT-UFMT and prioritized the approaches

developed in training courses. This team discussed the environmental regularization guideline applied to rural settlements, the methodologies and techniques of surveying and processing primary and secondary data and the structure of the social, economic, productive and environmental diagnostic report (model) of rural settlement. In addition, this team made the planning of fieldwork and the review of standards and procedures for conducting occupational and environmental surveys.

The project was committed to raising the awareness of the agents involved in the complexity of the object of study – the importance of environmental regularization and the demands of rural settlements and family farming in the state, especially the community of *Vale do Mangaval*. It is worth remembering that the team of this project was present in the rural settlement before the training courses and fieldwork on October 19, 2019, precisely to show the proposal of academic and scientific research for the production of the diagnosis of the rural settlement for the purpose of environmental regularization of the area.

The Second Project Development Report dealt with the continuity of institutional and local institutions for the Green Economy, the sustainability of rural settlements and the preparation, the implementation of the guideline for environmental regularization of rural settlements and the implementation of human and professional training actions in the environmental regularization of rural settlements.

Socioeconomic, Productive and Environmental Diagnosis of the Rural Settlement of Vale do Mangaval and Environmental Regularization Plan: Research and Concrete Actions

The socioeconomic, productive and environmental diagnosis of the rural settlement made from the case of *Vale do Mangaval* is a research report model aimed at the analysis of informal rural settlements. The diagnosis includes data and explanations on rural families' social and economic profile of rural families, the use and occupation of land and the

characterization of productive areas and environmental areas.

The diagnosis was elaborated by several groups of researchers and professionals from various areas of knowledge who developed studies and technical products on specific topics: land regularization, family agriculture and agricultural production, work and income of rural families, social and productive infrastructure, public support policies (credit and technical assistance), land use and environmental conservation. The diagnosis exposes technical and social work developed by the university in its spaces and in the countryside, or rather in the rural settlement *Vale do Mangaval*, in Cáceres, where 121 rural families live (see Figure 06).

The rural settlement *Vale do Mangaval* has been the subject of attention of SEAF-MT since 2015 and has received actions from this secretariat to promote environmental regularization of the area and rural lots. Thus, the field research, carried out from November 4 to 8, 2019, is also a service provision of the university and the State Government.

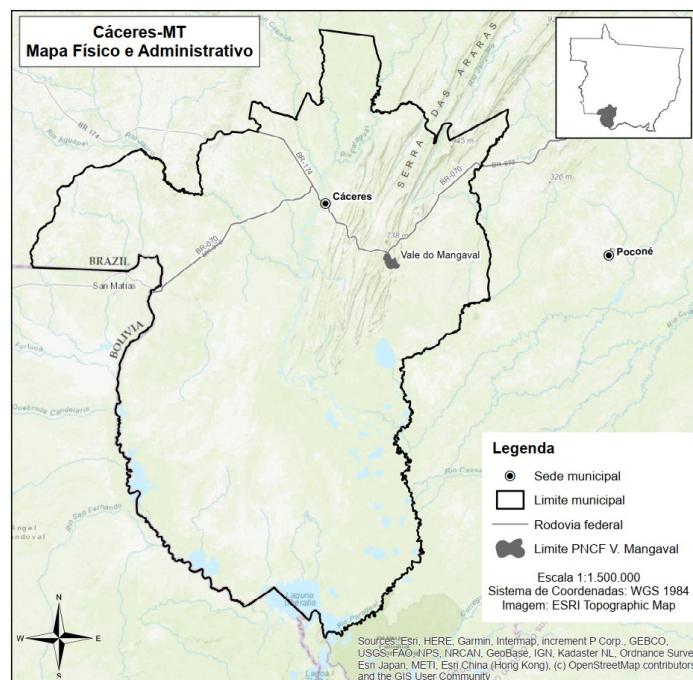


Figure 6. Vale do Mangaval Rural Settlement in Cáceres-MT
Source: SEAF-MT (2020).

The diagnosis presented emphasizes that the *Vale do Mangaval* has the attributes of PNCF projects and therefore can become a model of rural settlement with environmental regularization with the competent agencies. The document considered all issues that interfere in public policies, in the implementation of government actions and in the sphere of responsibilities of the social actors involved.

The research surveyed the documentation of the rural settlement and rural lots and found that the

PNCF standards and the installment of the *Vale do Mangaval* impose legal ties between SEAF-MT and rural settlers; it is a fact that the responsibility for the environmental regularization of the rural settlement studied is shared among them (SEAF-MT and rural community). The following figure (figure 07) shows the land splitting and the division of lots and collective environmental areas, which, in turn, "compel" the agents cited to cooperate in the management of common areas.

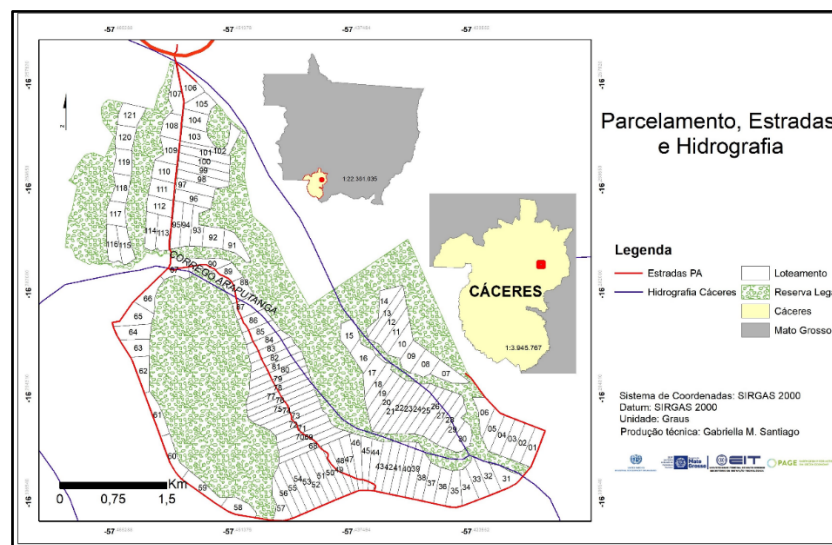


Figure 7. Map of Distribution of Rural Plots, Roads, Rivers, and Environmental Areas in the Vale do Mangaval
Technical production: Santiago (2020).

Analyzing the forms of occupational and environmental surveys, it is possible to affirm that the land situation of *Vale do Mangaval* is very complex. The government must make an effective monitoring of transfers and the use of rural lots in *Vale do Mangaval*, otherwise the aforementioned project may enter a situation of "land chaos" when the lack of documentation of rural lots, become unproductive and increase the risks of environmental degradation, especially illegal deforestation. The map of the condition of rural settlers in the *Vale do Mangaval* helps to understand the land problem of rural settlement (see figure 8).

Vale do Mangaval is a typical rural settlement of family farmers and rural workers holding small rural properties (14 hectares, of which 07 hectares of useful area and 07 hectares of environmental areas outside the property) and with average annual income in the ranges of R\$0.00 to R\$20,999.00 (45% of the population interviewed) and R\$21,000.00 to R\$40,999.00 (13% of the population interviewed). In addition, rural settlers reported that they use various activities (agricultural and non-agricultural) to supplement income and to maintain the livelihood of their families. This shows rural families in the Vale do Mangaval are plural active.

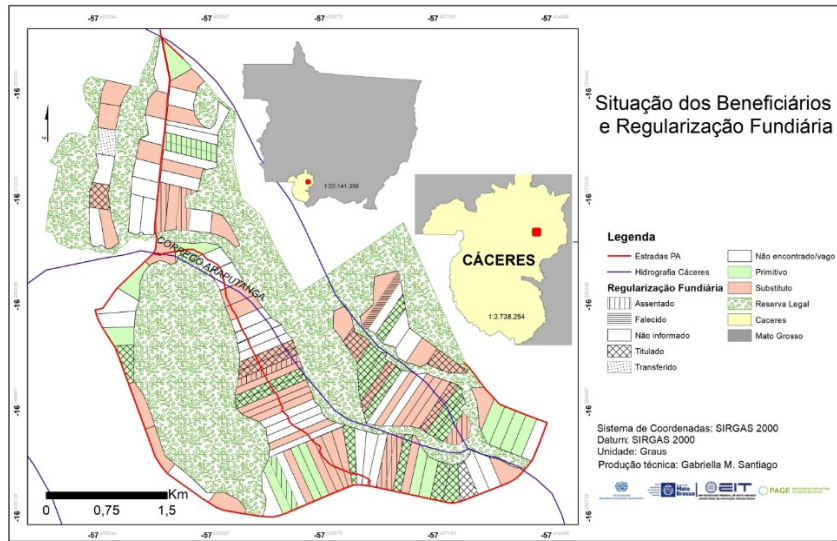


Figure 8. Land Tenure of Rural Settlers in the Vale do Mangaval, Cáceres-MT
 Technical production: Santiago (2020).

The study showed that rural settlers in *Vale do Mangaval* have the profile of the PNCF target audience (family farmers and rural workers holding small rural properties) and that they can receive policies to support family farming and rural settlements managed by the government. However, these public policies, especially credit

and technical assistance, do not have significant coverage in rural settlement. The records confirm that there are few cases of rural settlers who had some kind of support from the government in the last harvest/year. The following map proves the economic profile of rural settlers and access to public policies.

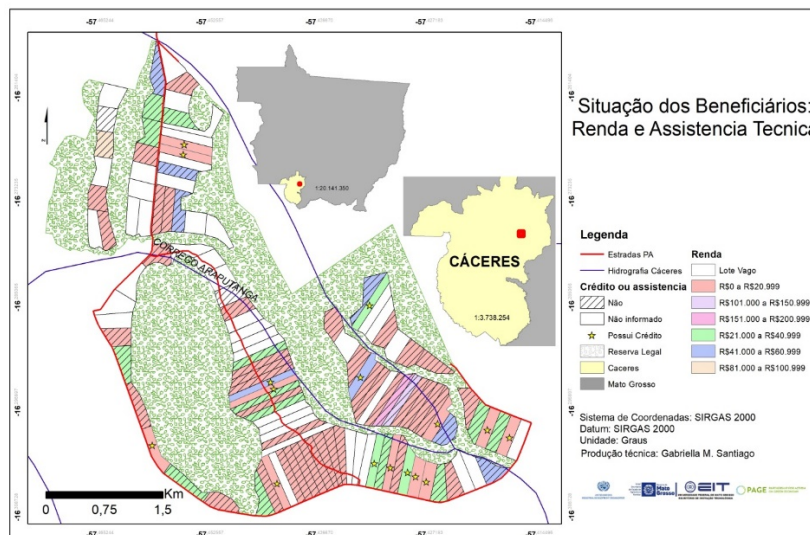


Figure 9. Map of the Income of Rural Settlers in the Vale do Mangaval, Cáceres-MT
 Technical production: Santiago (2020)

Vale do Mangaval was created in 2012 and is a relatively new rural settlement. The settlement still does not have sufficient social and productive infrastructure and quality (energy, health posts, schools, transport, among other equipment and public Serbs). It is noted in the area that many rural lots do not have houses and that simplicity predominates in rural housing of the rural settlement (wooden houses with access

to water, but without sanitation, and with few rooms), in which there are houses with better constructions. The following resource do the spatial distribution (spatialization) of conditions the material conditions of rural lots (access to water, availability of sanitation, coverage with communication services, existence of housing and machinery), as it can be seen.

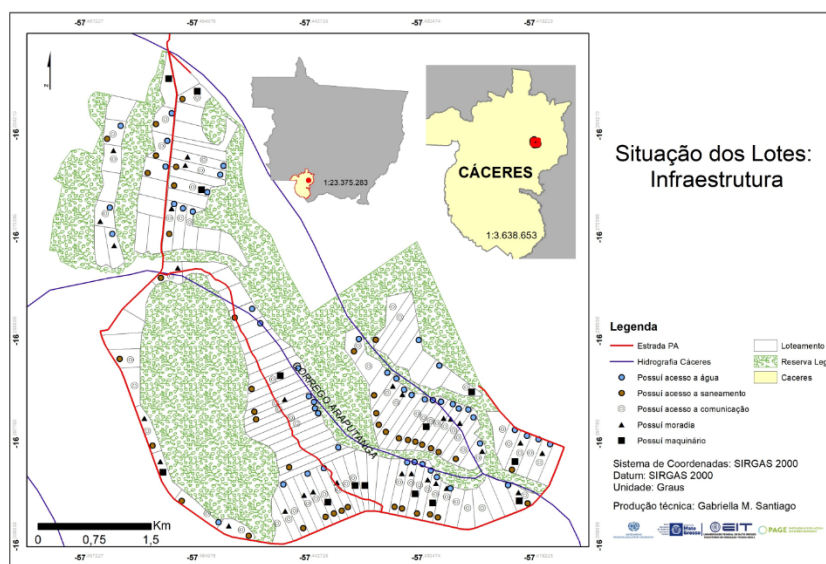


Figure 10. Infrastructure Map of the Rural Settlement of Vale do Mangaval, Cáceres-MT
Technical production: Santiago (2020).

Certainly, the difficult land situation and the problems of environmental regularization in rural settlement make it difficult to make public and private investments in the *Vale do Mangaval*. Rural settlers are unable to obtain the necessary documents for access to rural credits and technical assistance, and public agencies have legal impediments to carry out actions and improvements in areas with irregularities.

Even with the difficulties reported (little access to production support policies and lack of social and productive infrastructure), rural settlers in the *Vale do Mangaval* have produced foods in their rural lots. Agricultural production in the rural settlement is predominantly done in "productive vegetable and animal backyards", that is, small areas of tillage, and breeding of

animals near the places of rural lots. This production is small-scale and meets the needs of rural families and the little surplus is destined to donations and exchanges between rural families in the community. However, even if in a smaller number, there are rural settlers with more expressive agricultural production and destined to trade in *Cáceres*, this occurs with rural settlers who carry out dairy and beef cattle and pig farming. The map (figure 11) expresses land use and agricultural production in the rural settlement under discussion. The most productive rural lots have better infrastructure and have a privileged geographical position, that is, they are close to the access to the rural settlement and watercourses.

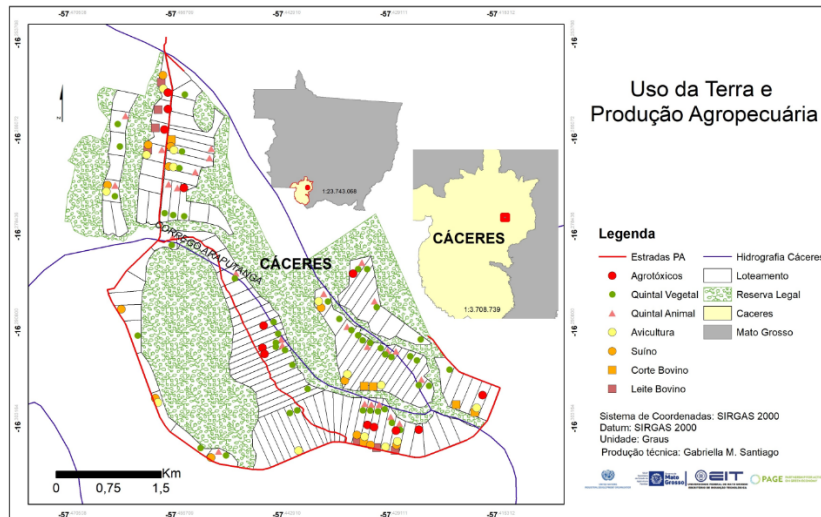


Figure 11. Land Use and Agricultural Production in the Vale do Mangaval, Cáceres-MT
Technical production: Santiago (2020).

By defining the socioeconomic and productive profile of rural settlement and rural lots, it is possible to better understand the level and “anthropization¹⁰” process of the area and changes in land use and occupation, in *Vale do Mangaval*. Based on the environmental legislation in force, read the Forest Code (Law No. 12,651/2012) and Normative Instruction No. 02 of May 6, 2014 of the Ministry of the Environment, Vale do Mangaval meets the necessary requirements for environmental regularization in the 02 (two) steps: collective CAR and individual CAR (lot by lot), although there are technicalities to be observed in the appropriate administrative procedure.

The map below (figure 12) contains the summary of the technical proposal for environmental regularization of *Vale do Mangaval*. This resource identifies legal reserve areas and deforestation areas before and after 2008, which are subject to separate legal treatment, consolidation/use and environmental recovery, respectively.

The situation of rural settlement and rural lots is properly supported by land parceling and rural

property registrations and Article 16 of the Forest Code (Law No. 12,651/2012) which authorizes the constitution of legal reserve areas in condominium. In spite of that, the rural environmental registration systems (SICAR and SIMCAR) do not have the modules of inclusion of rural settlements with areas of legal reserve in condominium. There is a technical limitation that prevents the launch of a CAR for rural settlement with collective legal reserve area and that hinders the continuity of the process in individual environmental regularization (lot by lot).

The collective environmental regularization of the Vale do Mangaval can be carried out based on the resources produced by this project. However, individual environmental regularization (lot by lot) will require greater participation and commitment of rural settlers, since 38 rural lots out of the 121 existing rural lots did not accept the technical visit for occupational and environmental inspection. The following map (figure 13) shows the situation of rural lots suitable and unfit for individual environmental regularization (lot by lot).

¹⁰ Translator’s note: Neologism – To make something become anthropic.

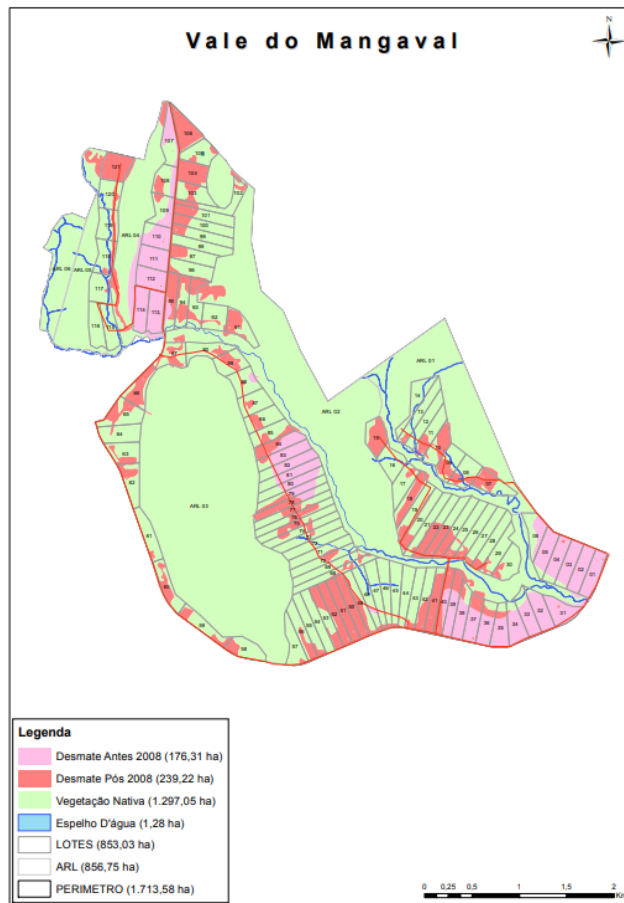


Figure 12. Deforestation in the Vale do Mangaval Rural Settlement Before and After 2008
Source: Database – Project Development of Methodology to Support Environmental Regularization and Analysis of Informal Rural Settlements (2019-2020).

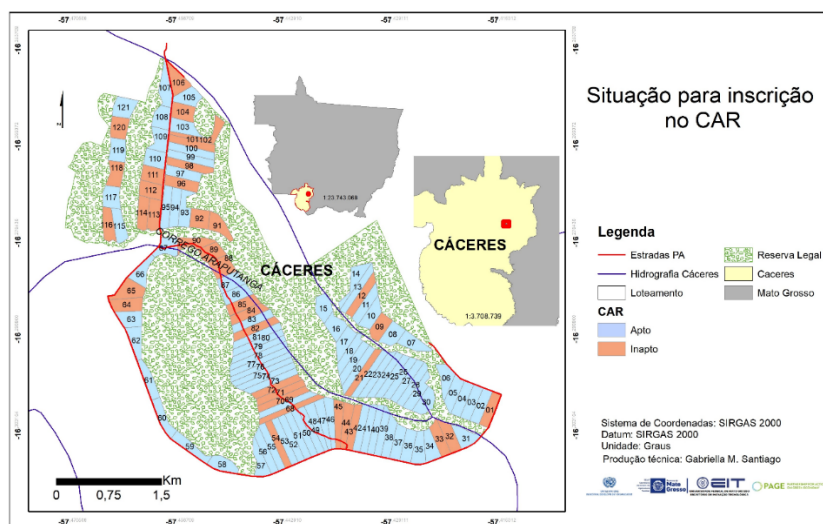


Figure 13. Rural Lots that Can Be Regulated Individually
Technical production: Santiago (2020).

Conclusions

The project developed the Work Plan in accordance with the Terms of Reference and the contract concluded between the institutions inserted in the inter institutional partnership and presented reports containing the description of the actions performed, the services provided and the results obtained, summarized in this document. This document defines important issues and strategies for the environmental regularization of rural settlements and for the analysis of informal rural settlements managed by the government.

Based on the experience seized with the development of the project and its activities, it is necessary to build a state policy of environmental regularization of rural settlements that establishes clearly and objectively the responsibilities of the public agencies involved (land and environmental) and rural settlers. This public policy needs to consider the capacity of government agencies to provide (or not) environmental regularization services and assess the possibilities of public and private partnerships and investments, including by financial institutions and environmental programs.

The structure and activities of the project (social mobilization and establishment of a support network, environmental regularization guideline, training courses and multi-thematic diagnosis of rural settlements) suggest an appropriate technical roadmap for the proposition of initiatives and actions for environmental regularization and the development of rural settlements, which can be applied to the PNCF and other land access programs. Finally, the project contributed to the understanding of institutional and social responsibilities in promoting sustainability in rural settlements.

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