


**LAND REGULARIZATION, SOCIAL FUNCTION OF PROPERTY, AND
METHODOLOGICAL APPROACHES FOR THE ANALYSIS OF SPECIAL RURAL
ADVERSE POSSESSION IN THE DISTRICT OF MONTES CLAROS/MG**

**REGULARIZAÇÃO FUNDIÁRIA, FUNÇÃO SOCIAL DA PROPRIEDADE E
CAMINHOS METODOLÓGICOS PARA A ANÁLISE DA USUCAPIÃO ESPECIAL
RURAL NA COMARCA DE MONTES CLAROS/MG**

**REGULARIZACIÓN FUNDIARIA, FUNCIÓN SOCIAL DE LA PROPIEDAD Y
ENFOQUES METODOLÓGICOS PARA EL ANÁLISIS DE LA ADQUISICIÓN
POR PRESCRIPCIÓN EXTRAORDINARIA RURAL EN LA COMARCA DE
MONTES CLAROS/MG**

 <https://doi.org/10.56238/sevened2025.036-122>

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ABSTRACT

This article examines the theoretical foundations and methodological procedures adopted in the analysis of special rural adverse possession in the District of Montes Claros/MG, with an emphasis on verifying its effectiveness as an instrument for realizing the social function of land. Based on a historical understanding of Brazilian land formation and the constitutional framework that governs the productive and responsible use of land, the study points to a methodology that includes legal references, documentary analysis, and geoprocessing techniques to identify, systematize, and evaluate the effectiveness of the social function of rural properties susceptible to special rural adverse possession, notably in the district of Montes Claros/MG. The methodology developed involves three main stages: bibliographic and regulatory review; collection and examination of registry and judicial documents produced by the district's registry offices; and spatial analysis of the selected areas using MapBiomass geographic databases integrated with QGIS software. This interdisciplinary approach allows not only for an understanding of the legal history of the institution, but also for the mapping, description, and interpretation of the territorial dynamics linked to possessions qualified by residence and family productivity. By proposing a replicable methodological model, the article contributes to the improvement of academic research on land regularization, land use, and rural development, providing support for the empirical evaluation of the social function of property in specific regional contexts.

Keywords: Special Rural Adverse Possession. Social Function of Land. Land Regularization. Legal Methodology. Geoprocessing. Mapbiomas. Montes Claros/MG. Rural Possession. Territorial Development. Agrarian Property.

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RESUMO

O presente artigo examina os fundamentos teóricos e os procedimentos metodológicos adotados na análise da usucapião especial rural na Comarca de Montes Claros/MG, com ênfase na verificação de sua efetividade como instrumento de concretização da função social da terra. Partindo da compreensão histórica da formação fundiária brasileira e do arcabouço constitucional que rege o uso produtivo e responsável da terra, o estudo aponta metodologia que compreende referenciais jurídicos, análises documentais e técnicas de geoprocessamento para identificar, sistematizar e avaliar a efetividade da função social dos imóveis rurais suscetíveis à usucapião especial rural, notadamente, na comarca de Montes Claros/MG. A metodologia desenvolvida envolve três etapas principais: revisão bibliográfica e normativa; coleta e exame de documentos registrares e judiciais produzidos pelos cartórios da comarca; e análise espacial das áreas selecionadas mediante o uso de bases geográficas do MapBiomias integradas ao software QGIS. Essa abordagem interdisciplinar permite não apenas compreender o percurso jurídico que do instituto, mas também mapear, descrever e interpretar as dinâmicas territoriais vinculadas às posses qualificadas por residência e produtividade familiar. Ao propor um modelo metodológico replicável, o artigo contribui para o aprimoramento das investigações acadêmicas sobre regularização fundiária, uso da terra e desenvolvimento rural, oferecendo subsídios para a avaliação empírica da função social da propriedade em contextos regionais específicos.

Palavras-chave: Usucapião Especial Rural. Função Social da Terra. Regularização Fundiária. Metodologia Jurídica. Geoprocessamento. Mapbiomas. Montes Claros/MG. Posse Rural. Desenvolvimento Territorial. Propriedade Agrária.

RESUMEN

El presente artículo examina los fundamentos teóricos y los procedimientos metodológicos adoptados en el análisis de la prescripción especial rural en la comarca de Montes Claros/MG, con énfasis en la verificación de su eficacia como instrumento para concretar la función social de la tierra. Partiendo de la comprensión histórica de la formación fundiaria brasileña y del marco constitucional que rige el uso productivo y responsable de la tierra, el estudio propone una metodología que comprende referencias jurídicas, análisis documentales y técnicas de geoprosesamiento para identificar, sistematizar y evaluar la eficacia de la función social de los inmuebles rurales susceptibles de prescripción especial rural, en particular en la comarca de Montes Claros/MG. La metodología desarrollada comprende tres etapas principales: revisión bibliográfica y normativa; recopilación y examen de documentos registrares y judiciales producidos por las oficinas notariales de la comarca; y análisis espacial de las áreas seleccionadas mediante el uso de bases geográficas de MapBiomias integradas al software QGIS. Este enfoque interdisciplinario permite no solo comprender la trayectoria jurídica de la institución, sino también mapear, describir e interpretar las dinámicas territoriales vinculadas a las posesiones calificadas por residencia y productividad familiar. Al proponer un modelo metodológico replicable, el artículo contribuye al perfeccionamiento de las investigaciones académicas sobre regularización fundiaria, uso de la tierra y desarrollo rural, ofreciendo subsidios para la evaluación empírica de la función social de la propiedad en contextos regionales específicos.

Palabras clave: Usucapión Especial Rural. Función Social de la Tierra. Regularización Fundiaria. Metodología Jurídica. Geoprosesamiento. Mapbiomas. Montes Claros/MG. Posesión Rural. Desarrollo Territorial. Propiedad Agraria.

1 INTRODUCTION

Understanding the institute of special rural adverse possession and its legal, social and spatial developments requires a methodological approach capable of articulating historical, normative and empirical dimensions. In Brazil, the land structure was constituted under a deep concentration of land, from the colonial sesmarias to the Land Law of 1850, through processes of private appropriation that transformed land into an object of economic and political exclusion. As Marés (2003, p. 12) observes, "the practice of concentrating production in a space of land, and even more recent, transforming this concentration to the benefit of a single person and calling it a right of property", showing that the relationship between land and society was historically constructed in such a way as to privilege private accumulation to the detriment of collective destination.

In this scenario, the Federal Constitution of 1988 introduced criteria for legitimizing property based on its social function, linking it to the fulfillment of economic, environmental and social requirements, as established in article 186. Special rural adverse possession is based on this paradigm, operating as a mechanism for historical correction and land regularization by legally recognizing the prolonged, productive and responsible possession of small farmers. However, despite its normative relevance, there are still few empirical analyses that examine the effectiveness of this institute and, above all, the appropriate methods to study it in the Brazilian territorial context.

Notwithstanding the normative advance introduced by the 1988 Constitution and the importance of special rural adverse possession as an instrument for democratizing access to land, it remains poorly understood, especially at the local level, whether this institute has been able to produce concrete effects related to the fulfillment of the social function of property. In the District of Montes Claros/MG, despite the significant presence of family farming and the recurrence of consolidated possessory situations, no empirical studies were identified that allow verifying, based on documentary and spatial evidence, whether the properties regularized by special rural adverse possession have been used in a rational, productive and environmentally appropriate manner. Thus, the research problem that guides this study is: has the special rural adverse possession, as applied in the District of Montes Claros/MG, effectively promoted the fulfillment of the constitutional criteria of the social function of property? The answer to this question requires the adoption of methodological procedures capable of articulating legal analysis, systematic document collection and spatial

evaluation of land use and land cover, since only the convergence of these dimensions allows the socio-legal effects of land regularization to be consistently assessed.

The methodology adopted in the research from which this article derives was structured to, as a general objective, evaluate, in an interdisciplinary way, whether the properties regularized by rural adverse possession in the District of Montes Claros/MG meet the criteria of social function. For this, in addition to the deep understanding of the underlying legal concepts; it was necessary to rigorously identify the available registration and judicial data; and the application of geoprocessing instruments capable of representing land use dynamics over time.

Thus, this article presents an expanded detail of the methodological choices that guided the investigation, articulating basic theoretical foundations to the technical and analytical strategies employed. It is, therefore, a work that seeks to demonstrate a methodological procedure that, because it is adequate to scientific requirements, is capable of subsidizing future research on land regularization, rural development and legal geography of land.

2 METHODOLOGICAL FOUNDATION

The investigation is guided by references that understand research as a process articulated between different analytical stages. Minayo (2009, p. 23) teaches that the method constitutes "a path of thought and practice exercised in the approach to reality", being inseparable from the object researched and the objectives that one wishes to achieve. Thus, the methodology was not conceived as a mere instrumental step, but as a structure that allowed the recognition of the complexity of the phenomenon studied, integrating legal, historical and spatial dimensions.

Gil (2017; 2019) points out that exploratory research is especially indicated when the object lacks previous studies or when it is intended to deepen understanding of little-known phenomena in certain territorial areas, exactly the case of special rural adverse possession in the District of Montes Claros. Adopting the premises of this author, it seeks to combine data collection with analysis of its descriptive elements to characterize, in a systematized way, the properties, their records, the dynamics of land use and the adherence to the constitutional criteria of the social function.

Still seeking to meet the exploratory character of the research, indicated by the author, it is possible to see that the methodology of the present analysis is proposed from three main

foundations. First, the preservation of interdisciplinarity, necessary to articulate law, geography and rural development. In addition, the maintenance of documentary rigor, required in legal studies and, finally, spatial analysis, indispensable when examining land use and territorial transformations.

3 STEP 1 – BIBLIOGRAPHIC AND DOCUMENTARY REVIEW

The first stage consists of the construction of the theoretical framework necessary for the interpretation of the legal institutes involved and the Brazilian agrarian context. The review follows the procedure recommended by Gil (2019), which establishes the need to delimit central topics, select reference materials, and proceed with analytical reading capable of guiding the formulation of the analysis categories. In this context, the consultation of books, scientific articles, theses, dissertations and normative documents that deal with the historical formation of property, possession, adverse possession and, above all, the social function of rural property is inserted.

As the author of a necessary review in research on the social function of the ownership of rural properties subject to adverse possession, Carlos Frederico Marés stands out, with his work *The Social Function of Land*. The work of Marés (2003) is fundamental to understand the historical characteristics of land concentration and the social nature of property rights. In a relevant passage, the author states that "land cannot be reduced to a commodity without losing its dimension as an indispensable good for life" (Marés, 2003, p. 21). By glimpsing this excerpt, it is reinforced how much the analysis methodology cannot ignore the social dimension implicit in the institute of special rural adverse possession.

Maria Helena Diniz, in her *Course on Brazilian Civil Law* (2022), and Sílvio de Salvo Venosa, in the work *Civil Law: Real Rights* (2021), play a fundamental role in the conceptual structuring that supports the legal analysis undertaken in this study. Both authors offer classic and widely referenced systematizations in Brazilian law on the institutes of possession and property, so that their contributions not only define dogmatic categories, but also provide the interpretative parameters indispensable to understand adverse possession as an original form of property acquisition. In the methodological sphere, the reading of these works is essential because it establishes the theoretical basis necessary to distinguish possession *ad usucapionem* from other possessory modalities, to identify the constituent elements of *animus domini* and to recognize the objective conditions that characterize the prolonged, continuous and public exercise of possession, without opposition from the registered holder.

In addition, Diniz (2022) and Venosa (2021) offer conceptual frameworks that allow us to accurately differentiate qualified possession relevant to special rural adverse possession from mere irregular detention, a distinction that is central when examining lawsuits and real estate records. By systematizing the legal requirements of the various modalities of adverse possession, especially with regard to the time, area and socioeconomic purpose of the occupation, these authors enable the construction of a methodological filter through which it becomes possible to select, in a rigorous manner, the cases effectively compatible with the special rural adverse possession provided for in article 1,239 of the Civil Code. From this systematization, it becomes feasible to recognize, in the documents collected, situations in which possession is exercised as a true exteriorization of dominion, configuring itself as "possession-work" or "possession-productive" — categories that dialogue directly with the constitutional paradigm of the social function of property.

In view of the above, the review of these authors provides the theoretical and legal basis that guides the entire stage of documentary analysis and allows the proper interpretation of the registration descriptions, court sentences and factual elements mentioned in the registrations. Without this conceptual basis, the understanding of the legal meaning of the possessory situations under analysis and the verification of whether the possessions meet the normative requirements that legitimize the original acquisition of the property by special rural adverse possession are compromised.

In turn, the studies of Oswaldo Opitz & Silvia C.B. Opitz in the *Complete Course of Agrarian Law* (2017) and Louise Gabler, in the article *Sesmarias*, published in MAPA – Memory of Brazilian Public Administration (2015) are essential to reconstruct the historical and normative formation of the Brazilian rural territory, offering the necessary depth to understand land inequalities and how these structures impact effectiveness of the special rural adverse possession. These authors demonstrate that the constitution of the national agrarian space takes place through processes that, since the colonial period, institute forms of concentrated appropriation of the soil, either by the sesmarias distributed over large areas, or by the subsequent norms that transform land into merchandise and restrict its access to the economically privileged strata. By showing that the Brazilian territorial organization is based on exclusion, Opitz & Opitz (2017) and Gabler (2015) offer elements that allow us to interpret adverse possession not only as a legal institute, but as a state response to a long-term structural problem.

These studies, then, are able to reveal that the institute of special rural adverse possession does not arise in isolation, on the contrary, it is inserted in a scenario marked by historical disputes over access to land, by the late positivity of the social function of property and by the permanence of consolidated possessory situations on the margins of the registry system. By resuming the trajectory of the Land Law of 1850, for example, these authors explain how the requirement of purchase for the acquisition of vacant land instituted a privatist and exclusionary model, the effects of which are felt to this day in regions such as the North of Minas. Thus, the review of these authors allows us to understand that the prolonged and productive possession examined in the cases studied is not an isolated phenomenon, but a direct consequence of a territorial arrangement that, for decades, restricted formal access to property, strengthening the explanatory capacity of the research.

Through the bibliographic review, mainly of these authors, the theoretical exposition is not limited only to the presentation of concepts, but constitutes the basis for the subsequent methodological choices, which guides the collection of documents before the Notary Services and the spatial analysis of the areas studied.

4 STEP 2 – DOCUMENT COLLECTION AND IDENTIFICATION OF ENROLLMENTS

Having understood the institutes that make up the special rural adverse possession in Brazil, as well as their articulations with the distribution of land, land regularization and the social function of property — an understanding built from the specialized literature —, the second cycle of the research consists of the collection of documents that allow the delineation of the spatial fragmentation of the Comarca of Montes Claros and, particularly, to identify their rural areas. Once these zones have been delimited, data are obtained from the Real Estate Registry Offices of the district, consisting of the records of declaratory judgments of special rural adverse possession. At this time, with the support of a quantitative approach, it seeks to identify which areas and in which periods this type of adverse possession is registered, based on the sentences handed down between the years 2013 and 2023.

The choice of this time frame is justified by two central factors. First, the implementation of the Electronic Judicial Process (PJe) in the District of Montes Claros, in 2015, significantly expands access to digitized documents, as recorded by Minas Gerais (2015). The digitalization of the civil courts, where rural adverse possession actions are processed, allows the processes to be fully produced, managed and consulted electronically, giving greater precision and transparency to the research. Second, as Salomão and Madeira

(2023) consider, the Sars-Covid 19 pandemic intensifies the need to adopt technological tools for the provision of extrajudicial services, generating regulations that accelerate the transition from public records to the digital environment. This movement culminates in Law No. 14,382/2022, which establishes the Electronic System of Public Records (Serp), aimed at the national integration of registration services.

Although the Serp is more recent, the system observes the Principle of Registry Conservation, which, according to Venosa (2021), ensures that the real estate registration contains the permanent and continuous file of the property's history. In this way, even documents scanned later preserve the collection necessary to identify sentences recorded in previous periods. This methodological condition makes it possible to map adverse possession actions based on the registrations themselves, which is an indispensable stage of the research.

However, although the investigation seeks to determine which areas have records of special rural adverse possession and in which years such records occur, the consultations carried out on the data of the 1st and 2nd Real Estate Registry Offices of the District of Montes Claros reveal that there are no records of judgments classified as special rural adverse possession in the selected period. This finding is not an empirical result per se, but an element of the methodological path, which requires the adoption of complementary strategies for identifying cases that, although registered as ordinary or extraordinary, factually correspond to the requirements of special rural adverse possession.

4.1 SURVEY OF REGISTRATIONS IN THE REAL ESTATE REGISTRY OFFICES

The initial stage of document collection consists of requesting certificates from the 1st and 2nd Real Estate Registry Offices of the District, requesting the list of all rural properties with an area of less than 50 hectares and that present a record of adverse possession judgment from 2013 onwards. This methodological choice stems from the limitations of the notary systems themselves, which do not allow a specific search for the "special rural" modality. Thus, the area criterion — an objective requirement provided for in article 1,239 of the Civil Code — is used as a viable initial filter.

The 1st Official Letter indicates 19 enrollments that meet the established criteria, while the 2nd Official Letter presents 13. With these reports, each registration is individually analyzed through the SAEC platform (currently called RI Digital), seeking to identify: the ownership, the number of the judicial process that supports the registration and any

references to the owner's residence in the usucapido property. This check is essential for subsequent filters.

4.2 SELECTION OF ADVERSE POSSESSION LAWSUITS

After surveying the enrollments, the research stage of the respective legal proceedings begins on the portal of the Court of Justice of Minas Gerais, with the objective of verifying which type of adverse possession was proposed by the plaintiff. In physical processes, the consultation is restricted to the information made available by the system; In electronic proceedings, it is possible to fully examine the procedural documents, from the initial petition to the judgment.

It is observed, in this methodological phase, that most of the processes are registered as ordinary or extraordinary adverse possession. The methodology thus foresees the need to identify, among these actions, those that meet the requirements of special rural adverse possession. Such a procedure is justified because this modality presents additional subjective requirements — such as the inexistence of another property owned by the possessor and productivity through the family's work for at least five years (Brasil, 1988, art. 191) — which often lead the plaintiffs to opt for modalities with less evidential rigor. On the other hand, ordinary and extraordinary adverse possession (Brasil, 2002, arts. 1.238 and 1.240) do not have such limitations, which explains their greater recurrence.

Thus, in order to meet the objective of the research — which consists of analyzing the fulfillment of the social function in small rural properties whose owners reside and produce on the site — a methodological filter is carried out that selects, among the records of ordinary and extraordinary adverse possession, those that materially fit the constitutional requirements of special rural adverse possession.

4.3 RESIDENCE FILTERS AND PRODUCTIVE ACTIVITY

Based on the registrations provided by the registry offices, the filter related to the rural location and the size of the property (less than 50 ha) is applied, considering the entire territorial extension of the District of Montes Claros as defined by the Law of Judicial Organization of Minas Gerais (2001), which includes the municipalities of Montes Claros, Claro dos Poções, Glaucilândia, Itacambira and Juramento. Then, it is verified, through the registration certificates and the initial documents of the processes, if the possessors reside in the property.

Once this second filter is consolidated, only the registrations that indicate habitual residence are selected, as this requirement is an essential element of special rural adverse possession. The verification of the productive activity complements the filtering: only the registrations whose owners demonstrate, in the documents analyzed, that they exercise productive exploitation of the property by their own or family work, in accordance with article 191 of the Federal Constitution, remain in the sample.

These filters allow the identification of the areas that make up the universe of the research and constitute the basis for the subsequent stages of spatial analysis and legal interpretation.

4.4 SPATIAL ANALYSIS AND LAND USE

Once the areas that meet the methodological filters have been identified, the spatial analysis begins to examine their territorial conformation in the selected period. To this end, the MapBiomass platform is used, a collaborative network that has produced annual mapping of land cover and use in Brazil since 1985, and whose bases allow observing environmental changes in a standardized and comparable way. The selection of the period is based, on the one hand, on the digitization of enrollments by notary offices and, on the other hand, on the availability of MapBiomass Collection 9, in September 2024, which covers data up to 2023.

Spatial analysis is performed using QGIS software, an open-source tool widely used in geographic surveys. Initially, the geographic coordinates of the enrollments are structured in a compatible spreadsheet (CSV), converting data from degrees, minutes and seconds to decimal degrees when necessary. These coordinates are then imported as a vector layer, using SRC EPSG:4326 (WGS 84). To spatially represent the areas, the points are converted into polygons, observing the correct order of the vertices.

After the delimitation of the areas, the *raster* data from MapBiomass are integrated into the project, and the layer is cut out based on the defined polygons. Then, the classes of land use and land cover are identified and quantified using tools such as *r.report*, which allows the generation of analytical tables and comparative tables that support subsequent interpretations. This methodological stage is not intended to present results, but to demonstrate the technical procedure that allows, in later stages, to examine the dynamics of land use in the period from 2013 to 2023.

Once the preparation, treatment and organization of the registration, judicial and spatial data is concluded, the third cycle of the research begins, dedicated to the integrated

analysis of these materials. The objective is to evaluate, in a methodologically grounded manner, whether the selected areas — characterized by prolonged possession, residence and productive activity — present conditions that allow, at a later stage, to examine their fit in the constitutional criteria of the social function of rural property. It is, therefore, the consolidation of a methodological path that articulates geotechnologies, documentary analysis and normative interpretation, constituting a solid basis for the development of the following stages of the study.

5 FINAL CONSIDERATIONS

The methodological trajectory outlined throughout this study shows that the analysis of special rural adverse possession, especially when inserted in contexts marked by historical inequalities in access to land, demands an approach that transits between disciplinary fields and integrates different scales of reading the territory. The combination of legal foundations, historical reconstruction, detailed documentary analysis and geoprocessing techniques allowed us to achieve a model capable of apprehending the phenomenon in its complexity, offering solid parameters to assess the conformity of the properties studied with the constitutional criteria of the social function of property.

The application of this methodological path demonstrated that the understanding of special rural adverse possession is not limited to the fulfillment of legal requirements, as it necessarily involves the empirical verification of how prolonged possession materializes in space and how productive occupation contributes to the transformation of local agrarian dynamics. By integrating registry data, judicial information and spatial evidence on land use, the methodology adopted demonstrated the ability to produce diagnoses on the land reality of the Montes Claros County, expanding the interpretative scope of the institute and allowing a more concrete approximation of its socio-legal effects.

The procedures employed, while allowing a detailed characterization of the selected properties, also showed that the study of special rural adverse possession can play a relevant role in the construction of public policies aimed at land regularization, the strengthening of family farming and territorial planning. The ability to identify patterns of productive use, family permanence and environmental management shows that legal instruments, when properly used, can function as effective mechanisms to lead to the fulfillment of the social function of property and to promote sustainable rural development.

Although this paper does not aim to present material conclusions about each case analyzed, the consolidation of a rigorous methodological model provides a basis for future research interested in evaluating the effectiveness of special rural adverse possession in different regions. By structuring a replicable path, this study contributes to the advancement of the dialogue between law and territorial sciences, reinforcing that land regularization should be understood as a process that involves legal, geographic and historical dimensions. In this sense, the methodology presented, by structuring safe means of interpretation and analysis, contributes not only to the academic literature, but also to the formulation of state interventions necessary to confront the historical inequalities that still mark the Brazilian rural space.

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