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BIOPHYSICAL DETERMINANTS AND MODES OF ACCESS TO RURAL LAND IN THE COMMUNE OF AKPRO-MISSERETE IN BENIN

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ABSTRACT

Addressing rural land issues is essential for reducing land disputes in rural areas. The aim of this study is to analyze the biophysical factors and modes of access to rural land in the Akpro-Misserete Commune in Benin.

The methodological approach adopted is based on data collection, processing, and results analysis. The information obtained was processed manually, and the results were analyzed using appropriate software. A total of 102 households were surveyed in their real-world setting.

The results show that the population of the Akpro-Missérété commune increased from 34,074 inhabitants in 1979 to 97,424 in 2013, reflecting strong population growth and increased pressure on land resources. The study is based on data from the 1979, 1992, 2002, and 2013 General Population and Housing Censuses (RGPH), as well as a socio-anthropological survey conducted with 102 households. Access to land is primarily through inheritance (57%) and purchase (32%), while other methods are less prevalent. According to the results presented, renting accounts for 9%, gifts 2%, and loans 3% of land access methods. The natural environment is favorable to agricultural activities, thanks in particular to the presence of fertile soils, lowlands, marshes, and a hydrographic network composed of several rivers. Land management relies both on traditional mechanisms involving customary authorities and on modern systems such as the Rural Land Plan (RLP).

Keywords: Rural land, Development, Local activities, Akpro-Missérété Commune.

1 INTRODUCTION

Throughout the world, land issues remain a complex, multidimensional problem involving various actors and institutions. Thus, it can be summarized as a social relationship with multiple facets: economic, social, political, legal, etc. (S. Tchaou, 2014, p. 24). In West Africa, for example, political debates surrounding land highlight the opposition between two modes of access to land and relationships to land ownership: custom, on the one hand, which organizes land use for a community based on sacred principles, and colonial-era law, on the other, which defines the allocation of full private ownership to individuals (L. Deville, 2010, p. 137).

In Africa, just after independence, most cities underwent major transformations, particularly political capitals, administrative centers and port cities, which benefited from new contributions to the extension of structures inherited from the colonial period or the creation of new services (M. Djaouga, 2008, p. 7).

In Benin, land issues are a major concern for various development actors (A. Tohozin, 2005, p. 75). Land constitutes the primary source of income for the population. Inter-ethnic relations are studied from the perspective of land access issues within a context of power struggles and negotiations between different local interests (C. Balogoun, 2011, p. 15). In this period of decentralization, the concept of local development posits that decentralization should now be a process that allows communities to participate in the development and management of policies affecting their territory. The land situation is far from conducive to the harmonious development of the agricultural sector in Benin (A. Tohozin, 2005, p. 10). Thus, decentralization presents an opportunity offering the prospect of local land management, particularly at the municipal level (V. Ouédraogo, 2008, p. 68). The land management mechanism in the Commune of Akpro-Missérété would therefore be tainted by many irregularities and misunderstandings.

The Commune of Akpro-Missérété is located between 6°30' and 6°39' north latitude and between 2°32' and 2°38' east longitude. It is subdivided into five districts: Akpro-Missérété, Zoungbomè, Gomè-Sota, Katagon, and Vakon, and comprises 40 villages and urban neighborhoods. Figure 1 presents the geographical and administrative layout of the Commune of Akpro-Missérété.

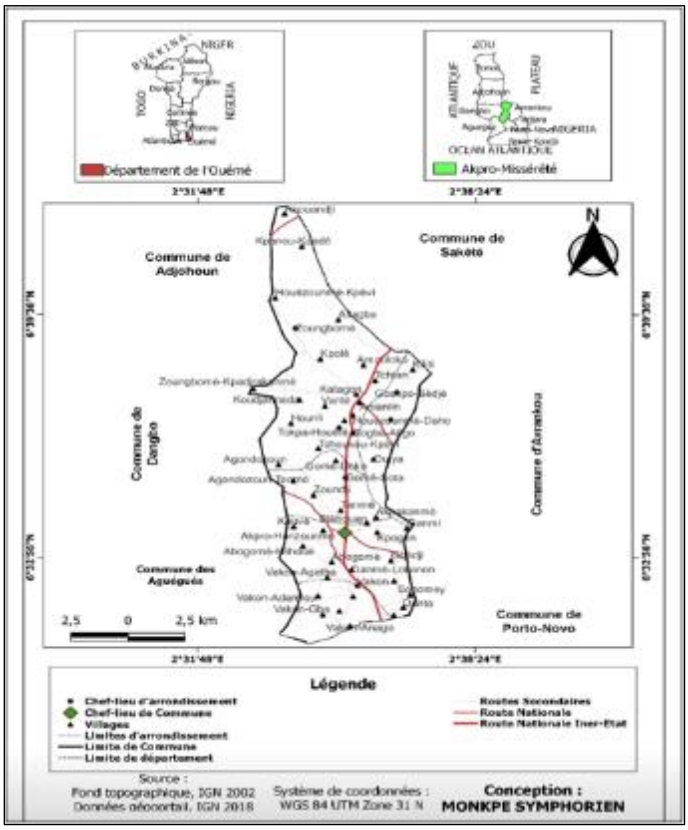

Figure 1: Geographical and administrative situation of Akpro-Missérété

2 MATERIAL AND METHODS

The methodological approach adopted for this research is based on the data used, data collection, data processing and results analysis. Several categories of data were used in this research. These included, firstly, demographic data from the General Population and Housing Censuses (RGPH) of 1979, 1992, 2002, and 2013, obtained from INstaD, which allowed for the analysis of population trends. Secondly, data from socio-anthropological surveys conducted with residents were collected to assess access to available land in the research area. The formula of J. P. Beaud and B. Marien (2003) was used as follows to determine the sample size.

n = $\frac{N+400}{N+400}$with for n = sample and N = total number of households. n = 2251 households $n = \frac{2251*400}{2251+400}$= 340. n = 340 households. Applying the sampling rate set at 35%, n ' =$\frac{340*30}{100}$

n ' = 103 households. In total, the sample consists of one hundred and three (103) households distributed across the 3 targeted villages and urban neighborhoods in this district. Table I presents the distribution of the sample in each locality (number of households actually surveyed per village).

Table 1: Distribution of households

Villages and neighborhood	Number of households	Number of households surveyed	Sampling rate in %
Agondozoun	930	42	41
Zoundji	538	24	24
Allagba	354	17	16
Zoungbomè	429	19	19
Total	2251	102	100

Source: Field surveys, December 2024

Analysis of Table II shows that 102 people were surveyed in the present work.

The field survey was conducted using data collection tools such as: a questionnaire, an interview guide, an observation grid and a camera.

3 RESULTS

3.1 Biophysical and human factors of the Akpro-Missérété Commune

They take into account both biophysical and human factors.

3.1.1 Biophysical factors

The natural determinants linked to the modes of access to rural land in the Commune of Akpro-Missérété revolve around climate, relief, soils, and the hydrographic network.

3.1.1.1 Climatic characteristics

The commune of Akpro-Missérété shares with the Ouémé department a subtropical climate with two rainy seasons and two dry seasons: a long rainy season from March to July; a short dry season from July to August; a short rainy season from September to mid-November; and a long dry season from December to March. The crops grown on the land are adapted to these temperatures, and the plants develop normally.

3.1.1.2 Aspects of the relief

The commune of Akpro-Missérété has an almost monotonous and very gently rolling landscape. It is situated on the Pobè-Sakété plateau, whose average altitude of 100 meters decreases to 20 meters at Adjarra. This plateau is indented by small and medium-sized depressions with very gentle slopes. This allows the population to engage in income-generating activities that require the use of land.

3.1.1.3 Soil Formation

The soils found there are ferralitic soils, known as "terre de barre," primarily suited to cereal crops, and less ferralitic soils which, due to human activity, are giving way in some areas to lateritic soils. Hydromorphic soils are also observed in the lowlands and river valleys. Overall, these different soil types are fertile, allowing farmers in the Akpro-Missérété Commune to be large-scale producers of food crops. This demonstrates the development of rural land for local development. Figure 2 presents the soil types of the Akpro-Missérété Commune.

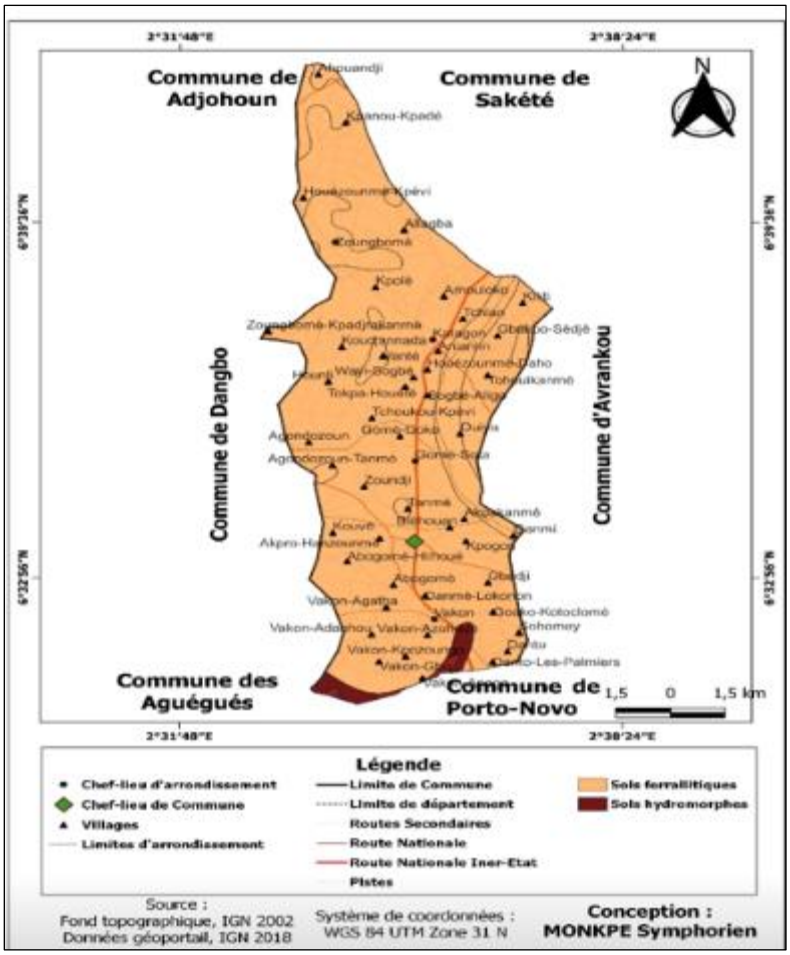

Figure 2: Soil profile of the Akpro-Missérété Commune

Analysis of Figure 2 indicates that the Akpro-Missérété commune is largely covered by ferralitic soils. The analysis also suggests that only the southern part of the commune is covered by hydromorphic soils.

3.1.1.4 Hydrographic Network

The Akpro-Missérété commune is watered by four rivers and several streams rich in raffia palms. These rivers are intersected in several places. The abundance of marshes and lowlands is conducive to fish farming and agriculture. Figure 3 shows the hydrographic network of the Akpro-Missérété commune.

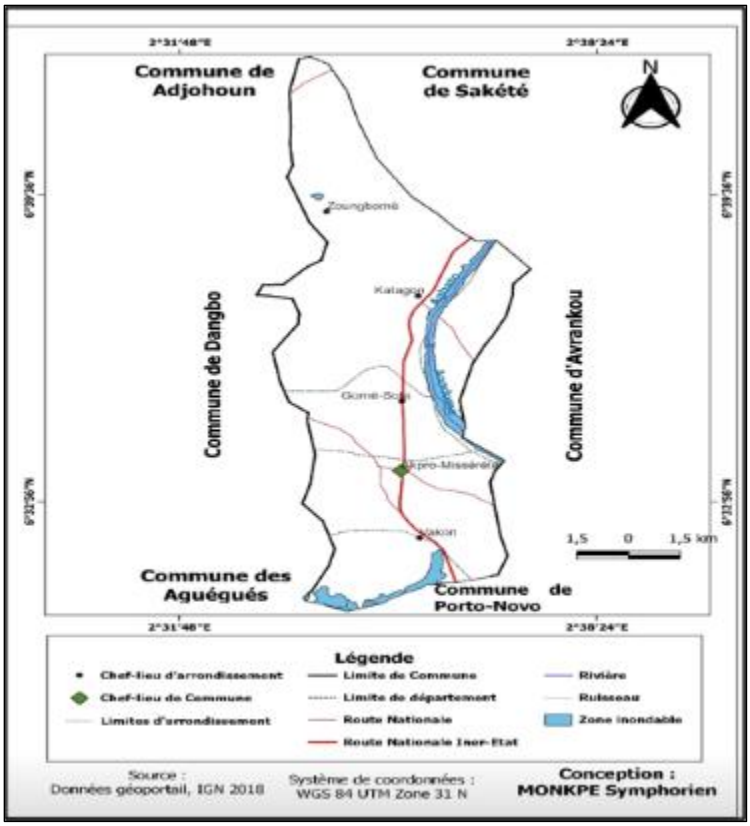

Figure 3: Hydrological Network of the Commune of Akpro-Missérété

Analysis of figure 3 shows that the Commune of Akpro-Missérété is watered by rivers, streams and floodplains.

3.1.2 Human factors related to land access methods in rural areas of the Akpro-Missérété Commune

They take into account demographic factors and population trends.

3.1.2.1 Demographic Foundations

The Commune of Akpro-Missérété had 60,112 inhabitants in 2002 and 97,424 inhabitants according to the 2013 general population census. The population is predominantly rural and female. Regarding population trends, the analysis is based primarily on data from the general population censuses collected by INSTAD in 1979, 1992, 2002, and 2013. Figure 4 presents the demographic evolution of the population of the Commune of Akpro-Missérété from 1979 to 2013.

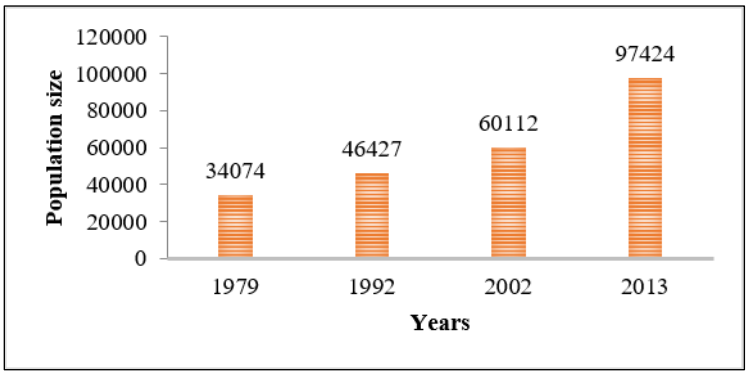

Figure 4: Population evolution of the Commune of Akpro-Missérété from 1979 to 2013

Sources: INStaD, RPGH 1, 2,3 and 4

Analysis of Figure 4 shows that the population of the Akpro-Missérété Commune is very dynamic and growing rapidly. It increased from 34,074 inhabitants in 1979 to 97,424 inhabitants in 2013. The graph demonstrates this rapid population growth. This growing population represents a significant demand for land resources.

3.1.2.2 Migrations and settlements

The founding of the Kingdom of Porto-Novo in 1688 led to the migration of people in search of living space. This migration occurred in successive waves. First came the Sèto, during the reigns of Dê Sodji (1848-1864) and Mikpon (1864-1872). Subsequently, the Azohouè clan settled in the region of Allada. The third wave was that of the Ahovi of Malanhoui, whose settlement dates back to the reign of Toffa I (1874-1908). The wave of Tori clans, composed of several groups including the Dohouènou, Houahénou, and Honhénou, arrived later but in large numbers. Aside from the Ahovi, other migratory groups came from the regions of Allada and Tori-Bossito. Finally, there were the Ouémènou who settled north of Akpro-Missérété in the districts of Katagon and Zoungbomè. Thus, the second wave, that of the Azohouènou clan, is found throughout the commune. A village in the Vakon district bears the name Azohouè. It was in this village that the district was built. Therefore, the various socio-cultural groups established in the Akpro-Missérété commune carry out activities that require the use of land for housing and agricultural work.

3.2 Mode of access to rural land in the Commune of Akpro-Missérété

According to the results of fieldwork, several methods allow access to land in the Commune of Akpro-Missérété.

3.2.1 Heritage

Inheritance is the most dominant land tenure system in the Akpro-Missérété Commune. 57% of those surveyed accessed their land through this method. According to the respondents, this is the means by which children inherit the property of their deceased parent. Through this system, inherited land grants the heir all property rights, including administrative and operational rights. Field investigations revealed that only men have access to this system.

3.2.2 Purchase

This method of land acquisition involves permanently purchasing a plot of land from an individual known as the seller. According to fieldwork, 33% of those surveyed acquired their land through this method. With this land acquisition method, the new owner, i.e., the buyer, holds all property rights (usus, fructus, and abusus) over the land. Land purchases, which emerged in the recent past, are now common in the Akpro-Missérété Commune. Occasionally, these purchases are challenged due to the inauthenticity of the transaction documents or fraud perpetrated by the sellers themselves.

3.2.3 Don

It consists of permanently transferring land to a descendant (nephew, uncle, friend, etc.) free of charge and without requiring any compensation in cash or in kind. From ancient times until recently, this practice, which 2% of those surveyed believe is disappearing, has been gaining access to their land through this method.

3.2.4 Location

Land leasing, which appeared in the Akpro-Missérété Commune in the recent past (20 to 30 years ago), has evolved. Initially, it consisted of leasing a plot of land to a farmer for a long period ranging from 10 to 20 years. The lease price was negotiated and fixed according to the area. This price was paid at the beginning of the contract and remained verbal. The tenant only had rights to seasonal crops. According to surveys, 7% of those interviewed accessed their land through this method. Currently, the lease term varies from 1 to 3 years. The contract price is negotiated per unit of land area. Methods of accessing land in rural areas of the Akpro-Missérété Commune. Figure 5 presents the methods of accessing land in rural areas of the Akpro-Missérété Commune.

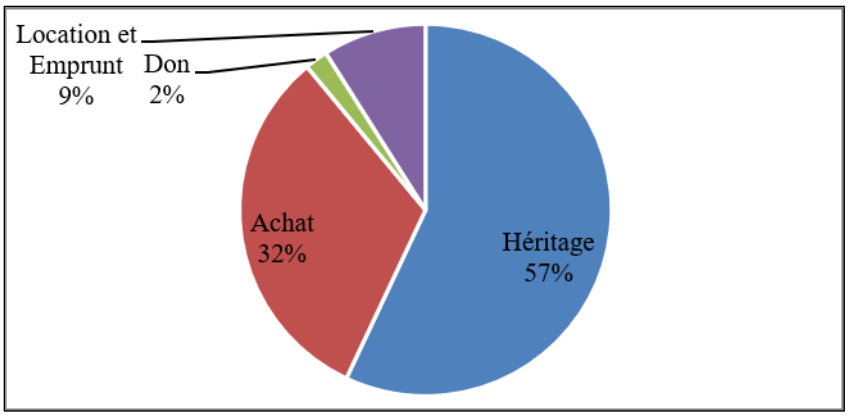

Figure 5: Modes of access to land in rural areas in the Commune of Akpro-Missérété.

Source: Field survey, December 2024

Analysis of Figure 5 shows that 57% are heirs; 32% became owners through purchase; 2% through gifts; 9% through rental; and 3% through loans. Therefore, access to land in the Akpro-Missérété Commune is primarily through inheritance or purchase.

3.3 Framework for regularization and methods of managing rural land in the Commune of Akpro-Missérété

Land management in the Commune of Akpro-Missérété is presented in a traditional and modern way.

3.3.1 Traditional Management

The customary land elite in the commune is composed of elders, family groups, and village chiefs who work alongside modern institutions. These customary bodies are primarily involved in the distribution of inherited land and the settlement of disputes that arise tacitly between the various stakeholders in land use (customary communities, farmers, urban dwellers, politicians, traders, and rural inhabitants). These conflicts often stem from the economic, political, social, and sometimes contradictory interests of the actors. Conflicts with a high probability of a positive resolution are those arising from inheritance or those related to the demarcation of land using vegetation. Although this body is increasingly losing influence due to the disintegration of families and moral values, most parties involved in conflicts still resort to it to resolve their disputes.

In response to the increasing trend of challenging deeds or agreements in villages, the key players are increasingly relying on legal documents, eyewitness accounts, and oral testimony in certain situations. This may involve long-standing arrangements being challenged or contested by the descendants of those who made them, or the emergence of new forms of transactions with unstable rules and evolving contradictions, all within the context of economic, political, and social status. While access conditions are indeed becoming more restrictive in some cases, there are also risks of opportunistic maneuvers stemming from dysfunctions in arbitration systems.

3.3.2 Modern Management

Rural land management became official in Benin with the establishment of the Rural Land Plan (PFR). The PFR was instituted in the Republic of Benin by interministerial decree 015 of January 1994 (Ministry of Rural Development and the Interior), which authorizes land transactions within the framework of the Natural Resource Management Program (H. Hounkpodoté, 2000, p. 17). According to him, the PFR is a method of land investigation and management, a public land documentation system whose purpose is to provide producers with greater security so that land practices do not hinder long-term investments and development efforts for the sustained and sustainable management of natural resources.

The degree of adoption of the PFR (Local Forest Management Plan) depends on its final visibility and the expected added value. It is therefore particularly important to communicate the tool's benefits to each type of stakeholder. Thus, at the start of the tool's introduction, an information and awareness campaign was organized from top to bottom, enabling stakeholders to learn about the relevance, usefulness, and development process of the project. This campaign reached the prefect, company and brigade commanders, judges, members of the municipal administration, the mayor and municipal councilors, and village chiefs. At the village level, the campaign, organized as a General Assembly, mobilized various socio-professional groups, youth, women, elders, farmers, farmers' organizations, village councilors, etc., in all the villages of the Commune. Stakeholder participation occurs upon request from the population, signed by village authorities and resource persons reached by the information campaign. The more stakeholders integrate, understand,

and adhere to the methods used during the preliminary introductory analysis and actively participate in it, the more they appropriate its tools in the way intended by the project promoters. Within this framework, participatory land assessments were organized in selected requesting villages within the Commune to clarify and explain to stakeholders the dysfunctions, as well as the appropriate methods and techniques related to the Land Resource Management (LRM) program to be used to correct the situation. Furthermore, it is worth highlighting the creation of land glossaries in the beneficiary villages, reflecting this appropriation approach.

Several bodies are responsible for land management in rural areas at the municipal level in the era of decentralization. These include:

3.3.2.1 IGN

Based on the results of fieldwork, **the** National Geographic Institute (IGN) is a legally constituted body with defined prerogatives. Operating at the departmental level, it assists municipalities in managing their land assets, particularly in urban and peri-urban areas. In rural areas, it monitors the quality of the PFR (Field Planning and Development) tool, conducts verification operations, and makes amendments to cadastral maps. When necessary, it issues recommendations and, upon request, certifies the completion or updating of the tool through institutional certification of the PFR's accuracy and usability.

3.3.2.2 Local elected officials

The municipal councillors are distributed among the various management bodies. Their essential roles are to mobilize the population around the activities of implementing the PFR, to serve as intermediaries for requests for support and access to information, and above all to participate in decision-making within the framework of improving land management.

In order to strengthen land control, gain a better understanding of the stakeholders, collect information related to various land transactions and update it for better use of the PFR tool, three official bodies are involved in land management. They can be situated at different levels of the pyramidal management chain: at the base, the Village Land Management Sections (SVGF), at the intermediate level, the District Land Management Subcommittees (SCGFA), and at the top, the Land Management Committee (CoGeF).

3.3.2.3 Land Management Sections

The Akpro-Missérété Commune currently has 23 Land Registry Offices (SVGFs), which collect and process land data. Composed of representatives from various socio-professional categories and village councilors, the SVGFs are the closest bodies to the local communities. The SVGFs report to the village council and are headed by the village chiefs. Specifically, the SVGFs assist landowners in drafting contracts that formalize changes to their land. They also maintain a register of land rights transfers, collect all the information necessary to update the Land Registry Plan (PFR), and archive copies of PFR documents. Furthermore, the SVGFs provide advisory support for resolving land disputes, notably by supplying land information when required to facilitate resolution.

3.3.2.4 Subcommittees for Land Management of the Boroughs

In the Akpro-Missérété Commune, there are six (6) SCGFAs (Local Land Management Committees). They serve as a conduit for transmitting and relaying village land data from the village level to the Commune level. Composed of representatives of land stakeholders in the districts, the SCGFAs constitute a first level of control and supervision of the activities of the SVGFs (Land Management Committees). The SCGFAs, in turn, send their representatives to the CoGeF (Land Management Committee).

3.3.2.5 Land Management Committee

This is the highest local authority for land management in the Commune of Akpro-Missérété. It assists the Mayor in managing land issues affecting the entire territory of the Commune. Specifically, it supports the mayor's office in maintaining the Commune's land database, issuing Rural Land Certificates (CFRs), and updating the PFRs (Property and Land Registers). It also intervenes in the amicable settlement of land disputes, in collaboration with the Conciliation Court and the Court of First Instance of Porto-Novo.

It is a place for welcoming and informing: the members of the land management committee must receive all users to hear their requests, insofar as these concern matters relating to land or natural resources. More specifically, the office of the land management committee is responsible for receiving all user requests for information concerning rural land; advising users on the implementation of the appropriate land tenure security procedure, whether to stabilize their current situation or in the context of actions likely to modify the legal status of a plot (inheritance, transfer, lease, etc.); and explaining to users the land and property situation of the Commune. to ensure the permanent updating and proper

preservation of documents of all categories held by the land management committee, both for the needs of its operation and for those of the users (the municipal land management commission being a place of preservation of state and land archives relating to all lands and natural resources located on the municipal territory); to serve as a place of coordination and possibly as a relay for the competent decentralized services of the State in matters of land and/or natural resource management.

4 DISCUSSION

In the Akpro-Missérété Commune, access to land is primarily through inheritance and purchase, while leasing, gifts, and loans remain less common. The natural environment is favorable to agricultural activities, thanks in particular to the presence of fertile soils, lowlands, marshes, and a hydrographic network composed of several rivers. Land management relies both on traditional mechanisms involving customary authorities and on modern tools such as the Rural Land Plan (PFR). This aligns with the findings of B. Balogun (2011, p. 17), who demonstrated that in Benin, as elsewhere in Africa, land is central to economic, social, cultural, environmental, and political issues.

Land conflicts have become increasingly frequent and difficult to manage in many African countries in recent years (A. Coulibaly, 2006, p. 17). This situation is characterized by growing uncertainty and precarious land transactions. Land management by the PFR (Rural Land Fund) is therefore a participatory process aimed at securing customary rights, thereby reducing and controlling land conflicts, and thus promoting rural development (M. Dicko, 2006, p. 15).

5 CONCLUSION

This research analyzed the biophysical determinants and modes of access to rural land in the Akpro-Misserete Commune of Benin. Population growth, from 34,074 inhabitants in 1979 to 97,424 in 2013, intensifies the pressure on land resources. Access to land relies primarily on inheritance (57%) and purchase (32%), while leasing, gifts, and loans play a more limited role. Natural conditions, including the presence of fertile soils, lowlands, and water resources, favor agricultural land development.

However, land practices remain marked by risks of conflict, irregularities, and disputes related to transactions and inheritance. The coexistence of traditional mechanisms and modern systems, particularly the Rural Land Plan (PFR), reflects the search for greater security of land rights. Thus, more collaborative and secure land management appears necessary to promote sustainable land use and support local development in Akpro-Missérété.

STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

Disclosure of conflict of interest

The authors declare no conflicts of interest regarding this manuscript.

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