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Environmental sustainability in the face of the Church's current challenges worldwide: education and perceptions of Siloé Lândana Parish members regarding mangroves (2020-2025)

Sustentabilidade ambiental face aos desafios actuais da Igreja no mundo: educação e percepção dos membros da Paróquia Siloé Lândana sobre os mangais (2020-2025)

Sostenibilidad ambiental ante los desafíos actuales de la Iglesia en el mundo: educación y percepción de los miembros de la Parroquia Siloé Lândana sobre los manglares (2020-2025)

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Abstract: This article analyzes environmental sustainability in the face of the current challenges facing the Church, focusing on environmental education and the perceptions of members of Siloé Lândana Parish regarding mangrove conservation from 2020 to 2025. The study aimed to analyze environmental education and members' perceptions of the importance of mangrove conservation. A quantitative approach was adopted, using bibliographic, documentary, and field research, as well as a case study. The study population consisted of 90 individuals, of whom 50 participated in the sample, including pastors, a Christian educator, evangelists, and lay parish members. Data were collected through questionnaires, interviews, and unsystematic observation, and analyzed using frequencies and percentages. The results revealed a positive perception of the importance of mangroves and recognition of Christian responsibility for caring for creation. However, there was limited systematic integration of environmental education into the Church's activities and low participation in practical conservation actions. The study concludes that there is a gap between environmental awareness and practice, making it necessary to strengthen environmental education, promote community-based actions, and increase the Church's involvement in mangrove conservation.
Keywords: Environmental sustainability; Environmental education; Church; Mangroves; Perception; Lândana.

Resumo: O presente artigo analisa a sustentabilidade ambiental face aos desafios actuais da Igreja, com enfoque na educação e percepção dos membros da Paróquia Siloé Lândana sobre a preservação dos mangais, no período de 2020 a 2025. O estudo teve como objectivo analisar a educação ambiental e a percepção dos membros sobre a importância da conservação dos mangais. Adoptou-se uma abordagem quantitativa, recorrendo à pesquisa bibliográfica, documental e de campo, bem como ao estudo de caso. A população foi constituída por 90 indivíduos, dos quais 50 integraram a amostra, entre pastores, educadora cristã, evangelistas e membros leigos da paróquia. Para a recolha de dados foram utilizados questionários, entrevista e observação assistemática, sendo os dados analisados por meio de frequências e percentagens. Os resultados evidenciaram uma percepção favorável sobre a importância dos mangais e o reconhecimento da responsabilidade cristã na protecção da criação. Entretanto, verificou-se fraca integração sistemática da educação ambiental nas actividades da Igreja e reduzida participação em acções práticas de preservação. Conclui-se que existe uma lacuna entre consciência e prática ambiental, sendo necessário fortalecer a educação ambiental, promover acções comunitárias e ampliar o envolvimento da Igreja na conservação dos mangais.
Palavras-chave: Sustentabilidade ambiental; Educação ambiental; Igreja; Mangais; Percepção; Lândana.

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Resumen: Este artículo analiza la sostenibilidad ambiental ante los desafíos actuales de la Iglesia, con énfasis en la educación y la percepción de los miembros de la Parroquia Siloé Lândana sobre la preservación de los manglares entre 2020 y 2025. El estudio tuvo como objetivo analizar la educación ambiental y la percepción de los miembros sobre la importancia de conservar los manglares. Se adoptó un enfoque cuantitativo, con investigación bibliográfica, documental y de campo, además de un estudio de caso. La población estuvo constituida por 90 personas, de las cuales 50 integraron la muestra, entre pastores, una educadora cristiana, evangelistas y miembros laicos de la parroquia. Para la recolección de datos se utilizaron cuestionarios, entrevistas y observación asistemática, y los datos se analizaron mediante frecuencias y porcentajes. Los resultados evidenciaron una percepción favorable sobre la importancia de los manglares y el reconocimiento de la responsabilidad cristiana en la protección de la creación. Sin embargo, se verificó una débil integración sistemática de la educación ambiental en las actividades de la Iglesia y una reducida participación en acciones prácticas de preservación. Se concluye que existe una brecha entre conciencia y práctica ambiental, por lo que es necesario fortalecer la educación ambiental, promover acciones comunitarias y ampliar la participación de la Iglesia en la conservación de los manglares.
Palabras clave: Sostenibilidad ambiental; Educación ambiental; Iglesia; Manglares; Percepción; Lândana.

1 Introduction

The contemporary world faces several environmental challenges, including global warming, sea-level rise, biodiversity loss, and ecosystem degradation, largely resulting from growing human intervention in nature. In this context, environmental sustainability is a global concern that requires the participation of different social institutions, including the Church. As a community of faith and a space for moral and educational formation, the Church can help build environmental awareness grounded in Christian principles of responsibility, care, and preservation of creation.

In Lândana, this problem is particularly evident in the degradation of mangroves caused by factors such as deforestation, unsustainable fishing, pollution, and the expansion of human activities. Mangroves have great ecological, economic, and social importance: they protect the coastline, contribute to biodiversity conservation, provide shelter and breeding grounds for marine species, and sustain the activities of coastal communities. Their degradation therefore threatens not only environmental balance but also the food and economic security of populations that depend on them.

From a Christian perspective, responsibility for conserving nature is grounded in Holy Scripture. In Genesis 2:15, humankind is placed in the garden to “cultivate and keep it,” expressing the principle of stewardship of creation. Likewise, Psalm 24:1 states that “The earth is the Lord's, and everything in it.” These principles allow environmental care to be understood

as an ethical and spiritual responsibility. According to Moltmann (2010), the theology of creation should lead Christians to an ethic of responsibility in which care for nature is part of the Christian mission.

In this sense, environmental education within the Church can help transform its members' knowledge, perceptions, and behavior. How believers understand the importance of mangroves may influence their participation in conserving these ecosystems. There is, however, a need to strengthen the integration of environmental issues into the Church's educational, pastoral, and community activities. The choice of this topic is justified by the growing degradation of mangroves in Lândana and the need to understand the level of knowledge and perceptions of members of the Evangelical Church of Angola (IEA) regarding their conservation. The study therefore examines the relationship between environmental education, Christian faith, and preservation practices from 2020 to 2025.

Against this background, the following scientific problem is formulated: How do environmental education and the perceptions of IEA members in Lândana influence mangrove conservation from 2020 to 2025? The object of the study is the education and perceptions of IEA members regarding mangroves, and its field of action is the Ecclesiastical Region of Cacongo, in Lândana. The general objective is to analyze environmental education and the perceptions of IEA members in Lândana concerning the importance of mangrove conservation in the context of environmental sustainability challenges between 2020 and 2025. Specifically, it seeks to identify members' level of knowledge about the importance of mangroves, assess their perceptions of the relationship between Christian faith and environmental care, and propose strategies to strengthen environmental education in the Church.

The study is based on the hypothesis that a higher level of environmental education is associated with a better understanding of the importance of mangroves and attitudes more favorable to their conservation, although members' practical participation may remain limited. This research is expected to contribute to strengthening environmental education in the ecclesial context and promoting sustainable mangrove conservation practices in Lândana.

2 Theoretical framework

2.1 Environmental sustainability and Christian responsibility

Environmental sustainability is a fundamental principle for addressing contemporary ecological challenges, as it seeks to connect economic development, social well-being, and

conservation of natural resources. The concept gained wide prominence with the report *Our Common Future*, prepared by the World Commission on Environment and Development, which defines sustainable development as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, p. 43).

This conception introduces an intergenerational dimension according to which natural resources must be used responsibly, ensuring living conditions for present and future generations. Daly (1996) broadens this understanding by arguing that the economy is embedded in ecological systems and therefore cannot grow indefinitely without considering nature's biophysical limits.

Meadows et al. (2004), in turn, draw attention to the limits of natural systems and the need to rethink production and consumption patterns. Sustainability thus presupposes a change in individual and collective behavior, particularly in how societies use natural resources.

In the Christian sphere, this perspective can be related to the doctrine of creation and the concept of stewardship. In Genesis 2:15, humankind is placed in the garden "to cultivate and keep it," establishing a relationship of responsibility toward creation. Similarly, Psalm 24:1 states, "The earth is the Lord's, and everything in it," indicating that human beings are not the absolute owners of nature but are responsible for its administration.

Environmental sustainability can therefore be understood by Christian theology as an ethical dimension of faith. Caring for creation means using natural resources responsibly, preventing the destruction of ecosystems, and promoting decent living conditions for present and future generations. From this perspective, the environmental crisis is not only a scientific or economic problem but also a moral and spiritual issue.

2.2 Church, education, and socio-environmental responsibility

In Christian thought, the Church is understood as a community of faith called to bear witness to the values of the Gospel within society. Barth (1932) emphasizes the centrality of the Word of God in constituting the Christian community, while Bonhoeffer (1937) understands the Church as a community that concretely manifests the presence of Christ in the world.

This understanding makes it possible to recognize that the Church's mission should not be limited to the spiritual dimension. Christian faith has social, ethical, and community implications. For Moltmann (2011), the theology of creation leads to a relational understanding among God, humanity, and nature in which preserving life is part of human responsibility.

The Church can therefore perform an important educational function. Freire (1970) understands education as a process of forming critical awareness and transforming reality. Applied to the environmental context, this perspective means that education should not merely transmit information about ecological problems but should promote changes in attitudes and practices.

In the Christian context, environmental education can be developed through sermons, Bible studies, Sunday schools, youth groups, lectures, community campaigns, and practical activities. Environmental education and Christian education can converge in forming values such as responsibility, solidarity, justice, respect for life, and care for creation.

Thus, the Evangelical Church of Angola (IEA), as a religious community embedded in Angolan social reality, can be a privileged space for forming environmental awareness among its members. Education within the Church can help believers understand local environmental problems and relate them to the principles of Christian faith.

2.3 Mangroves: ecological, social, and economic importance

Mangroves are coastal ecosystems of great ecological, economic, and social importance. Located at the interface between terrestrial and marine environments, they perform functions related to coastal protection, biodiversity maintenance, fish production, sediment retention, and carbon storage.

Barbier et al. (2011) demonstrate that coastal ecosystems provide several essential services to human societies, including protection of coastal areas, support for fisheries, and maintenance of ecological processes. The climatic importance of mangroves has also been demonstrated in scientific literature. Donato et al. (2011) showed that these ecosystems are among the tropical forests with the greatest carbon storage capacity, mainly because of the high concentration of carbon in their soils.

In addition to their climatic function, mangroves serve as breeding, nursery, and shelter areas for various species of fish, crustaceans, and mollusks. Their conservation consequently has a direct impact on fishing and the food security of coastal communities.

Mangrove destruction may result from urban expansion, timber extraction, pollution, land-use changes, aquaculture, unsuitable fishing practices, and other pressures. Scientific literature shows that reducing these ecosystems compromises the environmental services they provide and increases the vulnerability of coastal communities. Donato et al. (2011), for

example, associate mangrove loss with significant carbon emissions, reinforcing the need for their conservation.

In Lândana, the importance of mangroves must be analyzed by considering the relationship between the ecosystem and the activities of coastal populations. Fishing, the use of natural resources, and coastal protection make mangrove conservation an environmental, economic, and social issue at the same time.

2.4 Environmental sustainability from the perspective of Christian theology

The Christian theology of creation is one of the main foundations for understanding the Church's environmental responsibility. The biblical narrative presents God as Creator and creation as a reality endowed with value. Genesis 1:31 states after creation that “it was very good.” Nature therefore does not appear merely as an instrument intended to satisfy human needs.

The command in Genesis 2:15 reinforces this responsibility by presenting human beings as those who must cultivate and keep the garden. This passage supports the concept of stewardship of creation, according to which humankind receives responsibility for managing natural resources without destroying their capacity for regeneration.

Bauckham (2010) advocates a biblical reading that values the relationship between human beings and other creatures. From this perspective, creation should not be interpreted exclusively according to human needs, but as a community of life in which different beings have importance before God.

Moltmann (2011) also contributes to this reflection by advocating a theology of creation capable of responding to contemporary ecological crises. Christian hope, in this sense, cannot be separated from responsibility for preserving life.

The encyclical *Laudato Si'*, by Francis (2015), reinforces this perspective by developing the concept of “integral ecology,” according to which environmental, social, economic, and human issues are deeply interconnected. The ecological crisis affects vulnerable populations in particular, which is why environmental protection is also an issue of social justice.

Preserving mangroves can therefore be understood as a concrete expression of Christian responsibility. Conserving these ecosystems protects biodiversity, contributes to food security, reduces the vulnerability of coastal communities, and benefits future generations.

2.5 Environmental education and the perceptions of Church members

Environmental perception refers to how individuals understand, interpret, and assign meaning to environmental issues. In this research, the particular interest is to understand how IEA members perceive mangroves and the extent to which knowledge acquired through the Church influences their attitudes.

Freire (1970) makes it possible to understand education as a process of awareness-building. Applied to the environment, this approach means that education should enable individuals to recognize problems in their context and participate in the search for solutions.

The Church can influence this perception through its educational and community processes. Sermons and Bible studies can present creation as a human responsibility; youth groups can develop environmental campaigns; and community activities can transform acquired knowledge into concrete practices.

Northcott (2015) advocates integrating ecological ethics into Christian reflection and considering environmental degradation as an issue that also involves values, lifestyles, and moral responsibility. From this perspective, a religious community that promotes environmental education can contribute to more responsible behavior.

The relationship between knowledge and behavior, however, is not automatic. A member may recognize the ecological importance of mangroves and still maintain practices harmful to their conservation. The study of perception must therefore consider not only members' knowledge but also their attitudes, practices, community participation, and the influence of religious formation.

2.6 The Church's role in mangrove conservation in Lândana

The Church can play a strategic role in conserving Lândana's mangroves through three fundamental dimensions: education, mobilization, and community action.

In the educational dimension, it can include environmental issues in Bible studies, Sunday school, youth groups, and leadership training.

In the mobilization dimension, the Church can raise awareness among its members and the community about the risks associated with mangrove destruction and encourage sustainable behavior. In the practical dimension, it can participate in cleanup campaigns, restoration of degraded areas, planting of appropriate species, awareness activities, and partnerships with environmental institutions.

The Church's action can also assume a prophetic dimension by drawing society's attention to practices that threaten the integrity of creation. In this sense, defending mangroves should not be seen as an activity external to the Christian mission but as a consequence of the responsibility to care for life.

Gorringe (2013) advocates a public understanding of Christian faith in which social responsibility forms part of the Church's witness. Environmental justice can thus be integrated into the Christian mission, particularly in communities vulnerable to the effects of environmental degradation.

In Lândana, this responsibility is particularly relevant because of the importance of mangroves to coastal protection, biodiversity, and local economic activities. The Church can act as a mediator among scientific knowledge, Christian values, and community experiences, creating conditions for contextualized environmental education.

The theoretical framework shows that environmental sustainability results from the articulation of natural resource conservation, social responsibility, and intergenerational justice. Environmental literature demonstrates the importance of mangroves for biodiversity, coastal protection, fishing, and carbon storage, while Christian theology grounds human responsibility for caring for creation.

Education is the link between knowledge, perception, and behavior. Through environmental education, Church members can develop greater awareness of ecological problems and adopt more responsible practices. The Church, in turn, has the potential to transform theological principles into concrete conservation actions.

In Lândana, this approach establishes a relationship among environmental sustainability, Christian education, IEA members' perceptions, and mangrove conservation. The study therefore begins from the understanding that believers' environmental formation may influence how they perceive and relate to mangroves. At the same time, it seeks to verify whether Christian principles of stewardship of creation are effectively translated into concrete environmental practices.

The theoretical framework thus supports the analysis of the IEA's reality in Lândana from 2020 to 2025, seeking to identify members' level of knowledge, their perceptions of mangroves, the influence of religious education, and possibilities for Church intervention in promoting environmental conservation.

3 Methodology

3.1 Research approach and design

This study adopted a predominantly quantitative, descriptive approach, supplemented by qualitative procedures. The quantitative approach was chosen because of the need to quantify the perceptions and level of knowledge of Siloé Parish members in Lândana regarding mangrove conservation and the Church's role in promoting environmental sustainability.

According to Gil (2019), scientific research is a systematic process aimed at obtaining answers to formulated problems through previously defined procedures. From this perspective, the study was structured to ensure articulation among the problem, objectives, data-collection procedures, and data processing.

The qualitative component was used as a complement, especially in analyzing information obtained through interviews and observation. Bogdan and Biklen (1994) emphasize the importance of understanding phenomena in the contexts in which they occur and from the perspectives of the subjects involved. Combining these perspectives allowed a more comprehensive understanding of the phenomenon studied.

Regarding its objectives, the study is descriptive because it seeks to characterize the knowledge, perceptions, and practices of Siloé Parish members concerning mangroves and to describe Church actions related to education and environmental sustainability.

Regarding technical procedures, the study is bibliographic, documentary, field-based, and a case study. The bibliographic research was based on books, scientific articles, dissertations, theses, and other academic works on environmental education, sustainability, mangrove conservation, and the socio-environmental responsibility of religious institutions. The documentary research focused on institutional documents and records of Siloé Parish.

Field research made it possible to collect information directly from participants in the context of the reality under investigation. The case study, in turn, used Siloé Parish in Lândana as its unit of analysis, enabling a contextualized examination of its role in environmental education and awareness of mangrove conservation.

3.2 Study area

The study was conducted at Siloé Parish, located in the town of Lândana, municipality of Cacongo, province of Cabinda, Angola. The area has coastal characteristics and

socioeconomic activities related mainly to agriculture and fishing, within an environmental context in which mangrove ecosystems have ecological and socioeconomic importance.

Siloé Parish is one of the religious institutions in the region and has a history dating back to the establishment of evangelical work in Lândana in 1947. In 1995, the locality became the seat of the Ecclesiastical Region of Cacongo and, in 2016, the former Parish of Lândana was renamed Siloé Parish. This institution was chosen as the field of research because of its presence in a coastal community and its potential as a space for education, awareness, and community mobilization. The parish therefore provides a relevant context for analyzing the relationship among Christian faith, environmental education, and mangrove conservation.

3.3 Study population and sample

The study population consisted of 90 participants from Siloé Parish in Lândana, distributed among pastors, a Christian educator, evangelists, and parish members. Of the total, 36 participants (40%) were male and 54 (60%) were female. The population comprised 2 pastors (2.2%), 1 Christian educator (1.1%), 5 evangelists (5.6%), and 82 lay members of Siloé Parish (91.1%). Parish members thus significantly predominated and constituted the majority group in the population studied.

A sample of 50 participants was selected, corresponding to 55.6% of the total population. The sample comprised 2 pastors, 1 Christian educator, 5 evangelists, and 42 lay members of Siloé Parish.

Regarding gender, the sample consisted of 24 male participants (48%) and 26 female participants (52%), showing a relatively balanced distribution. Among parish members, 20 men and 22 women were selected, totaling 42 participants, or 84% of the sample.

Participants were selected to obtain information from the different groups that make up the structure of Siloé Parish. Including the pastors, Christian educator, and evangelists provided information related to the Church's institutional and pastoral perspective, while members' participation made it possible to analyze their level of knowledge, perceptions, and positions regarding mangrove conservation and environmental sustainability.

The composition of the sample thus brought together different perspectives on the phenomenon under study, providing an adequate basis for analyzing the Church's role in environmental education and in promoting mangrove conservation in Lândana.

3.4 Research methods

The study used theoretical, empirical, and descriptive-statistical methods, articulated according to its objectives. The bibliographic method provided the conceptual and theoretical foundation through consultation of scientific literature on mangroves, environmental education, sustainability, environmental conservation, and the responsibility of religious institutions.

The analysis and synthesis method made it possible to break down the phenomenon into its main elements, namely environmental knowledge, members' perceptions, conservation practices, and Church intervention, and subsequently integrate them into an overall interpretation. The inductive-deductive method was also used, allowing particular information obtained in the field to be related to the theoretical assumptions adopted in the study.

Finally, documentary analysis was used to examine institutional documents of Siloé Parish, contributing to the characterization of the institution and understanding its organization and history. In the empirical domain, observation and interviews supplemented data obtained through the questionnaire. Observation made it possible to identify aspects related to environmental education, members' practices, and the presence or absence of awareness initiatives for mangrove conservation.

Interviews collected information from parish leaders and workers and made it possible to understand existing perceptions of the Church's responsibility toward environmental problems.

Quantitative data were processed using descriptive statistics, with absolute and relative frequencies presented in tables and, when necessary, graphs. Percentage analysis allowed participants' responses to be compared and trends to be identified concerning knowledge of mangroves, perceptions of environmental problems, and the role attributed to the Church in their conservation.

3.5 Data-collection techniques and instruments

Data were collected through a questionnaire, interviews, and observation. The questionnaire was the main instrument for collecting quantitative data and was administered to lay members of Siloé Parish. It contained closed questions organized according to the study's specific objectives, allowing participants' knowledge and perceptions of mangroves and environmental sustainability to be assessed. Semi-structured interviews were conducted with the pastors, Christian educator, and evangelists to obtain more in-depth information about the

Church's conceptions of environmental education, awareness actions, and mangrove conservation.

Observation was used as a complementary technique, making it possible to record relevant aspects of the research context and, whenever possible, compare information obtained through the other instruments. Data were collected directly at Siloé Parish in Lândana after the study objectives had been presented to institutional leaders and participants. The first stage involved a bibliographic and documentary review to construct the theoretical and methodological framework. The questionnaires were then administered and the interviews conducted. In parallel, the institutional context and practices related to environmental issues were observed.

After collection, the questionnaires were checked, coded, and organized in a database. The responses were then subjected to descriptive statistical processing through calculation of frequencies and percentages. Information from interviews and observation was analyzed thematically and used to complement and contextualize the quantitative results. This procedure articulated the different data collected and gave greater consistency to interpretation of the results.

3.6 Ethical considerations

The study observed the ethical principles applicable to scientific research, including voluntary participation, respect for participants, confidentiality of information, and use of data exclusively for academic and scientific purposes. Participants were informed in advance about the study objectives and data-collection procedures, and their participation was voluntary. The information obtained was treated confidentially and used only within the scope of this study.

4 Results and discussion

The study included a sample of 50 participants: 2 pastors, 1 Christian educator, 5 evangelists, and 42 members of Siloé Lândana Parish. The results were organized according to four main dimensions: perceptions of the importance of mangroves; integration of environmental education into the Church; perceptions of mangrove degradation; and Church participation in environmental preservation actions.

4.1 Perceptions of the importance of mangroves

The results reveal a broadly favorable perception of the importance of mangroves. Among the 42 parish members, 100% considered mangroves important to the community and stated that protecting them is a relevant responsibility. Likewise, all 5 evangelists recognized the importance of mangroves to Lândana, while the 2 pastors classified them as “very important” to the Church's mission in the community.

Parish members' perceptions of environmental care also have a significant religious dimension: 100% associated environmental care with protecting God's creation. This result demonstrates the existence of a favorable theological basis for integrating environmental issues into the Church's mission.

The Christian educator expressed the same view, considering it important for the Church to teach believers about mangrove preservation and recognizing that Christian education can address care for creation. The evangelists' results reinforce this perspective, since 100% considered that the Bible can be used to teach environmental responsibility.

4.2 Integration of environmental education into Church activities

Despite the strong recognition of the importance of mangroves, the results show weak institutionalization of environmental education at Siloé Parish.

Both pastors surveyed stated that the Church had no environmental education programs or activities, corresponding to 100% of responses. In addition, one pastor stated that environmental sustainability was not addressed in the Church, while the other indicated that it was addressed only rarely.

This situation contrasts with the perceptions of members and workers. Although 100% of members recognized the importance of mangrove protection, only 40% stated that they had directly heard sermons about protecting nature, while 60% said this occurred only occasionally. The results therefore reveal a gap between existing environmental awareness and its systematic integration into the Church's educational and pastoral activities.

4.3 Perceptions of the condition of mangroves in Lândana

The data show that participants recognize problems related to mangrove conservation. Among the 42 parish members, 32 (76%) stated that they had observed mangrove destruction in their area, while 10 (24%) responded negatively.

Among the evangelists, 60% considered that the mangroves were being destroyed, while 40% classified them as well preserved. The Christian educator also assessed the situation negatively, considering that the mangroves in the Lândana community were not being properly cared for.

Regarding the causes of degradation, parish members unanimously identified tree cutting as the main factor in mangrove destruction, corresponding to 100% of responses. This result shows that human pressure on natural resources is perceived by the community as one of the main problems affecting conservation of these ecosystems.

4.4 Church participation in environmental preservation

One of the most significant results concerns the Church's limited practical experience with environmental preservation activities.

The 2 pastors stated that the Church had never participated in environmental protection activities such as cleanup, planting, or awareness campaigns. This perception was confirmed by the members: all 42 participants stated that they had never taken part in an environmental activity promoted by the Church.

Despite the absence of initiatives, there is a favorable disposition toward intervention. Both pastors believed that the Church should become actively involved in mangrove preservation and also argued that responsibility for their protection should be shared by the Church, the community, and other local entities.

Among the evangelists, 100% considered it important for the Church to address environmental and social issues. Regarding intervention strategies, biblical preaching, practical teaching, and community campaigns were mentioned, indicating the need to combine religious formation, environmental education, and practical participation.

4.5 Triangulation of the main results

The overall data analysis identifies a situation marked by strong recognition of the importance of mangroves but limited implementation of environmental practices within the parish. The results show four main trends:

- High awareness: all groups recognize the importance of mangroves and the need to protect them.
- Favorable religious foundation: participants relate environmental care to the Christian responsibility to protect God's creation.
- Perception of degradation: 76% of members stated that they had observed mangrove destruction, and 60% of evangelists considered that the mangroves were being destroyed.
- Low institutional participation: 100% of members stated that they had never participated in an environmental activity promoted by the Church, while the pastors confirmed the absence of structured environmental programs.

The results thus demonstrate a gap among knowledge, appreciation, and practice. The parish community shows a willingness to protect mangroves, but this awareness has not yet been translated into regular educational programs and environmental activities.

4.6 Proposal for Church intervention

In light of the results, environmental education should be integrated into the pastoral mission of Siloé Lândana Parish through simple, continuous actions. The main possibilities include lectures and sermons on Christian responsibility for the environment, inclusion of mangrove content in catechumen classes, creation of a parish ecological group, community cleanup campaigns, reforestation activities, and partnerships with schools and local authorities.

These actions should be developed in a participatory manner involving pastors, the Christian educator, evangelists, young people, and other community members. The purpose should not be limited to transmitting knowledge but should promote a transition from environmental awareness to effective participation in mangrove conservation.

Final considerations

The study results indicate that members and workers of Siloé Lândana Parish have a positive and widespread perception of the importance of mangroves and of the Christian

responsibility to care for creation. However, this awareness is not accompanied by proportional participation in concrete environmental preservation activities.

Mangrove degradation was also found to be a reality perceived by most participants, with tree cutting identified as the main cause. At the same time, the Church still lacks structured environmental education programs, a fact confirmed by the pastors and members surveyed.

The study's main result is therefore the identification of a gap between environmental perception and institutional practice. The Church nevertheless has favorable conditions for intervention, since the importance of mangroves is recognized, Church workers are open to environmental education, and the Christian responsibility to care for creation is accepted.

Consequently, Siloé Parish should move from a predominantly discursive approach to an integrated strategy of environmental education, awareness, and action, using preaching, catechesis, evangelization, and community mobilization as instruments for conserving Lândana's mangroves.

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