

## **SOCIO-ENVIRONMENTAL IMPACT OF THE CONSTRUCTION OF A MINI DAM IN THE ZENÚ INDIGENOUS COMMUNITY OF COTORRA: CONSEQUENCES ON FOOD SECURITY AND BIODIVERSITY OF THE SINÚ RIVER**

### **SUMMARY**

This study analyzes the social and environmental problems that the Zenú de Cotorra indigenous community, located near the Sinú River, will face due to the construction of a mini hydroelectric dam 30 km from their territory. This project will have serious consequences for the river's ecosystem and the food security of the 300 Zenú families, who depend heavily on fishing for their livelihoods.

The construction of the mini-dam will directly affect the population of key fish, such as catfish and salmon, by altering natural breeding cycles and aquatic habitats. Reducing these species will not only decrease the river's biodiversity, but also exacerbate food insecurity in the community. Zenú families consume fish on a daily basis, and the decrease in this protein source will severely compromise their diet, increasing the risk of malnutrition.

In addition, fishing is one of the main economic activities in the region. The reduction in the fish population will directly affect local fishermen, including those from the Zenú community, who will see their economic opportunities diminished. The loss of income will exacerbate poverty and increase social vulnerability in a community already facing challenges related to a lack of resources and opportunities.

This analysis highlights the need to conduct a thorough environmental impact study before proceeding with the construction of the mini-dam.

Alternatives that minimize ecological and social damage should be considered, as well as mitigation strategies that guarantee the protection of the natural resources on which the Zenú community depends. Otherwise, the consequences will be devastating for their food, economic and environmental security.

**KEY WORDS:** Zenú indigenous community, Mini hydroelectric dam, Food security, Environmental impact.

### **INTRODUCTION**

The Zenú indigenous community, located in the Colombian Caribbean region, near the Sinú River, has historically been dependent on the natural resources of its surroundings to ensure its survival, well-being and social cohesion. This community, which extends mainly through the departments of Córdoba and Sucre, has a rich culture and an ancestral relationship with the land and water, essential elements for its identity and sustenance. However, in recent years, a number of social and environmental challenges have arisen that put their way of life and the sustainability of local ecosystems at risk. One of the most imminent challenges is the construction of a mini hydroelectric dam just 30 kilometers from its territory, which can have negative impacts on both the environment and the socioeconomic conditions of the Zenú families living in Cotorra, near the Sinú River.

#### **1. Context of the Zenú Community**

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The Zenú are an indigenous community that has inhabited the plains of the Colombian Caribbean for centuries, with a social and cultural organization based on a deep connection with the territory. Agriculture, fishing and handicrafts have been fundamental pillars of its economy, with the Sinú River being a vital source of natural resources, especially with regard to fishing and the supply of water for human consumption and agricultural activities. The relationship between the Zenú and the Sinú River is much more than an economic issue: it is imbricated in the culture, worldview, and traditional practices of the community. The river represents not only a resource, but a central element of the Zenú identity, being the axis around which their daily activities, celebrations and rites take place.



Today, the community of Cotorra, which is part of this indigenous group, is made up of about 300 families who live along the river and depend on it for their food and economic security. Fishing, in particular, plays a key role in the diet and income of these families, providing a critical source of protein

and being an activity they depend on to trade and generate income in local markets. However, this harmonious relationship with the environment is at risk due to external factors that could irreversibly alter the ecosystem of the Sinú River and, therefore, the life of the Zenú.

### **2. The Mini Hydroelectric Dam Project and its Implications**

The construction of a mini hydroelectric dam 30 kilometers from Cotorra poses a number of environmental challenges that could have disastrous consequences for the Zenú community and other actors in the region. While the main objective of the dam is to generate electricity in a "sustainable" way, using the natural flow of water, the environmental impacts associated with this type of infrastructure are well known and can be devastating to river ecosystems.

One of the main expected consequences is the alteration of the natural flows of the river, which will directly affect the aquatic species that depend on these cycles for their reproduction and survival. Specifically, the reduction in the population of fish such as catfish and salmon worries experts and the local community, as these species are fundamental to both the biodiversity of the river and the food security of the Zenú. These fish migrate along the river in search of optimal conditions to reproduce, and artificial barriers such as dams often interrupt these cycles, causing a drastic decline in their populations.

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### **3. Food Safety at Risk**

The impact of the mini-dam on the fish population not only has ecological implications, but also socio-economic ones. The Zenú community of Cotorra depends on daily fishing to ensure their food. Fish is one of the main sources of protein in the diet of these families, which means that any decrease in the availability of this resource has direct consequences on their food security. The decrease in catches of catfish and salmon, fundamental species for the community's diet, could generate a significant nutritional deficit, mainly affecting the most vulnerable: children, the elderly and pregnant women.

Moreover, fishing is not just a subsistence activity; it is also a source of income. Zenú families fish to sell in local markets, which allows them to access other products and goods necessary for their daily lives. The reduction in the fish population and the consequent decrease in catches will directly affect

the economic livelihood of these families, increasing their vulnerability and pushing them into poverty.

### **4. Impact on Local Fishermen**

Fishermen in the Sinú River region, including those who are not members of the Zenú community, will also be severely affected by the construction of the mini-dam. Fishing is a key economic activity for many families in the region, and the disruption of water flows and declining fish stocks will put their livelihoods at risk. These fishermen, like the Zenú, depend on the river's biodiversity to earn income and support their families. Diminished fishing opportunities could increase poverty levels in the region and generate social tensions in a context already affected by a lack of economic opportunities.

### **5. Cultural and Social Consequences**

In addition to the environmental and economic impacts, the construction of the mini-dam would also have cultural and social repercussions for the Zenú community. As mentioned above, the Sinú River is not only a source of natural resources, but also a cultural and spiritual symbol for the Zenú. The alteration of their ecosystem represents a threat to their worldview and traditions, affecting the balance between the community and their natural environment.

The loss of resources and the interruption of their traditional practices could generate a weakening of the social fabric in the community, affecting internal cohesion and generating conflicts related to the



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distribution of resources and opportunities. In addition, community impoverishment and increased food insecurity could lead to increased rates of migration to urban areas, which in the long term could erode Zenú cultural identity and weaken their resilience to these challenges.



### **6. Need for Assessment and Mitigation**

Given the panorama described, it is essential that a thorough assessment of the environmental and social impacts of the construction of the mini hydroelectric dam be carried out. This evaluation must take into account both the direct and indirect effects that the work will have on the ecosystem of the Sinú River and on local communities, including the Zenú families. In addition, it is crucial that alternatives and mitigation measures are explored to reduce environmental and social damage.

Among the possible mitigation measures, the installation of devices that allow the passage of migratory fish could be considered, as well as the

implementation of reforestation and habitat restoration programs in the affected areas. Likewise, economic compensation and support programs must be developed for families that will be affected by the reduction in fishing, ensuring that the transition to new economic models is fair and equitable.

### **GENERAL OBJECTIVE**

To assess the socio-environmental impact of the construction of a mini hydroelectric dam in the vicinity of the Zenú de Cotorra indigenous community, specifically on the Sinú River, to identify the risks and consequences on food security, biodiversity and the socio-economic well-being of the community.

### **SPECIFIC OBJECTIVES**

- **Analyze the environmental impact** that the construction of the mini dam will have on the biodiversity of the Sinú River, with a particular focus on fish species such as catfish and salmon.
- **Determine the consequences on food security** for the 300 Zenú families that depend on daily fishing as a primary source of protein.
- **Assess the socio-economic effects** on local fishers and Zenú families, focusing on the loss of income and increased economic vulnerability due to reduced fish catches.

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- **Propose mitigation strategies** to minimize the environmental and social damage caused by the construction of the dam, including the conservation of aquatic species and economic support programs for the affected community.

### **LEGAL FRAMEWORK**

The legal framework that regulates the construction of infrastructure projects in Colombia, such as the planned mini-hydroelectric dam near the Zenú indigenous community in Cotorra, encompasses both national standards and international agreements that protect the environment and the rights of indigenous peoples. These legal instruments are essential to ensure that economic development and resource exploitation are carried out in a sustainable manner that respects local communities.

#### **1. Political Constitution of Colombia (1991)**

The Constitution of Colombia establishes the basis for environmental protection and the rights of indigenous communities. Article 79 recognizes the right of all citizens to enjoy a healthy environment, while imposing on the State the duty to protect the diversity and integrity of the environment, guaranteeing the sustainable use of natural resources. This article is particularly relevant for the protection of the Sinú River, whose ecosystem would be altered by the construction of the mini hydroelectric dam, affecting both biodiversity and the lives of the communities that depend on it.

Article 330 of the Constitution is another fundamental pillar in the defense of the rights of indigenous peoples. This article grants indigenous communities the right to participate in the planning and execution of projects that may impact their territories. This implies that, before the construction of any infrastructure work that affects the territories of the Zenú, such as the mini-dam, a process of prior consultation must be carried out, in accordance with the provisions of Law 21 of 1991.

#### **2. Law 21 of 1991 (ILO Convention 169)**

Law 21 of 1991 incorporated Convention 169 of the International Labor Organization (ILO) into Colombian legislation, an international instrument that protects the rights of indigenous and tribal peoples. This agreement establishes the obligation to carry out prior, free and informed consultation before the execution of projects that may directly affect the territories or the way of life of indigenous communities.

Prior consultation is a fundamental right that guarantees the active participation of indigenous peoples in decisions that affect them. This process should be done in a transparent manner and well in advance so that communities can assess the impacts of the project and voice their concerns and proposals. In the case of the mini-dam, authorities must ensure that the Zenú community of Cotorra is consulted and that their concerns about possible damage to the Sinú

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River, the reduction of the fish population and the impact on their food security are taken into account.

### **3. Law 99 of 1993**

Law 99 of 1993 is one of the most important regulations in Colombia in terms of environmental protection. This law created the Ministry of the Environment and established the National Environmental System (SINA), with the aim of regulating the sustainable use of natural resources and preventing the negative impacts of development projects. In particular, the law states that any infrastructure project that may have a significant environmental impact, such as the construction of dams, must undergo an Environmental Impact Study (EIA).

The EIA is a technical and participatory process that assesses the potential effects of a project on the environment, identifying risks and proposing mitigation measures. In the case of the mini hydroelectric dam, the EIA must consider the impacts on the biodiversity of the Sinú River, especially with regard to the population of fish such as catfish and salmon, which are critical for the food security of the Zenú community and local fishermen.

### **4. Decree 1320 of 1998**

Decree 1320 of 1998 regulates the prior consultation process in Colombia and establishes the procedures that must be followed to guarantee the effective participation of indigenous communities in projects that affect their territories. This decree specifies that

prior consultation must be carried out before the execution of any work that may have an impact on the lands, natural resources or cultural rights of indigenous communities.

In the case of the mini-dam, this decree guarantees that the Zenú communities must be informed in a clear and timely manner about the details of the project, including the environmental impacts and possible alternatives to mitigate the negative effects. If this process is not followed, the project could be suspended for violating the rights of the community.

### **5. International Standards**

Colombia is committed to several international treaties and agreements that protect the rights of indigenous communities and the environment. One of the most relevant is the United Nations Declaration on the Rights of Indigenous Peoples, which recognizes the right of indigenous peoples to conserve and protect their lands, territories and natural resources. This declaration reinforces the right to prior consultation and the obligation of States to obtain the free, prior and informed consent of indigenous peoples before adopting measures that may affect them.

Another important international instrument is the Convention on Biological Diversity, to which Colombia is a signatory. This agreement establishes the need to protect biodiversity and promote the sustainable use of ecosystems. In the case of the Sinú River, it is essential that any development, such as



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the construction of the mini dam, complies with the principles of sustainability and biodiversity conservation, ensuring that it does not cause irreversible damage to the ecosystem or put the food security of the communities that depend on it at risk.

### **PROBLEM DESCRIPTION**

The Zenú indigenous community of Cotorra, located on the banks of the Sinú River, faces serious social and environmental problems in the face of the imminent construction of a mini dam just 30 km from their territory. Not only does this project threaten the aquatic ecosystem, but it also has profound implications for the food security and livelihoods of approximately 300 indigenous families who depend on the river for their food and livelihoods. The interconnection between the environment and the culture of the Zenú community is vital, and therefore any significant alteration of the aquatic ecosystem has the potential to generate devastating consequences.

### **1. Environmental Impact on Biodiversity**

The construction of the mini-dam proposes a significant alteration of the aquatic habitat that has sustained the community for generations. The modification of the natural flow of the river will have a direct impact on fish stocks, especially on keystone species such as catfish and salmon. These fish are critical not only to the community's diet, but also to the balance of the aquatic ecosystem.

The decline of these species not only represents a loss of food resources, but also an imbalance in the ecosystem. Overexploitation of species and disruption of fish migration routes will affect other species that depend on fish for their survival, causing a cascade of effects that could compromise ecosystem health. This scenario not only threatens local biodiversity, but also impacts the water quality and overall health of the Sinú River.



### **2. Food Safety**

The Zenú community is highly dependent on the consumption of fish, which is an essential part of their daily diet. For many families, fish is a primary source of protein and nutrients. The reduction in the fish population resulting from the construction of the

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dam would compromise the food security of these families, who already face challenges related to access and availability of food. Food insecurity could lead to an increase in malnutrition, especially in children, who are more vulnerable to the effects of an inadequate diet.

In addition, this situation could lead to an even greater reliance on imported food or other sources of income that are not culturally relevant to the community. The loss of access to such a basic and vital food resource could have not only physical, but also emotional and psychological repercussions, affecting social cohesion and community well-being as a whole.

### **3. Economic Impact on Local Fisheries**

Fishing is a vital activity for the economic sustenance of the Zenú community. Fishermen in the area, who have practiced this activity for generations, would be severely affected by the decline in fishing resources. The reduction in the amount of fish available means that fishermen would have to invest more time and effort to get the same, if they manage to get anything at all. This would not only affect their income, but also their quality of life.

Job losses and reduced fishing income could lead to increased poverty in the community. The need to seek income alternatives that might not be sustainable or appropriate for your culture can result in a cycle of poverty that perpetuates itself over time. This could also induce young people to leave their

community in search of better opportunities, which could result in a loss of traditional knowledge and skills that are vital to the cultural continuity of the Zenú community.



### **4. Threats to Indigenous Culture and Heritage**

Not only does the Zenú community face economic and health challenges, but the alteration of the river and its ecosystem also affects their culture and their relationship with the land. The Sinú River is not only a source of resources; it is a central element in the cultural identity of the community. Fishing practices and knowledge about water management are part of their cultural heritage, and loss of access to these resources could result in the erosion of ancestral traditions and knowledge.

This cultural loss cannot be easily quantified, but its impact on the identity and social cohesion of the community is significant. The decline in traditional



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fishing could lead to a weakening of the Zenú culture, with long-term repercussions that go beyond the economic.

### **5. Challenges in Community Participation and Decision-Making**

In addition to the direct impacts on the environment and the economy, the construction of the mini-dam poses challenges in terms of community participation in decision-making. Historically, indigenous communities have been marginalized in planning and development processes. The lack of consultation and consideration of the perspectives and needs of the Zenú community in this project could exacerbate tensions and mistrust between the community and the authorities.

It is essential that a comprehensive environmental and social impact study is carried out, including the active participation of the community in the decision-making process. The voices and concerns of the Zenú community must be heard and taken into account to develop solutions that protect both natural resources and the culture and well-being of the community.

### **JUSTIFICATION**

The justification for this study lies in the urgent need to understand and address the social and environmental problems faced by the Zenú indigenous community of Cotorra in the face of the imminent construction of a mini dam in the vicinity of the Sinú River. This project not only threatens the

biodiversity of the aquatic ecosystem, but also has profound implications on the food security, local economy and culture of this community. Below are the key reasons behind this study:

#### **1. Protection of Human and Environmental Rights**

The Zenú community has the right to a healthy environment and to the protection of their culture and traditions. The construction of the mini dam poses a serious risk to these rights, as it may negatively affect their natural resources. This study is essential to ensure that the rights of the community are respected in the context of decision-making on the use of land and water resources.

#### **2. Environmental Impact Assessment**

Assessing the environmental impacts of the mini-dam is crucial to anticipate negative consequences on biodiversity, particularly in relation to the decline of fish species such as catfish and salmon, which are vital to the community's diet and economy. This study will provide a scientific basis for identifying and mitigating adverse effects, ensuring the protection of the aquatic ecosystem and its ability to sustain life.

#### **3. Food Safety and Sustainability**

Food security is a central concern for the Zenú community, which relies on fish as its main source of protein. This study will allow us to evaluate how the decline in fish populations will affect the nutrition

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and well-being of approximately 300 families. In addition, sustainable alternatives that can offer long-term solutions for the community's food and livelihood will be explored.

### **4. Economic Impact on the Community**

Fishing is a vital economic activity for the Zenú community. Reducing the fish population will not only compromise food security, but could also lead to an economic crisis that would affect the quality of life of fishermen and their families. This study is essential to understanding the economic impact of the mini-dam and to developing strategies that support the economic resilience of the community.



### **5. Cultural Preservation**

The Sinú River is a central element in the identity and culture of the Zenú community. The alteration of the aquatic ecosystem could lead to the erosion of ancestral traditions and knowledge related to fishing and the management of the natural environment. This

study will seek to document and highlight the cultural importance of the river and fishing for the community, promoting the conservation of its cultural heritage.

### **6. Strengthening Community Participation**

The lack of consultation and participation in decision-making on projects that impact the community is a historical concern. This study will seek to facilitate the inclusion of the voices of the Zenú community in the evaluation and planning process of the project, ensuring that their perspectives and needs are taken into account. This will not only strengthen participatory democracy, but will also contribute to building trust between the community and the authorities.

### **7. Research and Knowledge**

The construction of a mini dam represents a complex phenomenon that deserves an in-depth analysis. This study will provide a theoretical and practical framework to understand the interrelationships between the social, environmental and economic factors that affect the Zenú community. The research will generate knowledge that can be useful not only for this community, but also for other indigenous communities in similar situations, as well as for policymakers and development organizations.

## **METHODS**

To carry out a comprehensive study on the social and environmental problems faced by the Zenú

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indigenous community of Cotorra in the face of the construction of a mini dam, a methodological approach that combines various research techniques is proposed. The following are the methods that will be used:

### **1. Literature Review**

**Objective:** To compile existing information on the impact of dams on indigenous communities and aquatic ecosystems, as well as previous studies related to the Zenú community and the Sinú River.

**Description:** A comprehensive review of scientific articles, reports by non-governmental organizations (NGOs), government documents, and relevant case studies will be conducted. This will provide a theoretical and empirical context on the environmental and social effects of dam construction.

### **2. Surveys and Questionnaires**

**Objective:** To obtain quantitative data on the community's perception of the construction of the mini-dam and its impact on food security, economy and culture.

**Description:** A questionnaire will be designed to be applied to a representative sample of the population of Parrot. Questions will include topics on river use, reliance on fish as a food source, concerns about shrinking fishery resources, and knowledge about the mini-dam. The data will be statistically analyzed to identify trends and patterns.

### **3. Semi-structured interviews**

**Objective:** To deepen the experiences and perceptions of community members about the impact of the mini-dam.

**Description:** Interviews will be conducted with community leaders, fishermen, families and other members of the Zenú community. The interviews will be semi-structured, allowing interviewees to share their stories and concerns in depth, generating valuable qualitative information.

### **4. Focus Groups**

**Objective:** To facilitate a dialogue among community members to explore their opinions and concerns about the mini-dam project.

**Description:** Focus groups will be organized with different segments of the community (fishermen, women, youth, etc.) to discuss how the construction of the dam could affect their lives. These discussions will allow information to be gathered about the social and cultural dynamics within the community, as well as about its aspirations and needs.

### **5. Environmental Impact Analysis**

**Objective:** To evaluate the potential effects of the construction of the mini dam on the aquatic biodiversity and ecosystem of the Sinú River.

**Description:** Field studies will be carried out to collect data on fish population, water quality and flora and fauna of the aquatic environment. Comparisons will be made between sites that could

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be affected by the dam and control sites not affected. This analysis will provide scientific evidence on the environmental consequences of the project.

### 6. Socioeconomic Analysis

**Objective:** To examine the economic impact of fishing and food security on the Zenú community.

**Description:** Data will be collected on fish production, fishers' income, and fish consumption in the community. This will be done through surveys and interviews. The data will be analyzed to determine the economic dependence of the community on the river and the risks associated with the decrease in fishing resources.

### 7. Participatory Observation

**Objective:** To understand more directly the cultural practices and use of the river by the Zenú community.

**Description:** Researchers will spend time in the community, participating in everyday activities related to fishing and other cultural practices. This immersion will allow you to capture nuances and contexts that might not be evident through more distant methods.

### 8. Community Consultation and Engagement

**Objective:** To ensure that the voices and concerns of the Zenú community are an integral part of the research process.

**Description:** Workshops and community meetings will be organized where preliminary findings will be

presented and community feedback will be invited. This will encourage a participatory and collaborative approach to studying, empowering the community in the process.

## RESULTS

The study on the impact of the construction of a mini dam on the Zenú indigenous community of Cotorra aims to generate a deep understanding of the social and environmental implications of the project. The expected results of the study are detailed below:

### 1. Documented Environmental Impact Assessment

**Description:** It is expected to provide a clear and detailed analysis of how the construction of the mini dam will affect the biodiversity of the Sinú River, including the expected decline in fish populations such as catfish and salmon.

**Outcome:** A technical report presenting data on water quality, aquatic biodiversity, and potential ecosystem changes, along with recommendations to mitigate negative impacts.

### 2. Quantitative Data on Food Security

**Description:** Through surveys, it is hoped to collect quantitative information on the community's dependence on fish as a food source and how this dependence will be affected by the mini-dam.

**Outcome:** Statistics on the amount of fish consumed per family, the projected impact on food security, and



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the identification of vulnerable groups within the community.

### 3. Documented Community Perception

**Description:** Through interviews and focus groups, it is hoped to capture the opinions and perceptions of community members about the impact of the project.

**Outcome:** A compendium of testimonies and opinions that reflect the community's concerns, aspirations, and expectations about the future of the river and its environment.

### 4. Comprehensive socioeconomic analysis

**Description:** An in-depth analysis of how fisheries and aquatic resources contribute to the local economy and the daily life of the community is expected to be conducted.

**Results:** Data on fishermen's income, the role of fish in the daily diet and the local economy, as well as an assessment of the economic risks associated with the decline of fishery resources.

### 5. Strengthening Community Participation

**Description:** The study is expected to promote active community participation in the research process and in decision-making about the future of the mini-dam project.

**Outcome:** An increase in community awareness of their rights and the importance of their participation in natural resource management, as well as the

creation of spaces for dialogue and collaboration between the community and the authorities.



### 6. Recommendations for Impact Mitigation

**Description:** Based on the findings of the study, concrete recommendations are expected to be made to mitigate the negative impacts of the mini-dam on the community and ecosystem.

**Outcome:** A set of proposals that will include compensation measures, sustainable development alternatives, and fisheries management strategies that allow the community to adapt to changes.

### 7. Cultural and Heritage Documentation

**Description:** It is expected to record the cultural relationship of the Zenú community with the Sinú River and fishing, as well as the importance of these elements for their identity.

**Outcome:** A report documenting cultural heritage related to the river and fisheries, which can be used to promote the conservation of the Zenú culture and its ancestral knowledge.

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### 8. Knowledge Generation for Public Policies

**Description:** Based on the findings, it is hoped to contribute to the development of public policies that protect the rights of indigenous communities and the environment.

**Outcome:** A document summarizing the findings of the study that can be presented to local and regional authorities, as well as NGOs and international organizations working on human and environmental rights.

### CONCLUSION

The study on the impact of the construction of a mini dam on the Zenú indigenous community of Cotorra is of vital importance to understand the complex interactions between economic development, environmental sustainability and human rights. The creation of this infrastructure, which is projected just 30 km from the community, not only poses significant environmental challenges, but also threatens the food security, the local economy, and the culture of the Zenú, which relies heavily on the aquatic resources of the Sinú River.

Population reductions of key species such as catfish and salmon, which are critical to the daily diet of around 300 indigenous families, could lead to a food security crisis. The reliance on fish as a primary source of protein means that any decline in the fish population directly impacts the health and well-being of the community. This highlights the need to understand and mitigate the impacts that the mini-

dam could have on aquatic biodiversity and the community's ability to survive. The preservation of these resources is not only crucial for food, but also for the continuity of cultural practices and traditions that are part of the Zenú identity.

In addition, the study aims to document and analyze the community's concerns and perceptions regarding the project. It is hoped that, through interviews and focus groups, diverse voices will be collected that reflect the concerns of community members about the future of the river and their livelihoods. This participatory approach is critical, as it empowers community members, allowing them to take an active role in making decisions that will affect their environment and quality of life.

Likewise, the socioeconomic analysis foreseen in the study will offer a clear vision of how fishing contributes to the local economy and to the daily life of the Zenú. This analysis will not only serve to document the importance of aquatic resources, but will also provide data that can be used to advocate for public policies that protect community rights and ensure sustainable access to resources. The generation of knowledge from this study can be a powerful instrument of defense against projects that put food security and the well-being of indigenous communities at risk.

The proposed methodological approach, which combines literature reviews, surveys, interviews, focus groups, environmental and socioeconomic impact analysis, and participatory observation, will

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provide a comprehensive overview of the current situation and the possible effects of the construction of the mini-dam. This will not only enrich the quality of the study, but also ensure that community voices are heard and respected, promoting a more equitable and fair approach to decision-making.

Finally, this study aims to contribute to the generation of policies that respect and protect the rights of indigenous communities, promoting development that is sustainable and that guarantees the preservation of their culture and environment. The expected results will serve as a call to action for authorities, organizations and civil society, highlighting the need to address the complexities of economic development in the context of social justice and environmental sustainability.

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