

ORIGINAL
Research article

**Assessment of sustainability in economic
entrepreneurships in indigenous communities: area of
influence of the Alto Fragua Indi Wasi National Natural
Park***

**Evaluación de la sostenibilidad en emprendimientos económicos en
comunidades indígenas: zona de influencia del Parque Nacional Natural Alto
Fragua Indi Wasi**

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Abstract

Sustainability is one of the main concerns worldwide, especially in the context of the creation of new small businesses. In the case of rural contexts, ventures must face multiple barriers and adverse elements, which affect individuals and communities, as well as the design of their strategies and their productivity. The study aimed to evaluate the sustainability of a group of

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enterprises, with the premise of advancing the identification of the necessary guidelines to improve their conditions, production model, and results, as well as cultural and environmental conservation. A qualitative investigation with a hermeneutic design was carried out, and the main results indicated that the ventures were essentially sustainable but had to address various aspects. The study allowed us to conclude on a group of adjustment needs, dimensions to strengthen, and indications for improving social activity in the area.

Keywords: Community, Entrepreneurship, Environment, Sustainability

Resumen

La sostenibilidad constituye una de las principales preocupaciones a nivel mundial, especialmente en el contexto de la creación de nuevas empresas de tamaño pequeño. En el caso de los contextos rurales, los emprendimientos deben afrontar múltiples barreras y elementos adversos, los cuales afectan a individuos y comunidades, pero también al diseño de sus estrategias y su productividad. El estudio realizado se encaminó a evaluar la sostenibilidad de un grupo de emprendimientos, con la premisa de avanzar en la identificación de los lineamientos necesarios para mejorar sus condiciones, modelo productivo y resultados, así como la conservación cultural y medioambiental. Se realizó una investigación cualitativa con diseño hermenéutico y los principales resultados apuntaron a que los emprendimientos eran esencialmente sostenibles, pero debían atender a diversos aspectos. El estudio permitió concluir en un grupo de necesidades de ajustes, dimensiones a fortalecer e indicaciones para el mejoramiento de la actividad social en el área.

Palabras Clave: Comunidad, Emprendimiento, Medioambiente, Sostenibilidad

SUMMARY

INTRODUCTION. – RESOLUTION SCHEME. – I. Research problem. – II. Methodology. – III. Writing plan. – 1. Rating of the sustainability of economic ventures. - 2. Brief conceptualization of the sustainability of rural economic ventures. – IV. Research results. – 1. Characterization of economic ventures and their context. – 2. Evaluation of the sustainability of economic ventures and their context. - CONCLUSIONS. – REFERENCES.

Introduction

Currently, protected areas are faced with conflicts due to inappropriate and unsustainable uses that affect the natural ecosystems of the areas, which puts the conservation objectives for which they were declared at risk. Among them, the main pressures converge in four fundamental aspects: the transformation by ancestral practices; the uprooting and dispossession of the territory and its cultural values; the use of practices, arts, and techniques incompatible with the environment; as well as the increase in economic needs and new cultural relations.

The case area of influence of the Alto Fragua Indi Wasi PNN-AFIW National Natural Park stands out for being one of the marginalized areas affected by the historical conflict in Colombia. Therefore, it is necessary to promote social and environmental development from the local level, with the livelihoods of the populations that live in the protected area; this allows for a sustainable approach to natural resources. Among other effects, the destruction of habitats and the fragmentation of native ecosystems present in the region are observed, in many cases, due to the low level of appropriation and awareness on the part of the inhabitants of the area regarding the importance of the conservation of natural resources and the preservation of ecosystems. Likewise, the use and implementation of inappropriate production models are observed, which, added to the scarce state support, allows us to assess that these anthropic activities generate, in one way or another, pressures on the protected area.

Local communities, especially indigenous ones, are located in strategic conservation zones for the protected area. In addition, this region has relatively conserved and protected territories, but they are affected by the pressures mentioned above. Likewise, within these territories traditional productive activities are carried out for self-consumption and commercialization, managed from the indigenous worldview and their life projects, these last two aspects being fundamental to achieve adequate well-being and development (Noroña-González et al., 2023; Pérez-Gamboa et al., 2023).

However, despite the good will and sustainable discourse of the economic ventures supported by the AFIW NNP to these communities, it is not clear whether or not they actually contribute to a sustainability designed and articulated in the territory. In this sense, it is important to consider local and international trends that point to the early closure of small and medium-sized companies, the abandonment of rural environments, their poor resilience and the environmental impacts generated by the poorly developed production models that are often evident in these scenarios (González-Ávila et al., 2023).

Therefore, a study was required aimed at better understanding the interrelationship between environmental factors and those of the enterprises themselves, both in the conceptual and practical dimensions. The main purpose was to generate knowledge that would guide the main actors studied towards decision-making for the improvement and strengthening of actions within the buffer zone, in a sustainable and developmental manner.

Resolution scheme

1. Research problem

What are the guidelines for improving the economic ventures of indigenous communities settled in the area of influence of the AFIW National Park?

2. Methodology

The research was developed with a qualitative approach and was aimed at achieving an advanced understanding of the experiences related to entrepreneurship, its sustainability, and the contributions they make to the region from the perspective of the people studied, as is typical of these studies (Ohemeng & Grant, 2023; Rajasinghe et al., 2021). In order to establish a design capable of accounting for these goals, the research was based on the hermeneutic historical approach, which favors the interpretation of texts and the exploration of their true meaning (Jedličková et al., 2022).

Therefore, the research design was aimed at a deep understanding of the narratives in the dissimilar contexts of human action and its interrelation with the social environment. The ultimate interest of this approach was practical, as it focused on the interrelation of the socially constructed and human action as a way to clarify the social and political commitment in the socioeconomic and environmental configuration of the territories. The study focused on a deeper exploration of the contexts under study rather than on a specific sample and, therefore, sought to approach the actors as a population, that is, in their natural environment and as a whole. In this sense, the research population was made up of the inhabitants of six reservations, eight economic initiatives, and the 107 families that led them. Below, the relationship between initiative/reservation can be observed:

- Juyecuri chili pepper/Murui Muina Jaieni Diona Council.
- Warmi Awadurkuna crafts/Inga Yurayaco reservation.
- Inga Iura panela/Inga Yurayaco reservation.
- Emberá crafts/Emberá La Cerinda reservation.
- Production of native eggs/Paéz El Portal reservation.
- Brisas del Fragua panela/Inga Brisas reservation.
- Sanmigueleña panela/Inga San Miguel reservation.
- Miski panela/Inga de Niñeras reservation.

In order to characterize economic ventures and achieve an assessment of their sustainability from the meanings attributed to and constructed on them, three fundamental variables were established. The essential elements of their conceptualization and the analytical instruments used for their processing are specified below.

- General characterization of the reservation: analysis of the official documents available on the reservations so that the essential aspects for understanding the context could be identified.
- Description of the project: A study of the history, the process, and the current state was carried out based on guided conversations with the leaders of the projects in each of the case studies.
- Socioeconomic diagnosis of the project: the inputs and outputs of the project, the costs, the production process, the transformation, the commercialization, the labor force involved, and the income it generates were examined; it was carried out through individual interviews with the Indigenous people involved in the project.

In addition, an evaluation of the socioeconomic, biophysical, sociocultural, and political-institutional sustainability indicators of the population participating in the study was carried out as a way to synthesize the essential aspects to be considered in the guidelines for improving economic ventures. This task was carried out through the analysis and evaluation of the behavior of the four dimensions of sustainability. These were sociocultural, biophysical, socioeconomic, and political-institutional, which were processed based on nine sustainability criteria broken down into discursive elements (Table 1).

Table 1. Matrix of dimensions, criteria and analysis elements

DIMENSION	CRITERIA	DESCRIPTION
Sociocultural dimension	1. Recovery, Strengthening, and Promotion of Traditional and Local Knowledge associated with the Sustainable Use of Biodiversity.	The focus of actions is to ensure the promotion of economic enterprises that adequately integrate ancestral and community knowledge in the use, management, and sustainable use of biodiversity resources by estimating tangible and intangible cultural heritage.
	2. Strengthen mechanisms for community participation and inclusion in conservation management.	Assessment that the project was developed in a collaborative and integrative way, adjusting to the local environment to ensure fair and equitable collaboration
	3. Definition and Regulation of Ecological Limits	Research and establishment of safe ecological margins for the sustainable use of biodiversity and its ecosystem services based on the understanding of its current condition, exploitation capacity (extraction), and ecological adaptation capacity (resilience and resistance). The aim was to avoid compromising the composition, structure, and natural functioning of indigenous populations and ecosystems.
Biophysical dimension		

Socioeconomic dimension	4. Efficiency and Innovation for the use of resources	Exploration to promote complete and varied exploitation systems. The implementation of the most effective and efficient practices in the management of biodiversity based on traditional and environmentally friendly methods; the improvement in the formation and distribution of knowledge; the recognition of future applications and species with high potential that expand; as well as expanding opportunities to create value chains within the local sphere.
	5. Strengthening and Promotion of Traditional Production Systems	They are striving to strengthen the independence of communities through projects or production options that provide financial resources to households, in addition to promoting the substitution of economic and productive practices that, although traditionally ensuring their physical and cultural livelihood, do so in an unsustainable way.
	6. Promotion and consolidation of viable economic systems with a value chain approach	Exploring projects that strengthen each component of the value chain, guaranteeing connection to a market and the creation of economic advantages in local communities from the provision of value-added products and services.
Political-institutional dimension	7. Organizational and associative strengthening.	Promoting the development of governance capacity in communities through ongoing support; the encouragement of legal and legitimate practices of economic exploitation and use that foster the growth of independence and the ability for community response.
	8. Institutional legitimacy.	Strive to ensure that activities are institutionally aligned, allowing for the provision of information to help achieve the objectives of the organizational mission and supporting the regulatory role of national parks in the planning and management of protected areas.
	9. Social participation in conservation.	Promotion, strengthening, organization, and collaboration in collective initiatives and decision-making processes for planning and management according to distinctive methods of involvement in conservation (EEM: Indigenous and Afro-descendant communities; UOT: farmers and fishermen); in addition to the improvement of regulatory bodies and instruments for the use and exploitation of protected areas, with the aim of ensuring the achievement of conservation goals, the reduction of adverse impacts and support for sustainable projects.

Source: own elaboration.

3. Writing plan

3.1 Rating of the sustainability of economic ventures

While tools were needed to compare the analyzed data with objective and recognized standards, the principles of ecosystem management were adopted, and qualitative characteristics were metrically evaluated. Regarding the principles, ecological viability within the framework of biodiversity, equitable distribution of resulting economic advantages, permanence of local socioeconomic dynamics, observance of national and international laws, protection of the rights of BioTrade participants, clarity in land tenure, and impartial access to natural resources were considered.

Regarding quantification, this was done based on compliance criteria (Complies - 3; Partially Complies - 2; Does Not Comply - 1; Not Applicable - 0) by weighting the sum obtained by the number of valid elements for the evaluation and classifying them based on the percentage achieved. This percentage was determined from the relationship between compliance and total possible by analysis elements, which generated ranges of interpretation of sustainability evaluation (Table 2).

Table 2. Sustainability assessment interpretation ranges

%	Interpretation
81-100	The initiative can be considered sustainable.
61-80	The initiative is considered sustainable, but there are elements to be strengthened.
41-60	The initiative requires urgent attention in order to improve its conceptualization and implementation.

0-40 The initiative is unsustainable.

Source: own elaboration.

3.2 Brief conceptualization of the sustainability of rural economic ventures

Entrepreneurship is a social phenomenon traditionally considered as an initiative of a purely economic nature. Nowadays, due to issues such as the globalized economy, awareness of environmental problems, and the impact of archaic and maladjusted production models, this vision has moved towards a comprehensive perspective (Orozco-Castillo, 2022). It means taking into account the ecosystemic, environmental, cultural, and sociopolitical aspects that are intertwined in the design and durability of the enterprise (Ripoll-Rivaldo, 2023).

In this regard, the study carried out by Terán-Yépez et al. (2020) demonstrated a considerable increase in the attention given to sustainable entrepreneurship. According to these authors, at the end of the last decade, both articles and citations skyrocketed, which could be nuanced in a more relevant way if the impact on environmental awareness generated by the COVID-19 pandemic is taken into consideration. Likewise, this study highlighted the interdisciplinary nature of the approaches and the interest from disciplines such as social sciences, economics, and accounting, as well as the energy sector.

This growing orientation towards sustainability as a guiding element of entrepreneurial strategies has also generated a better understanding of other important lines such as local development, social responsibility and inter-institutional links (Gómez-Miranda, 2023), the design and implementation of innovative solutions and the promotion of human well-being. Therefore, sustainable entrepreneurship, as a concept and as a practice, transcends the launching of an initiative aimed at generating profits. However, this remains one of the essential motivating aspects, according to Anand et al. (2021).

However, these general aspects concerning what is conceived as sustainable entrepreneurship acquire different nuances in the rural context (Agarwal et al., 2020; Higuera-Carrillo, 2022; Sahrakorpi & Bandi, 2021). In this sense, it is necessary to consider that in today's society, rurality and the countryside have suffered processes of devaluation in terms of their representation and importance. Among other factors, the literature points out the impact of the globalized economy and large value chains (Guo et al., 2020; Kano et al., 2020), the need for intelligent and innovative decision-making (Falcone et al., 2020; Machuca-Contreras et al., 2023; Pérez-Gamboa et al., 2022); migratory processes towards large cities and metropolitan areas (Gao et al., 2020; Tang & Zhu, 2020); the constant emergence of new economic actors and changes in the market; the short technology cycle and the constant need for training (Ricardo-Jiménez, 2022); among others.

It causes SMEs in rural contexts to face all kinds of problems related to resources, operating capabilities, understanding of the context (local-regional-global), and planning for the future (Chege & Wang, 2020; Torres-Barreto, 2023). These aspects are more accentuated in contexts in developing countries (Chege & Wang, 2020), but potentialities related to their small size and the ability to transform at a lower cost are also appreciated (Rosca et al., 2020); the malleability of the internal configuration of the enterprise with respect to its environment; the impact of founders' and investors' motivation is greater and favors leadership in preserving the environment (Argade et al., 2021; Cunha et al., 2020; Gómez-Miranda, 2022; Rodríguez-Torres et al., 2023); ancestral culture supports processes of change, not only for entrepreneurship, but also for family, local and regional environments (Bischoff, 2021; Cruz et al., 2022; Galvão et al., 2020; Sanabria-Martínez, 2022).

4. Research results

Based on the objectives set, the main findings are presented in two main directions. First, the context of economic ventures and their particular features are characterized. Second, the essential results of the sustainability assessment are condensed.

4.1. Characterization of economic ventures and their context

The research was carried out in the area of influence of the Alto Fragua Indi Wasi National Natural Park in six (6) reservations: Yurayaco, Brisas, San Miguel, Niñeras, El Portal, and La Cerinda, of the ethnic groups Inga, Nasa, Emberá Katio and an indigenous council Jatëni Dtona of the Murui Muina ethnic group. In these communities, eight (8) economic initiatives were identified, aimed mainly at crafts, the production of sweets, cultivation (panela and chili), and the raising of laying hens.

The Yurayaco, Brisas, San Miguel, and Niñeras reservations belong to the Inga ethnic group and are located in the south of the department of Caquetá in the municipalities of San José del Fragua and Solano, which make up the Association of Authorities of Indigenous Councils "Tandachiridu Ingakuna." These communities are responsible for the care of the Inca ancestral territories, which is why they actively participated in the creation of the protected area of the Alto Fragua Indi Wasi National Natural Park.

Agriculture is one of the main economic activities in these communities. It was mainly aimed at growing corn, bananas, and yucca for self-consumption. The importance of collecting wild fruits such as chontaduro, caimarona grapes, and canangucho was also observed. Finally, it was noted that livestock activities were in their infancy, mainly pig and hen farming, which were for self-consumption and inserted into the most frequent family activities.

The El Portal Reservation belongs to the Nasa ethnic group, located in the municipality of San José del Fragua, south of the AFIW National Park in the Fragua Grande River sector. It is located on the eastern flank of the eastern mountain range, in the Fragüita River basin, in the sector called El Portal, where the mountain range ends and the Amazon plain begins. The main economic activity of the people was agriculture (chagras), where men and women participated. It was observed that the main plants planted were corn, banana, yucca, sugar cane, pineapple, and chontaduro. The population of the Reservation was low because the production systems did not generate alternative economic income for families, which resulted in several migratory processes. The La Cerinda reservation, belonging to the Emberá Katio people, was also analyzed. It is located on the eastern side of the mountain range, near the town known as Nuevo los Angeles, which is part of the municipality of Belén de los Andaquíes, in Caquetá, and within the impact zone of the Andaquí road. Regarding the political structure, it was observed that the council facilitated the distribution of plots to families and acted as an arbitrator in the resolution of disputes considered within its jurisdiction.

Likewise, procedures for land titling, the guarantee of education and health, production programs, and the presence of legal mechanisms to confront conflicts with external actors that threaten the territory were observed. The practices of agricultural activities and extraction of natural resources were observed with the objective of satisfying self-consumption needs, a characteristic feature of all the reservations studied. Among their main tasks was assistance to family agricultural plots that have associated subsistence crops, such as plantain, pillory, and cassava, among others.

Finally, the Jatëni Dïona community, also known as “orphan tobacco,” is an Indigenous group that has experienced displacement and dispersion of its members. It is located in the department of Caquetá, within the Fraguïta district, on the banks of the Fragua Chorroso River and close to the Portal del Fragua, a site of profound religious importance for them, as they consider it the origin of their community. They are heirs of the Atofe Murui, formerly known as “uitotos” during the period analyzed.

In the daily life of the Murui community, customs associated with the sowing of fields, the gathering of fruits, fishing, and hunting in the forest were observed. These activities required large areas of territory. Hence, land and displacement are of great relevance to the culture and worldview of this community.

Regarding the enterprises, their fundamental economic activity was the factor that was seen as regulating and conditioning the other elements of analysis under study. Thus, the type of crop, food production, or animal husbandry are aspects of the culture that have subsequently been channeled or re-represented as ways to generate profits, although self-consumption predominated, which was recorded in their narratives and actions.

In the case of enterprises directed towards cultivation, perennial productive processes and others that were emerging or intermittent were observed. For example, the organic pulverized smoked Juyecuri chili pepper, an enterprise led by the Jatëni Dïona portal Fraguïta council of the municipality of San José del Fragua Caquetá, also directed community efforts to the commercialization of ambil, mambe, casabe, soap, chili pepper, and handicrafts at municipal fairs and events.

In this case, the representation of the value of the enterprise was subordinated to self-consumption, which limited the way in which the fundamental economic activity was produced and affected its valuation in the community. Contradictorily, it was assessed that this undertaking could facilitate larger production processes due to the product they offer, Amazonian chili, in three presentations: liquid, powder, and cream. Although this was evidenced in the discussions and narratives, the production, transformation, and marketing areas had minimal equipment and tools for its preparation, facts in the process of change, since at the end of the study, they were in the equipment phase to obtain the INVIMA registration, for the local, national and international marketing channels.

In another case, the economic undertaking Huevos Criollos El Portal del Resguardo El Portal had as a secondary economic activity the cultivation of plantain, yucca, corn, pillory, and bore, among others, with the purpose of guaranteeing food sources for the raising of Creole chickens on pasture for the production of eggs and meat. To do this, each family establishes a hectare in a chagra with the species above so that, in addition to achieving a stable source of food for the chickens, it directly contributes to the food sovereignty of each family and the community in general so that self-consumption takes on a different character.

Another important aspect of this undertaking was the successful combination of ancestral and relatively modern practices, which allowed them to breed several breeds of native chickens resistant to the climatic conditions of the humid tropics. Perhaps of greater relevance is that this mixture of knowledge has facilitated the recovery of knowledge at risk of disappearing, as well as resulting in a vehicle for the empowerment of women. Even so, the need for a higher level of training was perceived, especially in terms of phytosanitary aspects, support for the generational transfer of knowledge, and the modernization of the undertaking in conceptual and technological terms.

In terms of entrepreneurship directed towards crafts, economic activity is subordinated to cultural transmission and community strengthening. Contradictorily, in the case of the

economic enterprise Artesanías Warmi Awadurkuna (woman weaver) of the Inga Yurayaco Reservation, the beginning of the artisanal production was marked by a learning process that led them to make products without cultural relevance. However, thanks to the training they received, they began to design their products based on native symbology and the transmission of their cultural values. At the time of the study, the satisfaction of the female members with the conciliation between personal-community and economic reasons was evident. However, they recognized their weaknesses in accounting and sales.

In the case of the indigenous community La Cerinda, although the artisanal enterprise is fundamentally feminine, the presence of the work of men was also identified in the narratives, who contributed to production by collecting seeds, feathers, beaks, and skins in areas surrounding the reservation. In the study, it was found that, although ancestral knowledge and practices were present, in this community, culturally oriented preservation was necessary as a rescue and transfer, but also as a vehicle for leadership, data that coincide with other studies on heritage preservation (Rodríguez-Torres et al., 2023).

Finally, in the ventures dedicated to the cultivation of *panela*, the symbolic value of the activity was observed and confirmed in the narratives, which is not only represented as economic but also has various associated values (energy, sweetener, food). In these ventures, the main limitations were caused by the need for greater economic support for the improvement of technical and productive conditions since this practice was seen as fundamentally ancestral and artisanal, which limited its possibilities of generating sufficient income.

4.2. Evaluation of the sustainability of economic ventures and their context

In the case of the sustainability assessment, it was necessary to particularize the results based on each undertaking because, despite the common elements presented in the previous section, an examination of the differentiating aspects is also required. In general, the studied undertakings were considered sustainable, especially in light of the positive assessment made by their members of the potentialities and weaknesses to be resolved, a result that was contrasted in the sustainability assessment interpretation ranges.

In this regard, the results ranged between 61.00% - 80.00%, with 66.18% being the lowest result and 79.49%. According to the pre-identified ranges, these data suggested that the undertakings did not require urgent intervention to transform their proposals in the conceptual and practical aspects. However, it did allow triangulation of the essential elements of its characterization, the literature consulted, and the perspective of the members (narrative and action) so that it was possible to arrive at the indicators that should be subject to improvement.

In this sense, a marked tendency was observed in the data toward the need to strengthen organizational components and advance in the quality, presentation, and marketing of products. Likewise, a greater hierarchy of the biophysical dimension and a lower one of the political-institutional dimension was identified. It meant the need to strengthen organizational and associative aspects, support for governance, support for the legitimacy of legal institutions, and the insertion of narratives associated with the conservation of protected areas.

In order to understand these results, it is necessary to highlight that this is one of the marginalized areas affected by the historical conflict in Colombia. According to a previous study carried out in the municipality of La Montañita in the Agua Bonita area, individual, social, and environmental development must be promoted at the local level, with a sustainable approach to natural resources, but also based on transitional justice and social representations associated with conflict/peace/reconstruction of the land (Pérez-Gamboa et al., 2023).

The study carried out made it possible to verify the destruction of habitats and the fragmentation of native ecosystems present in the region, the low level of appropriation, and awareness on the part of the inhabitants of the area regarding the importance of the conservation of natural resources and the preservation of ecosystems. In addition, the use and implementation of inconvenient production models, poor state support, and other human activities that generate threats to the protected area were evident.

Conclusions

The results of the study suggest that the economic ventures supported by the Alto Fragua Indi Wasi National Natural Park have been developed in a participatory and endogenous manner, taking advantage of the skills, interests, and opportunities of the communities adjacent to the protected area. These initiatives have fostered exchange processes that could lead to the creation of trust and synergies between the daily routines of the community and the conservation of biodiversity.

The analysis of the actions, narratives, and levels of sustainability of the ventures underlines the need to determine key strategies, systematize the lessons learned, and encourage exchange and mutual support. It also highlights the importance of improving external assistance mechanisms. According to the study, initial awareness raising before interacting with communities is crucial, as well as technical and conceptual preparation, which are fundamental support tools. In addition, the need to implement optimal environmental practices that are integrated with vital aspects such as capacity building, governance, value chain development, joint promotion of research with local actors, and ongoing monitoring is highlighted.

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