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Proposal for a Social and Solidarity Model for Poultry Entrepreneurship in Macuspana, Tabasco.

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SUMMARY

Tabasco stands out in the quality of life of families in rural areas thanks to the production of backyard poultry; in 2018 it had a production of 27,509 tons of chicken meat and 1,578 tons of turkey meat. Furthermore, several studies have highlighted the viability of poultry production for fostering social and solidarity economies. These studies suggest that the sector can contribute significantly to community development and improve quality of life. For example, the study by Avilez et al. (2016) on the economic viability of improving business growth at the Las Delicias poultry farm in the municipality of San Nicolás, Nicaragua, revealed increasing development and a secure market for poultry products. It offers accessible business opportunities for families with low initial investment requirements. This research, based on interviews with three key participants in 2015, suggests significant potential for local business development, job creation, and economic, social, and solidarity-based inclusion. Similarly, the study by Ortiz Carvajal (2016) analyzes the factors influencing association among small and medium-sized poultry enterprises (SMEs) in Puéllaro , Cotopaxi, Ecuador. Internal factors such as leadership, trust, communication, and shared objectives were identified, as well as external factors such as government support, access to credit, and markets. Association is presented as a crucial element for improving production, quality, and competitiveness. The research also highlights the importance of favorable government policies and local business development.

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Keywords: model, social , supportive, poultry

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Propuesta de Modelo Social y solidario para emprendimiento avicola en Macuspana Tabasco.

RESUMEN

Tabasco, destaca en la calidad de vida de las familias en zonas rurales gracias a la producción de aves de traspatio, en el 2018 tuvo una producción de 27, 509 toneladas de carne de pollo y 1, 578 toneladas de carne de guajolote. Además, diversas investigaciones han destacado la viabilidad de la producción avícola para fomentar economías sociales y solidarias. Estas investigaciones sugieren que el sector puede contribuir significativamente al desarrollo comunitario y mejorar la calidad de vida. Por ejemplo, el estudio de Avilez et al. (2016) sobre la viabilidad económica para el mejoramiento del crecimiento empresarial en la granja avícola Las Delicias del municipio de San Nicolás, Nicaragua, reveló un creciente desarrollo y un mercado seguro para productos avícolas. Ofrece oportunidades empresariales accesibles para familias con bajo requerimiento inicial de inversión. Esta investigación, basada en entrevistas a tres participantes clave en 2015, sugiere un potencial significativo para el desarrollo empresarial local, generación de empleo e inclusión económica,social y solidaria. Asimismo, el estudio de Ortiz Carvajal (2016) analiza los factores que influyen en la asociatividad en pequeñas y medianas empresas (PYMES) avícolas en Puéllaro-Cotopaxi, Ecuador. Se identificaron factores internos como liderazgo, confianza, comunicación y objetivos comunes; así como factores externos como apoyo gubernamental, acceso a crédito y mercados. La asociatividad se presenta como un elemento crucial para mejorar la producción, calidad y competitividad. La investigación destaca también la importancia de políticas gubernamentales favorables y el desarrollo empresarial local.

Palabras clave: modelo, social, solidario, avicola

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INTRODUCTION

The research presented as a "Social and Solidarity Model for Poultry Entrepreneurship in the community of Isla 1ra Sección, Macuspana, Tabasco" aims to design a strategy to support the development of poultry farms that contribute to self-employment and improve the quality of life for the residents of this community. Clearly defining the target audience for this research is crucial to the project's success.

This project assesses the current situation of the residents, primarily a group of 12 people who are directly involved. It aims to improve their quality of life by providing employment opportunities, diversifying their income sources, and generally offering them access to fresh, nutritious food.

Municipal and state authorities, seeking effective economic development strategies aligned with the UN Sustainable Development Goals (SDGs), are fundamental to the project's success. Their support is crucial, as they facilitate the financial and technical resources and implement favorable policies to promote the region's economic and social development. Their active participation will strengthen the social and solidarity economy and foster sustainable initiatives for the community.

Non-Governmental Organizations (NGOs) operating in the field of rural and social development, interested in promoting projects that foster sustainable development and can be replicated, can be important allies. Their experience in training and access to financing and technical resources can help the project have a better impact on the community, ensuring that sustainable practices are implemented.

This research not only seeks to contribute to academic knowledge but also to offer practical solutions that benefit various sectors. Collaboration among residents, authorities, NGOs , and researchers is essential to transforming the current conditions of the Isla Primera Sección community and achieving the Sustainable Development Goals (SDGs) established by the 2030 Agenda.

METHODOLOGY

Problem

The community of Isla Primera Sección, Macuspana, Tabasco, with 420 inhabitants, faces significant economic and social challenges.

According to the Pueblos de América website, only 29.29% of the population over 12 years of age is employed, with a breakdown of 49.86% for men and 12.21% for women.

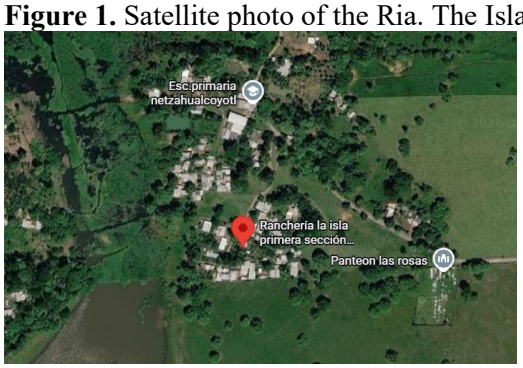
In this context, the community also faces a limited socioeconomic level, with only 4% of households owning a car. The illiteracy rate is 8.57%, with an average of approximately 7.65 years of schooling, which also limits employment opportunities.

100% of homes have electricity and 68% have access to non-potable piped water.

The size of the population suggests that the inhabitants are involved in informal activities and self-employment, but with few opportunities and limited sustainable productive entrepreneurship projects.

The dependence on agriculture, with cassava as its main crop, and the lack of economic diversification increases the economic vulnerability of the community.

Figure 1. Satellite photo of the Ria. The Island, first section



Source: Google maps

In the context of the 2030 Agenda for Sustainable Development, the 17 Sustainable Development Goals (SDGs) are established as “the master plan for achieving a sustainable future for all” (UN, 2018). The proposed model for a social and solidarity-based enterprise—a sustainable broiler chicken farm in the island community—with a focus on the social and solidarity economy, seeks to address these issues by aligning itself with these goals. with SDGs 1 (No Poverty), 8 (Decent Work and Economic Growth) and 12 (Responsible Consumption and Production)

Consequently, the inhabitants of the First Section Island community face significant challenges that impact their quality of life, from limitations in access to basic services to scarce job opportunities.

The high rate of illiteracy and the low level of education exacerbate this situation, further restricting personal and community development.

It is imperative to explore solutions to address these needs, foster sustainable development, and achieve the SDGs. Collaboration among authorities, organizations, and the community is crucial to transforming the current conditions of the island community.

General objective.

Design a Social and Solidarity Model for poultry entrepreneurship in Macuspana Tabasco.

Specific objectives.

1. Conduct a diagnosis of the current situation regarding the specific technical and environmental requirements for the chicken fattening process.
2. Applying the tools of social and solidarity economic innovation to the poultry fattening farm.
3. Develop the planning of a social and solidarity economic model in the Isla 1ra Sección community, Macuspana, Tabasco.

The methodology represents the critical and systematic path for generating valid knowledge. According to Hernández-Sampieri et al. (2014), research is defined as "a set of systematic, critical, and empirical processes applied to the study of a phenomenon or problem." Based on this premise, this chapter details the technical and organizational procedures for diagnosing and planning a poultry farm that contributes to community well-being.

Scope of the investigation

To achieve a comprehensive understanding of the phenomenon in the community of Isla 1ra Sección, the scope of this research is descriptive-propositive. According to Hernández-Sampieri et al. (2014), descriptive studies seek to "specify the properties, characteristics, and profiles of people, groups, communities, processes, objects, or any other phenomenon that is subjected to analysis." In this sense, the study describes the socioeconomic reality of the 420 inhabitants of the community in order to subsequently propose a technically and socially sound poultry farming plan.

Research focus.

This research adopts a mixed-methods approach (quantitative and qualitative) with a predominantly descriptive focus. According to Hernández-Sampieri et al. (2014), the quantitative approach uses data collection to test hypotheses based on numerical measurement and statistical analysis. In this study, a structured survey is used to quantify trends and needs among those interested in participating in the

project. This is complemented by a qualitative approach using semi-structured interviews, allowing for the collection of historical memories and subjective perceptions of key stakeholders in the community, particularly residents with prior experience in poultry farming.

Research Design.

The design of this research is non-experimental, cross-sectional, and descriptive. According to Hernández-Sampieri et al. (2014), non-experimental research is defined as that which is carried out without deliberately manipulating variables, observing phenomena in their natural context and then analyzing them. In this case, poultry farming is studied directly within the community to support a proposal that promotes community well-being. It is cross-sectional because data collection takes place at a single point in time during the community diagnostic phase .

Population and Sample

Population: It is made up of the 420 inhabitants of the community of Isla 1ra Sección, Macuspana, Tabasco, who represent the total universe of potential beneficiaries of the project.

Sample: A non-probability convenience sample was selected, consisting of a core group of 12 participants and long-standing producers with 11 to 30 years of experience in poultry farming. This selection allows for the recovery of the technical and social knowledge necessary for planning the farm under the Social and Solidarity Economy approach.

Data Collection Instruments

The design relies on two data collection instruments:

Interviews: These interviews will seek to obtain quantitative and qualitative information, targeting key stakeholders to gain insights into the operational history, financial management, and challenges that farms have faced in the past.

Survey: Designed with closed questions to assess technical knowledge, interest in participating, opinions on the potential impact of the project on their quality of life and socioeconomic needs of the actors interested in the project.

Data Collection Procedure

The procedure for data collection will be carried out as follows:

1. Document review: A review of the existing literature on poultry production and poultry farm management practices will be carried out.

2. Questionnaire design and application: The questionnaire will be designed and applied to those interested in participating in the project.

3. Design and application of the interview script: Interviews will be conducted with the community leader and residents of the community who have previously implemented a poultry farm.

4. Data Analysis: The data collected through the questionnaire and interviews will be analyzed.

Data Analysis

The data analysis will be conducted using quantitative and qualitative techniques. For quantitative data, statistical tools will be used to analyze observed trends and patterns. For qualitative data, thematic and narrative analysis techniques will be implemented to analyze open-ended responses and interviews.

This methodology will allow for a comprehensive understanding of the local context and will facilitate the effective design and implementation of the poultry project, aligned with the Sustainable Development Goals (SDGs) and the specific needs of the community.

RESULTS AND DISCUSSION

Knowledge and experiences about raising birds in the community

To understand the current situation from the perspective of those who live in the area, key stakeholders with **11 to 30 years of experience** in backyard poultry farming were interviewed. These conversations allowed for the recovery of existing knowledge and practices on Isla 1ra Sección, serving as a basis for farm planning. The following section organizes the most significant testimonies and findings from the interviews.

The community diagnosis was carried out by applying a survey to five participants from the community of La Isla Primera Sección, in order to identify their knowledge, experiences, interests and expectations regarding the implementation of a productive project dedicated to raising broiler chickens, under a social and solidarity economy approach.

The results show that 60% of respondents have direct experience in raising chickens, while 20% have participated occasionally and 20% possess theoretical knowledge. Regarding breed knowledge, 60% primarily recognize local crosses, and only 20% identify the commercial Ross 308 line. These results

demonstrate the existence of traditional practical knowledge that can be leveraged to develop the project, but they also highlight the need to strengthen the participants' technical skills.

Regarding the motivations for participating, 33% of responses were related to the desire to join a community project based on solidarity, cooperation, and equal opportunities, while 27% were related to generating additional income. Likewise, utilizing local resources and learning new skills each accounted for 20% of the responses. This demonstrates that the initiative not only addresses economic needs but also the desire to promote participation and collective work.

Regarding economic expectations, 60% of participants believe they could earn between $1,000 and $3,000 pesos per month, while 40% estimate earnings exceeding $5,000 pesos. These figures represent the respondents' perceptions and not proven profitability. Among the main benefits identified are job creation, improved nutrition, and strengthened food security, each mentioned by approximately 27% of respondents.

Furthermore, participants identified avian diseases and adverse weather conditions as the main risks, both cited by 40% of respondents. Additionally, 60% consider improving ventilation and temperature control in facilities a priority, while 40% propose investing in equipment and technology to improve production efficiency. The current situation in the community demonstrates favorable social conditions for launching a community-based broiler chicken farming project, given the participants' prior experience, their interest in generating income, and their willingness to work cooperatively. However, there is a clear need to strengthen technical training, disease prevention, environmental management, and the project's economic planning. From a social and solidarity economy perspective, this initiative represents an opportunity to promote the use of local resources, community participation, and the strengthening of food security.

It is important to note that, due to the small sample size (five participants), the results constitute an exploratory diagnosis and cannot be generalized to the entire community.

Therefore , the proposed model is structured around four fundamental pillars that function systemically. Each pillar seeks to address the problems identified in the fieldwork.

1. Technical-Productive Pillar: optimization and management of the shed

This pillar constitutes the operational core of the proposal, where the necessary technical and biological requirements are articulated to guarantee efficient and sustainable production in the community of Isla Primera Sección. Its objective is to establish comprehensive management that not only defines the carrying capacity and equipment of the 4 x 12 square meter shed, but also standardizes the processes of genetic selection, advanced nutrition, and biosecurity protocols.

This approach aims to mitigate the risks identified in the diagnosis, especially heat stress and respiratory diseases, ensuring animal welfare through strict control of the following technical parameters:

1. **Biological Carrying Capacity:** To mitigate the risk of heat-related mortality identified by 40% of respondents, a stocking density of **8 birds per m² is proposed** . This decision ensures better air circulation and animal welfare, based on **Cobb's Broiler Chicken Manual (2018)** , which states that: "The final population density will be determined by the type of shed and the ventilation system. In tropical areas with natural ventilation, it is recommended not to exceed 30 kg/m2 to avoid heat stress" (p. 42).

By managing 8 birds per square meter in the available 48 m2 area, a population of **384 chickens per cycle will be achieved** . This ensures that the project does not exceed the weight limit per square meter, guaranteeing the avian health that those interviewed identified as a constant concern.

2. **Equipment.** Responding to the community's interest in improving technology, 15 hopper feeders and 8 automatic drinkers have been installed. To ensure the project's success, the layout of this equipment has been designed with the birds' mobility and ease of cleaning by the members in mind.

The design of the 4 x 12 meter shed is presented below, showing the arrangement of the side curtains for natural ventilation and the use of space for the population of 384 birds. See Figure 1.

Figure 1. Design and technical layout of the shed.



Source: Own elaboration (2026).

3. **Chicken breeds.** For the development of this poultry project, the use of the Cobb-500 or Ross-308 broiler chicken breeds is proposed. These breeds are recognized for their good meat yield, rapid growth, and ease of handling. They adapt well to the Tabasco climate and allow for efficient results with affordable diets. The following table shows the key characteristics of these broiler chicken breeds.

Table 1. Technical characteristics of the Cobb-500 and Ross-308 chicken breeds

Criteria	**Cobb-500**	**Ross-308**
Rate of fattening	2.5 kg in 35-42 days	2.8 kg in 42 days
Feed conversion	1.5-1.6 kg of feed/kg of meat	1.6-1.7 kg feed/kg meat
Age of sacrifice	35-42 days	38-45 days
Growth rate	65-70 g/day	60-65 g/day

Source: Aviagen (2022); colaves ; Avifasa ; UAAN (2021); Zamorano (2018)

4. **Feeding and nutrition plan.** The proposed feeding plan for the Cobb-500 and Ross-308 broiler chicken breeds, considering the warm climate and the accessibility of inputs, is presented in the following Table.

Table 2 * Feeding proposal for Coob-500 and Ross-308 breed broiler chickens

Growth phases	**Nutritional parameters**	**Cobb-500**	**Ross-308**
Start (1-14 days)	Proteins (%)	22-24%	22-23%
	Main ingredients	Corn, soy flour, vitamin-mineral premix, vegetable oil	Similar
Growth (15-28 days)	Proteins (%)	20-22%	20-22%
	Supplements	Calcium, phosphorus, vitamin A, D3, E	Similar
Final fattening (29 days until slaughter)	Proteins	18-20%	18-20%
	Additives	Digestive enzymes and probiotics to improve digestibility	Similar
Water	Clean, free	Essential to avoid heat stress	Essential to avoid heat stress

Source: Ruiz (2009) and Aviagen (2023)

5. **Hygiene, health, and biosecurity.** Hygiene and health measures are fundamental to ensuring animal welfare, productive efficiency, and food safety in broiler chicken farming. For the Cobb-500 and Ross-308 broiler breeds, a technical protocol is necessary that includes cleaning, biosecurity, vaccination, and constant monitoring to prevent diseases, improve feed conversion, and thus obtain quality meat while also allowing adaptation to climatic and operational changes in the area.

Table 3 Hygiene and health protocol for Cobb-500 and Ross-308 broiler chickens

Stage / Area	Recommended actions	Technical details
Preparation of the facilities	Deep cleaning Removal of used bed Disinfection Drying, pest control and 14-day sanitary break	Suggested products: quaternary ammonium compounds, benzalkonium chloride, hydrogen peroxide, or iodophor . Use according to the manufacturer's recommended dosage.
Reception of chicks	Disinfection of boxes Bird vitality check Hydration with sugar water (1-1 1/2 cups/L Restricted access	1 waterer and 1 feeder for every 100 chickens Inspection and weighing of 10%
Health Program	Vaccination according to the technical schedule Day 1: Marek's disease plus laryngotracheitis (subcutaneous) Day 1: Newcastle disease plus bronchitis (spray) Day 7-10: Gumboro (subcutaneous or via water) Days 14-21: Newcastle disease plus bronchitis (spray or water route) Days 21-28: Gumboro reinforcement (assess if there is an irrigation zone) Day 28: Newcastle (Assess if there is a risk zone)	Based on Cobb and Ross breed vaccination schedules Responsible use of medicines
Daily hygiene	Changing wet beds Cleaning waterers/feeders Uses of footbath Keep a log of visits	Daily review of environmental conditions and behaviors
Records and traceability	Health log, weekly evaluation, and biosafety report	Formats adapted from SENASICA regulations

Sources: own elaboration based on SENASICA (2019), Cobb-Vantress (2022), Aviagen (2022) and digital veterinary (2022).

6. Thermal Management (Temperature). Thermal management in broiler chicken rearing is a critical factor in ensuring their well-being, physiological development, and productive efficiency. During the first weeks of life, the birds are especially sensitive to temperature variations, which can affect their feed intake, hydration, and immune response. To maintain optimal temperature ranges without interfering with rest periods, a dual system will be used: incandescent bulbs during the day and **ceramic heat emitters** at night. The recommended temperature ranges according to the age of the chickens are presented below.

Table 4: Temperature control in Cobb-500 and Ross-308 broiler chickens

Age (days)	Recommended general ambient temperature of the shed (°C)	Temperature under the heat source (°C)	Observations
1-7	32-33	35-36	Individual pens per group (10-20 chicks) Turn on the power supply 12 hours before. Monitor behavior
8-14	30-31	33-34	Reduce by 1°C every 2-3 days Adjust font height Observe shift distribution
15-21	28-29	31-32	Increase ventilation without drafts Check thermal comfort in each corral
22-28	26-27	29-30	Less dependence on direct heat Maintain monitoring by group
29-35	24-25	27-28	Adjust ventilation and humidity (50-70%)
36 and up	22-23		general thermal comfort

Thermal comfort indicators

1. **Birds evenly distributed:** suitable temperature.
2. **Birds huddled under the fountain** : cold.
3. **Birds panting and scattered:** excessive heat.
4. **Active birds, eating and drinking:** Optimal environment.

Note: Ambient temperature refers to the general air temperature of the poultry house. The temperature under the heat source refers to the focal point for each group of chickens, where they can thermoregulate as needed. During scheduled dark periods, heat will be provided exclusively by infrared ceramic lamps that do not emit visible light.

7. **Bedding and lighting management.** Given the high relative humidity in the community of Isla 1ra Sección, a wood shavings bedding with a minimum thickness of **10 cm will be used** . This layer will absorb droppings and prevent injuries to the paws. Members will rake the bedding twice a week to aerate it and prevent compaction.

Regarding lighting, a program will be implemented to guarantee between **four and six hours of total darkness at night** . This metabolic rest is vital for strengthening the immune and cardiovascular systems, reducing mortality from sudden death.

1. **Days 1-3:** Constant light (23 hours) for adaptation.
2. **Day 4 onwards:** Periods of darkness are gradually introduced. During these times, the lights will be turned off, but the **ceramic heat emitters will remain on** , ensuring that the chicks maintain a suitable body temperature in a completely restful environment.

8. **Mortality and Waste Management.** In compliance with biosecurity standards and the project's environmental commitment, birds that die during the production cycle will not be disposed of in bodies of water or open dumps. A **mortality composting system will be used** within an isolated area of the poultry house, where the biological remains will be processed along with the manure to become organic fertilizer, thus closing the nutrient cycle safely and hygienically.

2. Social-Organizational Pillar: Collective Management

In the social economy, success depends on the quality of human relationships. As Coraggio (2011) points out, the social economy seeks not only economic profit, but also the reproduction of life and the strengthening of the community.

A general assembly of the project's 12 partners is proposed, where each person will have a voice and a vote. Care and cleaning tasks will be organized in rotating shifts, fostering shared responsibility and reducing the technical gaps identified in the needs assessment through collaborative learning. An "Open Cash Book" will be kept, available for consultation by any partner at any time, where sales income and expenses for supplies will be recorded.

3. Environmental pillar: sustainability and biosecurity

This pillar ensures that the broiler chicken farm is a model of respect for the local ecosystem. In the Social and Solidarity Economy (SSE), the relationship with nature is not one of exploitation, but of balance and the reproduction of life. Circular economy strategies are proposed to transform waste into resources and protect the health of the environment.

1. Integrated Management of Chicken Manure (Composting). The production of 384 chickens will generate a considerable volume of organic waste (excrement and bedding). To prevent soil contamination and the proliferation of odors, an aerobic composting process will be implemented:

- Process: The 12 partners will allocate an area of 2 x 3 m for the treatment. The chicken manure will be mixed with local pruning waste to balance the Carbon/Nitrogen ratio.
- Impact: The resulting fertilizer will be distributed equitably among the partners for their crops (lemon, corn, cassava), eliminating dependence on chemical fertilizers and strengthening family food sovereignty.

2. Pest control using natural methods. Integrated Pest Management (IPM) will be prioritized, avoiding the use of agrochemicals to protect the health of members and the safety of the meat.

- Hydrated Lime and Wood Ash: A mixture of lime and wood ash (obtained from family hearths) will be applied to the corners of the shed and on the bedding. The lime acts as a low-cost dehydrating and disinfectant, while the ash, due to its alkalinity and abrasive texture, physically controls red mites and other crawling insects.

- Botanical Barriers: Perimeter planting of citronella and basil to function as natural repellents of flying insects.
- Environmental Management: Airtight storage of food to eliminate sources of attraction for rodents.

3. Sustainable Water Management and Effluent Control In an area with high water availability, but vulnerable to groundwater contamination, water management will focus on two main areas:

- Drinking Water Quality: To mitigate heat stress and prevent enteric diseases, potable water will be used, treated with controlled chlorination or sediment filters. The use of automatic bell-shaped drinking fountains (mentioned in the Technical Pillar) is essential here, as it reduces water waste by 30% compared to manual drinking fountains.
- Wastewater Management (Cleaning): Since the ranch lacks municipal drainage, the water used during sanitary cleaning (washing the barn) will not be discharged directly onto the ground. The construction of a biological filter or infiltration trench filled with gravel and sand is proposed. This will retain the organic load and allow the water to filter safely into the subsoil, preventing stagnant water that attracts mosquitoes that transmit diseases such as Dengue or Zika.

4. **Biosecurity and Sanitary Break** : The use of lime footbaths at the entrance to the poultry house is mandatory. Likewise, the 14-day sanitary break period between cycles will be strictly observed. This time, combined with the area's solar radiation, acts as a natural disinfectant, breaking the pathogen cycle without the need for excessive use of harsh chemicals.

4. Economic-solidarity pillar: local consumption circuit

This pillar justifies how the project will generate well-being without falling into exploitation.

1. **Fair Pricing and Marketing:** Direct sales within the community will be prioritized, followed by sales to neighboring towns. By eliminating intermediaries, a fresh product can be offered at a price that covers production costs and leaves a fair profit margin for the families. Viability rests on the strength of the organization: with 12 active members, the goal of selling the entire batch is simplified to placing **32 chickens per member per cycle** within their networks of acquaintances and local customers, ensuring a quick and steady cash flow.

2. **Reserve Fund:** A collective commitment is established to allocate **10% of net surpluses** to a common reserve fund. Following the principles of the Social and Solidarity Economy (SSE), this capital

is not distributed but is held in trust by the assembly to ensure the project's long-term sustainability without relying on external loans. This fund will be used for:

- Preventive maintenance of the shed infrastructure.
- The advance purchase of supplies (food and vaccines) for the next cycle.
- Solidarity support in the face of possible weather emergencies or diseases in the area.

CONCLUSIONS

This research enabled the design of a comprehensive poultry management model for the community of Isla Primera Sección in Macuspana, Tabasco, demonstrating that the convergence of technical efficiency and the values of the Social and Solidarity Economy (SSE) is the most viable path for local development. The following conclusions are drawn:

1. Effectiveness of the Technical Design: It was confirmed that the design of the poultry house with natural ventilation and a density of 8 birds per square meter directly addresses the mortality problem identified in the diagnosis (40% concern due to heat). This model ensures animal welfare and minimizes losses without relying on expensive cooling systems.

2. Strengthening Social Capital: The organizational model based on 12 partners validates the principles of the Social and Solidarity Economy (SSE). By breaking down the commercial target into 32 chickens per partner, the project becomes manageable and resilient, allowing families with limited time or resources to integrate into an efficient production chain under the concept of "mutual aid."

3. Economic Viability and Self-Management: The results indicate that the project is financially sustainable. The implementation of a 10% Reserve Fund allows the group to generate its own working capital for future cycles, eliminating dependence on external loans and ensuring a return on investment that, according to market analysis, ranges between 40% and 50%.

4. Sustainability and Local Resources: The integration of circular economy practices, such as the use of wood ash and lime for pest control and the composting of chicken manure, demonstrates that it is possible to produce healthy protein while respecting the ranch environment and reducing operating costs to a minimum.

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