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# Agroecological Entrepreneurship, Public Support, and Sustainable Development: The Case of Rural Yucatan (Mexico)

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**Abstract:** This paper offers an approach to Yucatecan social reality in terms of entrepreneurship and the process of creating companies dedicated to the production and/or commercialization of agroecological products, considering its contribution to sustainable rural development. The key actors' perspective towards the existence of policies that favor land sustainability, assist in the development of rural areas and their population, and support these business initiatives is also presented. Likewise, it illustrates the small entrepreneurs' standpoint on the role of public institutions in promoting wealth generation and sustainable development in lower growth areas, such as the state of Yucatan, in Mexico. A qualitative methodology was used for this research, based on in-depth interviews with a group of businessmen and -women from the region. The main results give a pessimistic view of institutional concern regarding both production and consumption of agroecological products and, therefore, the promotion of these enterprises for the socioeconomic development of Yucatan. From these findings, we detect: (a) A policy of scarce support for this type of production, due to political priorities; (b) inadequate management that prevents the consolidation of certain structures needed to support agroecological enterprises; (c) a lack of confidence in the Yucatecan government, which does not promote or support a social network of collaboration between agroecological producers and marketers; (d) a difficulty in undertaking agroecological enterprises because of social and cultural norms and poor environmental awareness among the population; (e) significant training deficiencies among entrepreneurs in agroecological agriculture; (f) absence of adequate distribution channels for agroecological products; and (g) excessive bureaucratic obstacles through laws that hinder entrepreneurial processes.

**Keywords:** entrepreneurship; agroecological production; sustainable development; public institutions; rurality

## 1. Introduction

In order to combat the decreasing population of rural areas, it is of considerable importance that public institutions encourage entrepreneurial initiatives that generate wealth and employment in a sustainable manner. Such measures would prevent the depletion and degradation of these areas and contribute to the development of the territories in accordance with their natural resources and biodiversity [1,2].

The neoliberal economical model has caused enormous damage to the planet. Governments in rural areas are faced with the dilemma of either maintaining the current paradigm or transitioning to a

new one based on a notion known by multiple names: Organic, biological, ecological, or biodynamic agriculture [3].

Since its emergence in the early 1980s, the concept of agroecology has evolved both in approach and analysis. In its beginnings, this term referred to “the application of ecological concepts and principles to the design and management of sustainable agroecosystems, or the science of sustainable agriculture” [4] (p. 599), encouraging farmers to substitute the inputs and practices of conventional industrial farming and move towards certifiable organic production systems. By the end of the 1990s agroecology was conceived as a way of building relationship-based market systems that are equitable, fair, and accessible for all, focusing on political economy: “The approach is grounded in ecological thinking where a holistic, systems-level understanding of food system sustainability is required” [4] (p. 599). Today, agroecology is both a new discipline and a practice “seeking to develop food and fiber production in a sustainable manner. At the same time, it is a broader social movement integrating politically the social actors who promote institutional and social changes towards sustainable agriculture” [5] (p. 485). The aforementioned paradigm shift implies, for national governments and public institutions, a transformation in perception of the countryside and its inhabitants. This transformation must be manifested in the promotion of agroecological entrepreneurial initiatives that contribute to sustainable territorial development.

This document presents the results of a study on entrepreneurial initiatives in the agroecological sector of the Mexican state of Yucatan. These initiatives function as a sustainable development option for entrepreneurs by contributing to the preservation of their lands, the improvement of their quality of life, and the adoption of a natural and healthy food culture.

In Yucatan, agroecological products are those derived from chemical-free agriculture and farming, that is, natural products subjected to a natural production process that respects the cycles and elements provided by nature [6]. This type of merchandise could include both those with and without organic qualifications. It is pertinent to mention this since only a portion of the agroecological produce is certified as organic by the Mexican government’s Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA). The “Organico SAGARPA México” seal is the accreditation granted to products that meet quality, health, and food safety guidelines; it also guarantees consumers that the Mexican standards established in the Organic Products Law have been complied with [7].

The role of institutions is fundamental, not only in the economic aspect by implementing policies to promote this type of entrepreneurial projects, but also in the educational and social aspect by generating awareness among the population that sustainable development implies the moderate and rational exploitation of natural resources, taking care to preserve them for future generations.

Mexico’s agroecology sector has experienced dynamic growth since 1996 (the organic surface area, the number of producers, and the foreign exchange generated have grown at an annual rate of over 25% concentrated in the Mexican states of Oaxaca and Chiapas, the poorest in the country). However, organic agriculture in the country has only developed due to the efforts of the producers themselves [3]. The meagre support of official institutions, a condition known as “institutional inertia” or inability to assimilate change, which also occurs in the state of Yucatan, is particularly noteworthy [8]. Despite the existence of a robust legal framework in Mexico on this matter, laws have not translated into sufficient institutional support [9]. The small-farming systems deal with “technical problems such as pests and disease as well as the lack of markets and opportunities for commercialization . . . there is also evidence of failures by the government in terms of the lack of public policy and programs geared toward promoting and incentivizing the use of these agroecological systems” [10] (p. 342).

The objectives of this study focus on ascertaining the existence of effective support for agroecological production by public institutions at a national level in Mexico, but, mainly, in the state of Yucatan. In this sense, we were keen to learn our witnesses’ opinion regarding: (a) The existence of government policies that favor this sort of production, or, on the contrary, if there are many bureaucratic or legal obstacles for the regulation of these activities; (b) social and cultural norms embedded in the population to benefit such initiatives; (c) whether the entrepreneurs’ training is sufficient for the

development of this type of business, and the main training deficiencies of the producers; (d) the presence of production, distribution, and sale channels; (e) their promotion through public institutions; and (f) the population's income and environmental awareness as elements that facilitate and enable these activities.

Based on this introduction, this article is structured in five further sections: Section 2, a theoretical framework on agroecological entrepreneurship and production that refers to: The entrepreneurial process, the role of public institutions in this process, the consideration of elements which favor agroecological entrepreneurship (the training of entrepreneurs, the population's income, and environmental awareness) and, finally, agroecological production and the Slow Food market in Yucatan. Next, Section 3 presents the materials and methods used in the study, explaining the geographical context in which the research has been developed and the methodology that has been applied. Section 4 presents the results obtained from the subjects who have been studied. Section 5 provides a discussion of the results obtained; and, finally, Section 6 describes the conclusions reached and sets out the limitations of the study, as well as future lines of research that could be established.

## 2. Entrepreneurship and Agroecological Production

### 2.1. Entrepreneurship and the Business Creation Process

In view of the consequences of globalization, in Yucatan, as in many regions of the world, there is an increasingly important movement that strives for the preservation of the environment from a perspective of sustainable local development. Consumers now respond to different visions of politics and consumption, culture and economy [11]. Thus, nowadays the revival of varieties of plants and foods threatened by agricultural standardization resulting from the extensive use of conventional practices [12] has gained popularity amongst consumers who reject the assimilation of intensive agriculture due to its negative impact on society and the environment [13]. From the perspective of New Institutionalism (NI) based on social actors [14–17], the aforesaid situation has led to the creation of a new institutional field [18], a concept based on DiMaggio and Powell, who described a set of “organizations that, in the aggregate, constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies and other organizations that produce similar services and products” [19] (p. 148). The Slow Food movement is positioned in such an institutional field as a result of the incorporation of new actors and the creation of an extended collective identity. Now, it includes not only gastronomes, but also social justice activists and environmentalists [18]. Within this context, there is a movement among local entrepreneurs who have incorporated this vision of sustainability, i.e., agroecological products, into their productive processes.

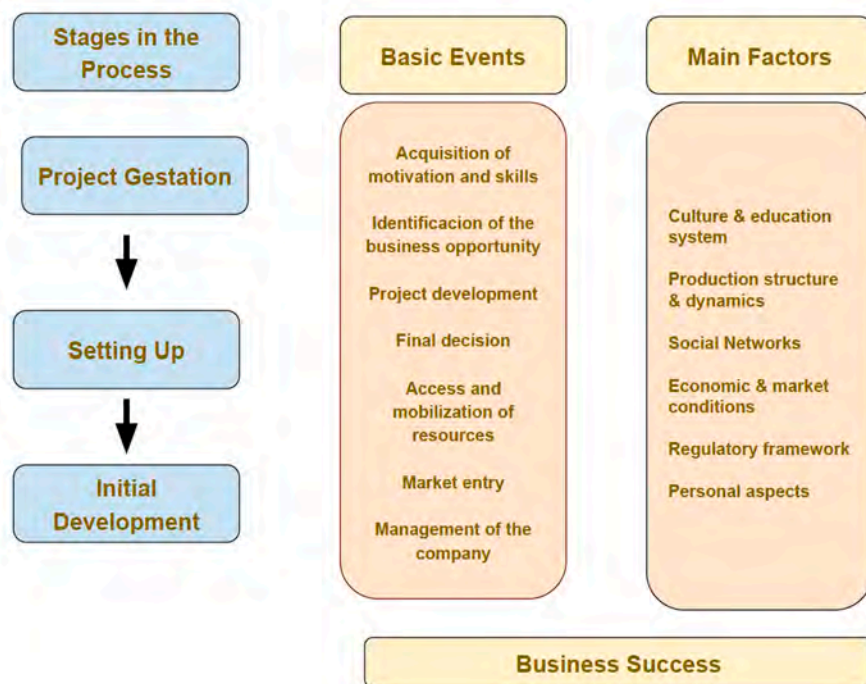
Entrepreneurship implies the entrepreneur's vision, the creation of new economic opportunities and the introduction of their ideas into the market, facing uncertainty and taking decisions related to the location, form, and use of resources and institutions [20] (p. 18).

Although entrepreneurs are usually studied in a business context, several of their theoretical principles such as networks, resource mobilization, business representation are also valid for other kinds of organizations [21], for example, in the areas of education, culture, and agroecology. Specialized literature distinguishes between traditional business-related entrepreneurship and social entrepreneurship [22]. The latter is characterized by a concern for aspects that go beyond private profit, mobilizing resources in areas with low productivity to strengthen the economy through job creation for local residents [22,23], and also to preserve the environment.

Regardless of the entrepreneur's orientation (traditional or social), the result of their initiatives tends to crystalize into the creation of a company. This process is a complex phenomenon, contextualized around specific moments and environments in which social, cultural, and economic factors interact [21,24–27].

Following the above, Kantis et al. [27] defined three stages in the company creation process: The *project gestation*, the *set-up*, and the *initial development of the firm*. In each of these phases, certain

main factors that affect the critical events of the said phases can be identified, all of which are shown in Figure 1.



**Figure 1.** Entrepreneurial process. Source: Partially adapted from [27].

The growth of small successful businesses into large-sized organizations implies several administrative and organizational adjustments for their creators [28]. Their ability to face these adjustments is crucial to the survival and success of their companies.

## 2.2. The Role of Public Institutions in Entrepreneurship

For agroecological enterprises to become a clear and solid reality, they require a series of conditions and factors that enable them to do so. Knowing that the public administrations' relationships with, and support for entrepreneurial projects can be identified as one of the said major factors, it is vital to address the following question: Which significant aspects should prevail in their promotion of entrepreneurship? (i) transparency, trust, and institutional responsibility; (ii) support for entrepreneurial leadership, especially female leadership; and (iii) technological commitment.

First and foremost, relations with public administrations should be based on transparency and trust [29]; they should be directed towards providing essential support to micro-enterprises so that they get to be implemented. A study conducted by Ramírez et al. [30] in Mexico showed that when the government generates support structures by investing, funding, and training in this type of business, the results, even in cases of extreme vulnerability, are overwhelmingly positive. In addition, these highly profitable social projects contribute to alleviating poverty even if maximum levels of competitiveness are not achieved. Nevertheless, in reality this support does not occur exactly as described above. There are diverse political priorities and management gaps that prevent the consolidation of precise entrepreneurship support structures (co-working spaces, soft micro-credits, tax facilities, and exemptions, etc.).

Furthermore, public institutions should potentialize female entrepreneurial leadership, given that it effectively responds to the demands of competitive and rigorous environments that require perseverance, effort, a certain degree of pragmatism, and ultimately unity [31]. Although this leadership ideal should be contingent on socioeconomic situations and contexts, the fact is that women respond more and

better, as has been demonstrated in recent studies oriented towards the institutionalization of female entrepreneurship [32].

Finally, technological incorporation allows the local/rural entrepreneurial processes not only to have access to structural economic support, but also to become the center of a global perspective, thanks to the existence of social media. For this purpose, the role of public administrations is still crucial to supplying the indispensable infrastructures that facilitate online interconnections. New unexplored paths are opening up in the rural sphere. It might even be possible to overcome the rural-urban dichotomy that constantly emerges in connection with certain weaknesses and deficiencies made explicit by the inhabitants. Taking advantage of technology requires institutional support, education, and training of the population, as well as essential attitudinal changes so that individual action is oriented towards collectivity and its benefits are evident. Considering new consumption habits, new forms of leisure, and methods of selling and buying, there are experiences in this area which demonstrate that agricultural and livestock producers can be geolocated through mobile telephony (see Figure 2). Thus, producers who can promote their products, their retail outlets, and surroundings are identified and localized [33].



Figure 2. Luraki APP. Source: [33].

### 2.3. Entrepreneur Training, the Population's Income, and Environmental Awareness as Elements that Favor Agroecological Entrepreneurship

Entrepreneur *training* is directly associated with the factors and conditions enabled by public administrations in agroecological entrepreneurship projects. Moreover, the modernization of globalized economies and their labor markets allows the acquisition of wealth, which determines the different *incomes of the population*. It is this population which finds in the transformation processes of the agri-food system the option to choose natural products from organic farming over products derived from modern industrial agriculture. The public institutions that promote the industrial or ecological agriculture sector [34] and those consumers who decide to buy agroecological products play a very important role in this alternative.

The disjunctive between industrial agriculture and ecological agriculture opens two pathways for entrepreneurial training. A first training, related to traditional agriculture, incorporates processes that need large areas, sophisticated machinery, and the utilization of chemical products (synthetic fertilizers and chemicals). It implies some environmental impact (especially pollution of soil, aquifers, and water

resources) besides the devastating effects on living beings such as the decline of bee populations [35]. However, a second training scheme, linked to ecological agriculture, must incorporate traditional techniques that, by definition, do not include chemical products. This training is complemented and enriched by a variety of studies in Good Agricultural Practices, Masters degrees in the Organization and Control of Cultivation Operations and in Cultivation Techniques, Masters in Agri-food Biotechnology, Agricultural Engineering and Agri-food, and the use of ICTs and modern marketing techniques.

Certainly, *environmental awareness*, among both entrepreneurs and the general population, has a favorable influence on agroecological entrepreneurship. It encourages the adoption of conscious food consumption habits (related to questions of how much, how, when, and where). It also influences concerns regarding distancing from traditional diets and good health, problems related to food abundance and globalization—studied by the Sociology of Food—[36] and rural gastronomic tourism, which promotes local culture and proposes the experiential component of food as a tourist product, and indeed the main attraction of a destination [37] (p. 175).

Definitely, this environmental awareness was progressively established as the liberal economic model changed to a new cyclical model of nature. In this new model, a green and circular economy with eco-intelligent mobility, an endogenous development, a sustainable management, a sustainable touristic product, and the fight against climate change took center stage [38–42].

In its report “The new Rural Paradigm: Politics and Governance” [43], the OECD seeks to explain the paradigm shift in implemented rural development policies. It takes into account the diversity of rural regions, their problems (migration, ageing, deterioration of skills, decline in labor productivity), as well as the exploitation of available opportunities and assets. In the context of this paradigmatic change, agroecological entrepreneurs tirelessly promote and develop their projects.

#### 2.4. Agroecological Production and the Slow Food Market in Yucatan

In Yucatan, traditional agricultural activities such as the *milpa* and beekeeping are sustainable development strategies that have allowed the preservation of a portion of the region’s forests. For this reason, it is still possible to find Mayan biocultural heritage, where production practices reflect traditional knowledge and belief systems that revolve around agroecology [44]. This is not the case in other areas of Mexico, where extensive cattle farming, and commercial crops have replaced them, eroding this patrimony and generating social conflicts as a result of globalization and neoliberal markets.

Specifically, the agricultural system of the *milpa* is based on polyculture: Combining corn, sweet potato, pumpkin, and various types of legumes. In Yucatan one third of the land is still dedicated to the *milpa* [45].

However, the sustainability of the *milpa* system is threatened by the shortening of fallow periods and the ever-decreasing diversity of crops integrated into the system.

The lack of interest and support from public institutions means that most of the public policies applied to the rural sector have contributed to aggravating the environmental and socioeconomic problem of the Mayan *milpa*. The solutions that have been implemented to modernize the *milpa* system have been exogenous and poorly adapted to local conditions in the area, such as the use of chemical fertilizers and hybrid corn seeds [45].

In this context of socio-environmental conflict in Yucatan, movements and support networks have emerged to vindicate agroecological models and traditional sustainable production practices.

At the same time, following the international *Slow Food* movement that emerged in Italy in 1986, the Mexican state of Yucatan saw the birth of *Slow Food Yucatan*, which promotes local food production, the preservation of rich regional culinary traditions, and healthy eating. This, in turn, provides economic benefits for local producers and health benefits for consumers of these types of products.

The *Slow Food* organization is located in 130 countries across five continents and is recognized by the Food and Agriculture Organization (FAO) as a non-profit organization [46].

*Slow Food’s* “Earth Markets” project consists of bringing together markets around the globe that offer healthy, quality food at a fair price, through direct contact with consumers, and guaranteeing environmentally sustainable methods [47]. Today there are 57 markets in 17 countries.

Established in 2010 by the *Slow Food Yucatan Convivium* in Mexico, the Earth Market “Mercado Fresco” is held every Wednesday and Saturday in the Plaza Colón, a small square in Merida, the state capital.

The Market has been included in “*Slow Yucatán: Development of a good, clean and fair food system, based on the sustainability model of the international project Slow Food Movement*”, funded by the W.K. Kellogg Foundation (WKKF). One of the objectives will be to use *Slow Food Earth Markets* to consolidate networks of local producers through the marketing of their products.

In this sense, the *Slow Food* movement could play an important part in Yucatan by acting as a nexus for the exchange of experiences among agroecological producers. The “Mercado Fresco” is not a conventional market. It is linked to the slow and healthy food movement and its participants must abide by increasingly strict guidelines not only for their own benefit and that of their consumers, but also for the sake of achieving greater visibility for these microenterprises, since for some of them this market is their only distribution channel.

Just over fifty food producers participate in this market. Most of them are Mexican, but there are also Italian, French, American, German, Chilean, and Brazilian entrepreneurs who have chosen to settle in Merida because of its quality of life. Fifty percent of the entrepreneurs are dedicated to primary activities: They produce eggs, milk, vegetables, etc., and the other half are processors because they cook their products. The market offers fruits and vegetables (spinach, lettuce, bananas, tropical fruits, pumpkins, carrots), pork, and sausage from a hairless pig (a local breed of pigs), dried meat, quail, eggs, butter, goat cheese, confectionery and baked goods, fruit juices, preserves, coconut milk, etc. Traditional local dishes are also for sale, as well as Korean, German, Italian, and Arabic specialties prepared by members of immigrant communities.

Thanks to the great variety of food products on offer, the market attracts many visitors, including chefs and students of gastronomy. The *Slow Food Yucatan Convivium* organizes various workshops for members of the public interested in subjects such as cheese production with raw milk, making bread with natural yeast, the principles of organic agriculture, etc.

The subjects interviewed in this research are entrepreneurs who participate in Yucatan’s “Mercado Fresco” Earth Market.

### 3. Materials and Methods

#### 3.1. The Study’s Geographical Context

The study was carried out in the state of Yucatan. Yucatan is one of the 32 federal entities that constitute the Mexican Republic. The specific case study area is Merida, the state’s most populated city, and its capital. While the commercial center is located in Merida, where entrepreneurs market and distribute much of their produce, in large part, most of the agroecological enterprises (farms, especially agricultural and livestock) are located in small municipalities located around the capital (see Figure 3).

The state is located in the southwest of the country, on the peninsula of the same name, which also includes the states of Campeche and Quintana Roo. Yucatan consists of seven regions: West, Northwest (where Merida is located), Center, Central littoral, Northeast, East and South, with a total of 106 municipalities altogether.



**Figure 3.** Geographical location of the State of Yucatan (Mexico) and main municipalities. Source: <https://www.mapade.org/yucatan.html>.

### 3.2. Applied Methodology

The methodology applied in the design of this research consisted of conducting semi-structured interviews with Yucatecan entrepreneurs in the agroecological production sector. The results have been processed through a content analysis of the transcripts of these interviews (coding, categorization, thematization). The study of these texts was hermeneutical in character as well as interpretative-comprehensive [48]. This places us in a different situation compared to the observed social reality, considering latent meanings and freely expressed subjectivities. In parallel, a quantification of the responses was carried out to observe certain social trends within the group of entrepreneurs interviewed. This qualitative research has great importance due to the peculiarity and value of the informants' contributions, as well as the free and spontaneous manifestation of their opinions, which leads to a methodological induction that enriches the research topic.

The sample was selected based on convenience, targeting those agroecological entrepreneurs who attended the *Slow Food* Market in the capital of Yucatan on a weekly basis to exhibit and sell their products—some of which were organic—and expressed their willingness to collaborate in this research. The sample consisted of twenty people and was distributed as follows: Nine male and eleven female entrepreneurs, with the majority of the enterprises being led by women. The geographical area where the fieldwork was done was the state of Yucatan, specifically, in Merida and other nearby municipalities. The interviews were conducted between March and April of 2017 in a personalized manner, through audio recording, and annotating of the relevant aspects for the research.

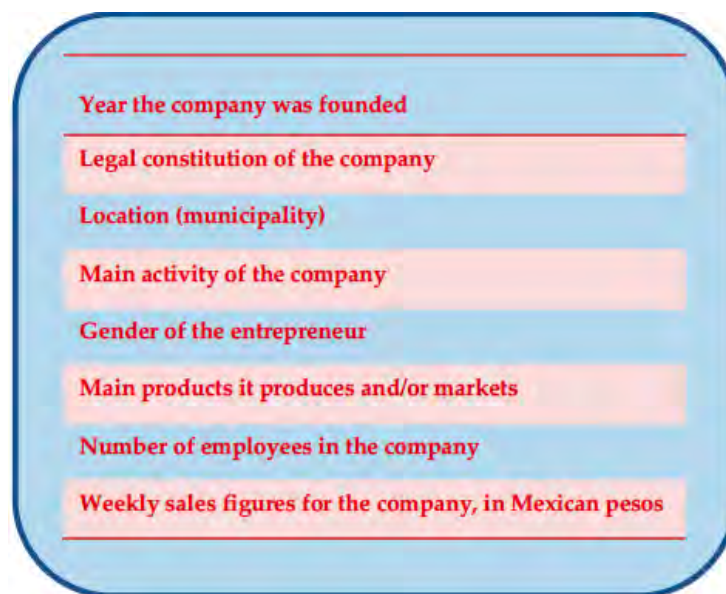
The interview script addressed thematic issues regarding entrepreneurship initiatives in local agroecological production in the main municipalities of Yucatan. Questions were asked about such aspects as:

- Entrepreneurs' opinion on the existence of a government policy of effective support for ecological production and consumption, as well as on governmental promotion and support for collaboration amongst ecological companies in the agro-livestock sector.
- Their opinion about Yucatecan society concerning whether the social and cultural norms that guide their habits and traditions favor this type of business initiative, both in terms of agroecological consumption and production.



- Entrepreneurs' perception concerning whether their own training is sufficient for this type of agroecological enterprise and the subjects in which the main training deficiencies can be noticed.
- Entrepreneurs' knowledge of the existence of adequate distribution channels for agroecological products.
- Entrepreneurs' perception regarding the population's income as a key factor in favoring the consumption of agroecological and/or organic products.
- Their viewpoint on the population's environmental awareness as a promoter of agroecological and/or organic product consumption.
- Their opinion on the detection of bureaucratic obstacles to the creation of this type of business.
- Their opinion on whether legislation favors the entrepreneurship of agroecological companies and the initiation of young people into this type of enterprise.
- Their knowledge of the frequency with which events are organized (fairs, exhibitions, etc.) by public institutions, considering them as support mechanisms for agroecological entrepreneurs to advertise their products and boost their selling possibilities and market penetration.

The set of variables considered relevant for the investigation (Figure 4), based on which the microentrepreneur sample was obtained, are the following:



**Figure 4.** Selection of variables used in the study. Source: Own elaboration.

The main characteristics of the entrepreneurs interviewed are summarized in Appendix A.

## 4. Results

### 4.1. Factors Which Generate Obstacles and/or Support for the Production and Consumption of Agroecological Products

The research question is: What have been the effects of public policies on the development of agroecological production in the Yucatecan market? Specifically, it is about trying to determine if the public administration and the national and state governments in Mexico, but fundamentally in the state of Yucatan, really and effectively support the production and consumption of agroecological products.

#### 4.1.1. Existence of an Effective Government Policy to Support Agroecological Production and Consumption

About 60% of informants state that there is a policy of little or some support for this type of production [I20: "Some, and that's it. There isn't an office, as such, that is organized like in Chiapas"; I7: "There's some support ... it just doesn't reach the real people"; I11: "Some support, but I don't think it's in the

government's interest"]. In this sense it can be deduced, as Ramírez et al. [30] pointed out, that there are other political priorities as well as inadequate administration that impede the consolidation of certain structures that are needed to support the ventures, and that the informants notice their lack.

On the other hand, 40% strongly deny that there is any effective governmental support [I2: "No, write 'double No'"; I5: "It doesn't exist...these plans stay on paper, nothing else"].

If we look at the theory of New Institutionalism (NI) based on social actors [14–17], discussed above, and at the creation of a new institutional field, mentioned by authors such as Van Bommel and Spicer [18] and Dimaggio and Powell [19], it highlights the creation of a collective identity (producers and consumers) around the development of social enterprises [22,23]. Unfortunately, according to the entrepreneurs interviewed, public policies to support this type of enterprise have not yet been implemented.

#### 4.1.2. Promotion and Governmental Support for Collaboration Between Ecological Companies in the Agro-Livestock Sector

In relation to this issue, the consensus (65%) of the interviewees is that the government of the state of Yucatan does not have a policy to promote and support the social network of the agroecological producers/marketers. Therefore, it is unable to encourage collaboration between these companies. As Schwentesius et al. [3] asserted, agroecology in Mexico has developed fundamentally through the effort of the producers themselves. In view of this dynamic, the public administration's failure to provide support due to its inability to assimilate the changes (*institutional inertia*) has become evident [8]. In this regard, some of the informants' comments confirm these facts:

I6: "Yes, they have it; no, they don't apply it. We'll have gone to two or three fairs where the municipal president congratulates us . . . and walks away".

I12: "In fact, there was a desire to organize the organic production system . . . There are intentions, but nothing's consolidated yet".

I19: "I've been here for 6 years, and I've never been invited to an ecological producers' meeting; from my perspective, I don't think that promotion policy exists".

From these statements, one can observe the lack of confidence in relations with public administrations, especially when it comes to providing entrepreneurs in this sector with the essential and necessary support for collaboration and coworking among themselves, as Sanagustín-Fons and Brunet-Icart [29] indicated.

#### 4.1.3. Do Yucatecan Social and Cultural Norms Favor Agroecological Enterprises and Consumption?

It is also interesting to understand what the small entrepreneurs think about Yucatecan society, in order to evaluate if the social and cultural norms that guide their habits and traditions do favor this type of initiative. In this sense, the panorama presented by their opinions is quite pessimistic, since 60% of them argue that they do not favor them "at all" and 30% believe that social norms favor them "somewhat", both in organic consumption and production.

I1: "What I have modified, as a social or cultural norm is saying that it's Yucatecan production . . . promoting local consumption. 5 years ago, I was in an association called 'Merida Verde' . . . and I worked in the area of responsible consumption in schools, and the answer was that it's very expensive, I'm not going to stop eating a pork sandwich because you tell me that it harms me . . .".

I3: "No, no, no. Not at all . . . At least 90% of the production involves agrochemicals. And a very small fraction of it is organic, and it's the same for the population . . . My son just came from Europe. He was working there, and he came back. . . yesterday he said: 'we're having salad', and I said: 'hey where are my beans and my tortillas?' He said that there were some for me, but for them, just natural stuff . . .".

The above demonstrates the way in which Yucatecan habits and traditions represent a huge obstacle to incorporating different food consumption habits based on an awareness of how, how much, when and where we consume. In turn, this results in nearly non-existent concern for the abandonment of traditional and healthy diets. As argued by Díaz Méndez and Gómez Benito [36], together with the great influence of fast and unhealthy food advertising, these issues (that are and have been the subject of study in the Sociology of Food) de facto greatly hinder the development of agroecological entrepreneurial initiatives.

On the other hand, tourist development linked to local gastronomy (based on an appreciation of each region's cultural assets) can be an encouraging factor. This implies the dissemination of culinary traditions, identifying the experiential component of the food as a tourist product and as the principal attraction of a destination [37].

#### 4.1.4. Entrepreneurs' Self-Evaluation of Their Agroecological Entrepreneurial Training and the Areas in Which They Detect Greatest Training Deficiencies

As argued by Kantis et al. [27], the development of skills or competencies is a crucial activity for the entrepreneur in the gestation stage of the project (see Figure 1). When analyzing the production and marketing training of entrepreneurs for these agroecological initiatives, it is significant to consider that when they self-evaluate, or assess fellow entrepreneurs in the Yucatecan sector, 80% of them admit that their training is insufficient and that there are many deficiencies in different aspects of their training: [I13: *"Mexico had, many many years ago, agroecological production. Now the new generations, with the introduction of agrochemicals and technological packages, no longer have the same training as former producers. SAGARPA (Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food) tells them: 'here's your technological package and we'll support you if, and only if, you buy these agrochemicals from us'. Then, lifelong farmers, they all ... didn't use pesticides ... and what happened? ... the way they worked the land was changed"*; I19: *"In the Faculty of Agronomy you are taught organic agriculture by the same teacher who teaches chemistry, and that they don't have experience producing organics ... "*]. That is, it is confirmed by these declarations that the conditions and factors that public administrations make possible in entrepreneurial projects are associated with the entrepreneurs' formation. Therefore, if the State further encourages aids for agrochemical production, evidently most entrepreneurs will educate themselves in traditional production and will not acquire knowledge in organic production.

Now, regarding the areas in which the main formative deficiencies are detected, it is evident that there is a generalized problem among the agroecological producers of the area, since they pointed out deficits in all of the issues contemplated in this research. As previously noted [35], this training is linked to ecological agriculture and at the same time, is enriched with the use of ICTs and modern marketing techniques and studies on Good Agricultural Practices, along with training in Agri-food Biotechnology, Agricultural Engineering, Agri-food, Organization and Control of Crop Operations and in Crop Techniques. According to the producers', their least developed training area is ICT Management and Handling Techniques (80%), followed by Marketing Techniques (75%), and lastly, knowledge about Producer Support Programs (70%). Only slightly more than half of the interviewees (55%) referred to a lack of knowledge in Production Techniques. Their interesting statements testify as follows:

I12: *"As far as production techniques are concerned ... most of the current producers only know how to mix agrochemicals... They lack knowledge in informational techniques; although currently, many are supported by their children. I believe that the producer, as such, does not use them much: email, social networks, etc. I think they also lack knowledge about the support channels for the producer and this is an important issue. Because they are more reactive than proactive ... "*

I10: *"They lack knowledge about the support channels for producers and ... this would be due to a lack of infrastructure, sometimes the network crashes and makes it very difficult for them to access these channels"*.

I14: *“I’ve occasionally heard of support calls launched by the government and then . . . they don’t know where to go or where they can request it”.*

I19: *“In terms of knowledge about support channels for producers . . . I lack information and I guess the rest of us do too”.*

After examining the above statements, the absence of government support is corroborated by: (a) The aforementioned “institutional inertia” when faced with applying strategies that, far from favoring, worsen the environmental and socioeconomic problems of traditional agricultural techniques such as the Mayan milpa in the rural sector [45]; and (b) insufficient transparency in informing producers about possible aid for their agroecological ventures [29].

#### 4.1.5. On the Existence or Lack of Adequate Distribution Channels for Agroecological Products

Kantis et al. [27] emphasized that market entry is a key aspect for entrepreneurs in the initial stages of their projects (see Figure 1), which implies identifying distribution channels for their products. Astier et al. [10] indicated that, in Mexico, the small-farming systems deal with the lack of markets and opportunities for commercialization. In this sense, the issue with distribution channels for this type of product was found to be more serious in urban areas, with the exception of large cities such as the capital of the country. In light of the data provided by the informants, in small cities such as Merida there are no organically specialized supermarkets, just a few stores. This, in addition to the low demand for agroecological produce makes it impossible to cover large volumes of products, which in turn makes it difficult for producers to supply these products to the entire population. In this regard, 60% of our informants think that the distribution channels of agroecological products are inadequate [I12: *“Most of the organic production will be able to develop more in the rural area, but how do you get the products into the city? Sometimes it has happened to me that . . . I have to send the product by bus and not everyone is willing to absorb the cost of transportation; and then the distribution . . . ”*; I13: *“ . . . only in the big cities are there organic ‘supers’... In the southeast there aren’t proper channels”*; I15: *“As there isn’t enough demand, few channels remain, and two or three other stores have the same as I do . . . ”*; I18: *“No, because the channels are too closed . . . So, everything ecological and organic is . . . labeled as expensive”*; I19: *“There are very few stores and they aren’t well prepared to receive these products (refrigeration systems, etc.)”*].

On the other hand, 35% of the interviewees think that there are adequate distribution channels, although some of them point to the fact that despite being adequate, they are insufficient [I3: *“Well, they are few, let’s say adequate, perhaps, but insufficient . . . ”*; I8: *“The Slow Food market is the only one. There are very few stores and groups that have this kind of products that are big and don’t let the little ones in. In my product distribution, most of the sales are direct... I have a Facebook page and there are stores interested in selling my products, but what about the stores?... I give leaflets to the stores, but . . . the employee . . . doesn’t care if the product is sold or not. I mean, we have to fight . . . ”*; I20: *“I can say that there are channels, but not enough . . . As a consumer, six years ago . . . there were no flea markets, there was nothing, and now . . . I can buy vegetables in this or that market... the movement has already started, but it’s not enough yet”*].

#### 4.1.6. Relation between the Population’s Income and the Consumption of Agroecological Products

The population’s income has also been considered a key factor in furthering the consumption of agroecological products. As Kantis et al. [27] stated, it is related to the identification of business opportunities in the gestation stage of the project (Figure 1). In this regard, the informants believe that income is fundamental for the consumption of these products, especially in the area under study and nearby municipalities. Indeed, national competitiveness has become a central concern, both in advanced and developing countries, particularly in the face of the challenges of an increasingly open and integrated world economy [49]. The modernization of economies and their employment markets are the decisive factors that allow the creation of wealth, which will in turn determine the different incomes of the population. It is important to note this, since it has an impact on the choice, within the processes of change in the agro-alimentary system, between consuming natural products from ecological agriculture,

and products from modern industrial agriculture. On this point, a quarter of the interviewees think that in Yucatan the income of the population is rather low and does not favor the said consumption at all, with 70% of the answers leaning towards it being slightly favorable, but not much.

It is pertinent to remember that the population's income varies depending on the specific zone within the study area. This means that the consumption of said goods will develop further in those areas where acquisitive power is higher, rather than in other areas which suffer a much poorer economic level. Moreover, the amount of organic production—which is much lower than the conventional production—increases the price of these products much more, making it difficult for a large part of the population to consume them. For example, a significant consumer sector of the said produce is foreign residents living in the state, who can afford to buy these products more often because of their income, unlike the local population. On this subject, the entrepreneurs corroborate this with their statements:

I1: *“Merida is divided in two; If we're speaking about the north zone yes, if we talk about the south zone, it is of very low purchasing power”.*

I20: *“I think that some. In Merida, for example, my market is divided a lot into north, south and . . . , People from the north don't pay attention to the price and other things. In my store I try to compare the prices of non-organic products and from those prices my organic products will remain reasonably priced for the majority . . . There are middle class people who can access my products, because they say: 'it's not that different from the normal product and I can pay the extra cost'”.*

I5: *“No, because organic products are expensive, and our level is pretty low. The majority of the public is low-income locals. The people who come here are people who have money or are foreigners with a different cultural level as well”.*

However, in some cases entrepreneurs alluded to the existence of sufficient purchasing power to buy these products, which is, however, wasted on the consumption of unnecessary and sometimes unhealthy goods due to a cultural issue:

I19: *“Yes, but they buy Coca-Cola. I think that the power exists, I mean, you decide what to eat. I'm not a millionaire and I can do it, but, why? Because I don't spend on other things: I don't have Skype, I don't have . . . ”.*

#### 4.1.7. Relationship between the Population's Environmental Awareness and Agroecological Product Consumption

Another important indicator would be to know if the environmental awareness of the population also favors the consumption of agroecological products. If that is the case, then logically, as argued by Sassatelli and Davollio [11], and Díaz Méndez and Gómez Benito [36], it would be a favorable factor for agroecological entrepreneurship, for the adoption of different and beneficial food consumption habits, for raising awareness of the abandonment of traditional and healthy diets, as well as for the valorization of local gastronomic tourism. These benefits would be expressed in a new economic model linked to the cycles of nature, where the sustainable management of products is prioritized, turning them into ecological and tourist products while at the same time respecting the environment [41,42]. In fact, more than half of those interviewed conclude that the population's level of environmental awareness favors the consumption of these products slightly, while 30% think that it does not. There is much work to be done in order to create environmental awareness among Yucatecans: Often they consume in imitation of foreigners, not because they really believe in these principles:

I4: *“... Since many locals see that there are foreigners buying here, they say: 'it must be good'... It's more of an imitation...”*

I3: *“It doesn't favor it, but the younger generations are integrating more and more. It's small but growing”.*

I19: *“No, they’re still cutting down trees. I mean, they’re just getting started, but it’s 1% of the population”.*

I18: *“A little, nothing more. Because most consumers of this type of product, here in Yucatan, are not Yucatecans, perhaps 30% are, but the vast majority of consumers are foreigners”.*

I20: *“Just a little. It’s awake, but we’re still missing it. There are people who, out of conscience, do care where the food comes from . . . and that it is not transgenic”.*

#### 4.1.8. Existence of Bureaucratic Obstacles to the Agroecological Enterprise

Sassatelli and Davolio [11] noted that the lack of institutional support for agroecological companies translates into numerous bureaucratic obstacles faced by small-farming systems, which is confirmed by the testimonies of the interviewees. The vast majority of small entrepreneurs (65%) agree that there are many bureaucratic obstacles in the entrepreneurial process when it comes to creating this type of business (whether they are producers or marketers of agroecological products). These considerations are also an important generator of either obstacles to or support for organic production and consumption, since it is understood that bureaucratic obstacles hinder the creation and development of companies in this sector. Here, we are referring to the transparency and trust that public administrations should demonstrate in order to provide a solid support that generates dynamism in the processes of entrepreneurship [29], while at the same time generating support through funding and training mechanisms [30]. In this regard, entrepreneurs highlight these obstacles:

I4: *“There are obstacles: you need contacts in the government to get that financial facility or to get that loan; not just anyone gets that chance . . . I’ve heard that a lady was given the opportunity to put her habanero peppers there and she subleased that land, and she just gets money from another company that’s giving its own money”.*

I15: *“I’ll give you an example: my husband has a farm where he’s planting. It’s sustainable land where there’s land conservation and planting, and for this there are procedures and more procedures. So, every so often you put in your papers to ask for support, and maybe one year they’ll give it to you, but maybe next year, when you’ve already gathered everything, they will tell you: ‘I’m not going to give it to you, because a series of steps weren’t fulfilled’ . . . and they hold you back”.*

In other cases, informants state that, rather than government obstacles, there is a lack of interest in and concern for this type of activity, since traditional agrochemical production is more profitable.

I10: *“Well, I’d say that there’s no interest, that is, the government doesn’t encourage it and that’s an obstacle in some way. The government supports big initiatives like a wind farm, but if you say: ‘we’re going to plant millions of hectares of organic . . .’, it says: ‘ah, well, I don’t have any money’, right?”.*

I13: *“ . . . just no information, no support for ecological production, no organic culture, no initiative. SAGARPA isn’t organized, there’s no organic department . . . ”*

#### 4.1.9. The Role of Legislation in the Creation of Agroecological Enterprises

Pulido Secundino and Chapela y Mendoza [9] point out that although in Mexico there exists a robust legal framework for agroecological matters, the existing regulations have not crystallized into the necessary institutional support. This is confirmed by the informants’ opinions. The majority of those interviewed (75%) believe that the laws and regulations of Mexico and the state of Yucatan in particular, do not favor the launching of these businesses in any way.

I2: *“Laws facilitate conventional production more, obviously, but the law doesn’t say I’m going to provide agrochemicals for the farmers and transgenic seeds . . . that’s politics. It’s government policies”.*

I5: *“No. I studied certifications and all that for a while, and I think it gets too complex for anyone”.*

I12: *“Right now legislation is changing, but in the direction of sustainable production policies that avoid deforestation, not so much towards organic production”.*

I14: *“No, regulation is only done under pressure from the U.S. So, the only reason why a Mexican official lifts a finger is because of pressure from other countries, because if the FDA had not pushed Mexico to have legislation regarding its products, the domestic product would have stagnated . . . so, basically they did it out of necessity . . . not out of ecological interest in taking care of our land; they don’t care and the only reason they give support . . . is because if they don’t give the people crumbs, they are going to rise up, and that doesn’t suit them”.*

#### 4.1.10. Are Young People Encouraged to Pursue Agroecological Entrepreneurship?

Among the factors that generate support or create obstacles to agroecological production, whether or not to promote the initiation of young people in this type of enterprise is a question of special relevance. It has been stated that one of the relevant aspects that should prevail in the promotion of entrepreneurship by public administrations is support for female entrepreneurial leadership [31,32], but in addition, it is considered equally necessary to support youth leadership in ecological entrepreneurship. This is because the new techniques of production and cultivation of these products require fresh labor, new ways of thinking, and minds trained in the new skills required by these agroecological activities, since we are talking about quality products and higher demands due to an increasingly competitive and environmentally committed setting.

From the opinions expressed by the interviewees, it seems that their views regarding this aspect are more positive, as 35% of them think that the involvement of young people is very much favored and 45% say it is somewhat favored. Some arguments corroborate these percentages:

I1: *“Yes, now the state government is starting. For two years now, it has been working with the IYEM (Yucatecan Institute of the Entrepreneur) and is pulling in many young people. In fact, Montse (one of the interviewees) participated a year or two ago”.*

I2: *“ . . . I’d say yes. Almost everyone who’s starting out is young”.*

I12: *“Yes. I think so, somewhat. It’s an alternative that supports the field, because, unfortunately, the average age of producers is well over 60, so the young people should inherit it”.*

Other testimonies suggest that entrepreneurship is being encouraged, but at a general level and not specifically in the ecological sector:

I3: *“Fortunately, entrepreneurship in general has been increasing... ecological entrepreneurship less so. This is because there is already an institute that’s about ten years old that promotes calls for entrepreneurship from any type of company, but happily, there is a small part of those entrepreneurships (10% or 20%) that are ecological”.*

I20: *“There’s a lot for them to entrepreneur, but in general, and in terms of ecological issues, it’s very limited. There are, rather, entrepreneurial forums, and yes there have been success stories like Blanca’s (informant)”.*

Finally, a few opinions state that aid does exist to favor entrepreneurship, but, at the same time, there is a greater abandonment of the countryside by young people in the search for jobs in the service sector and in more urban environments.

I10: *“Yes, it’s very favored. Right now, there’s a lot of support until the age of 29. But the young people aren’t interested in the countryside, there’s a total detachment from it”.*

I14: *“Yes. The Mexican countryside has been abandoned little by little because there has been more education in the rural areas, so . . . people go to the cities, little by little they leave the countryside”.*

*From Piste to Quintana Roo, all the little towns are practically empty of young men in the countryside because they go to Cancun and Playa del Carmen to work in the hotels or go to the U.S. to work. So, all this is caused by consumerism and public mismanagement in our field, because the opportunities were very unequal”.*

These opinions suggest that the public administration is promoting entrepreneurship among young people, but not specifically for projects to create agroecological businesses. Once again, this inaction pushes different organizations and movements, such as the Milpa Collective (to which one of our informants belongs), to take the initiative in promoting agroecological practices for the cultivation of endemic species in Yucatan, as well as the exchange of knowledge and products among farmers and friends [44].

#### 4.1.11. Frequency of Fairs and Events Organized by Public Institutions for the Exhibition and Sale of Agroecological Entrepreneurs’ Products

On this subject, we have analyzed how often events (fairs, exhibitions, etc.) are organized by public institutions, considering them as support mechanisms for agroecological entrepreneurs to publicize their products, boost their sales possibilities, and market penetration. On this occasion, only a quarter of those interviewed stated that this type of event is organized frequently, as opposed to almost three quarters of them who thought that these events were held, but only occasionally. Furthermore, although some recognize their frequency, these events are not exclusively related to the production and consumption of organics, due to the strong presence of conventional products, techniques, and machinery used for agrochemical production, which is the most developed in current agricultural markets. The interviewees also reported a lack of commitment to this type of product and, therefore, the lack of involvement in finding ways to reach new markets and customers [I2: “Yes, there are fairs, which are not very successful, because they are lousy, as they are dedicated to inviting producers and charging them. They are not dedicated to advertising, to finding key clients, key entrepreneurs, places where a new production can be started, where the producer can meet the consumer. They put a spectacular ad on the radio, and they sell it to you as the business opportunity of a lifetime; it costs a fortune to put a stand in a fair”; I19: “There is the Expo Campo, but it has one pavilion, for organic, and it has the whole convention center for tractors, machines, agrochemicals, etc. In fact, an organic fair, organized by the Government, has never existed!"].

## 5. Discussion

In this research, Yucatecan producers and farmers feel that the government does not support them enough. This opinion is in line with the study conducted by Valdés et al. [50] in the same Mexican region. This demonstrates that, although efforts have been made in many countries to support small producers’ participation in the ecological agriculture market, here there is widespread skepticism among the population. To improve the producers’ chances of accessing larger markets, cooperatives or farmers’ organizations have been recommended and established, often with the support of the government or non-governmental organizations (NGO). The purpose of this research is to fill a gap: To give a voice to the most important social actors, and to record their perception of the lack of institutional support for agroecological entrepreneurship.

Similarly, the results that come from the analysis contained in this paper highlight the role played by some associations and networks, but our interviewees say that the results are unsatisfactory, because the support provided and the competitiveness achieved are not sufficient. Zabala [51] has also worked on the process of building a national agroecology plan in Uruguay 2002–2016, which is both a challenge and a matrix of change for family-produced products, the population’s health, and environmental awareness. In this new scenario, family producers are establishing alliances with different NGOs and national and international Civil society organizations to defend their rights and traditions.

A study developed by Fisher [52] shows that, over the past few centuries in Yucatan, Mayan farmers have practiced milpa agriculture (i.e., slash and burn) in ways that have the potential to be either sustainable or unsustainable, depending on whether or not the leaders’ policies created institutional



support for farmers to implement a full range of traditional ecological knowledge. These findings are consistent with this inquiry's conclusion that some support programs are only related to the will of the government, not to the real needs of Yucatecan farmers. What Yucatecans really need is more support to learn technologies and open markets, rather than ecological, traditional agriculture. The situation in regards to the entrepreneurial training of the interviewees is very deficient, since the State promotes aid for traditional production, but not for organic production. On another note, *female* and *youth entrepreneurship* are more likely to be promoted by Public Administrations in ecological enterprises. The aforesaid highlights the importance of entrepreneurship-oriented training for local administrations in Spain, such as the Alcorcon City Council—Madrid, which offers courses for entrepreneurs in ecological farming [53]; or the Barcelona Provincial Council, which supports and cooperates with municipalities working in social agriculture [54]. As in this research, researchers such as Keleman [55], have shown that, in other Mexican territories such as southern Sonora, agricultural support is mainly oriented towards high-tech production, and that there are structural barriers to small farmers' access to research and development institutions.

The *social and cultural norms* of the Yucatecan population studied here have little influence on entrepreneurship and are a barrier to the incorporation of healthy consumer habits, making it difficult to develop entrepreneurial projects in agroecological products intended for this population. Now, the *environmental awareness* level of the population in general and of producers in particular, and the *consumption of agroecological products* are perceived as favorable for consumption and entrepreneurship, although there is a long way to go before achieving this mentality. On this subject, Pietrykowski [56] and Gómez Cruz [57] revealed the value of agroecological products, and the development of the domestic market just as an organic movement gets consolidated, for example, in the EU in the 1990s. Interest in the production of agroecological (particularly organic) products and the development of the *Slow Food* market assisted in the defense of food biodiversity and gastronomic culture, in which Mexico is beginning to stand out as a producer and exporter.

In tune with our research, we also stress the value of the agri-food sector and the environmental awareness that is being emphasized by the COVID-19 crisis [58]. In these times a new sustainable socioeconomic model is being imposed: One that interweaves individual responsibilities with ecology and is capable of promoting the agricultural, livestock, and fishing sectors, so as to avoid the risk of a crisis in food stocks and in rural life [59].

Finally, the rather *low-income level* in the city of Merida influences the consumption of ecological farming products, the latter being higher at upper economic levels and lower at low levels. This reality alludes to Pierre Bourdieu's theory of the fields [60], where each field is constituted as a space of conflict between subjects who are confronted by the goods offered by that field, generating different schemes of behavior and social practices [61].

Valdés et al. [50], with whom our research agrees, proposed that due to the socio-economic profile of Yucatan and the social structure of agriculture, this region is suitable for investigating the potential of ecological agriculture for offering profitable employment to smallholders. Then, this becomes the basis for adequately conceptualizing support policies.

Paths are being created for further research and in-depth study of the issues addressed, for two reasons: (i) Firstly, because of the high agricultural potential of the Yucatan peninsula, which provides the relevant bioclimatic space for the foundation of a possible specific biodiversity laboratory, which would also include an analysis of its social system, and (ii) secondly, because of its complex and unequal socio-political structure, which necessitates an improvement of its governance networks in the specific field of agroecological entrepreneurship, especially taking into account the growing role of women and the incorporation of young people as powerful agents of change and socio-economic consolidation.

### 6. Conclusions

As a result of this research and other similar studies, it has been detected that within a consumer trend called *Slow Food*, since 2008, a movement has been developing in the Mexican state of Yucatan. This social movement is propelled by local entrepreneurs who offer natural products, incorporate a vision of sustainability, and consequently can be classified as agroecological. These are entrepreneurial initiatives whose aim is not to compete in large production circuits, but to establish themselves in a market niche represented by a different consumer profile from the traditional one, a profile which forms part of the well-known trend of *responsible consumption*.

Based on this reality, and mindful of the objective of this research, the entrepreneurs involved were asked for their point of view regarding the existence of public policies to support sustainable business initiatives that contribute to the development of rural areas and their population. Here, we have provided a response to a serious social problem generated by poverty which is caused, among other reasons, by lack of water in a particular geographical area, as is the case in the state of Yucatan. This study illustrated, through the theory of New Institutionalism (NI) based on social actors, how such rural development is promoted, based on informal and bottom-up groups action. A conceptual model depicted in Figure 5 shows how these groups (entrepreneurs who come together weekly in a pseudo-organized *Slow Food* market in Merida) are aligned in a model for governance. The institutional inertia of public bodies, in terms of their tendency to resist change, has led to the emergence of agroecological entrepreneurship initiatives in response to a significant social concern. Therefore, we have given a platform to the protagonists, whose most substantial comments have been set out in the results.

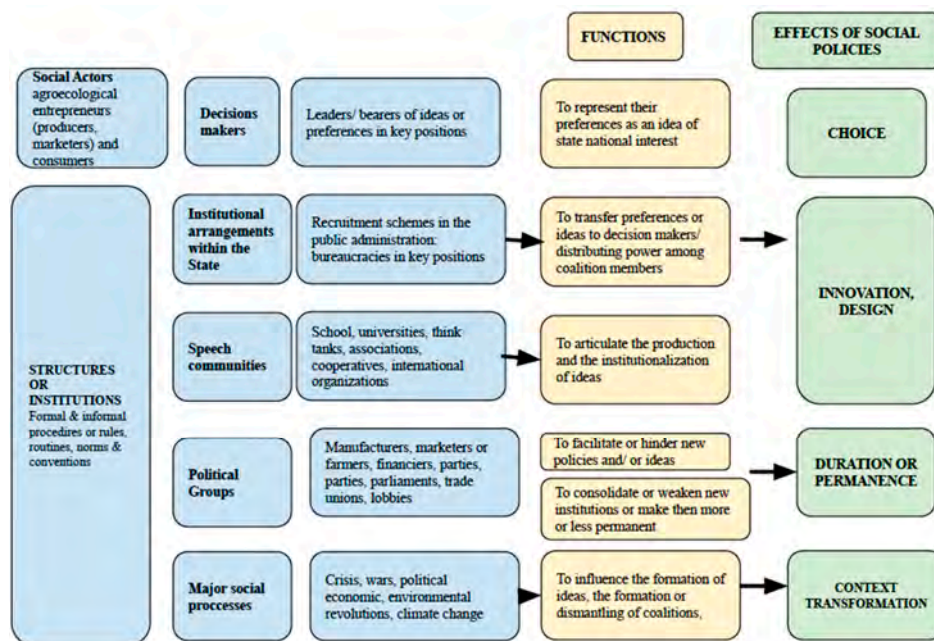


Figure 5. Conceptual model of new institutionalism and public policies. Source: The authors, adapted from [16].

The entrepreneurs who participated in the research have described, from their perspective, the role that public institutions play in promoting wealth generation and sustainable development in less developed areas, as is the case in most Yucatecan municipalities. In this regard, a series of conclusions have been drawn:

There is clearly a policy of little support for this type of production, due to the existence of other political priorities and inadequate management, which prevents the consolidation of certain structures needed to support agroecological entrepreneurship, and which our informants find absent. The generalized feeling is that few events are held in the state (fairs, exhibitions, etc.) and they are

not exclusively focused on organic farming but primarily on conventional production. This situation indicates a lack of commitment from the institutions to agroecological entrepreneurs in finding potential markets and clients for them.

We also detect a lack of confidence in the government of the state of Yucatan, which does not have a policy to promote and support the social network of producers/marketers of agroecological products, and therefore does not encourage collaboration between different companies.

There are great difficulties facing the development of entrepreneurial initiatives in agroecological products, which are caused by social and cultural norms related to food consumption, along with the low level of income among the citizens in general. At the same time, it is necessary to mention another aspect linked to the consumer, and that is the lack of environmental awareness as a contributing factor to the fact that there is still much to be done to increase the consumption of this type of product.

On the other hand, many entrepreneurs themselves argue that there are numerous deficiencies in training or knowledge regarding ecological agriculture (covering the areas of management, ICT management, marketing or production support channels, and production techniques). These are caused by the lack of government support for this form of production. Such a situation leads to entrepreneurs who are more educated in conventional agricultural production, in which there is more support and backing from institutions.

Regarding the supply chain, the general feeling is that there are no adequate distribution channels for agroecological products, and those that do exist are insufficient for the distribution of products to a large majority of the population.

Finally, a major obstacle for the start-ups is the number of bureaucratic barriers reported by entrepreneurs in the sector. They exhibit a lack of trust in public administrations, which is reinforced by legislation that significantly hinders the processes of business creation. However, in the opinion of the informants, it should be noted that there is a commitment to youth entrepreneurship (although not exclusively in the agroecological sector). This is perhaps due to the growing abandonment of the countryside by young people who prefer to see their future in an urban environment, often focused more on the service sector.

Yucatan is a state with a great potential for sustainable rural development based on agroecological production. Having heard the informants' voices, our recommendation to public institutions is to make a firm and efficient commitment to this sector, if it is to become a reality.

The limitations of this study are defined by the need for a deeper, qualitative look at the discourse of those who develop public policies to support entrepreneurs, in order both to observe the phenomenon in a holistic manner, and also to establish differences in terms of the relevance and real influence of said policies.

The study's own limitations suggest future lines of research. In addition to considering entrepreneurship from a gender perspective, right from the beginning of the research, social research techniques could be used to achieve relevant and conclusive results in connection with this issue. Finally, the authors propose to continue studying in detail the demand for agricultural products, an issue that has been addressed rather tangentially, and which is a determining factor in the design, implementation, and evaluation of public policies.

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## Appendix A

Table A1. Characterization of the agro-ecological entrepreneurs interviewed in Yucatan.

No.	Year Company Was Created	Legal Constitution	Municipality	Informant's Business Activity	Gender of the Entrepreneur/ Informant	Main Products it Produces and/or Markets	No. Employees (Including the Informant)	Weekly Sales (Mexican \$)
1	2004	YES—Individual Person	Merida	Marketer	F	Food, body, and cleanliness	1	More than \$2.000
2	2009	NO	Cholul	Marketer and Producer	F	Tomato, egg, bean, dill, arugula, sprouts, bean	4–5 (4)	More than \$2.000
3	1997	YES—SPR de RL (Agricultural company)	Tizimin	Producer	M	Turmeric, cassava, ginger, neem leaf, alternative medicine products	2–3 (3)	\$1.000–2.000
4	2014	NO	Merida	Marketer and Producer	F	Jams, nut butter, and seeds	2–3 (2)	\$1.000–2.000
5	2007	NO	Merida	Marketer and Producer	M	Tamales, prepared food	1	More than \$2.000
6	2012	YES	Merida	Marketer and Producer	F	Lettuce, arugula, tomato, coriander, seasonal fruit, and beet	4–5	More than \$2.000
7	2015	NO	Tecoh	Marketer and Producer	F	Salad leaves, seasonal herbs, Japanese ferment for fertilization, bio-insecticides, and seeds	2–3	More than \$2.000
8	2014	YES—Individual Person	Merida	Marketer and Producer	M	Capsules of moringa, neem, neem bark, graviola, turmeric, and artichoke	2–3	More than \$2.000
9	2015	NO	Hunucma	Marketer and Producer	M	Papasul, sikilpak seed, shredded coconut, chaya, spinach, and pitaya	2–3	Less than \$1.000
10	1997	YES	Merida	Marketer	F	Organic coffee, neem products, seeds, cereals, honey, and nutrients	2–3	More than \$2.000
11	2011	YES	Merida	Marketer and Producer	F	Pasta, sauces, aubergine, canned vegetables	2–3	More than \$2.000
12	2011	YES	Oxkutzcab	Marketer and Producer	F	Honey, cassava flour, ginger, and turmeric powder, fresh products	More than 5 (8)	More than \$2.000

Table A1. Cont.

No.	Year Company Was Created	Legal Constitution	Municipality	Informant's Business Activity	Gender of the Entrepreneur/ Informant	Main Products it Produces and/or Markets	No. Employees (Including the Informant)	Weekly Sales (Mexican \$)
13	2012	YES—SPR of RL (Agricultural company)	Merida	Marketer and Producer	M	Green leaf Stevia, ground Stevia powder, and tea blends	More than (30)	More than \$2.000
14	2011	YES	Merida	Marketer and Producer	M	Sourdough bread, gluten-free bread, organic seed bread, and pretzel	4–5	More than \$2.000
15	2011	YES	Merida	Marketer	F	Egg, cereal, sweetener, personal care, and coffee	4–5	More than \$2.000
16	2014	NO	Caucel	Marketer and Producer	F	Lentil burgers, sprouts, sweet potato, yucca, dog biscuits, and raw brownies	1	\$1.000–2.000
17	2014	YES	Izamal	Marketer	M	Ferments, cambucha (probiotics), kefir, and onion bread	2–3	More than \$2.000
18	2013	YES	Tepakan	Marketer and Producer	M	Goat roller cheese, panela, manchego, and yogurt	More than 5 (7)	More than \$2.000
19	2010	YES	Cholul	Marketer and Producer	M	Egg, seeds, fertilizer, kale, and arugula	4–5	More than \$2.000
20	2009	YES	Merida	Marketer	F	Legumes, API honey, seeds	1	More than \$2.000

Source: [62].

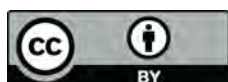
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