

FOOD CULTURE OF CUBAN FARMS IN AGROECOLOGICAL TRANSITION BENEFITED BY THE CUBA BIOMAS PROJECT

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Abstract: More than 70% of the world's population is fed by family farming. Hence its main importance and the need to know the rural territories in order to listen; all this allows observing and recognizing tastes, traditions and needs of peasant communities, and at the same time promoting intervention actions that promote and dignify their ways of life and production on agroecological bases, including the enrichment of their food culture. The work presents the research carried out in 19 Cuban family farms in eastern and central Cuba, representative for the rest of family agriculture in the country due to their characteristics and history, and which have participated in different phases of the Biomasa Cuba international collaboration project. Field visits were made and questionnaires were applied to more than 100 peasants to evaluate the eating habits and customs of peasant families, levels of knowledge about food, nutrition and food hygiene, food preferences, menu diversity, preservation of the Creole food, use of condiments, frequency of consumption of vegetables and fruits, among other aspects. Information was also collected on the management and condition of the farms and their level of self-sufficiency to evaluate their food sovereignty and socioecological resilience, as well as the characteristics of the territories in which they are located. The results showed that some production and food customs are maintained, which are remarkably rooted and the level of knowledge of these populations in relation to food culture has increased, although the consumption of vegetables and fruits is still insufficient; the consumption of conventional products is maintained and the high plant diversity for food purposes is not yet valued. In addition, the farms show a medium resilience, because, although they are largely self-sufficient for family food, autonomy is low due to dependence on external resources

and an incipient strategy for agroecological transition.

INTRODUCTION

The study is based on the complex nature of food culture, which incorporates aspects related to the bio-psycho-social, to which technological and environmental components are added. According to the authors, alimentary culture is a complex category, full of meanings that transcend the purely biological. Due to its links with the quality of human and planetary life, it has become a booming field of intervention, where anthropologists, sociologists, nutritionists, educators and researchers try to reveal the regularities of this process and promote its transformation and improvement.

Food culture is a set of values, synthesized in multiple manifestations associated with the ways and styles of producing and eating, which are reflections of the local and world historical process in which they develop, presupposes a unity between the biological and the socio-historical. cultural, and contains affective elements. In this sense, it must be focused on socio-ecological resilience to reinforce the capacity of socio-ecological systems to remain over time, carry out adaptive changes to overcome disturbances, stress situations or change, and maintain agricultural production in harmony with culture, social organization, the satisfaction of needs and the capacity of ecosystems, in an ecologically possible and socially desired context.

The conformation of the food culture of each country is highly conditioned by various factors [Vázquez, 2010, 2017]. For the approach to food culture in Cuba, it is necessary to highlight that food in the country has historically stood out for an unsustainable economy with an import of 70 % of food [Figuerola, et al., 2005; ONEI, 2019].

In this sense, the Cuban State prioritizes

conventional modes of production with investments in machinery, credits and for large areas of cultivation, destined for the food industry and with priority and thought focused on feeding the population and import substitution.

However, of the food produced in the country, more than 75% comes from family farms that manage less than 25% of agricultural land and with less public support for access and availability of inputs and appropriate infrastructure for the efficiency of production. their productions.

Unlike industrial agriculture, whose tendency is towards uniformity, high productivity and monocultures indifferent to the link with the local and contextual, family farming in Cuba manages a rich ecological and cultural diversity, and has played a fundamental role in feeding the population in each historical moment and crisis.

An important example was what happened during the special period in the 1990s, when Cuba lost its main markets and trade relations, and inputs and technological packages for agriculture stopped entering the country. All this caused an immediate drop in production, more accentuated in large agricultural and livestock companies, and demonstrated the vulnerability of the high-input system in Cuban agriculture that also caused 76.6 % of soils with high degradation rates [García et al., 2014], unlike peasant farms that are generally diversified and with agroecological practices, which guaranteed growth in production to cushion the blow of the food crisis [Machín et al., 2010].

In this context, it can be affirmed that family farming in Cuba is in crisis, the exodus from the countryside to the city continues, the rural population is over 60 years old on average, there is a growing disinterest of young people to project themselves towards life in the countryside, the continuous effects of climate

change are increasingly evident, as well as the effects on the health of soils and ecosystems. Regarding the food culture of the Cuban population, despite the increasing promotion through the Cuban media and health agencies to improve lifestyles, pernicious consumption habits persist and the incidence of chronic diseases increases. -degenerative.

Therefore, the objective of this work was to carry out an investigation in outstanding and representative farms for family farming in Cuba, in such a way that it would allow proposals to be brought into context that contribute to their food culture, socio-ecological resilience and the staggering of agroecological farms in Cuba.

MATERIALS AND METHODS

Two types of surveys were applied to the selected families; one to the family in general to evaluate technological and efficiency criteria in each farm, by applying the MERS methodology [Casimiro, 2016], and the other to each family member based on an interview (which included a questionnaire and open questions) with creative adaptations to the one proposed by the Food Hygiene Institute [Vázquez, 2010], in order to reflect the knowledge of the interviewees regarding nutrition, health, hygiene, food practices, tastes and preferences, as well as the frequency of consumption of a group of plant foods. It was possible to measure the indexes of self-management of the farms, the eating habits of the families visited and some elements of access and availability in the interpretation of the results.

RESULTS AND DISCUSSION

In relation to the results reflected in the topic of food culture, it can be seen that knowledge about food, nutrition and food hygiene has increased in the interviewed population, and food practices reflect more

favorable behaviors. However, unfavorable habits are still maintained expressed in low levels of fish consumption, preference for fried products, high levels of sugar consumption, overestimation of the role of meat in the diet, inadequate distribution of energy during the day, some abandonment of the traditional rural breakfast, little consumption of vegetables such as cauliflower, broccoli, cabbage, chard and watercress, scarce use of other aromatic plants (turmeric, basil, parsley, celery, marjoram, etc.), among others. On the other hand, there is a medium perception of the relationship between food and health. The perception of the link between food, the environment and resilience is also insufficient, which is reflected in the fact that some families buy their food products off the farm and there is little recognition of the need to know the sources of food. In general, a style of eating less influenced by the culture of fast food and urban areas is recognized.

It was detected that in general the families studied do not add value to their productions, one of the reasons being the scarce resources for their transformation and benefit, in addition to not having material and regulatory facilities to directly market new products. which coincides with studies carried out by Casimiro [2016].

This directly affects the local economies of peasant families, since they sell their products at low prices, while with added values they could lengthen their production cycles, generate self-employment for the family and improve their income, while contributing to the domestic market. still dissatisfied, both due to the lack of products and the high cost of those offered.

In this sense, the families exposed some tools and infrastructures, which depending on their context, could facilitate the extraction of oils, the conservation of condiments or dehydrated fruits, the extraction of fruit pulp,

etc.; information with which the authors and with the collaboration of the Biomes Phase III International Collaboration Project (Financed by the Swiss Development Agency and executed by the Indio Hatuey Experimental Station), promote future interventions on the farms.

Tables 1 and 2 show several of the indicators obtained by applying the MERS methodology. Most of the farms achieve favorable self-sufficiency in food, since in the rich diversity of family productions, family food and the production of surpluses are prioritized for their socioeconomic contribution to society.

Smaller farms generally achieve higher productivity per hectare than larger farms, with the exception of Finca la Victoria, which has the best production rates; Despite this, energy efficiency on this farm is negative given the high degree of importation of external inputs. The families showed a capacity for positive technological change, and lead community processes in an innovation system with permanent access to knowledge, based on the exchange with projects and local communication processes. Said budgets allow the adoption and generalization of this knowledge, as an important part of the agroecological design and management for the integrated production of food and energy with a gender approach.

More than 50% of the farms stand out as moderately resilient and only two of them are not very resilient; The latter, according to the assessment carried out, show low efficiency in land use, high dependence on external resources and very low energy efficiency.

However, six farms were resilient or very resilient and in these stands out an agroecological management and design at a higher level than the rest, a use of renewable energy sources with the use of appropriate technologies and favorable energy efficiency.

From the information collected, an

extensive socioeconomic, technological, productive and efficiency interpretation can be made. In summary, it is possible to highlight elements that are affecting the resilience of farms: inadequate livelihoods reflected in poor infrastructure and poor access to the input market, unfavorable prices, no value is added to production, economic analyzes that do not reflect wages family, among others. On the other hand, resilience is favored by the technological change capacity of families, the support of international collaboration projects in training and infrastructures for the use of renewable energy sources, peasant innovation and experimentation, as well as the love of families. for their farms and the development of agroecological practices.

Based on the study, it is considered that the proposals that continue can contribute to promoting a food culture under the approach of socio-ecological resilience in family farming:

- Formulation and implementation of public policies in correspondence to the well-being and happiness of peasant families and the resilience of their farms and for existing policies, to gain coherence, flexibility and adaptation to the different narratives, needs, possibilities and demands of families in their territories.
- Active role and participation of peasant families and consumers in decision-making regarding the production and consumption of agroecological food.
- Consolidation of a market for inputs, tools and appropriate technologies for agroecological production and the use of renewable energy sources (FRE).
- Favor short marketing circuits that lower transportation and storage costs, while contributing quality and freshness to the products offered in the local

market.

- Establishment of fair prices for peasant families and for consumers, which reflect the production and transformation times of the products and the expenses that they entail in energy and resources, to then apply an honest and transparent profit margin.
- Avoid as much as possible the use of synthetic chemical products, maintain and enrich agroecological practices in territorial management.
- Implement food education policies, with the focus that the production and consumption of food becomes a process that goes “From the land to the table”, which presupposes the preservation of traditional agri-food (agricultural plus cooking), the reduction of the loss of food during this cycle, a greater use of food diversity, knowledge of the food source, updating of knowledge in food and nutrition, among other aspects.

CONCLUSIONS

- Socio-ecological resilience and food culture have a multidimensional character; They can be approached transversally in different non-formal spaces.
- Its components are very diverse and link various topics, the contents of which must be approached analytically and creatively to increase their educational impact. Knowledge of the bases of agroecology, food science, sustainable energy systems, together with political and socio-cultural aspects, could help to improve eating habits, agroecological practices and true food sovereignty for socioecological resilience.
- The achievement of integrated actions

Farm number and name	Municipality	Area (ha)		Production per ha (kg)	Economic earnings, average/year	Hours of human work/ha	Hours of animal work/ha	People fed with protein ha/year	People fed with protein ha/year	Family Feeding from the Farm, %
		Property	Usufruct							
# 1 Tierra Brava*	Guantanamo		6.02	7465.16	307142.5	1333.9	239.2	29.40	16.5	30
#2 The Little Orange	Santiago de Cuba	73.81		405.8	33593.44	220.6	22.5	1.3	0.4	40.00
#3 The Hope*	Jiguani	27.84		815.9	44074.928	419.5	157.33	3.4	1.3	60
#4 The Victory	bayamo		40	18180.7	2354286.66	2820.5		12.8	11.6	70
#5 Valley of Victories	UrbanoNoris		42.84	2424.2	91587	329.13	173.67	5.2	2.1	Four. Five
#6 The Virtues	UrbanoNoris		40.26	7828.33	397977	487.95	186.3	6.9	5.2	fifty
#7 Saint Anne	jibara	5		4903.8	12376	1752		12.3	6.6	90
#8 The Future	sea cow		26.84	1748.38	17372	967.96	297.32	3.78	1.5	35
#9 The Peñas	sea cow		67.1	2228.2	164015.76	130.6	130.6	2.7	1.4	60
#10 The Pines	sea cow	19.05		1163.5	91,590.60	461.1	205.3	4	2.1	60
#11 The Reward	Tunas	9		12155.44	100218.64	973.33		12.6	8.3	10
#12 Middle Estate	taguasco	eleven		6720	143509.73	730	230	8	6.11	98
#13 The Glorious	cabaiguan		26.96	15422.0697	1355560	6227.3	59.6	13.6	11.8	55
#14 The Rebirth	cabaiguan		28.92	4258	101944.316	811.13	47.2	4.9	3.9	87
#15 Luboy Estate	cabaiguan		2	751.68	-12940	600	0	0.41	0.75	fifteen
#16 Flower of the Key	cabaiguan	9.64		4423.98	172463.672	2564.32	302.9	8	5.6	80
#17 The Two Roses	cabaiguan		12.42	6326.44	519791.8	2115.94	116.59	19.3	12.3	70
#18 San Jose*	Sancti Spiritus	9.2		5522.27	279946.04	1439.13	158.7	14	8	95
# 19 Rivers of Living Water*	Sancti Spiritus	3		5363	-39363.54	4623.3	1026.7	19	7.8	80

Estate	Land Use Index	External Inputs (%)	Shanon indices	Use of RF (%)	Innovative Intensity (%)	Energy efficiency	Farm Energy (%)	Energy balance	energy cost protein production	Relationship Cost-benefit	External resource dependency index(%)	Food Sovereignty	Technological Sovereignty	Energy Sovereignty	Economic Efficiency	resilience index	Classification
1	0.94	90	1.6	62.13	55.9	0.84	9.8	0.73	128.34	0.35	58.1	0.47	0.65	0.2	0.64	0.49	moderately resilient
2	0.55	65.8	1.6	18.50	46.9	2.98	34.2	2.45	20.3	0.8	62	0.33	0.37	0.58	0.4	0.42	moderately resilient
3	0.84	32.4	1.9	93.7	56.6	9.7	67.6	7.6	8.5	0.81	31.3	0.6	0.85	0.89	0.76	0.77	Resilient
4	1.13	95.4	1.2	4.5	76	1.2	4.6	1.19	128.3	0.41	96.4	0.87	0.38	0.33	0.26	0.46	moderately resilient
5	1.37	70.6	1.47	3.4	57.2	1.02	29.4	0.75	92.5	0.82	32.6	0.53	0.48	0.29	0.76	0.52	moderately resilient
6	1.18	78	1.15	26	58.5	1.4	22	1.3	99.15	0.4	38	0.67	0.44	0.34	0.8	0.56	moderately resilient
7	1.16	25	2.42	fifty	89.4	5.9	48	4.04	28.1	0.87	19.8	0.99	0.83	0.71	0.94	0.87	very resilient
8	1	53.2	2.23	68.9	60.9	2.17	46.8	1.29	50.48	0.93	37	0.47	0.75	0.49	0.76	0.62	Resilient
9	0.53	58.8	0.75	47	47.6	3.5	41.2	2.86	31.14	0.46	53.6	0.53	0.48	0.67	0.62	0.58	moderately resilient
10	1.3	70	1.8	46	80	1.02	24.4	0.69	135.8	0.53	34.7	0.6	0.6	0.30	0.78	0.57	moderately resilient
eleven	0.4	80	0.01	fifteen	0.6	0.74	8	0.66	171.3	0.59	70.3	0.47	0.24	0.2	0.44	0.34	little resilient
12	2.7	10	2.15	83.6	95.44	17.3	84.85	10.9	0.6	0.34	1.8	0.99	1	1	1	0.99	very resilient
13	2.6	95	1.63	13.7	43.8	1.75	8.8	1.62	89.3	0.54	94.9	0.73	0.39	0.43	0.24	0.45	moderately resilient
14	0.84	70.7	1.43	32.9	67.4	4.7	29.25	4.2	30.9	0.82	57.8	0.86	0.44	0.65	0.58	0.63	Resilient
fifteen	1.1	77.3	1.03	22.74	61.3	2.2	22.7	1.9	160.4	4.5	24.8	0.2	0.44	0.42	0.2	0.32	little resilient
16	1.1	60	1.9	fifteen	67.9	0.4	9.1	0.3	460.8	0.7	81.1	0.99	0.48	0.2	0.24	0.48	moderately resilient
17	1.6	70	1.7	fifteen	67.4	0.7	5.1	0.7	161.4	0.37	86.3	0.87	0.42	0.2	0.26	0.44	moderately resilient
18	1.5	Four. Five	2.1	25	84.5	1.3	20.8	1.02	95.7	0.4	57.7	1	0.68	0.34	0.62	0.66	Resilient
19	0.15	84	1.13	72	75.1	0.49	15.96	0.3	226	1.2	38.63	1	0.6197	0.2	0.56	0.59	moderately resilient

Tables 1 and 2 respectively. 1. Characteristics of the farms and some indicators of socio-ecological resilience. 2. CSR indicators and indices.

and public policies for the understanding and promotion of the links between culture and socio-ecological resilience requires multisectoral strategies with a broad profile, which make it possible to raise awareness and encourage the population as a whole, on the relevance of improve the behaviors of production, feeding and the management and design of peasant farms.

- A second intervention is planned, on the farms, through workshops, videos, talks, exchanges and collective exhibitions, for a greater awareness of the farms in terms of food culture and the socio-ecological resilience approach.

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