

Potential of agro livestock cooperatives in terms of food sovereignty and nutritional education



Potencialidades del cooperativismo agropecuario en función de la soberanía alimentaria y educación nutricional

O potencial do cooperativismo agrícola em termos de soberania alimentar e educação nutricional

Odalys Labrador Machín¹, Yamira Mirabal González², Carlos Cesar Torres Paez³

¹ Universidad de Pinar del Río "Hermanos Saíz Montes de Oca". Departamento de Preparación y Superación de Cuadros. Pinar del Río, Cuba. ORCID: <https://orcid.org/0000-0002-9376-5728>. Email: odalys@upr.edu.cu

² Universidad de Pinar del Río "Hermanos Saíz Montes de Oca". Facultad de Ciencias Económicas y Empresariales. Centro de Estudios de Dirección, Desarrollo Local, Turismo y Cooperativismo. Pinar del Río, Cuba. ORCID: <https://orcid.org/0000-0003-2673-1381>. Email: yamira@upr.edu.cu

³ Universidad de Pinar del Río "Hermanos Saíz Montes de Oca". Facultad de Ciencias Económicas y Empresariales. Centro de Estudios de Dirección, Desarrollo Local, Turismo y Cooperativismo. Pinar del Río, Cuba. ORCID: <https://orcid.org/0000-0001-7956-5079>. Email: carlosc@upr.edu.cu

Received: December 9th, 2020.

Accepted: December 14th, 2020.

ABSTRACT

The purpose of this paper was to argue the role of agricultural cooperatives as a key actor in achieving food sovereignty and their strengths in promoting nutritional education among their members and the community. The methods used were historical-logical, systemic and hypothetical-deductive and, as empirical, observation. The procedures used were analysis and synthesis, scientific abstraction, induction-deduction and individual and group interview techniques, with a predominance of documentary analysis and research, and participatory action. It is concluded that the foundations of cooperativism have turned this movement into a key factor of development, which contributes in a decisive way to food sovereignty, so the synergy between both aspects will allow to make it concrete and to project actions in pursuit of a nutritional education that leads to a healthy life. The contributions of the cooperative sector to the management of local food systems and municipal development strategies as tools that help to food sovereignty and nutritional education are needed.

Keywords: agro livestock cooperatives; food sovereignty; nutritional education; local food systems

RESUMEN

El propósito del presente trabajo se centró en argumentar el papel de las cooperativas agropecuarias como actor clave, en el logro de la soberanía alimentaria y sus fortalezas para fomentar la educación nutricional entre sus socios y la comunidad. Los métodos utilizados fueron el histórico-lógico, sistémico e hipotético deductivo y como empíricos, la observación. En correspondencia con los mismos, se utilizaron los procedimientos análisis y síntesis, abstracción científica, inducción-deducción y las técnicas de entrevista individual y grupal, predominando el análisis documental, así como la investigación, acción participativa. Se concluye que los fundamentos del cooperativismo han convertido a este movimiento en un factor clave de desarrollo, que tributa de forma determinante a la soberanía alimentaria, por lo que la sinergia entre ambos aspectos permitirá concretarla y proyectar acciones en pos de una educación nutricional que conlleve a una vida saludable. Se precisan los aportes del sector cooperativo a la gestión de los sistemas alimentarios locales y las estrategias de desarrollo municipal como herramientas que contribuyen a la soberanía alimentaria y educación nutricional.

Palabras clave: cooperativas agropecuarias; soberanía alimentaria; educación nutricional; sistemas alimentarios locales

RESUMO

O intuito deste documento consistiu em argumentar o papel das cooperativas agrícolas como ator-chave para alcançar a soberania alimentar e os seus pontos fortes na promoção da educação nutricional entre os seus membros e a comunidade. Os métodos adoptados foram os histórico-lógico, sistémicos e hipotético-dedutivos, mesmo assim a observação empírica. Correspondentemente, os procedimentos utilizados consistiram na análise e síntese, abstração científica, indução-dedução; e técnicas de entrevista individual e em grupo, com predominância da análise documental, bem como da investigação participativa de ação. A conclusão é que os fundamentos do cooperativismo transformaram este movimento num fator-chave de desenvolvimento, que presta um tributo decisivo à soberania alimentar, pelo que a sinergia entre ambos os aspectos vai permitir torná-lo concreto e projetar ações na busca de uma educação nutricional que conduza a uma vida saudável. As contribuições do sector cooperativo para a gestão dos sistemas alimentares locais e estratégias de desenvolvimento municipal são necessárias como fatores que contribuem para a soberania alimentar e a educação nutricional.

Palavras-chave: cooperativas agrícolas; soberania alimentar; educação nutricional; sistemas alimentares locais

INTRODUCTION

The cooperative movement, in the international context, assumes certain particularities in correspondence with the concrete conditions of each country, even though there are general regularities that allow to verify its viability, in the framework of dissimilar models that are presented as an alternative to the structural crisis of the capitalist system and to the neoliberal globalization, therefore, it is necessary to look for more proactive answers to this issue.

In order to face these challenges, the cooperative has an essential place in line with its identity and nature, which implies socio-economic advantages over other organizations, based on values and principles that are specified in its essence.

When analyzing the nature of cooperatives, it is considered necessary to clarify that reference is made to enterprises created by a group of members, with common needs, who are willing to satisfy them by a concerted action and in an environment of mutual aid and democratic functioning. The ethical values that sustain their members have been recognized by the International Cooperative Alliance, in the Declaration on the Cooperative Identity and are put into practice from a series of principles conceived as guidelines for action (Labrador Machín et al., 2018).

It is also stressed that cooperatives have their own or external management powers, which allow them to create favorable conditions and thus achieve an optimal level of efficiency and effectiveness, since they are better prepared to take advantage of the benefits provided by the decentralization and integration of economic management, as far as agro livestock cooperatives are concerned. This is vital to contribute to food sovereignty; in this sense, the cooperative enterprise must contribute to the consolidation of the municipality as a decisive link for food self-sustainability, an essential aspect at present (Labrador Machín, 2020).

Therefore, cooperatives have a progressive role to play in the construction of a diverse food system that is increasingly committed to the territory. Food and nutritional sovereignty is considered key within the economic and social strategy that the country has just approved to boost the economy and face the global crisis caused by the COVID-19.

Cuba has a wide experience in agro livestock cooperativism, which has shown, since its emergence, achievements and mistakes; however, it is urgent to make new readings and coordinated actions in order to consolidate agro livestock cooperativism as one of the essential axes for the creation of the necessary goods that contribute to food sovereignty. It also has the general learning and concrete knowledge for the development of nutritional education in defense of healthy and nutritious food. The objective of this work is: to value the potential of agro livestock cooperativism to improve the levels of efficiency and effectiveness of its results so that they contribute to strengthen the program of food sovereignty and nutritional education, based on local agro food systems, to which the maximum direction of the country summons.

MATERIALS AND METHODS

The methodology used consists in the approach of the criteria of different authors about the particularities of agro livestock cooperativism and the wide possibilities that can be exploited by the entities of this sector, in function of food sovereignty and nutritional education, as part of the realization of the principle of cooperative education. The concepts of food security and sovereignty, nutritional education and their relationship with municipal agro-food systems are addressed.

Theoretical methods, such as historical-logical methods, were used to assess the history of the management of cooperative enterprises and their link with food security and nutritional education. Their application made it possible to recognize national and international experiences on the subject and to analyze their contributions. The systemic method makes it possible to characterize the object of the research, by specifying the interrelationship between agro livestock cooperativism and its contribution to food sovereignty.

As empirical methods, it is started from scientific observation, visualizing the role of the board of directors, members, actors from different organisms and organizations, linked to cooperatives, in consultations between the government and researchers, meetings with advisors and specialists and questionnaires to reaffirm the importance of agro livestock cooperativism and its contribution to the preparation of managers, workers, members, peasants, from a participatory vision to assume the national plan for food sovereignty and nutritional education of our country. Through documentary analysis, scientific articles, books, resolutions and documents were consulted that corroborate the challenges of cooperatives in the new scenario.

The procedures used were analysis and synthesis, scientific abstraction, induction-deduction and individual and group interview techniques, with a predominance of documentary analysis and participatory action research.

RESULTS AND DISCUSSION

Agro livestock cooperative. Cuban experience

Cooperatives have advantages in contributing to the triple balance of economic, social and environmental objectives of sustainable development and to the governance agenda, among other reasons, because they are enterprises that work to achieve the economic progress of their members, while serving their socio-cultural interests, in addition to recognizing their commitment to improving the standard of living and quality of life of the members of society in general.

In the international context, these represent an alternative model of social enterprise, which contributions to sustainable development are a function of the generation of employment, products and services, and the satisfaction of economic and social needs. However, the number of such enterprises, as well as their share in the Gross Domestic Product, is still insufficient in most countries. Their development and consolidation must be an important instrument for the achievement of the Sustainable Development Objectives (ODS in Spanish), which constitute a challenge

in the achievement of people's access to the same opportunities for development and well-being.

On the other hand, agrarian cooperatives are now operating as global companies, on a large scale, fundamentally subordinated to the interests of the market, controlled by managers who are gradually divorcing themselves from the social base and where aspects such as the welfare of all members, solidarity or attention to the community are sacrificed for the benefit of other interests such as good management and economic efficiency, which strictly speaking do not have to coincide with cooperatives.

From this more entrepreneurial vision, cooperatives are set up which strategy and orientation acquire a more vindictive and socially committed discourse and bet on an agricultural cooperative that serves as a collective instrument of defense and vindication of the interests of the less favored social classes of the countryside. In this case, the development of production should serve to increase the social welfare of the members, families and community and not be at the service of increasing the patrimony of a part of its social base (Acosta Morales & Sánchez Quintero, 2019).

The cooperatives are a type of enterprises settled in the rural environment and have a series of peculiarities that make them the most appropriate enterprise form to lead the development of any form of economic activity carried out there, collaborating in the maintenance of the population and achieving greater integration and social cohesion. Their flexibility and capacity to adapt to the implementation of new rural development policies also contribute to this. Without cooperatives in these territories, it would be more difficult and complex for viable initiatives to emerge since they would lack the support of an organization or enterprise network, which would facilitate the development of complementary activities that provide an additional source of income and employment (García Müller, 2017).

Agro livestock cooperatives are committed to the revaluation of the work of the countryside and in it, to local practice, to nearby production, to agro-ecological production, to polyculture and to productive diversification. Cooperatives and associations committed to responsible consumption, consumption of natural, nearby and seasonal, healthy and quality products, together with the establishment of short distribution circuits, local markets and direct exchanges. Cooperatives socially committed to the recognition of a dignified life in the countryside, with peasant agriculture as a family sustenance in the rural environment and also as an instrument of social organization in urban areas (Ortiz, 2013).

Within the framework of social production, aimed at achieving production levels that contribute to overcoming the current economic crisis, the agro livestock sector has a preponderant role to play and, consequently, the cooperative movement. The solution to the needs of the population for food products and raw materials for industry, the increase of exportable funds and the assurance of the food base with the required quality depend to a great extent on the success of this sector. The organization and development of agro livestock production is subordinated to a set of particularities that, unlike other branches of the economy, set certain requirements in the methods, means and organizational forms, namely:

- Land is the fundamental means of production and differs essentially from others in that, with proper treatment, it constantly improves, increases its

yield and minimizes its deterioration, fundamental requirements for achieving levels of agro economic sustainability

- The need to use a different technology from that used in industry, which must be adapted to the particularities of agriculture
- The land has a limited and irreproducible character in extension
- The land produces with living organisms and its results depend on biological and metabolic processes
- Agriculture produces depending on the climate and the weather, a fact that influences production and yields
- Agricultural production has a temporary character
- In agriculture, different forms of property are present and are related to each other

All these characteristics make the economic and natural processes closely linked, influencing notably the resource needs and the production results.

Therefore, efficiency and effectiveness in agriculture depend not only on the work process, but also on the natural processes that take place on it. This means that economic analysis cannot ignore each of these factors. The evaluation of efficiency in agriculture must begin with an objective determination of the criteria or bases on which it will be measured and must include a system of indicators that correspond to this branch.

The development of cooperativism in Cuba has been organized in four stages: the first, since the 1960s, with the creation of the Credit and Service Cooperatives (CCS in Spanish), the second stage begins in the 1970s, with the organization of the Agro livestock Production Cooperatives (CPA in Spanish). In the 1990s, during a turbulent period, in order to find mechanisms to raise production levels, coinciding with the third stage, the Basic Units of Cooperative Production (UBPC in Spanish) are created. In 2013, the fourth stage begins, with the constitution of the Non-Agro livestock Cooperatives, which reveals that cooperatives have an important place in socioeconomic development. There are currently 4,828 agro livestock cooperatives in the country, with 447,235 members. Of these, 2,463 CCS, 869 CPAs and 1,496 UBPCs and 396 non-agro livestock cooperatives, with 16,573 members.

The process of updating our socialist development project has conditioned the application of a set of measures, in which the need to design and put into practice new forms of enterprise management is imposed, where cooperatives, as a socialist form of production and services, occupy a preponderant role to which science offers special attention.

In the conceptualization of the Economic and Social Model of Socialist Development of Cuba, there are presented a series of aspects that express the role of cooperatives in the Cuban socioeconomic context:

- The creation of first-degree cooperatives in different sectors of the economy, with the aim of producing and providing useful services to society
- The recognition of the legal norm that guarantees that cooperatives are not sold, nor transferred to other cooperatives, to non-State forms of management or to individuals
- The establishment of the contractual relations of the cooperatives with other cooperatives, companies, budgeted units and other non-state forms.

- The determination of workers' income and the distribution of profits, after payment of established taxes and contributions
- Increased efficiency as the basis for economic development, which will make it possible to achieve a progressive decrease in the levels of support provided by the State and contribute to improving, as far as possible, the supply of essential products and services for the population
- The improvement of the organizational, legal and institutional conditions to establish types of economic organization that guarantee the combination of scientific research and technological innovation, the fast and effective development of new products and services, their efficient production with appropriate quality standards and the internal and export marketing management, which will contribute to society and stimulate the reproduction of the cycle
- The promotion of the development of social and humanistic research on priority issues in the life of society, as well as the improvement of methods for introducing its results into decision-making at different levels
- The continuous education and training of technical personnel and qualified cadres that respond to and anticipate the scientific and technological development in the main areas of production and services, as well as the prevention and mitigation of social and environmental impacts
- The rescue of the role of work and the income obtained from it as the fundamental way to contribute to the development of society and to the satisfaction of personal and family needs
- The systematic and sustained improvement of the quality of services provided to the population and the redesign of existing policies, according to the possibilities of the economy
- The incorporation of people in working conditions into employment, as a way of contributing to the aims of society and to the satisfaction of its needs
- The expansion of work in the non-state sector as another employment alternative, depending on the new organizational forms of production and services that are established
- The adoption of a new management model, in line with the greater presence of non-state forms of production, which should be based on a more effective use of monetary-market relations, delimiting state and business functions, in order to promote greater autonomy for producers, increase efficiency, and enable gradual decentralization to local governments
- The adjustment of the current legislation, in correspondence with the transformations in the productive base, to facilitate its efficient and competitive operation and to decentralize the economic and financial management system. Improvement of the organizational structures to implement reliable control and information instruments
- The achievement of management autonomy for the different forms of cooperatives and the gradual introduction of service cooperatives in the agro-industrial activity, at the local level
- The adjustment of agrifood production to demand and the transformation of marketing, raising the quality and demand in the contracts, so that the parties comply with their obligations, limiting the centralized circulation to those items linked to the national balance sheets and granting a more active role to the mechanisms of free competition for the rest of the production
- The development of a comprehensive training system in line with structural changes, aimed at training and retraining of managers and workers in agronomy, veterinary, industrial and food technology, economics,

administration and management, including aspects related to cooperative and environmental management

- The recovery and increase in the production of construction materials that ensure the country's priority investment programs (tourism, housing, industrial, among others), the expansion of exports and sales to the population. Development of production with greater added value and quality. Achieving significant increases in the levels and diversity of local production of construction materials and disseminating their employment standards
- The promotion of the design of new state and non-state organizational forms in passenger and cargo transportation, as well as in other services related to the activity, in accordance with the characteristics of each territory
- The introduction of non-State forms of management in commerce, mainly in gastronomic, personal and technical services for domestic use

The development of the Cuban cooperative sector has been characterized by recognized results and advances, which have materialized in:

- Contributions to scientific and theoretical knowledge in terms of improving the management of cooperative enterprises
- Ethical, technical and scientific-innovative training of human resources in companies and institutions linked to the cooperative sector
- Products, goods and services with added value have been generated from the introduction of the technologies and knowledge acquired
- Development of technologies, processes, products and services, for the management of cooperative enterprises
- Design of social development programs for waste collection, waste disposal and the maintenance, in general, of the hygiene and sanitation of the communities
- Increased sense of belonging of managers, workers and associates that is reflected in the stability of the workforce and increased productivity.
- High levels of satisfaction of the demand for goods and services from the general population

However, one element that has been discreetly dealt with so far is the insertion of the cooperative enterprise as an entity that generates local development, based on its strengths linked to the principles and values by which it is governed, which allows it to be the bearer of independence and autonomy and to alleviate the barriers currently presented by public policies (Marín de León & Rivera Rodríguez, 2015).

In line with the above, it is a priority to strengthen the role of agro livestock cooperatives in the democratization of the agrifood system, based on processes of intercooperation, in terms of sustainable local development in each territory, which pays tribute to food sovereignty and nutritional education.

Food sovereignty and nutritional education

There is a consensus among researchers and social actors that food security and sovereignty is a current and global problem, considering that it is a priority and, moreover, a right of all people to have good food.

The concept of food security has evolved from a logic of food availability and surplus placement to a much more focused definition of nutritional level. The Food and

Agriculture Organization of the United Nations (FAO), redefining the concept, states that Food and Nutritional Security (FNS) at individual, family, national, regional and global levels is achieved when all people, at all times, have physical and economic access to sufficient, safe, healthy and nutritious food that meets their dietary needs and preferences for an active and healthy life (FAO, 1996). This definition poses four dimensions to achieve food security: food availability, economic and physical access to food, food utilization and stability over time of the three dimensions above. Although it is a broader concept than the original one, international public policy on food security continues to be structured along the lines favored by the development of international trade, given by the hegemonic model.

Ramos Crespo et al. (2018), define FNS management as: the decision-making process related to each of its components, under the leadership of the government and through the articulation of all the actors involved, in accordance with the specificities of the territory, climate changes, availability of resources, institutional capacity and infrastructure, which requires an information system that allows the continuous collection of data, analysis, interpretation and dissemination of the results, with a real participatory approach, in order to enhance all the knowledge in this regard, in order to ensure sustainable FNS.

The authors state that FNS should be considered as a concept that encompasses various dimensions and sectors since it is composed of several elements, such as availability, access, stability of supply and biological use of food. There is a need for all these components of the FNS concept to be articulated in a concatenated manner, with the participation of the municipal government being decisive. From the definition of policies and strategies, it must carry out planning, organization, management and control actions that have an impact on the different scenarios, in order to adapt to change, moderate potential damage, take advantage of the positive effects or support the negative consequences, in the global dynamic, on the real possibilities of managing it on a territorial basis, because without food security, it is difficult to propose other development processes..

At the World Food Summit in Rome, the concept of food sovereignty emerged, defined as: "the right of every nation to maintain and develop its capacity to produce basic foodstuffs, with respect to cultural and productive diversity and the right to produce our own food, in our own territory". Later, at the Forum for Food Sovereignty in Mali, the right of peoples to define their own food and agricultural policies, to protect and regulate national agricultural production and trade to achieve sustainable development goals, to determine the extent to which they wish to be self-sufficient, to restrict the dumping of products on their markets, and to give priority of use and rights over aquatic resources to communities that depend on fishing. Food sovereignty does not deny trade, but promotes the formulation of trade policies and practices that serve the right of peoples and individuals to safe, healthy and ecologically sustainable production (Bringel, 2015).

The author himself recognizes that food sovereignty refers to the way food is produced, the appropriation and management of resources, land and territory, local and international trade, sustainable development, collective action, social participation, agro-ecology and the right to food. This is a recurring theme at a time when new approaches and social dialogue are needed in policies to address the COVID-19 pandemic.

In this context, the concept of food sovereignty is assumed, defined in the national plan for food sovereignty and nutritional education, understood as: "The capacity of the nation to produce food in a sustainable manner and give access to all the population to sufficient, diverse, balanced, nutritious, safe and healthy food, reducing dependence on external means and inputs, with respect for cultural diversity and environmental responsibility" (MINAG, 2020).

The execution of actions, in the area of food sovereignty, must be supported by the planning of food and nutritional policies, tempered to the conditions of our country and based on educational models that lead to the formation of individual and collective behaviors in the area of healthy nutrition and the development of a food culture of the population.

Food and nutrition education or nutritional education has been defined by several authors among which we can highlight Andrien and Beghin (2001), Patiño Simancas and Landaeta Jiménez (2010), Rodríguez Vázquez (2012) and Landaeta Jiménez et al. (2013). The theoretical study on the subject allows us to identify common elements among which are:

- Process of forming knowledge, attitudes and practices for a healthy life
- Conscious changes in unfavorable eating practices that influence nutritional status, with positive effects
- Active participation of the population in the improvement of the food and nutrition of the family and the community

The effectiveness of the nutritional education process will depend on the participatory action in the planning and execution of its stages, the use of proactive methods, the levels of motivation achieved on the subject, among other aspects.

Nutritional education should not be limited only to the development of educational actions, but its conception should aim at an adequate food behavior based on: availability of food and new learning and positive attitudes about food and nutrition.

In this sense, in the realization of the principle of cooperative education -the cornerstone of cooperativism- three fundamental aspects are conceived: ethical-philosophical and doctrinal training, technical and innovative-research training, which from a new perspective should assume, as a transversal theme, training in food sovereignty and nutritional education, based on the design and implementation of programs and projects, duly structured on the subject.

Therefore, according to the role played by the education and training of the members of agricultural cooperatives, these should incorporate, in their training programs, the aspects concerning food sovereignty and create the spaces for the exchange of experiences that contribute to the integral education of the cooperative sector and to the food sustainability of the communities and territories.

Agro livestock cooperativism in local food systems and municipal development strategies

As part of the effort the country is making in terms of food sovereignty and nutritional education, emphasis is placed on basing it on the governance of local food systems and articulating it with the process of designing and managing municipal and

provincial development strategies, a process that should conclude in the year 2021 as part of the implementation of the Policy to Promote Territorial Development.

In the process of updating the Cuban Economic and Social Model, it is desired to stimulate the development of territories (municipality and province), from the country's strategy, so that municipalities are strengthened as a fundamental instance, with the necessary autonomy, sustainable, with a solid economic-productive base and the main disproportions among them are reduced, as an element to measure its effectiveness, taking advantage of endogenous and exogenous resources and the interactor, interterritorial and multilevel articulation. In this aspiration, it is based the strategic role that the cooperative sector has in Cuba and its linkage through productive chains with the rest of the forms of state and non-state management, in order to increase the added value of local productions, to promote exports, to substitute imports and to contribute to food sovereignty and nutritional education.

The Municipal Development Strategy (EDM in Spanish) and the Provincial Development Strategy (EDP in Spanish) are integrating instruments that help guide the management of the municipal government according to the priorities defined, based on national, provincial and municipal interests. From their design and management, they articulate the diagnoses and projections that are defined by other planning instruments, fundamentally by the General Plan for Territorial and Urban Planning. However, they have been focused, fundamentally, on state entities and have not managed to sufficiently integrate the cooperative and private sectors, particularly those linked to food production.

In this sense, it is conceived that in the design of the EDM and EDP at least three possibilities should be considered:

- What all the state actors of the enterprise and budgeted system, located in the territory, can contribute from their goods and services, committed to the different destinations foreseen in the plan of the economy and the budget, as well as other elements that can be taken advantage of (technologies, human resources, installed capacities, financing and raw materials, from idle resources, waste or residues, among others) according to their use in new productions or local services in which the cooperatives have a space for the increase and diversification of their productions
- What can be promoted from the management of municipal governments with the non-state sector (cooperative and private) and the linkages of the latter with state enterprises, an aspect where the cooperative sector finds space for collaboration based on the improvement of its management in terms of effectiveness and socio-economic efficiency and the expansion of its cooperative social responsibility
- What the population can propose by calling for People's Councils

The steps proposed for the design of territorial planning tools are not linear, but interact and provide inputs to each other, including analysis of context, challenges and opportunities, the role of the municipality in supra-municipal development, trends in the development of the territory based on key economic, socio-cultural and environmental criteria and indicators, characterization of the main potentials of the territory and balances of available resources, among other aspects that are of interest.

In all cases, the moments and forms in which the cooperatives are inserted into the process of designing the EDM and EDP are defined, particularly in the formation of development programs due to the economic and productive weight that this form of management has. It is conceived the incorporation of a representation of the cooperative sector in the Municipal and Provincial Groups of Local Development (Torres Páez, 2018).

It is essential to incorporate the conception of local food systems to the design and management of EDM and EDP, which must have their expression in local public policies, development programs and project opportunity portfolio, as instruments for their operationalization. In each of these components of the EDM and EDP, it is key that cooperatives get involved because of their specific weight in the agricultural sector, mainly in programs for rice, tobacco, various crops, citrus and fruit trees, cattle, pigs, beekeeping, coffee, cocoa, etc. (Díaz-Canel Bermúdez et al., 2020).

The agro livestock and non-agro livestock cooperative is founded as a possible holder of local development projects and its inclusion is achieved in the "Policy to Promote Territorial Development", approved by the Council of Ministers of the Republic of Cuba. This contribution is introduced in the "Methodological Guide for the design and management of the EDM" and in the "Methodological Guide for the design and management of the EDP", which are applied, to date, in 10 provinces and 32 municipalities of the country that are part of the Articulated Platform for the Integral Territorial Development.

This process contributes to diminish the traditional centralism, verticality and sectoriality that have predominated in the governmental management of the Cuban agro livestock sector, fundamentally at territorial level, and to replace it with an approach that grants more authority to the productive bases and to the agro livestock producers. The fundamental challenge is to transmit a nutritional culture and promote the transfer of technology and the application of the results of science and innovation to the municipalities, in the People's Councils, in the nearly five thousand farms that exist in Cuban municipalities, in the agricultural cooperatives and enterprises that exist throughout the country, in the 700 thousand backyards (which could be as many as 1.3 million), where food is produced. Achieving this process around the structuring and governance of local food systems and in articulation with territorial planning instruments, is a fundamental premise for the successful participation of the cooperative sector as one of the key actors.

Within the framework of the Policy to Promote Territorial Development, the creation of a municipal and provincial promotion fund for local economic development is defined, based on projects presented by the different actors, including cooperatives. These funds are formed from the contribution of the territorial contribution to local development made by state and non-state economic actors. They will be administered in trust by a financial institution and as a priority will promote local food systems and other priorities associated with strategic economic sectors.

The sources of funding for the implementation of local development projects, presented by the cooperative sector as a key actor in the local food systems, are the following territorial contribution for local development; funds for local development projects; funds from the Provincial Government from the territorial contribution of the municipalities; credit with the bank's own funds; international cooperation; foreign direct investment; channeling of remittances; sources from the different

forms of property; National Fund for the Environment; National Fund for Forestry Development; National Fund for the Development of Science, Innovation and Technology; the State Budget and any other legal source in accordance with current legislation (Capote Pérez et al. , 2018). These can be used in combination to carry out a local development project.

As part of the research developed by professors from the University of Pinar del Río, a group of methodological tools have been generated that contribute to the management of food sovereignty and the positioning of the cooperative sector as an important actor in this process and in territorial development. These tools are listed below for each of the components defined in Cuba's National Plan for Food Sovereignty and Nutritional Education:

- Component 1: Sustainable production model
 - Model of public management of food and nutritional security (improvement of production, energy, economic and management efficiency)
 - Technology package for the design and management of local economic development projects (improvement of production, energy, economic and management efficiency)
 - Methodology for the economic and social management of agricultural cooperatives (increasing productive and financial stability)
 - Procedure for the design and management of agroforestry and industrial production poles (increase in productive and functional diversity)
- Component 2: Transformation and commercialization
 - Local public management model with a value chain approach (incorporation of the local value chain approach and management)
 - Procedure for the design of quality management systems (assurance of the implementation of quality management systems)
- Component 3: Access to resources
 - Procedure for the design of local agro livestock innovation systems (implementation of local agrarian extension and technological innovation systems)
 - Methodology for territorial management of the labor force in terms of local development (increasing incentives to reverse internal rural migration and maintaining labor stability)
 - Model for the management of local development financing at the municipal level (guarantee of access to diverse sources of financing)
 - Methodology for the integration of international cooperation into municipal development strategies (use of the potential of national and international collaboration)
- Component 4: Education for food and nutritional sovereignty
 - Training and capacity building strategy for the cooperative sector (conception of cooperative education with a strategic approach, based on its essential axes)
 - Procedure for the Design of the FNS Training Strategy (integration of agro ecology and sustainability in the National Education System)
 - Software for the Diagnosis of Food and Nutritional Security (creation of computer applications for popular and technical consultation, focused on food and nutritional sovereignty)

The research shows the importance, in the current context of updating the Cuban Economic and Social Development Model, of incorporating the cooperative sector as a key actor in the management of food sovereignty and nutritional education, based on the governance of local food systems. Furthermore, the role of cooperatives is based on the process of design and management of development strategies at municipal and provincial level, as well as on the management of local development projects, with emphasis on those associated with strategic economic sectors, defined in the National Plan of Economic and Social Development until 2030. Among these, the following stand out: food production, tourism, local industry and commercial activity, with priority given to those that generate exports of goods and services, substitute imports and promote productive chains to increase added value, the competitiveness of local production, in accordance with the priorities of the plan for food sovereignty and nutritional education.

REFERENCES

- Acosta Morales, Y., & Sánchez Quintero, M. (2019). Seguridad alimentaria en Cuba en la coyuntura actual: Fincas familiares y cooperativas sostenibles. *Revista Científica Agroecosistemas*, 7(3), 142-147.
<https://aes.ucf.edu.cu/index.php/aes/article/view/329>
- Andrien, M., & Beghin, I. (2001). *Nutrición y comunicación: De la educación en nutrición convencional a la comunicación social en nutrición*. Universidad Iberoamericana.
- Bringel, B. (2015). *Soberanía alimentaria: La práctica de un concepto*. Global.
<http://www.gloobal.net/iepala/gloobal/fichas/ficha.php?entidad=Textos&id=14363&html=1>
- Capote Pérez, R., Torres Páez, C. C., & del Castillo Sánchez, L. (2018). Retos de la Administración Pública para la gestión del proceso de financiamiento del desarrollo local. *Cooperativismo y Desarrollo*, 6(2), 179-197.
<http://coodes.upr.edu.cu/index.php/coodes/article/view/206>
- Díaz-Canel Bermúdez, M., Núñez Jover, J., & Torres Páez, C. C. (2020). Ciencia e innovación como pilar de la gestión de gobierno: Un camino hacia los sistemas alimentarios locales. *Cooperativismo y Desarrollo*, 8(3), 367-387.
<http://coodes.upr.edu.cu/index.php/coodes/article/view/372>
- FAO. (1996). *Programa Especial para la Seguridad Alimentaria (PESA)*. Organización de las Naciones Unidas de la Alimentación y la Agricultura.
- García Müller, A. (2017). *Derecho cooperativo mutual y de la economía social y solidaria*. Asociación Iberoamericana de Derecho Cooperativo, Mutual y de la Economía Social y Solidaria.
https://www.academia.edu/35917382/DERECHO_COOPERATIVO_MUTUAL_Y_DE_LA_ECONOMIA_SOCIAL_Y_SOLIDARIA_PRESENTACION_Y_NUESTRO_PUNTO_DE_VISTA

- Labrador Machín, O. (2020). Gestión y responsabilidad social cooperativa: Su indisoluble unidad de la actualidad. *Cooperativismo y Desarrollo*, 8(2), 160-165. <http://coodes.upr.edu.cu/index.php/coodes/article/view/342>
- Labrador Machín, O., Rivera Rodríguez, C. A., & Alfonso Alemán, J. L. (2018). La eficiencia y eficacia socioeconómica de las cooperativas: Enfoque desde la actualización del modelo económico cubano. *Avances*, 20(1), 11-26. <http://www.ciget.pinar.cu/ojs/index.php/publicaciones/article/view/307>
- Landaeta Jiménez, M., Aliaga, C., Blasco, A., Aguilar, D., & Lara, J. (2013). Programa de educación nutricional en escuelas de tres ciudades en Venezuela. *Anales Venezolanos de Nutrición*, 26(2), 112-124. <https://www.analesdenutricion.org.ve/ediciones/2013/2/art-7/>
- Marín de León, I., & Rivera Rodríguez, C. A. (2015). La gestión pública y el desarrollo del sector cooperativo en Cuba. *Cooperativismo y Desarrollo*, 3(2), 117-125. <http://coodes.upr.edu.cu/index.php/coodes/article/view/97>
- MINAG. (2020). *Plan de soberanía alimentaria y educación nutricional de Cuba*. Ministerio de la Agricultura. https://www.minag.gob.cu/sites/default/files/noticias/documentos_complementarios.rar
- Ortiz, S. (2013). La ley de la integración de las cooperativas. *Soberanía alimentaria*, (15). <https://www.soberaniaalimentaria.info/publicados/numero-15/46-la-ley-de-la-integracion-de-las-cooperativas>
- Patiño Simancas, E., & Landaeta Jiménez, M. (2010). Nutrición y participación comunitaria en las acciones de la Fundación Bengoa. *Revista Española de Nutrición Comunitaria*, 16(1), 30-34. [https://doi.org/10.1016/S1135-3074\(10\)70009-0](https://doi.org/10.1016/S1135-3074(10)70009-0)
- Ramos Crespo, M. E., González Pérez, M. M., Torres Rivero, I. M., & Fernández López, R. (2018). Validación de indicadores para la gestión pública de la Seguridad Alimentaria y Nutricional. *Cooperativismo y Desarrollo*, 6(2), 169-178. <http://coodes.upr.edu.cu/index.php/coodes/article/view/198>
- Rodríguez Vázquez, L. (2012). Educación alimentaria y comunidad educacional. *Revista Cubana de Alimentación y Nutrición*, 22(1), 154-160. <http://www.revalnutricion.sld.cu/index.php/rcan/article/view/366>
- Torres Páez, C. C. (2018). Desarrollo local y cooperativismo: Apuntes para un debate. *Cooperativismo y Desarrollo*, 6(2), 120-124. <http://coodes.upr.edu.cu/index.php/coodes/article/view/207>

Conflict of interest:

Authors declare not to have any conflict of interest.

Authors' contribution:

The authors have participated in the writing of the paper and the analysis of the documents.



This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License

Copyright (c) Odalys Labrador Machín, Yamira Mirabal González, Carlos Cesar Torres Paez