



# PRINCIPAL RESULTS OF THE IMPLEMENTATION OF THE EXTENSION MANAGEMENT SYSTEM IN THE MUNICIPALITY OF GÜINES, MAYABEQUE PROVINCE

## Principales resultados para la implementación del sistema de gestión de extensión agraria en el municipio Güines, provincia Mayabeque

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**ABSTRACT.** The Agricultural Extension System (AES), is one of the way to provide, transmit knowledge and meet the producers, technicians and decision makers in the areas of agricultural production in Cuba. We studied the system of agricultural management in the municipality Güines, Mayabeque province, in order to assess the factors that enable the creation of an integrated process management extension, based on the collaboration of the forms of extension and institutions of science and innovation that contribute to agricultural development planning. The extension in the municipality Güines is characterized by its diversity of forms and ways of doing, which gives particular strengths and weaknesses. They develop programs and technological innovation projects that incorporate the extension component, allowing knowledge to incorporate as many farmers and promote rural development planning.

*Key words:* farmers, extension,  
participatory approaches

**RESUMEN.** El Sistema de Extensión Agraria (SEA), es una de las formas de facilitar, transmitir y conocer los saberes entre los productores, técnicos y decisores en las áreas de producción agrícola en Cuba. Se estudió el sistema de gestión de extensión agraria en el municipio Güines, provincia Mayabeque, con el objetivo de evaluar los factores que posibilitan la creación de un procedimiento integrado de gestión de la extensión agraria, basado en la colaboración de las formas de extensión y las entidades de ciencia e innovación que contribuyen al desarrollo agrario del territorio. La extensión agraria en el municipio Güines se caracteriza por su diversidad de formas y maneras de hacer, lo cual le concede fortalezas y debilidades particulares. Se desarrollan programas y proyectos de innovación tecnológica que tienen incorporados el componente de extensión agraria, lo que permite incorporar conocimiento a mayor cantidad de agricultores y favorecer el desarrollo rural del territorio.

*Palabras clave:* agricultores, extensión,  
enfoques participativos

## INTRODUCTION

Cuba's Agricultural Extension System has the mission of contributing to the competitive and sustainable development of productive chains in the agricultural sector, increasing the living standard of growers and consumers, managing and endowing

growers with approaches for economic and social development by solving problems and challenges of agriculture and forestry (1).

In Cuba agricultural extension as process, has evolved since its inception when it was considered a training service and in some cases the supply of inputs, credits and technologies. Now it is considered a technological training service to increase productivity and improve life quality of the rural population (2).

Extension is in itself an instrument to strengthen learning capacity and permanent innovation of rural communities towards competitiveness and sustainability. Several projects on rural development

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focus their work around research and agricultural extension so that contributed techniques by researchers can rapidly serve a large number of growers and favor economic and social development nationwide (3).

Extension also admits that insufficiency and slowness in the process of transfer, research and publication have brought about scarce results in different production branches. For these reasons, current trends to access new agricultural technologies focus on participative approach, which allows researchers and extension experts minimize rough mistakes at the time of taking achievements to a larger scale (4).

The adequate organization and application of a management extension model and its channels will allow the introduction of innovating changes in agriculture, supported by the adoption of decentralizing policies that encourage production forms, both individual and in cooperatives, Basic Cooperative Production Units (UBPC) and Credits and Service Cooperatives (CCS) (5). For all the above, this paper looks forward to characterize the extension management system in the agricultural sector of Güines municipality.

## MATERIALS AND METHODS

The research was done in the agricultural sector of Güines municipality, Mayabeque province. This location has 31 074,61 hectares devoted to agriculture, out of which 11 336,11 are for season crops; 6893,24 for sugarcane; 373,0 for fruit crops; 12036,96 for livestock and 7137,1 for forests.

The methodology used based on participative and equity principles; it was designed from the concepts of agricultural extension in Cuba and the world (5).

This research was made up of three main stages: I- characterization of the extension management system of the municipality; II- determination of

strengths, weaknesses, opportunities and threats in the agricultural sector; III- evaluation of growers participation in the extension system of the municipality.

As auxiliary means, researchers used open interviews to six advanced growers that were selected for their innovative nature; there were also interviews for 14 technicians and eight decision makers of the Municipal Agricultural Board and "Miguel Soneira" agricultural enterprise. Also included were 18 researchers from institutions of the territory that generate technologies: the National Institute of Agricultural Science (INCA), the National Center for Animal Health (CENSA), the Horticultural Research Institute "Liliana Dimitrova" (IILD) and the Tropical Fruit Crops Research Institute (IIFT). All of them have incidence on the agricultural development of the municipality. Also included was the review of governing documents related to agricultural extension as the Technical Assistance Council, consultation and advisory body that facilitates communication between the Ministry of Agriculture with its system, in addition to reviewing agricultural extension and communication between the Municipal Board and the Agricultural Provincial Board in order to identify the main features of the extension system.

Working Groups of the Agricultural Enterprise and the Credits and Service Cooperative do their work by crops, putting into practice those results of research institutions.

The research also took into account the population of growers, technicians, extension workers, decision makers and researchers (Table I).

Interviews results permitted to prepare an interpretation guide to apply surveys to a larger representation of growers in the municipality as shown in Table II. Indicators like age, years of experience in agriculture were considered; 26 growers accounting for 5 % of the total involved in extension work were surveyed.

**Table I. List of growers, technicians extension researchers and decision makers considered as population for this research**

Institution	Growers	Technicians	State decision makers	Researchers extension workers
Identified productive scenarios	6	14	8	7 (INCA) 5 (CENSA) 4 (UNAH) 2 (IHLID)
Total	6	14	8	18

**Table II. Composition of interviewed persons**

Group (age range)	Number of growers	Years of experience in agriculture
Group 1 (25-40)	1	7
Group 2 (41-49)	1	1
Group 3 (50-59)	4	2
Group 4 (60-69)	2	4

Interviews to male and female growers were processed by the percentages method and involved the same questions of previous interviews. They allowed a more objective and representative information.

## RESULTS AND DISCUSSION

From the results of the workshops with decision makers, technicians, experts and researchers involved in extension, the characterization of the extension management system was made. The current situation in the agricultural sector of the municipality was taken into account and the results showed the organizational design of the system where the expert in Science and Technology is the person in charge of the extension work in the municipality and in turn, subordinated to the Department of Agricultural Development from the Municipal Agricultural Board.

Thirty percent of interviewed technicians and experts refer using extension channels like: the Municipal Commission for Agricultural Extension, the Technical Advising Council, Forum and pinpointed actions or non-governmental organizations as ACTAF, ACPA and ANAP. They say that most of these channels are not properly used and coincide that the Municipal Extension Commission does not work despite it coordinates, makes easier, interacts and integrates extension actions in the municipality.

Seventy percent confirms the agricultural extension process keeps on being closely linked to technology transfer and technical assistance, and indicates that involved actors are used to the assistance-like approach and not to self-management, the main participation source.

The extension work is known as the actions done through institutional programs and projects as well as the generalization of scientific-technical results. Eighty percent of interviewed decision makers does not know the organizational system.

The Municipal Extension Commission is considered as a structure that allows the participation of all important actors, that is, growers and their organizations, representatives of different extension forms including research and service or technical assistance institutions of productive branches and other Agencies from the Central State Administration like the Ministry of Higher Education (MES), the Ministry of Education (MINED), the Ministry of Science, Technology and Environment (CITMA) and the Ministry of the Sugar Industry (AZCUBA), among others. This commission is presided over by the Manager of the Municipal Agricultural Board (MINAG) who is responsible for managing and controlling different activities from the agricultural extension system, the preparation and validation of methodologies in the municipality and the organization of training workshops with extension workers (6).

Ninety percent of interviewee says that among the most important activities carried out in the municipality is the interaction of different actors involved in agricultural development. It can be viewed by the implementation of development programs (municipal agricultural front), where the execution and updating of the diagnostic is an essential tool. Workshops, courses and field days have been held supported by the distribution of technical guidelines, booklets, brochures and technical magazines.

In a process of evolution where knowledge on agricultural production is multiple and complex, the essential objective of the Agricultural Extension System should be to favor the harmonious action of all extension forms at the service of the growers. Thus, exchange of experiences, results and extension tools will coexist within the system (7).

Different actions have been made in production units as the introduction of technologies, varieties, support to priority programs, growers and extension workers training and support to the Provincial Technical Advising Council.

In order to determine the strengths, weaknesses, opportunities and threats of the extension system, a socialization workshop from the interview results was held to determine the potential and limitations of the system in the municipality. They served as a guide to design an extension strategy. This workshop was attended by experts in Science and Technology, Researchers from ECIT (INCA, CENSA) and advanced growers of the municipality.

### STRENGTHS

- Presence of different extension forms, urban agriculture, forestry, plant protection, the agroecological movement from farmer to farmer (MACAC).
- Extension System from the National Institute of Agricultural Science (INCA) and the National Center for Animal Health (CENSA).
- Potential availability of human capital.
- Presence of institutions from the Ministry of Agriculture, the Ministry of Higher Education and the Ministry of Science, Technology and the Environment with management capacity for agricultural extension and innovation.

### WEAKNESSES

- Lack of institutionalization.
- All agricultural production forms do not receive the appropriate support from technology generating centers.
- Lack of a greater leading role of growers in the extension process.
- Lack of material inputs and transportation.
- Insufficient training of the workers.

- Insufficient systemic vision of the productive process.
- Insufficient preparation of extension experts.
- Scarce formation of technicians and professionals in agricultural extension.
- Insufficient skilled manpower in productive units.

**THREATS**

- Fluctuation of workers to better paid jobs.
- Competence of the social setting to attract better cadres and professionals.

**OPPORTUNITIES**

- New growers according to Decree 300 on land granting.
- Support given by organizations like the Cuban Association of Agricultural and Forest Technicians (ACTAF), the Cuban Association of Animal Production (ACPA), the National Association of Small Landholders (ANAP) and others, to programs of the agricultural and forestry sectors.
- State and political willpower of permanent training.
- Food production is a priority of Cuba’s government.
- Inclusion of the Municipality Agricultural Board into the local development program of Güines under the advisory of the Agricultural Body as per instructions from the provincial technical committee.
- Cuba’s policy from the new political-administrative division.

The main weaknesses identified are a reference to consider when designing an extension management system so strengths and opportunities can be taken up to overcome insufficiencies by the correct use of plans. This is a summary of the extension situation in this municipality as shown also in the figure.

There have been mistakes in the conception of this work for many years so the expected development has not been reached. The concept of providing growers

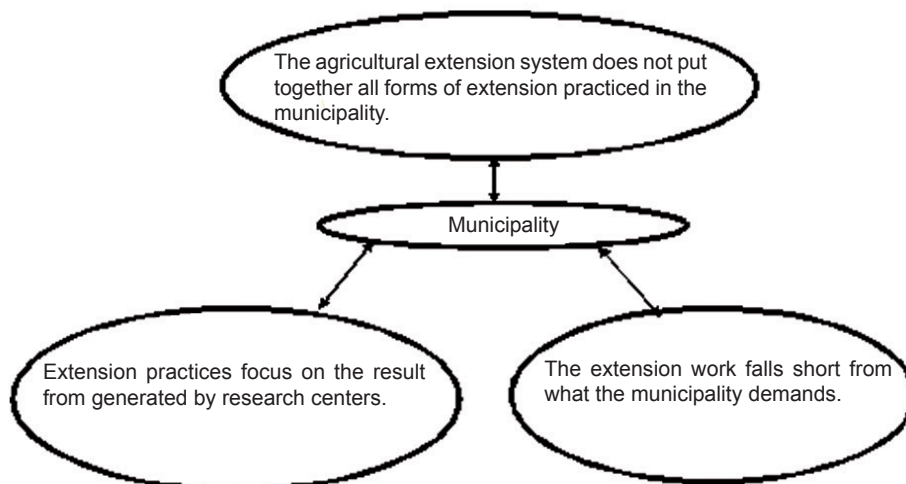
with alternatives or responses to their problems is still in place and no work is done to educate and find joint solutions that favor knowledge self-management (8).

The evaluation of the participative approach of growers in the agricultural extension of the municipality, age and years of experience in agriculture coincide in the grouping criterion; the results of the survey indicate that the highest percentage of growers age is from 50 to 59 years and from 25 to 40 years. It shows that surveyed growers are mostly senior persons.

The existence of a negative association between age and the use of innovations was determined pointing out that when growers are younger, the use of innovation is higher. A reason could be that sometimes growers with a larger agricultural experience tend to be more traditional, and in general they are more reluctant to introduce new technologies (9).

In order to know how growers perceive different forms to manage extension, surveys were applied. These are the results:

- ♦ Out of the total of surveyed growers 55 %, has introduced new varieties in the farm, groups 3 and 4 are more passive to introduce new varieties which accounts for 33 % of participation, so interviewed growers take part in these extension processes making true the processes of technological changes that in turn decide their success.
- ♦ Fifty eight percent has tested biological products in their farms as biofertilizers biostimulants (EcoMic®, Fitomas and organic manure) to improve soils with an adequate use. These products reach them from research centers, an indication of the technical support of such centers to growers from this municipality. Eighty four percent of surveyed growers refer the purchase of inputs and improved seeds.



**Summary of the extension situation in the municipality**

- ◆ The agencies and institutions with a greater incidence in making inputs available are the Ministry of Agriculture with 76 % and INCA with 74 %, and the exchange among growers that is of 50 %.
- ◆ The active participation of growers in the process of selecting new varieties has become an interesting channels towards the most harmonious integration of knowledge and abilities with plant breeders in the quest for practical solutions to their needs as to species and varieties is concerned (10).
- ◆ Eighty five percent of the growers knows where extension actions in their farm come from and considers them as a tool to increase production. INCA enjoys a high identification as well as CENSA where extension is a bridge between two different knowledge: the empirical knowledge of growers, that continue to be essential to increase productivity, and scientific knowledge that allows or contribute to enrich farmers knowledge (11).
- ◆ When asked how information had been transferred in their farms in the extension process, growers said information had been transmitted using different methods.
- ◆ Eighty two percent of the growers identifies different work methods in the extension process or in the application of new technologies as a form of information and positive communication, 18 % feels not informed because they do not identify any extension action, the preferred method for information are workshops, accounting for 88,4 %. They do not like seminars and lectures because both make them passive participants by only listening suggestions from extension agents.

As to training the following results were attained: 100 % of the surveyed growers received training and 20 % says that training offered by different extension forms does not meet their needs, 80 % considers training according to their expectations and needs.

As a matter of fact, when devising training actions as a way to influence the rural environment, its conception should rest upon a historical analysis of their experiences transformed into social and institutional knowledge, incorporating the context analysis that allows identifying and interpreting new demands. Permanent training should be supported by a better programming based on individual needs of agricultural production units, by the evolution of pedagogical methods and by a progressive adaptation of the content to an evolving environment and production decentralization (12).

What is really expected is the design of a management system that takes into account technological innovation and farmers experiments to organize agriculture which is able to get as much actors as possible. The features of this management system are focused to meet growers's needs; the proposal is put forward by organizing a ruling group that lays out

working lines taking into account municipality's needs. The rest of the work will be done from the constitution of multidisciplinary and interinstitutional groups.

The main actions to improve the agricultural extension management in the municipality of Güines are:

### **Actions**

- Institutionalization of the agricultural extension system.
- Validation of the proposal advocated by the Provincial and Municipal Commission of the Agricultural Extension System.
- Implementation of the procedures manual.
- Incorporation of training and extension activities to the functions of the Municipal Agricultural Extension System
- Restructuring and strengthening of the Municipal Extension Commission.
- Strengthening extension teams at ECIT.
- Design and functioning of the Ministry of Higher Education-Ministry of Agriculture network and its interaction with the Agricultural Extension System.

### **CONCLUSIONS**

- ◆ Programs and projects of technological innovation developed in the municipality of el Güines have a built-in agricultural extension component, which allows incorporating knowledge and more growers to favor rural development.
- ◆ The active participation of growers in the extension processes being developed in the agricultural and livestock sector of Güines targets a type of extension from the social organization that flows horizontally based on a participative systemic approach.

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Received: March 26<sup>th</sup>, 2014

Accepted: January 26<sup>th</sup>, 2015