

Local Productive Arrangement for a Cooperative Unit in Isle of Youth, Cuba

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Abstract: The research aimed to develop a Local Productive Arrangement that contributes to the improvement of productive performance in the Basic Unit of Cooperative Production (UBPC) Captain Lawton in the Isle of Youth. The methodology used is based on 1) Conceptual delineation of Local Innovation Systems, 2) Development of meetings, called "Reflection Workshops" and 3) Design of a Productive Arrangement scheme and its partial implementation with local actors. The research design was quasi-experimental, applied during the period 2016-2017. Methods and techniques were used to capture information and statistical methods: the internal consistency test using the Cronbach alpha coefficient; the nonparametric test of the Signs and the Wilcoxon test. The set of actors that are articulated for the formation of the productive chain in the agricultural sector was identified, based on the definition of the relationship criteria. It was obtained as a result of the implementation of the Local Productive Arrangement scheme, which favored the application of innovations in the case study sector as a consequence of the articulation of the different actors involved in the settlement and improvement of performance in the agricultural sector. From the favorable evolution of the productive indicators. It is concluded that the proposal constitutes a guide for the producers and managers of the territorial government, contributing to the articulation of the programs of organizational change of the main local actors.

Keywords: Actors, Articulation, Productive Performance

1. Introduction

Globalization, in addition to boosting economies to internationalization, has led them to self-diagnose to compete. As a result, it is recognized that the dynamism of the economies underlies the strength of their local economies, based on the role played by companies in the promotion of employment, investment and local production [1-2].

In recent decades, many countries have transformed their science and technology policies by incorporating innovation as a fundamental element of economic agendas. This transformation had the purpose of encouraging the dynamics

of technological change and multiplying the contribution of knowledge to the economic and social development of the countries [3].

In the literature consulted, the management of innovation, as a process, has been addressed by several authors, among which are: [4-11], those that address the link between innovation and local development as a dynamic of articulation between different actors of the social fabric, from the innovation systems.

On this last subject, in the consulted literature several denominations are recognized as: cluster, agglomerate, innovative milieu, industrial districts, local productive system, chains, productive alliances, local productive

arrangements, among others, which makes it difficult to standardize a single concept, all in a general way, they express the importance of the formation of alliances between the social actors [12].

Within this conception is born the concept of Local Productive Arrangements, defined as a frame of reference, from which seeks to understand the processes of generation, dissemination and use of knowledge and productive and innovative dynamics [13-14].

In Cuba important changes are being generated in terms of innovation policies, in this sense one of the results was, in 2016 the economic and social guidelines in the VII Congress of the Communist Party of Cuba were updated, which set the guidelines essential in the strategies for the development of the country and offer, among other elements, new options for the production of food, the diversification of productive forms and the promotion of cooperative and private property.

In these transformations, the agricultural sector plays an important role, from the diversification of the forms of organization and production, an issue that facilitated the understanding of the importance and viability of development in the different territories, which allowed the implementation of decentralized strategies, at the territorial or local level.

However, frequently initiatives for local development, prevailing institutional structures and policies and incentive systems generate a scientific and technological dynamic that is hardly connected to daily needs to promote innovative circuits and interactive learning spaces. In this scenario, universities stand out as a local support point capable of promoting knowledge management and innovation [15].

In the Isle of Youth, local experiences and initiatives converge through the execution of an Integral Development Plan until 2020, which was approved by the Minister Council in April of 2012, and is an instrument for the local government to interact with the organisms and the entities of the territory, in order to lead the process of socioeconomic and agricultural development of the municipality.

During the period 2012-2013, pilot experiences with the subsequent transformations in the economic and social field had been developed, as part of this process the agricultural sector began the implementation of an Integral Agricultural Development Program, in its projection 2023, promoted by the insufficient supply of food to meet the basic needs of the population.

In this context, the Delegate of the Agriculture of the Isle of Youth, asked the University Jesus Montané Oropesa, ten demands for the lifting of the existing situation in the Basic Units of Cooperative Production (UBPC), as their contribution to production territorial food does not correspond to its productive potential.

This process is contextualized in the Basic Unit of Cooperative Production Captain Lawton, in which the problematic situation was identified: a) inadequate methods and styles of work, incapable of maintaining a pertinent sociopolitical state in the UBPC; b) instability and fluctuation of the labor force; c) low levels of commitment of the labor

force in general; d) breaches of the linking of income to final results; and f) weak level of cooperation and quality of linkages in the productive chain; between the academy, the government and the agricultural companies, these last ones attend to the productive unit case of study.

In this sense, the present investigation had as objective, to develop a Local Productive Arrangement that contributes to the improvement of the productive performance in the Basic Unit of Cooperative Production Captain Lawton in the Isle of Youth.

2. Materials and Methods

The case study unit was, the UBPC Captain Lawton located on the highway of Sigüanea Km 4 Nueva Gerona Isla de la Juventud, with coordinates A-312019.98-325580.66, B-312023.08-325583.42, C-312020.16-325586.70 y D-312017.17-325584.04

The methodology is based on the proposal of López and Vázquez [16]. The authors of the present work included some modifications with the purpose of adapting it to the objectives of the research and to the conditions of the context of the Isle of Youth. It consists of three phases:

(1) Conceptual delineation of Local Productive Arrangements. It is executed in three stages:

a) Identification and selection of the bibliography, b) Review of the literature and c) Elaboration of the theoretical references.

(2) Development of meetings, called "Reflection Workshops". They are organized in four stages: a) Identification of actors, b) Description of the actors, c) Description of the relationships between the actors of the Local Productive Arrangement and d) Mapping of the set of actors.

(3) Design of the scheme of Local Productive Arrangements. It allows identifying the set of actions, linked together, that must be explicitly included in the proposal and that constitutes a common conceptual framework to apply to all the authors of the system.

The following aspects are also taken into account: history, social and contractual relations, main events, technological equipment and infrastructure, inventory of resources, human resources, age and school level, main problems of the unit and the productive performance of the year 2017. The methods used were: direct observation, interview and documentary analysis.

To do this, theoretical and empirical methods were used, among which the techniques and instruments used were: scientific observation, interviews, surveys, SWOT analysis, force field and content analysis, provided from the results of productive performance of the institutions within the Local Productive Arrangement. In all the statistical analyzes the SPSS see 15.0 and Minitab see 16.0 packages were used, with a confidence level of 95% or higher. Scales are used for the analysis of reliability with the Cronbach's Alpha method to know the confidence levels of the instruments.

The research is part of a result of the project "Local

Productive Arrangements for the improvement of performance in the business sector in the Isle of Youth", led by a group of professors from the University of the Isle of Youth and composed of specialists, technicians and managers, of agriculture and local government.

The definition assumed by the authors on Local Productive Arrangement, was: form of social management of the local production, led by the municipal governments, to guarantee the organization, integration and planned operation of the business production process, with the accompaniment of the academy, to gradually overcome the low level of development of the productive forces and raise labor productivity and knowledge management [17].

3. Results and Discussion

3.1. Brief Characterization of the Isle of Youth

Isle of Youth, is the second in importance, due to its size and population, of the Cuban archipelago. It is part of the Los Canarreos archipelago, located in the southwestern portion of the Cuban insular platform. Under its administrative jurisdiction are more than 500 keys that make up the majority of the Canarreos archipelago, which makes it cover a total area estimated at 12 397.8 km² of which 80.5% correspond to the marine part. The terrestrial portion with an extension of 2 419 km², of them 2 204, 15 km² belongs to the Isle of Youth and the rest to its adjacent keys.

Every day life takes place in 58 settlements, nine of them urban and 49 rural, distributed in the northern zone, because in the southern one there is only one, the Community of Crocodile. The 49 rural settlements are grouped in over 200 inhabitants with a total of 16 and under 200 inhabitants with a total of 33. The system is completed by the dispersed rural population with 4 689 inhabitants.

The Isle of Youth has a population of 84 467 inhabitants with a population density of 35.7 inhabitants / km². 83.7% is urban population and 16.3% rural; in the city of Nueva Gerona, 54.5% reside. In the northern sector lies 99.5%.

Given the economic and social complexity prevailing at the end of 2011, in April 2012, the Council of Minister approved the Integral Development Plan for the Isle of Youth, which is currently being implemented. The vision that is proposed for this special municipality is the following: Municipality with independent agro-productive that allows to satisfy all your needs of local food and contributes to cover the national demand, especially the grains, meat and milk, meats, coffee and vegetables.

It has developed the local industry, social and tourism services and has strengthened the capacity to face tendential hazards and extreme events. In the same way, this productive economic development has promoted the generation of new and varied jobs; the implementation of local development programs, including mini-industry, based on the use of own raw materials; and it has raised the quality of life of its inhabitants and community participation.

It pursues two basic objectives:

1. The economic-productive development of the territory, through the production of food, utilization and reactivation of the potential of natural, human and economic resources, the responsible management and protection of natural resources and the environment, as well as guaranteeing the necessary infrastructures that support the development of the territory.

2. Social equity and improvement of the quality of life, with job creation, the increase of services and the improvement of the habitat.

To achieve the above objectives, the Integral Development Plan defines three strategic axes: 1) Agricultural Program, 2) Industry Program and 3) Tourism Development Program.

At the end of 2013, the results planned in the Integral Development Plan were not satisfying the expectations that they generated. Under the direction of the government in the territory, the companies and the university were summoned to reflect on the causes and conditions that were manifesting and impeded the adequate development of the program.

3.2. Some Results of the Implementation of the Local Productive Arrangement Scheme in the Agriculture Sector

Figure 1 shows the articulation and interaction between the actors of the Local Productive Arrangement in the agriculture sector, where the weakening existing between the UBPC and the entities that are linked with broken lines can be appreciated.

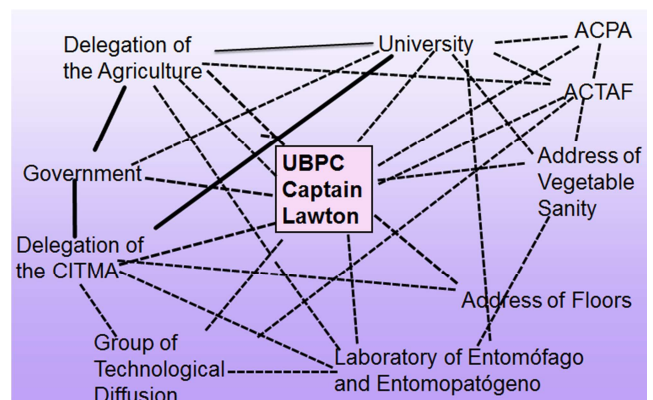


Figure 1. Articulation and interaction between the actors of the Local Productive Arrangement.

Taking as a reference that dark lines represent that relations and dashed lines are still weak.

Criteria to be defined for the relationship levels

- Existence of contracts between the actors.
- Functional and institutional relationships.
- Existence of levels of subordination and hierarchy.
- Existence of measurement criteria in the work objectives that address levels of relationship.
- Levels of accompaniment in productive processes or services.
- Levels of satisfaction between the parties with the actions undertaken.
- Main problems of the unit.

3.3. Proposal of the Scheme for the Local Productive Arrangements

A scheme of Local Productive Arrangements for the UBPC Captain Lawton is elaborated, where the four stages are based on the principles of the Deming cycle. The logic says that these aspects must generate a change in the case study unit. Parallel to the stages, four processes are contextualized that pursue the objective of creating a philosophy on change based on knowledge management and innovation (Figure 2).

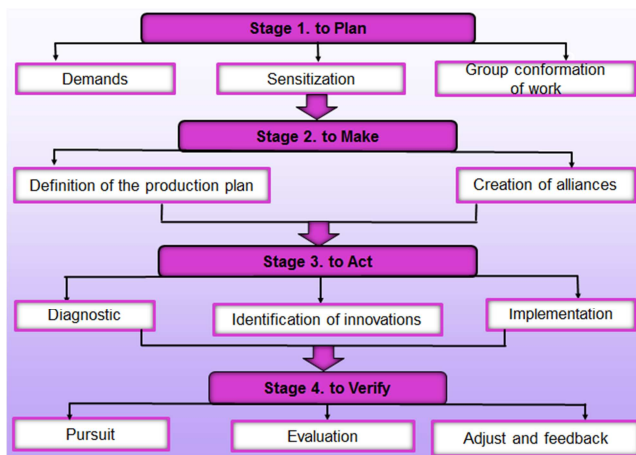


Figure 2. Local Productive Arrangements in the UBPC Captain Lawton.

The most important aspects of each stage to be developed by the local institutions that participate in the Local Productive Arrangements are highlighted below.

Stage 1. Plan

It contributes to the involvement of producers and decision-makers in order to solve the problem detected, and information on the production processes is collected. It is characterized by specifying the process of training and integration of all local actors that are members of the system. It is received by the university pinera, the demand made by the actors involved in the process from the strategic axes of the Integral Development Program of the Isle of Youth. This process must take place in a positive negotiation environment.

For the work, authorization must be obtained from the corresponding entities, which contributes to the scope and definition of responsibilities. What is agreed upon is disaggregated into a Gantt chart, where the main problems are defined, the objective and action for their solution, compliance period, those responsible and the area, with the respective necessary resources. Top management must play an important role in raising awareness, achieve a great mobilization of the producers in the execution of each task, workshops, training and meetings are developed which allows the critical analysis of each action to be executed.

The management group is organized into two teams, a main one that is responsible for applying the procedure and a second complementary team that is composed of decision makers related to the issue and the producers. This process is organized so that the conditions for adequate communication,

flexibility and creativity are created, mainly when receiving a criticism or giving solutions. There is knowledge and skills in the communities and territories that it is necessary to homologate, so it is necessary to rescue, systematize and organize knowledge, depending on the desired change. The training needs are determined and different group work techniques are used.

Stage 2. Do

It helps to understand the lines of work and the objectives in the short, medium and long term, after verifying the causes of the problems and collecting the appropriate data for a better strategic management. The fundamental objectives and goals are proposed to induce changes in the work systems of the agricultural activity with emphasis on the process of improving organizational performance, from the management of innovation, in order to establish the balance of its components.

The definition of strategic planning should enhance the productive results from the organization of the Key Results Areas, especially the definition of the mission and vision as a social commitment for the role played by the sector in local development. The commitment with the actors must increase the management level of the entity and its base units. Formal and informal visits are used in the study areas and participatory workshops. This is an indispensable step, based on the willingness and aptitude for work, because only from that point on, we begin to manage with a true will to change.

Stage 3. Act

Its objective is to incorporate improvements in the performance of institutions through the monitoring and measurement process. The objective of the diagnosis is to achieve a clearer perspective on the peculiarities of the entity both in its general organization and in its external and internal environment, in order to determine possible gaps on which to work at the specific moment of the implementation of the procedure.

What is intended is to promote the propensity to opt for change and effectiveness to make it a reality in the form of products, services, production or supply processes, and methods of organization or marketing. The data analysis is carried out with the objective of gathering all the information available in the diagnosis, through the instruments and techniques. All the elements of data analysis contribute to the decision making of the actors.

Good management practices are based on the identification of ways of using resources and how to organize the different components that interact with each other in the management process. For the implementation, the behavior of the indicators of efficiency, effectiveness and effectiveness, the work objectives, the dimensions and scopes of performance, establishment of responsibilities, construction of formulas and algorithms, information gathering, validation of technical criteria and communication of the results.

Stage 4. Verify

Its objective consists of verifying the status of the measured indicators, proposing corrective actions, as well as determining the degree of application of the actions and

participation of the actors involved. It contributes to the analysis of the data, understanding and documenting the differences and reviewing the problems and errors still to be solved. The main team monitors the proposed actions and the degree of application of the defined actions.

Priorities are identified from the problems detected. The main team holds work meetings with the members of the complementary team to discuss the results. A comparative analysis of the initial to the desired state is carried out with a periodicity of one year, which allows to determine the evolution of the evaluated indicators.

By adjusting and feedback the main team together with the complementary designs new actions if appropriate. This process constitutes the end of one cycle and the beginning of another that will lead to a higher stage in terms of continuous improvement and an adequate performance of agricultural activity. In general, it is a process of learning, feedback and continuous improvement.

Next, the essential aspects determined are related through the diagnosis made with the interviews with managers and workers and a documentary analysis of the balance reports. Among them are:

1. Lack of sense of belonging and ignorance of the principles of cooperativism
2. Lack of management autonomy
3. Non-compliance with the link between income and final results
4. Insufficient satisfaction of food self-consumption
5. Insufficient work force, qualification and preparation in cooperative management
6. Poor social management: lack of incentives, unattractive living conditions
7. Weak gender approach
8. Breach of the current legislative norms
9. Poor economic-financial and statistical situation

When performing an analysis of the productive indicators (table 1), it is observed that, of the 22 indicators evaluated in 2017, using as reference line the year 2016, it was found that all were met, only in the cultivation of the pump fruit the real in relation to the production plan is not fulfilled in 2017, but it is higher when compared with the year 2016. The fact is highlighted that, in crops such as Col (55.56%), Coco (43.75%) and Cucumber in 25.22%, are over fulfilled above 25% compared to the initial diagnosis.

Table 1. Behavior of the productive indicators in the UBPC Captain Lawton for the year 2017 and its comparison with respect to 2016.

No	Crops	U/M	Real 2016	Plan 2017	Real 2017	% Increment R17-P17	% Increment R17-R16
1	Viandas total	t	62,40	67,80	71,60	5,60	14,74
2	Tubers and roots	t	36,80	39,20	41,90	6,89	13,86
3	Sweet potato	t	15,40	16,50	18,60	12,73	20,78
4	Malanga	t	12,80	13,50	13,80	2,22	7,81
5	Yucca	t	8,60	9,20	9,50	3,26	10,47
6	Total banana	t	25,60	28,60	29,70	3,85	16,02
7	Total vegetables	t	34,43	38,70	42,68	10,28	23,96
8	Tomato	t	12,80	14,30	16,10	12,59	25,78
9	Pepper	t	5,20	5,80	6,30	8,62	21,15
10	pumpkin	t	3,50	4,10	4,50	9,76	28,57
11	Cucumber	t	2,30	2,60	2,88	10,77	25,22
12	Cantaloupe	t	5,30	5,80	6,20	6,90	16,98
13	Cabbage	t	1,80	2,30	2,80	21,74	55,56
14	Other Vegetables	t	3,53	3,80	3,90	2,63	10,48
15	Total grains	t	16,90	18,60	19,40	4,30	14,79
16	Corn	t	12,40	13,80	14,20	2,90	14,52
17	Bean	t	4,50	4,80	5,20	8,33	15,56
18	FRUIT	t	45,40	49,10	49,41	0,63	8,83
19	Coconut	t	1,60	1,80	2,30	27,78	43,75
20	Mango	t	6,40	6,80	6,96	2,35	8,75
21	Guava	t	11,20	12,40	12,85	3,63	14,73
22	Pump Fruit	t	26,20	28,10	27,30	-2,85	4,20

Source: Balance of the work objectives 2017. Delegation of the Agriculture of the Isle of Youth.

To determine the reliability of the instrument, the internal consistency test was used using the Cronbach alpha coefficient, where the test as a whole presented 0.96. The levels of internal reliability for each dimension of the test were calculated obtaining the following levels: Sources of innovation (0.85); Obstacles to innovation (0.89); Effects of innovations (0.70); Concentration of efforts (0.91); direction of innovations (0.93) and implementation of systems (0.87).

Once the most significant milestones to be developed in the Local Productive Arrangement procedure for the agricultural sector of the Isle of Youth are highlighted, a summary of the results achieved in correspondence with the

methodological framework followed in the present work is presented below.

The proposal of innovations that are identified for the performance of the agricultural sector to benefit the UBPC Captain Lawton, is the core of the Local Productive Arrangement, since it is where scientific and technological knowledge will be applied to the productive system, disseminating it and transforming it into improvements of the productivity and well-being of the population. During the analyzed period, it has introduced important innovations, in the broadest sense of the concept, the most outstanding according to the authors of the present work, have been:

1. Regionalization of new maize hybrids (*Zea mays*), including: simple hybrid HST-3236 (variety P-7928), Impacto, Somma and SYN 750.
2. Technology of root ball for the cultivation of rice from the collaboration project with CUBAPOM and the University of the Isle of Youth "Strengthening rice production in the conditions of the Isle of Youth".
3. Technology for the repair of waste treatment system with biodigesters in swine producers.
4. Technology for the cultivation of rice with JUMIL and GASPARDO grain seeder and CLASS harvester.
5. Reduced corn planting technology, with 55,000 and 70,000 plants per hectare.
6. System of refrigerated milk collection with thermos in dairies, called "Functional Agricultural Unit".
7. Technologies of wind mills to guarantee the water supply for animals and the sowing of pasture crops.
8. Methodology based on protected agricultural nurseries, to promote the development of the fruit program.
9. Egg incubator plant for the "Andrés Cuevas" Poultry Farm.
10. Porcine genetic center to guarantee the replacement of breeders in the conditions of the Isle of Youth.
11. Bulldozer for the provision of services to producers and a fertigation in agricultural production
12. Aseptic line technology in the agroindustrial company, for the processing of preserves.
13. Services for artificial insemination in cattle and pigs for genetic refreshing.
14. Method of substitution of CaCO₃ in the diets of laying hens.
15. Experimental polygon: "Commercialization of supplies, equipment and specialized technical services in the agricultural sector".
16. Methodology for updating the development program of the livestock company.
17. Productive poles for the execution of the proposed investments
18. Model of Local Productive Arrangements for the management of innovation in the agricultural sector.
19. Technologies for the management of improved seeds, biofertilizers, biopesticides.
20. Transfers of technologies and storage and conservation infrastructures in the industry.

The development of these innovations constituted an option of integration between the entities and the actors that participate from the generation of the primary products up to the consumer, to satisfy the demands of the population.

Towards the inner part of the territory, the following are included: the university with its structures, the Technological Diffusion Group, the Soil Directorate, the Plant Health Department and the Entomophagous and Entomopathogenic Laboratory. The local government with its addresses, those that are articulated to the business sector as interface agents (extension agents) or support and decision-making organizations.

As part of the growth and development process of the

Pinera University, strategic alliances have been created with other innovation networks such as the Local Agricultural Innovation System (SIAL) and the University Management Network of Knowledge and Innovation for Development (GUCID). It stands out, as an example of exchange of knowledge and learning processes between the university and GUCID the birth of a study center, attached to the university, which is becoming increasingly important as the incubation of knowledge strengthens the links between the university and the institutions of the territory, and encourages the construction of networks that allow a better interaction between the parties.

The University of the Isle of Youth, through structural changes that it has developed towards its interior, has been articulated little by little with the business fabric of the territory, in particular, it actively participates in the Local Productive Arrangement, where it has concentrated its cooperation through R + D + i projects, scientific-technical services, consultancies and undergraduate and graduate training based on the demands generated by the case study sector. The actions derived from the collaboration agreement that was signed by the university with the agricultural sector, have been developed through three essential forms, undergraduate and postgraduate training, research projects of R + D + I and services technical scientists

As for the training of professionals, the university has created conditions for entry into the Course by meeting, in a new form of entry into the careers that have the most impact on local development, such as: Engineering in Agronomy, Industrial and Bachelor's degree in Accounting and Finance. In postgraduate training and training, a Master's Degree in Management is successfully developed, where those enrolled assimilate new knowledge associated with modern management techniques and tools and other courses and workshops to improve the performance of the sector.

The lines of research that are currently being developed and taxed to the entity under study are: environmental management, organizational change, local productive arrangements, management of innovation and knowledge, creation of productive centers, quality management and programs of training.

In terms of science and innovation activities, the university has contributed to the formation of a local development network to respond to the demands of the main companies in the territory and the productive chains.

For this, four R & D & I projects were managed, which have been showing solutions to the main problems reflected in the Integral Development Program. They stand out among them:

1. Management of organizational change in institutions of the Isle of Youth.
2. Local productive arrangements for improving the performance of the business sector.
3. Quality management in institutions of the Isle of Youth.
4. Human capital management in institutions of the Isle of Youth.

Regarding the local government as a key actor in the Local

Productive Arrangement, it has increased its responsibility regarding the issue of development since 2011, with the approval of the Guidelines for the Economic and Social Policy of the Party and the Revolution in the VI Congress of the Communist Party of Cuba and ratified in the VII Congress. These guidelines propose a set of actions that should be articulated and be coherent with the development strategy of the country and the territories.

For the case under study, two of them deserve to be highlighted. The first is Line 17, which states that the development of the territories should be promoted based on the country's strategy, so that the municipalities are strengthened as a fundamental instance, with the necessary autonomy, sustainable, with a solid economic base - productive, and reduce the main disproportions among these, taking advantage of their potential. Prepare the corresponding legal framework.

While the second, it is the Line 24: Achieve higher levels of productivity and efficiency in all sectors of the economy from raising the impact of science, technology and innovation in economic and social development, as well as the adoption of new patterns of use of productive factors, managerial models and organization of production.

It is in this sense that the local government has been entrusted to demand, favor and encourage compliance with these policies, concentrating on encouraging innovation in its radius of action for all the institutions operating in its territory, in particular, the business system, using various mechanisms, such as the Municipal Initiatives for Local Development, which consists of a financial fund for the development of local development projects.

Both policies constitute an opportunity to promote greater coordination and promotion of the processes of generation and diffusion of knowledge and technologies, favoring the articulation of companies and the interaction of other actors. This includes important changes made in the legal framework associated with the recognition of small and micro enterprises, which participate in the Local Productive Arrangement.

More concretely, the government, through its management structures, has guaranteed the conscious participation of the social actors in a productive agglomeration to respond to the demand made. Participates in the signing of the agreement and the creation of strategic alliances between the integration agents described above. It has identified leaders and people with skills to streamline innovation processes, which allows to take advantage of local knowledge and talent.

Systematically evaluates the execution of the program of the UBPC case study from the means and resources assigned, for the productive processes, promoting its use in the priority activities for the economy by creating knowledge and infrastructure capacities. It promotes the creation of forums for coordination and articulation of

actors and innovation groups, where interests, themes to be discussed, programs, strategies and concrete actions are reconciled, which respond and enrich the Integral Development Program.

In addition, it carries out permanent exchanges with the decision-makers participating in the Local Productive Arrangement to match the demands and plan of action with the development priorities at the territorial level. It also allows a more organic link between innovation groups (university, research centers, NGOs, CITMA and MINAG).

The business sector and academics have recognized that the influence of local government has contributed to the strengthening of links and articulations between the actors; the processes of generation, diffusion and use of knowledge are enriched and the productive dynamics of the territory are intensified.

All the actions described above contributed to the UBPC Captain Lawton also incorporating as an activity of innovation, the: reorganization of the areas of the installation for the optimization of spaces and creation of new leisure areas, the instruction of new technologies for the improvement of the conditions of physical environment and wellbeing in the cabins, creation of an ecological area as part of the Vida project, respecting the interaction with the environment and the regionalization of plant species for the establishment of a friendly area with the environment.

The innovations introduced by the management group, together with the actions developed by the government and the university, have influenced the improvement of the performance of the entity under study, being reflected in the favorable evolution of the productive indicators.

4. Conclusions

1. The alliances and articulations achieved by the university with the national knowledge networks, have been a key factor for the generation, dissemination and use of knowledge in the Isle of Youth, inasmuch as useful training, research and innovation capacities have been created to guide the processes of knowledge management, which support the construction of knowledge for the implementation of public policies that are currently being developed in Cuba.

2. The scheme of Local Productive Arrangement, coincide with other methodological proposals regarding the need to study the relationships between the government, the university, the company and other integration agents, to define the real potential of joint work and formulate policies for a articulation that generates mutual benefit, however, differs in that it gives equal importance to all the actors involved.

3. The Local Productive Arrangement is a working instrument that, applied among local actors, contributes to the effective articulation between them and to the improvement of their performance, which has repercussions in the increase of production due to the development of products and services, new or improved, and to the satisfaction of the food needs of the population in the territory.

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