

Strategic management model for decision making in agricultural entities¹

Maybe Campos¹, J. Suárez¹ y R. Ojeda²

¹*Estación Experimental de Pastos y Forrajes "Indio Hatuey",
Universidad de Matanzas "Camilo Cienfuegos", Ministerio de Educación Superior
Central España Republicana, CP 44280, Matanzas, Cuba*

²*Centro de Estudios de Desarrollo Agrario y Rural, Universidad Agraria de La Habana, Mayabeque, Cuba
E-mail: maybe.campos@indio.atenas.inf.cu*

ABSTRACT

In order to contribute to decision making in agricultural entities the necessity of conceiving a strategic management model (SMM) was observed, integrated by a set of specific procedures and tools, which is supported by some premises that are related to the mission of the entity's administration, the information availability and the workers' commitment; likewise, it has fundamental characteristics that distinguish it. The SMM is participatory, proactive and interactive and has four evaluation stages; in it a set of tools is integrated, capable of analyzing and interpreting its dimensions with a holistic approach, through the utilization of a management system by processes that favors the interrelation actors-ecosystems and promotes agroecology. After executing the four stages, including the strategic planning of the entity, the model was implemented and activities of strategic control were conducted.

Key words: decision making, strategic management model, agricultural entities.

Practical antecedents in the elaboration of the Strategic Management Model for decision making

The topic of this work is related to the conception of a Strategic Management Model (SMM) to support decision making in Cuban agricultural entities, which are inserted in a context in which successful experiences are being displayed regarding the self-managed development by some municipalities; among them Yaguajay stands out (Boffil, 2010), where projects are being executed which take the municipal territory as center of a system where different stakeholders and factors of its environment intervene (Machado *et al.*, 2007).

Considering the above-mentioned information, the Ministry of Economy and Planning (MEP) suggested a methodological scheme for strengthening the municipalities' planning, in order to propitiate higher local initiative in the promotion of socio-economic development faced by the territories.

Consequently, the Matanzas province is developing an experience that began during 2000, in

the Martí municipality, and it focuses on the agricultural sector—according to Rodríguez and López (2011), agriculture is the most important sector of the economy, due to its natural, technical, economic and social characteristics— and the studied communities were those linked to the agricultural entities. This experience has spread to other municipalities of the country, at the request of the Provincial Direction of Planning, the Agriculture Delegation and the Secretary of the Provincial Administration Council of Matanzas.

During 2001, a study conducted at the productive entities of the Martí municipality, within the frame of the project "Socio-economic, environmental and technical-productive diagnosis of the Martí-Perico strip" led by the Experimental Station "Indio Hatuey" (Machado *et al.*, 2007) appreciated a deterioration of the productive basis (Campos, 2003), which had incidence on low sustainability levels due to the deterioration of natural resources, the unstable food situation, the decrease of the standard of living and the low family incomes. This situation demanded to

¹ This paper is part of a doctoral thesis.

evaluate the progress towards sustainability –using its tool of analytical, reflexive and participatory mapping of sustainability (Imbach, Dudley, Ortiz and Sánchez, 1997)– of the communities and productive entities (basic units of cooperative production –UBPCs–, cooperatives of agricultural production (CPAs), state farms and the livestock production enterprise), which involved a deeper analysis in agricultural entities; for this the UBPCs were selected in order to implement works of strategic planning, in an attempt to improve efficiency and productivity, according to the criterion expressed by Gómez (2001) and Rodríguez (2004).

Afterwards, in 2008, a participatory strategic planning was developed in 20 UBPCs of the Matanzas province and it arrived at the following conclusions: there was lack of autonomy and poor strategic vision; most of the entities were not profitable; the cooperative members needed to dedicate some time to the utilization of yards and plots to complete the family food; 100 % of the analyzed UBPCs did not fulfill the income demands of the partners; there was deterioration of the natural resources and imbalance of the ecosystems, little training of the managers and technicians; as well as

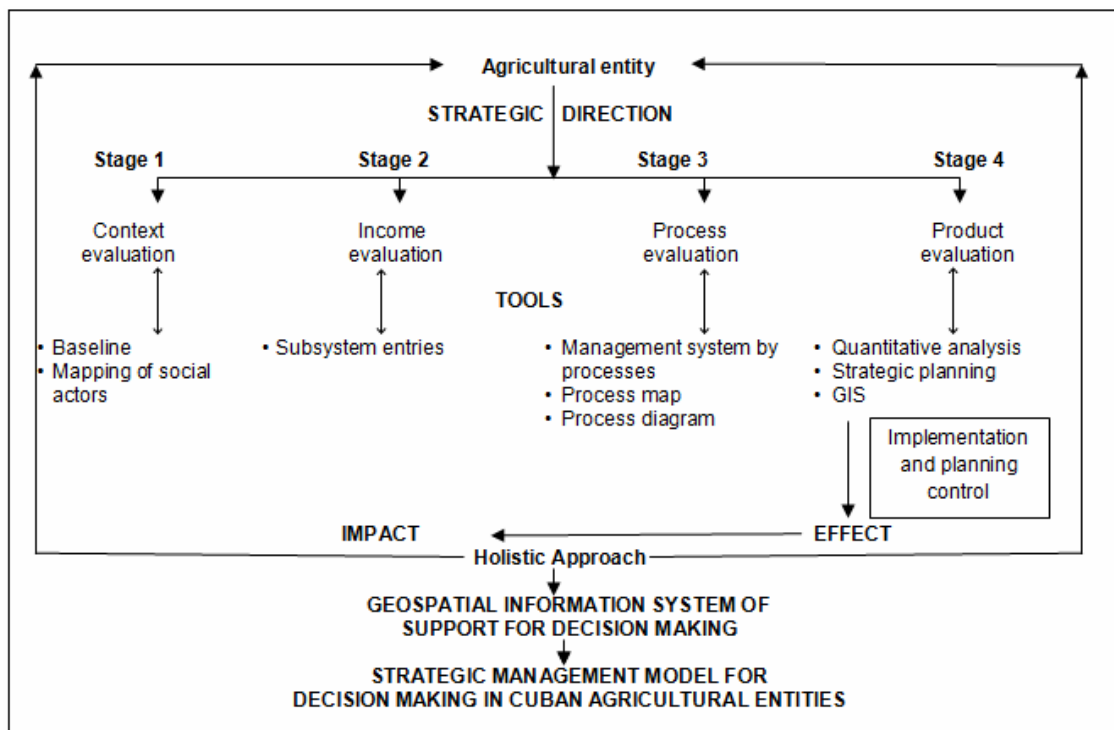
absence of tools and procedures for strategic management (Machado *et al.*, 2009). The main author of this article has participated in all these experiences.

In this sense, and due to the necessity of strengthening the learning generated in the territory from the theoretical and practical point of view, the need to conceive a strategic management model for decision making in agricultural entities was observed.

Conception of the Strategic Management Model for decision making in agricultural entities

For the conception of the SMM (figure 1) some long-term planning and evaluation management models were taken into account, as basis of the set of specific procedures and tools, developed from the functions of strategic management. These were considered the methodological structure of the research and constituted its main scientific-methodological contributions.

Among the models used, the approach “development of” suggested by Souza (2001) stands out, in which the philosophy of the “ontextual mode” of innovation of changing the people who change things prevails; as well as the CIPP model



Source: Elaborated by the author.

Figure 1. Design of the strategic management model for decision making in Cuban agricultural entities.

(Stufflebeane and Shinkfield, 1987), which comes from the branch of education and was adapted by Souza (2001) to be applied to agricultural institutions of development. This model considers that evaluation is a process that facilitates to identify, collect and interpret information useful to decision makers and to the people in charge of the execution and management of the programs.

Likewise, the CIPP model organizes the implementation process according to four dimensions (context, inputs, processes, products), in coincidence with Borges-Andrade *et al.* (1995) and with Rodríguez and Miguel (2005) who apply in their models these four types of evaluation, as well as the strategic management model which is suggested in this article.

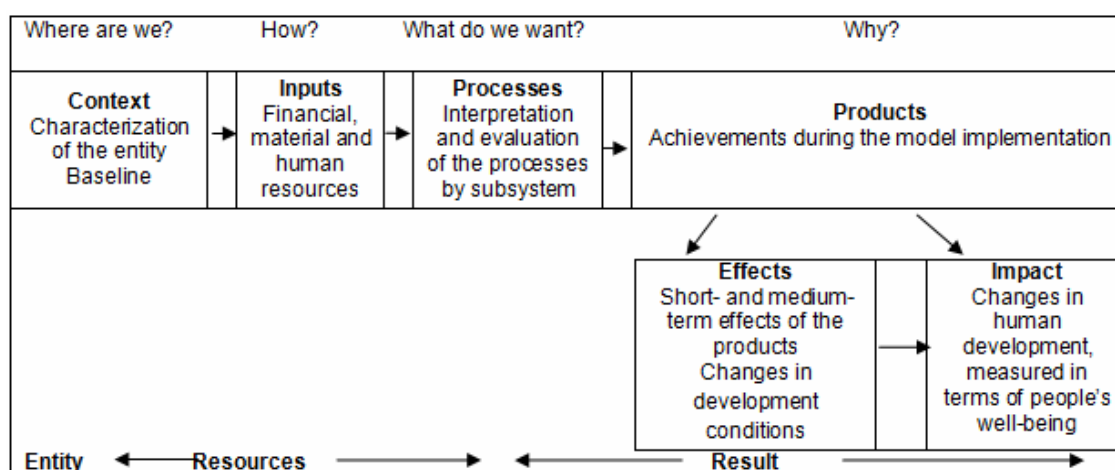
Other models that provided their contribution were the methodology of the National System of Agricultural Science and Technological Innovation of the Cuban Ministry of Agriculture (SINCITA) (Mato *et al.*, 1999), the models of technological management and innovation (Suárez, 2003), the results-based management model formulated by the UNDP (Perdomo, 2011) and the local development model based on knowledge and innovation (Bofill, 2010).

In the same way the CIPP model contributes to the conceptual bases of the SMM, the SINCITA methodology provides the contents of strategic analysis of the system using planning, monitoring and evaluation as well as transdisciplinarity and the holistic approach in the systems as instruments; however, this methodology does not perform the context evaluation. Such aspect constituted a

fundamental step in the SMM, because it corresponds to the stage of sensibilization and participatory diagnosis, in which the commitments and the empathy with the facilitator group is achieved, as well as the sense of belonging and the participation of the workers/partners.

The models of technological management and innovation (Suárez, 2003) and of local development based on knowledge and innovation (Bofill, 2010) contribute a conception aimed at catalyzing the development of an agricultural entity and the communities where it is inserted, from promoting the utilization of technology, innovation and knowledge. In this sense, the utilization of the ECOFAS (ECOLOGICAL Framework for the Assessment of Sustainability) methodology, developed by Funes Monzote (2009) for the conversion of specialized production systems towards integrated livestock production-agriculture systems, is considered suitable.

The results-based management model formulated by the UNDP (Perdomo, 2011), offers to the SMM the facility to convert the results related among themselves into a chain of results (figure 2), which exposes, essentially, what decision makers want to achieve, why they want to achieve it and how they will do it. This chain illustrates the short and medium-term effects of the products of an intervention and the changes in the development conditions; the impact, according to the UNDP (2009), is evaluated by the intentional or real changes in human development in terms of people's well-being.



Source: Elaborated by the author based on UNDP (2009).

Figure 2. Chain of results of the SMM.

The suggested SMM is supported by the following premises:

- It is suitable for its implementation in Cuban agricultural entities.
- The administration should be committed to the results generated by the model.
- There must be an availability of input information in the entity, as well as the possibility of capture and/or collection of internal data.
- Existence of a staff with some basic training about strategic direction and of a participatory environment which promotes creativeness and commitment of the workers in the search for endogenous solutions.
- The SMM procedures and tools constitute a methodological instrument; however, the success of their application is in the conception that decision makers have about the specificities of their productive entity, their potentials and their strategic vision.

The main characteristics of the suggested SMM are the following:

- It integrates a number of key tools within the entrepreneurial strategic management, whose content is presented in specific procedures that complement it.
- It evaluates and interprets, with a holistic approach², the stages and tools of the model, as well as achieves an interrelation in each of its dimensions.
- It analyses the processes in each subsystem, through process maps and diagrams.
- It identifies and evaluates economic and technical-productive as well as social and environmental indicators, these last ones in order to achieve cleaner productions.
- It integrates the database of the entity to a system of geospatial information.
- It trains decision makers in the systematic analysis of the problems and in the use of mechanisms that allow to verify the coherence of their appreciations and reflections.

As the CIPP model modified by Souza (2001) is used in the agricultural sector (by EMBRAPA³ and CIAT⁴) and because the main models considered use it, in all its conception or some of its elements, the contributions of the SMM that contribute to its novelty stand out, from the four stages of evaluation which constitute its components, as it is explained below:

- Context evaluation: the SMM includes a participatory characterization of the productive entity -unlike the global data of the CIPP approach- through the establishment of a socioeconomic as well as environmental baseline (Ministry of Economy, 2009) and a mapping of social actors (people and institutions), with the participation of decision makers and partners/workers of the entity; likewise, the SMM evaluates the ecosystem as the basis where agricultural development is promoted.
- Input evaluation: the SMM includes the identification and evaluation of the available resources (human, material and financial), not in a global way, but in each of the entity subsystems, in order to know the existing conditions to implement the development program.
- Process evaluation: the SMM not only registers the processes, but it also interprets and analyses them in each subsystem, through a management system by processes –a distinction that allows to use this modern management approach– in which tools such as maps and diagrams of the processes are used; likewise, it includes the dynamic interrelation between the ecosystems and the different actors.

In this stage, the SMM allows to manage integrally each of the processes in the evaluated subsystems, unlike the CIPP, which is an evaluation model; also, the development program which is generated is supported by the approach of the ECOFAS methodology (Funes Monzote, 2009), which is based on the evaluation, reflection, analysis and design of the improvement cycle of agricultural systems. It is a process that guarantees the joint participation of researchers and social actors; this allows to recognize the abilities and traditional knowledge of farmers, their

² Holistics is a conception based on integration, whose general principle was summarized by Aristotle in his metaphysical work *"The whole is more than the addition of the parts"*, for which it is highly associated to the system approach; the origin of the latter is ascribed to Ludwy von Bertalanffy in the mid 20th century.

³ EMBRAPA: Brazilian Enterprise of Agricultural Research, Brazil.

⁴ CIAT: International Center of Tropical Agriculture, Colombia.

ability for the analysis of the agroecosystem, the innovation, design, planning and definition of strategies.

- Product evaluation: the SMM is not limited to evaluate the results achieved according to the established objectives, but it enriches this evaluation with the incorporation of quantitative and strategic analyses -including the strategic planning of the entity- and a system of geospatial information, with its database and associated maps; also, effects and impacts are evaluated.

The SMM stands out for being participatory, proactive and interactive, as well as for integrating a set of tools which allows to analyze and interpret its dimensions with a holistic approach; this allows to clarify the interrelations among its components -with permanent adaptations-, in which all the dimensions are linked and this facilitates the readjustment of each stage according to the conditions of the evaluated context.

Advantages of the Strategic Management Model for decision making

- It is a participatory model elaborated together with decision makers of the evaluated entity as case study.
- It accomplishes higher depth in the analysis of the processes inside the productive entity, that is, "it allows to extract lessons from within".
- It allows to identify and evaluate productive systems, as well as to visualize the multifunctionality of the system and to optimize the local resources.
- The diagnosis and the participatory strategic planning are a learning process that contributes to knowledge management, which places the subject as knowledge producer in the reflection of himself/herself and his/her reality and, on this basis, it generates changes dynamically in the individual and in his/her social character.
- It allows to design the result chain aimed at the effects and impacts inside the evaluated system.

The implementation of the SMM and its procedures appears in two articles that will be published afterwards and which include the formulation of the strategic planning in a UBPC as case study, through action plans in each subsystem, as well as activities of strategic control of such implementation with the support of a system of geospatial information and other tools, with which the strategic direction is applied integrally (strategic

planning, implementation and control), approached by authors like Uzcategui (2008) and González, Rodrigo y Fonseca (2011).

CONCLUSIONS

- The existing deficiencies in the entrepreneurial management of agricultural entities in Cuba, the requirements local development currently demands and the necessity of elaborating, from the theoretical and practical point of view, a decision-support procedure suitable for such productive organizations -considering the state of the art-, demanded the conception of a strategic management model (SMM) for decision making in agricultural entities.
- The SMM conception -which concludes implemented as a strategic plan- is based on the set of specific procedures and tools, developed from the functions of strategic management; these constitute its methodological structure and are considered the main novel scientific-methodological contributions. Likewise, this model is supported by some premises and has fundamental characteristics which distinguish it.
- Although this model is conceptually based on diverse previous models that use the CIPP approach, the SMM incorporates some aspects that contribute to its novelty, applicability and pertinence to the conditions of Cuban agriculture, specifically in its entrepreneurial sector; the integration of tools, the application of participatory methods and the holistic approach stand out.
- The SMM interprets the processes in each of the subsystems through a management system by processes -a distinction that allows to use this modern management approach- and includes the dynamic interrelation among the strategic ecosystems and the diverse actors, promoting agroecology.
- The utility and pertinence of the SMM lies in its capacity to support the decisions associated to the formulation and implementation of development strategies and programs in agricultural entities, based on technologies and innovations associated to the promotion of sustainable agriculture.

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Received: October 15, 2012

Accepted: December 26, 2012