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Abstract

**Small Actions, Big Changes:
Systemic development of the territory, Sotaquirá, Colombia**

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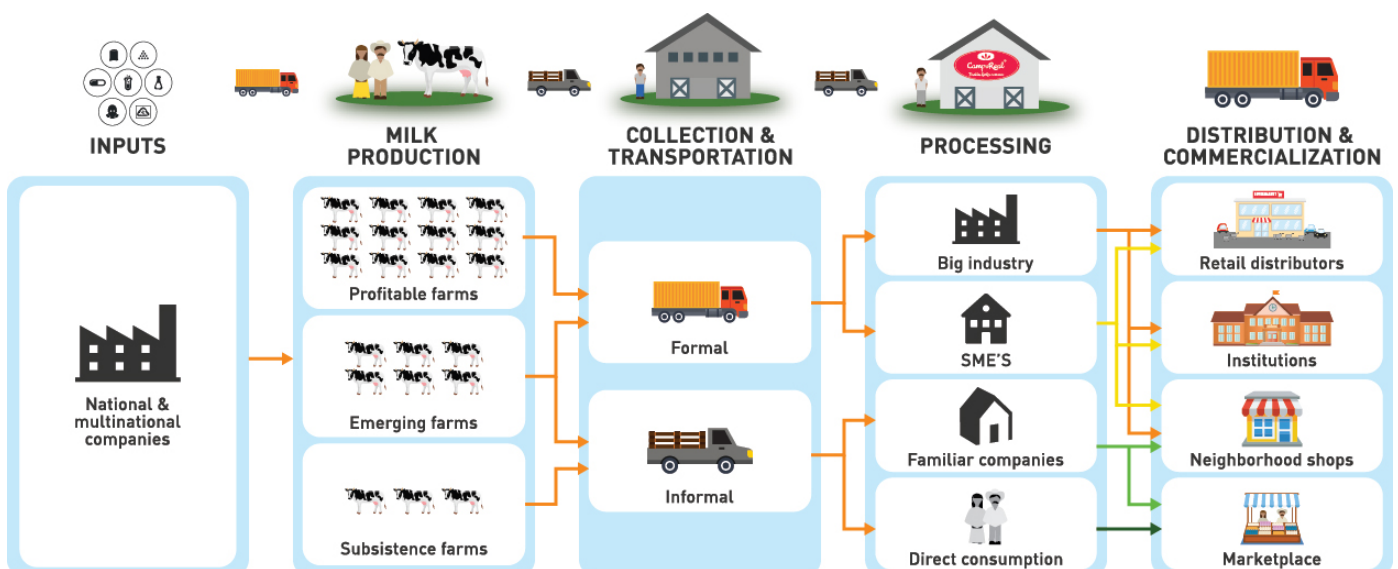
Colombia is the 12th country in the world that has more livestock and the 4th in South America. Dairy farming is one of the most important primary economic activities for the country, especially in the rural sector. However, it is a sector that is vulnerable and presents negative factors such as low productivity, informality, and smallholding economy that affects directly the social, environmental and economic development of the country. On the other hand, Boyacá is one of the dairy regions more affected by the phenomena named above. As well, it can be mentioned that farmers live with a survival economy, where soils are eroded for the activity, cows have a poor diet, and where there is a low productivity of 7 liters of milk per day per animal.

Taking into account what was mentioned above, and with the collaboration of Lácteos Campo Real a Dairy Product Company, the interest of carrying out the project of the Systemic Design application in Sotaquirá, Colombia was born. In this way, the project aims to determine the opportunities given by the territory for developing systemic strategies that contribute to the social, environmental and economic improvement in the region and also to the creation of shared value.

In order to accomplish this goal, specific objectives are defined:

- **Identify** and understand the situation regarding the territory, the people and the activities related to the milk transformation.
- **Analyze** the actual state of art in order to propose the levers for the change for the application of the systemic approach.
- **Manifest** the social, environmental and economic changes that generates the systemic approach in the territory.
- **Evidence** the social, environmental and economic improvement of the entire activity through an economic analysis of the situations.

Therefore, a holistic research was made in order to identify and define the current situation of Sotaquirá, Colombia. Facts such as the territory, the people and the activities related to the milk transformation activity were taken into consideration.



The current situation demonstrates how farmers do not produce milk of quality because of the animal nutrition and at the same time are the most affected and most economically vulnerable in the activity. Meanwhile, the cruderos (intermediaries) are an obstacle for the development of the activities, since they influence the relationships between the actors and also decide for farmers and milk producers and alter and damage the milk quality. Gathering centers are the responsible for standardizing milk and besides that, there are intermediaries that have a larger participation in the activity. Finally, the milk transformation does not offer much diversity of products and sell them in large-scale retail. As well, due to the low quality of milk standards, the qualities of dairy products are not the best. In these order of ideas, the relationships between intermediaries, activities and companies are problematic because they affect the entire system and make it work in an unbalanced way.



From the analysis of the current situation, it was possible to define the levers for the change for the application of the systemic approach and turn the territory into a sustainable one. In this way, by understanding the qualities of the territory the nutrition of the cows can improve, new practices start to be employed such as organic farming for producing products of quality, animal feed, organic fertilizers and homeopathic medicine. Also there is a development of new activities like phytodepuration and bio-digester which have less environmental impact and reduce the employment of non renewable resources. The

previous was done by expressing the social, environmental and economic changes that the systemic approach generates in the territory.



After all, the result is expressed by an economic analysis that contrasts the current and the systemic situation and shows how can be enhanced. Furthermore, by contrasting two realities in different aspects the project proposes diverse new alternatives for improving the entire dairy activity and for developing in a social, environmental and economic way the territory. In fact, it must be said that big changes happen, it is worthwhile to start with small actions.

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