


The Market of Fertilizers in Mexico During the Pandemic Crisis: The Case of a Comprehensive Entrepreneurship Model for Organic Fertilizer Businesses

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EXECUTIVE SUMMARY

This chapter aims to analyze the market of fertilizers in México during the pandemic crisis. This analysis of the fertilizer market in Mexico points out that the consumption of fertilizers has undergone a change in the structure in favor of consumers with the highest concentration and diversification. The method used is the analytical-descriptive and the critical reflexive based on the quantitative data obtained from secondary sources. This situation has contributed to a drop in the consumption of fertilizers because the farmer's real income has fallen during the pandemic crisis. To take advantage of the opportunities arising from the crisis, it analyzes the functioning of an integral model of entrepreneurship in green innovation business (GIB) that is currently emerging and in the process of internationalization. This chapter analyzes a particular company that specializes in ecological biomineral organic fertilizer, where no chemical product is used to produce the composition; everything that is marketed is made up of a base of organic minerals and other organic compounds.

INTRODUCTION

The Mexican Government's National Fertilizer Program aims to address the problem of low availability of national fertilizers at competitive prices for small producers. It includes both chemical fertilizers and biofertilizers. The National Fertilizer Plan aims to reduce dependence on the import of these fertilizers. To achieve this, the Cosoleacaque Petrochemical Complex plants and the Pajaritos plant are reactivated to produce ammonia, an input to produce urea, which Mexico imports mainly from Ukraine. In the case of phosphates, in the Pacific, the Lázaro Cárdenas plant is operational and is the largest in Latin America.

The National Biofertilizer Program shows incipient progress. The fertilizer production in Mexico estimated for 2019 was 1.85 million tons, reflecting an annual reduction of 2%; while demand continues to rise, with a record estimate of around 5.5 million mt. However, by July 2020, the production volume of nitrogen fertilizers in Mexico almost reaches 48,800 metric tons, which represents a decrease of 32.7% compared to that reported during the same month in 2019. The production volume of phosphate fertilizers in Mexico exceeded 75,600 metric tons, which represents a decrease of 29.1% compared to that reported during the same month in 2019 (Burgueño-Salas, 2020).

Currently, there is a new business model which has as the objective to be eco-efficient. Eco-efficiency is defined as the production of goods and services at competitive prices that meet human needs and provide quality of life, while the ecological consequences and the use of numerous resources during the life cycle are progressively reduced at the equivalent level at least to the estimated capacity of the planet (World Business Council for Sustainable Development, 1991).

On the other hand, it is mentioned that eco-efficiency has the purpose of establishing production of manufactured products of high durability, reducing the intensity in the application of energy for the production of goods and services, maximizing the use of raw materials, managing and disposing of hazardous materials and waste in an efficient and environmentally acceptable manner. Eco-efficient companies have management systems supported by environmental quality, as well as procedures in occupational safety and health, among other provisions, that will bring them financial benefits and competitiveness (Cantú, 2008).

In both definitions, the authors agree that eco-efficient companies should have as their main objective, to develop quality products at competitive prices, as well as to reduce the environmental impact of producing or offering their products and services. Castro (1998) mentions that eco-efficiency aims to address three relevant aspects that correspond to 1) the total quality, which involves productivity and quality in the company, 2) the preservation of the environment, which is related to sustainable development; 3) occupational health and safety (Castro, 1998). State the chapter's objective(s) so as to guide the reader.

FERTILIZER DEMAND IN MEXICO

A recent analysis of the fertilizer market in Mexico has pointed out that the consumption of fertilizers has undergone a change in the structure in favor of consumers with the highest concentration and diversification (UACH). This situation has contributed to a drop in the consumption of fertilizers because the farmer's real income has fallen.

On the changes in the consumption pattern, it has been documented already the use of mixed and compound fertilizers, considered as the mixture of two or more straight fertilizer materials of the three primary nutrients--N, P₂O₅, and K₂O (Hignett 1985; Rajani, 2019). From experience in the field, it can

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