Chapter 17

Innovation and Agronomy: An Empirical Review of the Case for Chile

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ABSTRACT

This chapter presents an empirical discussion about the relationship of agricultural industry and innovation in emerging economies. Then, a general revision of the innovation, agronomy and public policies associated will be reviewed. This chapter is immersed in the Chilean case. The author justifies that Chile can be a representative case because it is a country that wishes to become a world power in agro-food, but has very low investment in innovation. Besides, it has very low participation of agricultural innovative firms in the market. After the background is presented, innovation and development will be reviewed; subsequently, innovation in developing countries will be discussed, concluding with agro-innovation in Latin-American countries, especially in Chile.

INTRODUCTION

As of 2015, Chile is the only South-American country member of the OECD, which, unlike its neighboring nations, places it within a community of developed countries. This feature implies that Chile is facing a transition process towards economic development. However, as a developing country, the agricultural sector is still an important drive for its domestic economy. If we add the fact that Chile has a national policy of innovation more than 20 years old, it becomes interesting to study the case of agricultural innovation in said country since it sets a precedent for the rest of the Latin-American community.

The public administrations’ view of innovation in Chile, and in the majority of countries, possesses the imprint of the classical Schumpeter theory, which divides the pillars of business innovation into four areas. The foundation of these pillars, rooted in both scientific and secular research, comprises the body of innovation: (i) product, (ii) production process, (iii) organizational process, and (iv) marketing. In the context of the vision of Schumpeter, it should be said that he popularized the concept of “Destructive Creativity” (Schumpeter, 1942), and it is defined as a dynamic process of change, through time, where ideas of new goods and/or services are constantly born and die, searching for improve-
In other words, there is a strong competition in the market for a generation of products each time more developed, or for the more developed version of the same products, which are the deaths of their own predecessors. Even though the concept of destructive creativity was coined by Werner Sombat, Schumpeter established the idea as a necessary fact for economic development. This conception of innovation and the edges it presents is used for the design of policies in Chile and in all of Latin America.

Considering the idea of economic development, and focusing on the Latin American countries, most of them developing, it is necessary to talk about the Agro-industry sector separately. This sector is considered to be an important base of the economy of these countries. The shocks, of economic, political and natural order, which affect this industry, certainly will also affect the integrity, the growth and the development of the country. Thus, it can be considered that the relationship between each one of these countries could also be affected.

When studying innovation, it is observed that the Agronomy sector presents some peculiarities, which are considered worthy of review at a scientific level for reflection and policy design.

This chapter is divided into three large parts; the first one sets the theoretical bases linking economic development with innovation. The bibliography, in most of the arguments, is taken from classic papers. This section is mainly a scientific approach on the link between economic growth and innovation.

The second part deals with the relationship between innovation and developing countries, which concludes with comments and recommendations for policy makers since the effect and type of policies in countries of this nature require special attention and treatment.

Lastly, the third section reviews innovation in agriculture, emphasizing on developing economies. In addition, a few recommendations on micro economy are given, at a business level (business managers).

**Definition**

The definitions of the concept of “innovation” are varied, yet they do not contradict one another. It seems that each researcher feels at liberty to add their own meaning to the dictionary.

In his first contributions, Schumpeter relates the innovation with entrepreneurship and the entrepreneurial. In fact, within the conceptualization of the Schumpeter Theory, it is not possible to separate entrepreneurship from innovation. This topic will be elaborated further on in the context of the Latin-American community.

The scientific community has become accustomed to utilize the definition found in the Oslo Manual, which is the most recognized (OECD, 2007, p. 56) and its third edition describes it as:

> the introduction of a new or significantly improved product (good or service), process, new marketing method or a new organizational method in the internal practices of a business, organization or work place, or external relations (p.56).

According to the above, the pillars of innovation can be understood as:

1. **Product**: The introduction of a good or service that is new or substantially improved
2. **Process**: The introduction of a new or significantly improved method of production or handling.
3. **Organization**: Involves the creation or alteration of practices in businesses, organizations, work places or external relations.
4. **Marketing**: The implementation of a new method of marketing that involves a significant change in the design of a product, packaging, price or pricing.