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Strategic planning in public R&D organizations for agribusiness: Brazil and the United States of America☆

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Abstract

There is increasing evidence that public organizations dedicated exclusively to research and development (R&D) in agribusiness need systematic management tools to incorporate the uncertainties and complexities of technological and nontechnological factors of external environments in its long-term strategic plans. The major issues are: "What will be the agribusiness science and technology (S&T) needs be in the future?" "How to prepare in order to meet these needs?" Both *Empresa Brasileira de Pesquisa Agropecuária* (Brazilian Agricultural Research Corporation, Embrapa), attached to the Brazilian Ministry of Agriculture and the Agricultural Research Service (ARS) of the US

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Department of Agriculture (USDA) have developed a comprehensive strategic and operational planning process in order to answer these key questions in the 1990s. The main objective of this article is to present a comparative and preliminary analysis of concepts, methodologies, and processes utilized, and some results obtained by these public organizations.

Keywords: Alternative scenarios; Strategic planning; Agribusiness; Research and development management

1. Introduction

At the turn of the century, there is increasing evidence that the planning of public agricultural research and development (R&D) organizations must be based on systematic procedures to capture uncertainties and complexities associated with the future of their mission area and incorporate them into the decision-making process both at strategic and operational levels. As a first step, key issues that emerge are: "What be the science and technology (S&T) needs for the agribusiness sector in the future?" "How should be R&D organizations prepared to meet them?" On the one hand, the intensity of S&T advances and, on the other, the growing and diversified R&D demands of global markets need to have a different pattern of answers compatible with the new challenges imposed on the sustainability of these organizations at the turn of the 21st century. In order to answer the first question, it became necessary to redefine the vision of the future, broadened by the relatively long horizon of S&T planning, considering a set of external environment uncontrollable factors that affect, directly or indirectly, technological trajectories of agricultural research. In answering the second question, it became necessary to review internal management tools that translate this vision of the future into actions that are more in tune with the solution of priority problems of societies in changing economies.

Preparing to face these challenges, *Empresa Brasileira de Pesquisa Agropecuária* (Brazilian Agricultural Research Corporation, Embrapa), at the end of 1989, adopted the technique of alternative scenarios to visualize possibilities of evolution of future contexts in which agricultural research would be inserted. As of 1990, a process of organizational readjustments was initiated based on strategic planning techniques. The intention was to have necessary and sufficient conditions to attain higher levels of efficacy/efficiency in the use of R&D public resources for the development of Brazilian agribusiness competitiveness, abiding by principles of productivity, social equity, health/life quality, and sustainability of natural resources/environment to benefit society.

With the evolution of this process and results obtained, Embrapa became interested in the general position adopted by its North American counterpart — the Agricultural Research Service (ARS), US Department of Agriculture (USDA) — in search of answers to those questions. An Embrapa mission made up of researchers went to ARS headquarters (Beltsville, MD) in June 1997, which allowed the gathering of information to be used as reference for a internal report and a preliminary comparative analysis. As Embrapa, the ARS also developed