

# The Role of Research and Development in Agriculture and Its Dependent Concepts in Agriculture

Bahare Hajirostamlo<sup>1</sup>, Narges Mirsaeedghazi<sup>2</sup>, Mostafa Arefnia<sup>3</sup>, Mohammad Ali Shariati<sup>4</sup>, Esmail Alimohammadi Fard<sup>5</sup>

<sup>1</sup>Young Researchers and Elite Club, Marand Branch, Islamic Azad University, Marand, **IRAN**

<sup>2</sup>R&D Manager in Maedeh Food Industrial Co (A Member of YekoYek Food Industries Group), **IRAN**

<sup>3</sup>Department of Food Science and Technology, Khoy Branch, Islamic Azad University, Khoy, **IRAN**

<sup>4</sup>Deputy of CEO in Maedeh Food Industrial Co (A Member of YekoYek Food Industries Group), **IRAN**

<sup>5</sup>Department of Food Science and Technology, Science and Research Branch, Islamic Azad University, Tehran, **IRAN**

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E-mail for correspondence:  
[shariatymohammadali@gmail.com](mailto:shariatymohammadali@gmail.com)

## ABSTRACT

Increasing of agriculture products is of importance so that research and development in this branch considers as one of the most important infrastructure which develops production growth. Agriculture provides new and improved findings regarding inputs and production methods hence R&D efficiency increases and leads to potential creation in increasing of agriculture products and reduces pressure on natural resources. In most developing countries agriculture products has increased per farmers which exhibits the efficiency of novel technology application thus basic practicing of R&D in the field of agriculture is really important.

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## INTRODUCTION

Recently, the importance of food in human's life has been considered. It can be mentioned that after Second World War and green revolution movement, America and European countries marked on growth of industrial agriculture cause the knew that everything is impossible without food security.

This issue along with the lack of cultivated grounds has led to improving R&D as the best solution of agriculture development as industry (Hayami, 1980). During recent two decades; average income has remarkably increased in developing countries. Economists reveal that this growth is related to increasing of human resources, available capital and specially technical developed so that nowadays all countries have focused on R&D and attracting external researches gradually enhancing their economical capacity and manufacture more products therefore training of human resources seems a must-issue, this despite the fact that R&D costs appear in forms of invention, technical changes and technology. Considering this variety in production function and economic growth models not only effects on social and economic nation structures but on attracting investor to capitalize in a country are really effective, hence presence of superior R&D in agriculture depending on appropriate investing. In this regard, production become possible in two path; 1) more application of production factors at which lack of water is the main restricting factor during long time, 2) using more modern methods at which “efficiency” considers and refers to an inevitable factors in increasing the supply of agriculture. Agriculture knowledge must present in form of R&D plan then flow in production function in its technically form, thus agriculture needs a deeply research in order to be created progressions. There are different productions restrictions in any countries thus research and development planning is of importance regarding this issue that by increasing input efficiencies, production of agriculture crops diminishes. Lack of any important item in agriculture production inspire that its technically substituting is an obligation in order to reduction of costs. On the other side, growth of population and food demanding has led to indiscriminate utilization of water and soil resources (Stads and Roozitalab, 2008).

Base on agriculture products, either the policy of developing cultivation area be practiced or efficiency of inputs at which restrictions of agriculture fields limits first option, while increasing of efficiency by applying modern technologies through investment in researches and production of required knowledge facilitate the later. Researches and developments in agriculture causes to increase production. In Iran, after during 3 decades 168 governmental institutes and 28 private associations activate. Studies of International Food Policy Research Institute showed that by 2008, Iran has been in 2<sup>nd</sup> degree among its neighbor which is as sign of R&D development importance in Iran (Ranaei, 2001).

**RELATIONSHIP BETWEEN EFFICIENCY FACTORS OF R&D IN AGRICULTURE**

Figure1 depicts that firstly agriculture researches causes to improvement of technology which also will develops agriculture productions.

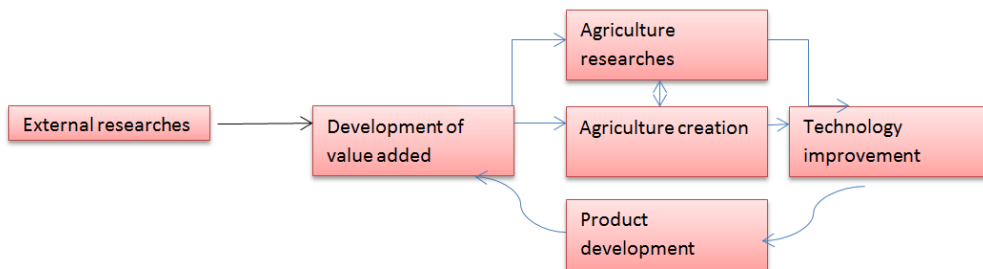


Figure 1: relationship between agriculture research and development (internal and external) with production values

Obviously, by production development the value of agriculture production increases as well thus value added issue in agriculture system drives continuing cycle of research affection on it. However this model covers foreign researches. Being interrupted of research and development in agriculture due to being expensive shows no affections at the beginning, then by elapsing necessary intervals causes to production development of small farms.

## CONCLUSION

Despite the food resource restrictions, Agriculture which is the only supplier of human's food must produces from intermediate and final inputs with high technologies clearly depending on modern knowledge in agriculture. In spite of being comparative advantages in agriculture part, still developing countries suffer from lack of high quality products hence they mostly request to create technically inputs in order to agriculture be progressed. In any case, all investments in R&D can be presented in such condition of modern methods and invention can be brought forward advances. Such developments can be created by developing of R&D methods.

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