

# EVOLUTION OF RESEARCH AND DEVELOPMENT CENTER FOR REGIONAL DEVELOPMENT: CASE STUDY OF MAKU R&D CENTER

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**Abstract:** The role of universities in R&D activities is a subject which needs to be reevaluated and thought over in terms of their contribution to the related industries, their vicinities and research parks. The mere reason of the existence of universities is to push the boundaries of the existing knowledge to achieve better and more reliable results in any given field. Although the ideal is having universities which are able to adapt really quickly to changes, often the reality is not so. The change is mostly slow and not swift enough to keep up with the recent developments in many fields such as the economic changes. These changes in the manner of universities require long periods of time. This is one of the reasons why universities should be quick to respond to regional needs and shifts to help pursue more attainable and resilient ecosystems. The main objective of this article is to analyze the role of research and development unit Mehmet Akif Ersoy University R&D services. It aims to support co-evolution of local municipal and industrial enterprises to increase the competitiveness of the region.

**Keywords:** R&D Center,

## 1. Introduction

The globalizing world and thriving technology has created a great competition in every field. This competition is at the highest level in fields such as industry, agriculture, tourism etc. which are important areas of the economy. Increased competition encourages countries and companies to pursue more research, development and investment activities.

Private sector and state support plays an important role in research and development activities. R & D centers in universities constitute an important part of State support's research and development activities. Researchers who are academically and technically experienced in these centers produce new ideas and products according to the sectors. These emerging products and ideas at the basic level are then developed and presented to the industrial market. At this point, the competitive power of the companies in the market has increasing and it makes a great contribution to the state economy. From this point of view, in this study the contribution of the research and development centers located in Mehmet Akif Ersoy University to the regional economy has been evaluated in general.

## 2. Burdur and Mehmet Akif Ersoy University

Burdur province is situated in the south Mediterranean regions of Turkey. It has a surface area of 6.887 km<sup>2</sup> and a height of 1000 m. 60.6% of the province's arable land consists of mountains, and the soil. The geographical position of Burdur is given in figure 1.



Fig. 1 Geographical Position of Burdur

Burdur economy is based on agriculture, animal husbandry, forest industry and natural stone sector. There are integrated facilities which produce milk and meat at a considerable level in the region, industrial facilities that manufacture agricultural and natural stone processing machinery and also forest processing facilities.

Natural stone and marble production is gaining importance in the region in recent years. Burdur has about 125 factories, 250 active marble quarries; Burdur-based companies have an export capacity of about 131 million dollars and employment capacity of 8500 people [1].

Mehmet Akif Ersoy University has become a world class educational institute in almost every academic field since its foundation in 2006. With 4 institutes, 11 faculties, 6 schools and 13 vocational schools, Mehmet Akif Ersoy pursues excellence in short-cycle, undergraduate and graduate levels. 5 departments running university-wide classes and 18 research centers are continuously doing their important activities in their respective fields. There are also masters programs, associate degrees and certificate programs offered through Mehmet Akif Ersoy University Distance Education and Learning Center.

## 3. Relationship between R&D Centers and Industrial Sector

As universities become bigger players in R&D and economic development, their relationship with industry, research parks and regions needs to be carefully rethought. The idea that a university is only an educational and research institution should be re-examined. Universities it can be characterized as a multidisciplinary structure, as it integrates many management (strategy, leadership, etc.), engineering (process knowledge, innovation), social (human resources, ethos, etc.), financial (marketing, extroversion, etc.) and other disciplines. Universities should be institutions that respond to changing and developing economic and market conditions in a short and long term [2].

There are many researches related to research centers and development level within the scope of university industry cooperation. Researchers investigating the effects of research centers on themselves and on regional development indicated that centers set up by different universities for the same purpose in the same region increased competition and contributed positively to development [3-5].

## 4. Burdur and Mehmet Akif Ersoy University Research and Development Center

Burdur economy is based on agriculture, animal husbandry, forest industry and natural stone sector. These five major economic sectors are helping the development of Burdur and contributing to the country's economy. Therefore, it is necessary to carry out research and development studies in these sectors. Mehmet Akif

Ersoy University is the most important institution for research and development studies. The research centers established within the university are the main centers of R&D activities. Mehmet Akif Ersoy University research and development centers are given in Table 1. Since Mehmet Akif Ersoy University is a newly established university, the activities of research centers are at the beginning level.

**Table 1:** Mehmet Akif Ersoy University R&D Centers

<b>Mehmet Akif Ersoy University Research and Development Centers</b>
Physical Education and Sport Sciences Application and Research Center
Scientific and Technology Application and Research Center
Biological Resources Application and Research Center
Burdur Development Center
Child Education Application and Research Center
Lakes Local Archeology Application and Research Center
Application and Research Center for Women Issues
Cosmetics Application and Research Center
Corporate Communication Application and Research Center
'Mehmet Akif Ersoy' Application and Research Center
Marble and Natural Stone Technology Application and Research Center
Music Culture Application and Research Center
Agriculture, Husbandry and Food Research Institute Application and Research Center
Teke Yöresi Folk Culture Application and Research Center
Turkish Folklore Application and Research Center
Distance Education Application and Research Center
Renewable Energy Resources and Technologies Application and Research Center
Turkish Language Practice and Research Center

#### **4.1. Burdur and Mehmet Akif Ersoy University marble and natural stone technologies research and application center**

Spain, Turkey, Italy, Pakistan etc. countries are in located Alpine-Himalayan belt. That's why these countries have rich marble deposits. Turkey in terms of diversity and quantity has significant marble deposits potential. It is estimated that this potential is 3,872,000,000m<sup>3</sup>[6].

Burdur with 40 million tons of marble potential has an important position in Turkey. The role of research centers plays an important role in the evaluation of marble potential within the scope of university-industry collaboration. Mehmet Akif Ersoy University Marble and Natural Stone Technologies Research and Application Center were founded on 2013. Recommendations for increasing the role of the R & D center in assessing marble potential are given below.

- The research center should support the marble and natural stone industry which is of great importance for the Burdur Provincial Economy.
- By contributing to the efficient evaluation of existing marble and natural stone potential, it is necessary to determine the problems of the sector and develop solution proposals.
- Sector employees should contribute to their training with seminars that will be organized on the topics they need.

- In the field of marble and natural stone technologies, it should follow the innovations in the world and inform the organizations in the sector.
- In order to develop university-industry cooperation, the marble sector, which is the largest economic power of the region, should produce projects that will increase the competitive power needed by the marble sector.

The research and development center should contribute to the strengthening of the scientific and technological infrastructure of the country in the light of the recommendations.

#### **4.2. Burdur and Mehmet Akif Ersoy University Agriculture, Husbandry and Food Research Institute Application and Research Center**

Agriculture and husbandry are one of the most important economic areas. There are 1,438,558 decares of agricultural land and 650,196 registered animals in Burdur [7]. Burdur which has a significant potential in this area, food and agriculture industry have developed. Mehmet Akif Ersoy University Agriculture, Husbandry and Food Research Institute Application and Research Center were founded on 2016. Recommendations for increasing the role of the R&D center in assessing agriculture, husbandry and food potential are given below.

- The research center should investigate the environmental conditions of the vegetable and animal production being made in the region, and to develop suitable plant and animal species and to carry out breeding studies and research.
- The research center should develop new products in the center by carrying out research and development studies that will increase production in line with the principles and targets of development plans.
- The result of the research done at the center should present the developed products to the market and the producers.
- Provide guidance services by sharing the developed and applied production models and methods with the regional producers. Training seminars, conferences and training courses should be organized to educate regional producers.
- It should carry out joint studies and projects in the fields of education, research and production within the framework of mutual bilateral cooperation with domestic and foreign universities, institutes, agencies, centers and public institutions.

In Burdur, a total of 182.519 m<sup>3</sup> of industrial wood production has been realized by 2011 and the value of this production is 9.456.744 TL. 94.187 m<sup>3</sup> of industrial production is logged, 762 m<sup>3</sup> is wire pole, 12.213 m<sup>3</sup> is mine pole, 4.475 m<sup>3</sup> is industrial wood, 25.767 m<sup>3</sup> is paper wood, 45.026 m<sup>3</sup> is fiber chip wood, The 89 m<sup>3</sup> section is also a pole bar [8].

Forestry activities are one of the important sources of income for Burdur. Therefore, Mehmet Akif Ersoy University should establish a research center related to forest and forestry activities and work to support forestry activities in the center.

## 5. Results and Conclusion

In this study, the contribution of the research centers of Mehmet Akif Ersoy University to Burdur province development and economy has been examined in general. It has been found that the Burdur province economy is based on agriculture, animal husbandry, forestry, marble industry and there are determinations about how these sectors will be supported by research centers in universities. University research and development centers should contribute to the development of the region with activities such as projects, education, and seminars. Mehmet Akif Ersoy University Technology, Engineering and Business faculties, should provide academic and technical support to the research and development centers.

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