

# Strategic Management of Agricultural Research and Innovation through EU Law

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**Abstract.** This paper critically assesses the most important European Union's instruments directed towards sustainable development as part of the process of agricultural research and innovation. The most significant European directives and regulations issued within the past ten years are evaluated in terms of efficiency directed towards economical effectiveness and its balance with environmental concerns. Strategic management of agricultural innovation is examined with regard to important resources in the European Union member states as well as elsewhere, especially in areas which are directly affected either by the agricultural practices of the European Union member states or by economic activities of subjects registered thereof. Together with focus on the health of plants and animals, other natural resources are taken into consideration, such as soil, water quality and social factors such as rural development. In addition to the European legislative instruments, other policy papers are taken into account in our assessment of strategic management of agricultural research and innovation through EU law, especially the policy document entitled European Commission: Strategic Approach to EU Agricultural Research Innovation.

**Keywords:** Agricultural Innovation, Agricultural Research, Economic Impact, EU Law, Strategic Management.

## 1 Introduction

Farmers and foresters, as well as bio-based and food industries are subject to innovation in techniques and are dependent on production, medical as well as agricultural research outcomes. Not differently from other industries, these fields have to succeed in tough competition which is regulated by market forces, supply and demand in the said industries, consumer preferences, development of complimentary goods, but also through ethical and health considerations and expectations placed on food. Therefore, agricultural research and innovation is thoroughly regulated through legislature on both domestic and international level. Legal regulation of agricultural research and innovations is especially imminent within the European Union, where the common market and other interconnected strategies require authorities and legislators to enable enterprises work across borders, while at the same time maintaining regional specifics. In short, legal regulation helps agricultural industries meet future challenges.

The principal purpose of this paper is to critically evaluate the current legal provisions of the European law that are pertinent to strategic management of agricultural research. Our overarching aim is to provide an overview of the present legislative *status quo*, having in mind the recent legal development that has immediately preceded it and the present-day legal background surrounding the particular legal provisions specifically devoted to agricultural research and innovation and the strategic management thereof.

## **2 Methods – Doctrinal Legal Approach to Analysis**

This paper undertakes the doctrinal legal research methodology. Following this “distinctly legal approach to research” [12] enables us to evaluate the wording and layout of the most important legal instruments in light of their development and current place in the European legal system. Our research is “situated” [16] in the black-letter methodology of the continental legal tradition.

While it is taken into consideration that the law of the European Union combines the civil law traditions with the focus on case-law, we view our assessment of the legislative instruments and statutes within the European Union as sufficient. This is supported by recent research on the methodological choices underpinning doctrinal legal approaches, which have led to the finding that “legal reasoning” is the “same intellectual activity” whether conducted on a statute in the continental legal tradition or on a court case as part of the traditional approach adopted in the common legal system [13].

Finally, our choice of doctrinal legal methodology adheres to the recently emerged and proliferating field of literature assessing agricultural development in the East of the European Union. For example, researcher in Central Europe have conducted studies evaluating the methodologies used in agricultural studies in Poland and Bulgaria and have come to the conclusion that the assessment of the “soundness” of legislation is crucial to the effective management of lands and other agricultural real properties [14].

## **3 Research - Agricultural Research and Innovation**

### **3.1 Knowledge and the Common Agricultural Policy**

The Common Agricultural Policy involves, among others, a long-term strategy. In July 2016, the European Commission published a paper specifying the details of strategic approach of the European Union towards agricultural research and innovation. There were more than 600 experts who contributed to the paper through workshops, consultations and other events [11].

The programme paper lists five priority areas for sustainable development in agriculture and food production [6]. Firstly, it is resources management, especially regarding soil, water and biodiversity. Secondly, healthier plants and animals are taken into consideration. Thirdly, the strategic document concerns integrated ecological approaches from farm to landscape level. Fourthly, new openings for rural growth are

taken into account. Finally, the strategic plan regulates enhancing the human and social capital in rural areas. All of these concerns priority areas are interconnected with the issue of societal challenge and specifically regulated through the European Union's legislative document entitled Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) [9].

Other European regulations and directives are linked to the possibilities of agricultural innovations while maintaining sustainable development. In particular, the most relevant legislative instruments within the European Union are the Regulation (EC) No 1107/2009 of the European Parliament and the Council of 21 October 2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC [15] and the Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides [1].

According to our critical assessment of the above legal regulation, there are three main aims that are intended through the European Union's Common Agricultural Policy. Firstly, it is securing viable food production. Secondly, and inextricably from the first point, it is ensuring sustainable management of natural resources and climate action. Finally, the purpose of the European Union's Common Agricultural Policy is contributing to a balanced territorial development. These three objectives involve creating, sharing and implementing new knowledge, gained through the adoption and development of new technologies, and the incorporation of new products and new ways of organization and cooperation.

**Table 1.** European Union regulations and directives related to agricultural innovation and research.

Year	Type of instrument	Area of regulation
2013	Regulation	Establishing Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020)
2009	Regulation	Placing of plant protection products on the market
2009	Directive	Establishing a framework for Community action to achieve the sustainable use of pesticides

These instruments are dealt with in detail individually in our analysis below, together with the critical assessment of their contribution to the maintenance of sustainable development while establishing bases for research and innovation in agriculture.

### **3.2 The Aims of European Union Regulations and Directives**

The Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) aims to “strengthen its scientific and technological bases by achieving a European Research Area [...] in which researchers, scientific knowledge and technology circulate freely, and by encouraging the Union to advance towards a knowledge society and to become a more competitive and sustainable economy in respect of its industry. To pursue that objective the Union should carry out activities to implement research, technological development, demonstration and innovation, promote international cooperation, disseminate and optimise results and stimulate training and mobility” [10].

The Regulation (EC) No 1107/2009 of the European Parliament and the Council of 21 October 2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC aims to ensure “a high level of protection of both human and animal health and the environment and at the same time to safeguard the competitiveness of Community agriculture.

The Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides acknowledges that “[e]conomic instruments can play a crucial role in the achievement of objectives relating to the sustainable use of pesticides”, and therefore “[t]he use of such instruments at the appropriate level should therefore be encouraged while stressing that individual Member States can decide on their use without prejudice to the applicability of the State aid rules” [3].

Doctrinal legal analysis of the pertinent legal instruments thus shows that particular attention should be paid to the protection of vulnerable groups of the population, including pregnant women, infants and children. The precautionary principle should be applied and this Regulation should ensure that industry demonstrates that substances or products produced or placed on the market do not have any harmful effect on human or animal health or any unacceptable effects on the environment” [2].

## **4 Discussion - Strategic Management within the European Union**

Apart from the societal dimension and apart from bearing in mind that agricultural innovation goes hand in hand with employment policies and rural development, the plans for strategic management can be subdivided into two broad areas, i.e. the strategic management of natural resources and sustainable development and the strategic management of the creation of such environment that supports healthier plants and animals.

Therefore, even though the European instruments leave great flexibility upon individual member states with regard to the particular policies they will adopt, all of them aim at a single strategic management plan within the European Union.

#### 4.1 Resources Management

The European Union’s strategic management of the use of resources is focused on the quality and availability of natural resources in European Union member states and in other areas which are interconnected with the EU member states in terms of trade related to agricultural innovation.

The first most important aspect of such strategic management is keeping the balance between productivity and environmental goals. This is done through various instruments, such as the “SME Instrument” produced by the European Commission: “Small and Medium-sized Enterprises that are EU-based or established in a country associated to Horizon 2020 can now get EU funding and support for breakthrough innovation projects with a market-creating potential under revamped SME instrument, which is rolled out as part of the European Innovation Council (EIC) pilot. The SME instrument will boost fast company growth and market-creating innovation thanks to staged funding and ramped up business acceleration services” [4].

**Table 2.** Resources Management as Part of Strategic Management.

Type of resource	Examples	Area of management
Availability and quality of natural resources	Lands, nutrients, water, biodiversity	Proper balance between productivity and environmental goals
Soils	Various productive ecosystem functions	Management of water use and more economical production
Genetic resources	Food and non-food systems	Diversification and meeting future demands in farming

The table above summarizes the areas of management and methods for supporting sustainable development as they are set forth by the European Commission’s document entitled Strategic Approach to EU Agricultural Research Innovation [7].

Our above assessment can be summarized with the finding that the most important types of resources that are to be managed following the issue of the strategic paper in 2013 are lands, nutrients, soil, water, biodiversity and various ecosystem functions, including the processes of food and non-food systems. The purpose of management is thereafter to maintain a proper balance between productivity and environmental goals, the management of water use and more economical production, together with proper diversification and making sure to meet future demands in farming.

## 4.2 Healthier Plants and Animals

According to the European Commission, plant health is an important and essential component of biosecurity. The Commission's official policy is directed towards establishing shared EU rules on "plant health aim to protect crops, fruits, vegetables, flowers, ornamentals and forests from harmful pests and diseases (harmful organisms) by preventing their introduction into the EU or their spread within the EU. This aim helps to: contribute to sustainable agricultural and horticultural production through plant health protection; contribute to the protection of public and private green spaces, forests and the natural landscape" [5].

Moreover, according to the strategic paper, "resilient agriculture and forestry systems require robust plants and animals with increased resistance to pests and diseases. Tackling numerous and highly dynamic biotic threats will require integrated approaches and the development of a wide range of tools for prevention, monitoring, control and management of pests and diseases along with risk management strategies. This includes seeking alternatives to contentious plant protection products and antimicrobials. The establishment of links between health and other disciplines and aspects of production will be sought. In the area of animal production, one-health approaches will receive particular attention" [8].

## 5 Conclusion

Management and sustainable treatment of natural resources is a top priority for experts within the European Union as well as in other states which are either interconnected with the EU member states through economic activities or are directly affected by the environmental developments within the European Union.

Industries related to farming are undergoing rapid innovation processes. Farmers and foresters alike are dependent on the development and adoption of innovation techniques. Research carried out in agricultural industries is managed by detailed European Union's regulation, especially by instruments adopted in the last decade.

Legal regulation aids agricultural economic activities and the recently adopted legislative instruments will prove that innovation is not in discrepancy with sustainability and environmental stability.

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