

## REVIEW

on dissertation for obtaining the **DOCTORATE DEGREE** in Higher Education 3. Social, business and legal sciences, Professional Field 3.8 Economics, Scientific Specialty: Organization and management of production

**Author of the dissertation:** MARIA SACHA DUKOVSKA

Part time PhD student at the Department of Management and Marketing at the Agricultural University, Plovdiv

### **Thesis topic:**

**SUSTAINABLE DEVELOPMENT OF VITICULTURE IN NORTHERN MACEDONIA**

**Reviewer:** Prof. Dr. Nelly Andreeva Bencheva,

Agricultural University, Plovdiv; 3. Social, Business and Legal sciences, Professional field 3.7 Administration and management, Scientific specialty: Organization and management appointed as a member of the scientific jury by order No. № РД--16-794/ 07.10.2020год from the Rector of the AU.

### **1. Brief introduction of the candidate.**

Maria Dukovska was born on December 30, 1993. in the city of Skopje, Republic of Northern Macedonia. In 2015 he received a bachelor's degree from the Faculty of Law "Justinian I", University of St. Cyril and Methodius in the city of Skopje. He received a master's degree in Business Law in 2017 at the same university. In 2019 he began training in the doctoral program "Organization and Management of Production" at the Department of Management and Marketing at AU-Plovdiv.

During the period 01/02/2016 - 01/12/2016 she worked in the Chamber of Commerce of Northern Macedonia. He is currently an assistant at the headquarters of Diotec Semiconductor AG in Heitersheim, Germany. He speaks English, German and Russian. He has good digital skills and work in social networks. There are a total of nine publications.

### **2. Relevance of the problem.**

The dissertation deals with a topical and important topic related to the opportunities for sustainable development of viticulture in the Republic of Northern Macedonia. Given that viticulture is one of the sectors of agriculture for which the

problems of sustainability and sustainable development are of particular importance, the need for research into the most important components of sustainable development is becoming increasingly important.

In this context, the chosen topic addresses important and current aspects of the development of the sector over the last decade in the spirit of harmonization with the requirements of the EU Common Agricultural Policy and changes related to the restructuring of grape production, increasing vineyards, mainly large producers and the implementation of European legislation in the wine sector.

The analysis and assessment of the condition and measurement of the effect of the factors that determine the application of the approach to sustainable development of viticulture ensures the achievement of sustainable competitive positions of the sector in the future.

I believe that the doctoral student skillfully, with solid objective arguments has substantiated the relevance of the chosen topic.

### **3. Purpose, tasks, hypotheses and research methods.**

The dissertation is developed in a volume of 139 standard pages. Regarding the structure and content of the dissertation, we should point out that a good and logical presentation of the material has been achieved. The work is structured as follows: introduction, three chapters, conclusion, list of references. 106 literary titles were used. The results of the empirical studies are illustrated in 47 figures. The subject and object of the research are clearly and precisely formulated.

The goals, tasks and methods of the research are presented logically and consistently. In order to achieve the main goal related to the assessment of the factors of sustainable development of viticulture in the Republic of Northern Macedonia, research tasks have been solved, which include mainly: Clarification of the nature and content of the approach to sustainable development of viticulture as a management approach; and a methodology for studying the factors determining the sustainable development of viticulture; Analysis and assessment of the main factors determining the sustainable development of viticulture; Determining the opportunities for sustainable development of viticulture.

The subject of the study is the sustainable development of viticulture in the Republic of Northern Macedonia. The object of the study are the vineyards in the Republic of Northern Macedonia. The surveyed vineyards are those in which at least 50% of the cash income from the activity is generated as a result of the production of grapes and / or grape products.

The realization of the goals and tasks of the research is achieved through analysis and synthesis of own empirical researches and official statistical data. The developed methodology includes tools and analysis of relevant methodologies and tools to perform sustainability assessment. The idea is to find and develop a developed and verified methodology for assessing sustainability in agriculture, which will be tested and applied to perform a similar assessment in the wine sector.

The methods used for analysis such as: systematic and graphical; index method; the method of expert assessment; the method of focus groups and the method of multiple comparisons, allow to make a complete and accurate description of the results and are the basis for the defense of the thesis that green agriculture, environmental protection and development and improving the quality of human life the concept of sustainable agriculture is becoming increasingly important.

#### **4. Visualization and presentation of the obtained results.**

The structure of the dissertation is built according to the goals and objectives of the study.

In the presented dissertation important theoretical summaries, decisions and conclusions for the application of the European legislation for production and control of vinification are made. In the dissertation, the measurement and assessment of sustainability in the wine sector are to be monitored as processes related to sustainability for a period of three years and an assessment of the ongoing changes is given. An attempt is made to assess the ongoing changes.

Hence the importance of the methodology and assessment tools used. A system of indicators is proposed, allowing to reach a qualitative and quantitative characteristic of the processes. This part of the dissertation is especially valuable because it is a successful example of the application of modern research methods, which is a condition for formulating complex conclusions about the sustainability of a

system in this case the wine sector. The methodology and approach developed and implemented for the purpose of the study allow to consider the sustainability of production farms and entities in a dynamic aspect, as the indicators are reproduced by the so-called "proxy" sub-indicators, which have quantitative or qualitative characteristics that allow to give quantitative expression of sustainability. This is one of the great advantages of the study expressed through the developed ten-point system for assessing sustainability.

The analysis of sustainability is made not only by applying an integrated methodology taking into account the impact of production and management activities of farms on the environment, social relations, economic indicators and institutional conditions, but it also reveals regional differences, features existing between farms, differentiated by legal status and size.

The dissertation contains concrete results and empirical evidence that objectively reflect the real achievements of the research. The challenges facing the sector and the opportunities for its stable development are presented in a clear and accessible form. This makes it possible to draw both conclusions and specific recommendations and suggestions for good practices that will lead to higher sustainability. This is also a guarantee that the current development of the industry will not endanger and harm its future.

The contributions greatly enrich the scientific knowledge for research and evaluation of the sustainable development of the wine sector and the prospects for its development in Northern Macedonia.

The achieved results show that the doctoral student has in-depth theoretical training, knowledge and ability for independent research.

## **5. Discussion of the results and used literature.**

In the first chapter a systematic analysis of the main theoretical views of the concepts related to sustainable development is made. Based on a critical analysis, the concept of sustainable development based on sustainability in agriculture is presented in detail

A detailed methodology has been developed and the overall organization of the study is presented. The methodology for studying sustainability in the sector is based on a holistic-integrated approach (a set of economic, environmental, social and institutional factors is considered). The selection of indicators is done through Multi-criteria analysis with different thematic criteria - analytical solidity, measurability, transparency, political relevance, portability and relevance to sustainability issues. A potential list of indicators has been prepared and evaluated by experts from various scientific fields - economists, sociologists, ecologists and agronomists. Based on their assessments, the final set of indicators was formed, which are included in the field survey questionnaire. The questionnaire itself was tested in 5 vineyards in order to improve the perception of the questions by the respondents, as well as the inclusion of new questions relevant to producers.

The methodology is divided into different steps, covering literature review, multi-criteria evaluation, selection of indicators, integration of indicators, field research, data analysis and sustainability assessment. A list of indicators has been drawn up, taking into account the four pillars of sustainability. A special place among them is occupied by:

- Indicators used by national and international institutions
- Specific characteristics
- Indicators created by the doctoral student and his / her supervisor

In the Multi-Criteria Expert Assessment (FEM), the validation of potential indicators was done by the method of expert assessments. The evaluation of the potential indicators by the experts is carried out under eight headings included in the criteria of expert selection (CES).

The assessment of sustainability is done by separate pillars, as follows: pillar "Environmental friendliness" - 7 indicators; "Economic efficiency" pillar - 7 indicators; "Social responsibility" pillar - 7 indicators; "Institutional efficiency" pillar - 4 indicators. Each of these pillars received an assessment, and in the Overall Sustainability Assessment the weight of all pillars is the same without giving priority or greater importance to any of the pillars. Each indicator also includes sub-indicators called proxies. These proxy indicators give the specific value expression of the observed

condition and phenomenon in the holdings and enterprises and through a ranking scale, these values should be converted into a sustainability assessment.

Thus, the structure of the organization of the study acquires a two-sided layout, consisting of 25 indicators covering the holistic nature of sustainability with the corresponding number of proxy indicators against which stands a scale from 0 to 10.

The second chapter is devoted to the analysis of sustainability in viticulture. The study includes an assessment of the sustainability of farms under the Pillar of "Environment", "Social Responsibility", "Economic Efficiency", "Institutional Efficiency" in terms of their legal status and regional aspect. Based on the analysis, conclusions are made for each of these pillars, revealing the factors and problems of productivity, environmental friendliness, economic viability and social responsibility. It is established that considered in unity, they are the basis of the concept of sustainability in the wine sector.

The third chapter analyzes the results of the overall assessment of the sustainability of the surveyed farms according to their size to show how the individual units are presented in terms of sustainability in its holistic whole and what differences exist between the different groups. The results obtained for the different assessments of the individual groups are explained in detail.

A comprehensive assessment of the sustainability of the surveyed farms by legal status has been made, similar to the assessment of sustainability by size shows the differences that are observed between different forms of management and organization of production units.

The dissertation contains concrete results and empirical evidence, which objectively prove the need for a comprehensive assessment of the sustainability of vineyards, where the problems are heterogeneous.

## **6. Contributions to the dissertation.**

The following more important ones can be pointed out in the presented dissertation:

### **Scientific contributions**

1. The essence of sustainable development and the sustainability of agriculture, and in particular viticulture, has been clarified.

2. A conceptual framework has been developed to assess the main factors determining the sustainable development of viticulture in Northern Macedonia.

3. The sustainability of the wine sector is analyzed and assessed by its individual components (pillars).

4. The needs of the vineyards for their sustainable development in the future have been identified.

5. The possibilities for sustainable development of the sector in the future are determined.

### **Scientific and applied contributions**

From the scientific contributions with practical application we will point out the following:

1. Good practices for sustainable development of vineyards have been established.

2. The obtained results can be used at different levels of management - consumers, enterprise, sector, government to develop strategic documents for sustainable development of the wine sector.

### **7. Critical remarks and questions.**

The chosen topic of the dissertation has a complex and complex content. In this sense, one can always look for grounds for critical remarks on the structure, content, scope of the study. It is commendable that the doctoral student shows in-depth knowledge of the topic and offers research approaches to assess the sustainable development of the wine sector.

A number of productions need clearer argumentation, supported by concrete results from their own research. In some places, a clearer position and conclusions from the obtained results are needed.

### **8. Published articles and citations.**

The presented abstract correctly reflects the content of the dissertation. It presents in a synthesized form the main points of the dissertation: general characteristics; content; scientific contributions. Nine articles have been published in connection with the dissertation.

#### CONCLUSION:

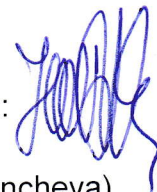
Based on the scientific and applied by the doctoral student, different research methods, correctly performed experiments, summaries and conclusions, I believe that the presented dissertation meets the requirements of ZRASRB and the Rules of the Agricultural University for its application, which gives me reason to evaluate it POSITIVE. .

I allow myself to suggest to the esteemed Scientific Jury to also vote positively and to award MARIA SASHA DUKOSKA the educational and scientific degree "Doctor" in the scientific specialty Organization and Management of Production.

Date: 26.10. 2020

Plovdiv

REVIEWER:



(Prof. Dr. Nelly Bencheva)