REVIEW

on the dissertation for the educational and scientific degree "Doctor" in the field of higher education 3. Social, economic and legal sciences, professional field 3.8. Economics, scientific specialty, the scientific specialty Economics and Management (by industry)

Author of the dissertation: ROSEN PLAMENOV IVANOV, doctoral student (full-time) at the Department of Economics at the Agrarian University, Plovdiv
The topic of the dissertation: RISK MANAGEMENT IN AGRICULTURE
Reviewer: Prof. Dr. Ivan Dimitrov Penov, Agrarian University - Plovdiv, Department of Economics; field of higher education 3. Social, economic and legal sciences; professional field 3.8. Economics; scientific speciality Economics and Management (Agriculture), appointed as a member of the scientific jury by order No. RD-16-368 /13.03.2025 by the Rector of the AU.

1. Brief presentation of the candidate.

Rosen Plamenov Ivanov was born on 10.01.1986. In 2008, he received a Bachelor's degree in Business Administration and in 2010, a Master's degree in Finance from Aarhus School of Business, Aarhus University, Denmark. In 2022-2025 he is a full-time doctoral student at the Department of Economics of the Agricultural University-Plovdiv.

He began his career 2015 as an Analyst at PlantaSYST Consortium, Plovdiv/Potsdam, Bulgaria/Germany. From 2016 to now, he has been the Owner/Director of Multiconsult Finance EOOD, Plovdiv, Bulgaria. Since 2023, he has been an Assistant Professor in the Department of Economics, the Agrarian University - Plovdiv.

2. Relevance of the problem.

The topic of risk management in agriculture is underdeveloped in Bulgaria. It is important for many reasons, especially at present. First, climate change requires changing the structure and method of growing fruit crops. Second, insurance and determining the compensations upon the occurrence of insured events cannot be

determined if the nature of the risk is not understood and its assessment has not been made.

3. Purpose, tasks, hypotheses and research methods.

Purpose: Assessment of risks in fruit growing and development of methods and strategies for risk management depending on the characteristics of the farms.

Tasks: (1) Presentation of the main theories and empirical research in risk management in agriculture; (2) Development of a methodological framework for studying the types of risks and their management in fruit farms; (3) Data collection for fruit growers: (4) Analysis of the risk management process in fruit growing and identification of the specificities of the sector; (5) Derivation of management and institutional solutions for better risk management in the fruit growing sector in Bulgaria.

Thesis of the work: Risk management is an underestimated topic for fruit growers in Bulgaria and is mainly reduced to traditional biological risks. However, the dynamic external environment creates increasingly complex types of risk. Improvements in risk management can contribute to increasing the economic sustainability of fruit farms.

Working hypotheses: H1: For fruit growers, risk management is not a process of primary importance; H2: Different types of risk are of equal importance for fruit growers; H3: Individual sociodemographic characteristics of farmers do not have an effect on risk management in fruit growing; H4: The specifics of the fruit farm do not affect risk management; H5: Different types of risk are of equal importance regardless of the characteristics of the orchards; H6: Owners and managers have the same levels of tolerance to risk and behaviour in the process of its management.

Research methods: Based on a literature review, a system of indicators for risk research was developed. A questionnaire was designed to collect information about the indicators. The data were analyzed, and the hypotheses were tested using descriptive and inferential methods, regression, and variance analysis.

Sample size: The "Snowball" survey method was used. 105 surveys were sent, 86 were received. Participation rate is 82%.

4. Visualization and presentation of the results obtained.

The dissertation includes an introduction, four chapters, conclusions, and appendices. It is 200 pages long and contains 16 tables, 45 figures. The introduction (4 pages) presents the relevance of the problem, the purpose and stages of the work, the subject and object of the study, the central thesis, and the methods of the study.

The first chapter is theoretical (67 pages). It discusses the theoretical framework for risk management in agriculture. An analysis of the empirical studies of the types of risk in fruit growing (external, sectoral, organizational, biological, etc.) is carried out.

The second chapter is methodological (15 pages). It outlines the subject and object of the study. The sources of information and the structuring of the questionnaires are discussed. The sample design and the method of collecting information are presented. The research hypotheses are derived, and the data analysis methods are presented.

The third chapter is exploratory (64 pages). A characteristic of the sample is presented. The types of risks in fruit growing are identified. The working hypotheses are evaluated

The fourth chapter is constructive (13 pages). Proposals for changes in the institutional environment and policies are made. Directions for future research are presented. The conclusion (2 pages) summarizes what has been done in the dissertation.

5. Discussion of the results and used literature.

There are two main approaches to formulating the working hypotheses. First, they could be formulated as economic hypotheses, which are expected to be confirmed in the analysis process. Second, they could be formulated as null statistical hypotheses, which are expected to be rejected (unconfirmed) in the process. The author has chosen the second approach.

The initial list of risks is limited, and 20 types of risk, grouped into seven categories, were examined. The assessment was carried out on two dimensions, frequency and effect on a 5-point scale. Reducing the number of studied risks to the most important ones helps to obtain a clearer picture of the studied processes.

The following types of risks were analyzed. Natural: Climate change, Extreme weather events, Plant diseases, Pests. Human resource management: Lack of

workforce; Incidents in the work process; Low motivation; Workforce turnover and absences. Financial: Change in interest rates; Insufficient cash flow; Problems with loan servicing. DMA management: Fire; Vandalism/theft; Equipment breakdown. Political: Change in subsidies; Legislative changes. Market: Macroeconomic instability; Instability of materials/raw materials for production; Instability of purchase prices. Other: Litigation (removed in the analysis process)

Based on the assessment, the author concludes that fruit growers perceive natural and market risks as the most significant. The remaining four risk groups are perceived to have relatively more minor.

Working hypotheses 1-6 were investigated, using mainly descriptive statistics and variance analysis of estimates. Regression analysis was also used as for hypothesis 3.

144 sources of information were used.

6. Contributions of the dissertation work.

I accept the scientific contributions in the dissertation, but I want to emphasize some.

Scientific contributions

- A risk management model has been developed for fruit growing in Bulgaria
- The main risks in the industry have been derived
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Scientific and applied contributions

- The differences in the risk perceptions of fruit growers have been presented depending on their demographic characteristics: gender, education, experience, etc.
- The perceptions of fruit growers about the main risks in the industry have been assessed
- Recommendations for improving the institutional environment in fruit growing have been derived

7. Critical notes and questions.

I have no significant critical remarks about the work. It is structured well, and the author's thesis is consistently defended. However, I think that Table 16 - "Detailed

assessment of the research hypotheses", could start with the work's central thesis. In this way, it could be seen better how the working hypotheses support the work's central thesis.

8. Published articles and citations.

Two articles related to the dissertation have been presented; one is co-authored, "Risk Management in Agriculture" (2023), published in Agricultural Sciences, and the second is independent "Risk Analysis and Management Practice of Bulgarian Fruit-growers"-(2025).

The presented abstract objectively reflects the structure and content of the dissertation work.

CONCLUSION:

Based on the various research methods learned and applied by the doctoral student, the correctly conducted experiments, and the generalizations and conclusions made, I believe that the presented dissertation meets the requirements of the LDASRB and the Regulations of the Agrarian University for its application, which gives me reason to evaluate it POSITIVELY

I would like to propose to the esteemed Scientific Jury also to vote positively and award

ROSEN PLAMENOV IVANOV

the educational and scientific degree "doctor" in the scientific field

3.8. Economics; Scientific speciality Economics and Management (by industry)

Date 25.04.2025
Plovdiv

REVIEWER: Prof. Dr. Ivan Penov.
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