STATEMENT

on a dissertation for obtaining the educational and scientific degree "Doctor" in the field of higher education: 3.0 "Social, economic and legal sciences", professional field: 3.8 "Economics", scientific specialty "Economics and Management (Agriculture)",

Author of the dissertation: **Rosen Plamenov Ivanov**, PhD student at the Department of Economics at the Agricultural University, Plovdiv

Topic of the PhD thesis: **Risk management in agriculture**

Reviewer: **Assoc. Professor Dr. Yanka Kazakova-Mateva,** UNWE, Business Faculty, Economics of Natural Resources Department. 3. Social, economic and legal sciences, 3.8. Economics, scientific specialty "Economics and management (Agricultural and Environmental Policy)", ,

appointed by Order № RD/ 16-368 / 13.03.2025 of the Rector of the Agricultural University - Plovdiv as a member of the scientific jury.

1. Relevance of the topic

The dependence of agriculture on natural conditions defines it as one of the high-risk sectors of the economy. The combined manifestation of the leading contemporary challenges posed by climate change and the loss of biodiversity, including agrobiodiversity, and the geopolitical instability of recent years, determine the growing need for systematic and precise risk management in the sector.

The topic of the dissertation and the initial analysis of the context clearly and convincingly present the relevance of the research problem. At the same time, the literature review points out the lack of studies that take into account the cumulative effects when different types of risks coincide, and thus deduces the research niche of the dissertation.

2. Aim, tasks, hypotheses and research methods.

The main objective of the dissertation is "*to assess the types, impact and frequency of risks in fruit growing and to propose effective methods and strategies for risk management depending on the characteristics of fruit farms*". Five main tasks have been identified to achieve the objective, which form the structure of the study. In the introductory part, the subject "risk management" and the object of the study "by fruit farms" are defined. The detailed presentation of the study object in the methodological second chapter, paragraph 2.2, p.81 creates some ambiguity, as it states that "*The object of the study is focused on the fruit growing sector.*" This ambiguity is observed in

different parts of the dissertation, as it seems that the author uses the two concepts interchangeably – "fruit farms" and "the sector/sub-sector of fruit growing".

The main thesis of the dissertation is that "*risk management is an underestimated topic for fruit farmers in Bulgaria*", which is motivated by the focus on "*traditional biological risks*", with insufficient consideration of "*the dynamic external environment that creates new and increasingly complex types of risk in agriculture*". The dissertation author has chosen to present the hypotheses of the study only in paragraph 2.9, p. 91, separately from the main thesis, yet each of the hypotheses is substantiated in detail. Six null hypotheses are formulated, for which sufficient and convincing statistically significant evidence is sought for their acceptance or rejection..

The main methodological approach of the study is deductive. A combination of qualitative and quantitative methods were applied in the analysis, allowing for a comprehensive assessment of the research problem, which is a strong point of the dissertation work. The primary data were collected through an online survey among fruit farmers in the Plovdiv region, distributed using the "snowball" method, resulting in 86 fully completed questionnaires. The number of respondents allowed the dissertation to derive the sought-after statistically significant results..

3. Visualization and presentation of the results.

The results of the study are presented in detail in Chapter 3 (total volume of 59 pages). In three main paragraphs, the results regarding fruit farms, risks and their management by fruit farmers are analyzed, and the hypotheses are evaluated. Three of the hypotheses are completely rejected and three are partially rejected. The results are illustrated with a series of logically arranged and connected graphs and tables, which are supplemented with detailed descriptive and analytical texts. This is a strong point of the dissertation work.

4. Discussion of the results and theoretical background.

The discussion of the results is in paragraph 3.4., with the results of the study being compared with other empirical studies from Bulgaria and abroad. This is a strong point of the dissertation work.

The conclusions in the last chapter regarding the results of the empirical study and the thesis of the dissertation are contradictory or insufficiently clarified: on page 174 it is stated: "*The results of the empirical study also confirmed the initial main thesis of the work – risk management is an underestimated topic for fruit growers in Bulgaria.*" At the same time, table 16, page 154 "Detailed assessment of the hypotheses of the study" states that "*Risk management is important for all groups of fruit growers except for those with the lowest education level*". The discussion in paragraph 3.4 is built around the results and the rejection of the first hypothesis. The formulation of the contributions in the final chapter states that "*the topic of risk management in*

agriculture.....is largely underestimated as an academic research topic". It is not clear on what basis the conclusion of the underestimation of risk management was drawn – whether risk management is underestimated by fruit growers or by scientific circles.

5. Contributions of the PhD thesis.

The author outlines four main contributions of the dissertation study, three of which are applied and one has a theoretical focus.

Theoretical contributions

The proposed theoretical model for risk management in fruit growing is presented graphically in Figure 44. It maps the leading factors that influence risk management in fruit growing. It is indicated that this represents a first scientific attempt and can be used for future research on the topic.

Applied contributions

The applied contributions comprise (1) analysis of risk management in agriculture, (2) analysis of risk management in fruit farms in Bulgaria, (4) proposals for improvements to future risk management actions.

6. Critical remarks and questions.

The dissertation is clearly justified, logically systematized and diligently applies the chosen research methods. The critical notes and recommendations have one sole purpose, namely to assist the doctoral student in his further scientific research work.:

- Environmental risks in agriculture, p.47, focuses on the risks of climate change such as extreme heat, droughts, storms and floods, which are the most common risks for agriculture. This is done correctly. A weak feature of the dissertation work, however, is the omission of the most critical natural/climatic risk for fruit growers, namely – late spring frosts (Devot et al. (2023), table 4, p.25). Grouping "extreme weather events" into a common risk manages to somewhat cover up this omission. But its absence throughout the dissertation leads to weaker interpretation of the empirical results of the study regarding risk management strategies on farms for the introduction of resistant varieties (applied in 54.7% of farms) and the construction of protective structures (applied in 51.2% of farms) (Fig. 38, p. 124.)
- The data source for economic indicators in agriculture – price growth, inflation, etc. (pp. 39, 40, 54, 56) are based on a single media publication, without being compared and verified with official economic data (NSI, Eurostat) or with scientific publications based on reliable data. This is unacceptable for scientific research, especially in a dissertation

in the scientific field 3.8 Economics and should be avoided in future scientific research.

- The study period is 2021-2024. This period is saturated with an excessive accumulation of risk events, which makes it an uncharacteristic period, even in the study of risk management. This "exceptionality" and atypicality of the period of manifestation of risks in fruit growing is not taken into account in the analytical, discussion or concluding part of the dissertation work, while it would have been useful and with added value to the results and recommendations of the study.

Questions:

(1) How is the concept of risk defined in the dissertation? When does a problem in the context/surrounding environment become a risk for agricultural producers? Are there threshold levels,and how do we determine them?

(2) What is the basis used for deriving the 20 risks included in the survey? What are the selection criteria and what is their relationship to the analyses performed at the macro, meso and micro levels in the first chapter of the dissertation??

7. Publications and citations.

A statement by Prof. Dr. Petar Borisov, coordinator of the faculty committee, is presented stating that two articles published in peer-reviewed journals were submitted, generating a total of 45 points. One article is co-authored, the other is independent. Both articles are on the topic of the dissertation.

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

CONCLUSION:

Based on the different research methods applied by the PhD student, the correctly performed analysis, the formulated recommendations and conclusions, I consider that the presented dissertation meets the requirements of the Law for Development of Academic Staff in the Republic of Bulgaria, The Regulation for the Application of the Law for Development of Academic Staff in the Republic of Bulgaria and the Regulations of the Agricultural University - Plovdiv for its application, which gives me reason to evaluate it **POSITIVE**.

I would like to propose to the Scientific Jury to vote **POSITIVELY** and award Rosen Plamenov Ivanov the educational and scientific degree "Doctor" in the scientific speciality "Economics and Management (Agriculture)"

Date: 30/04/2025
Plovdiv

Reviewer: .....
(Assoc.prof.dr. Yanka Kazakova-Mateva)