TO:
THE CHAIRMAN OF THE SCIENTIFIC JURY,
PROF. DR. CHAVDAR MLADENOV, NIGGG – BAN

FROM: PROF. DR. IVAN GATEV MARKOV,
MEMBER OF THE SCIENTIFIC JURY,
according to order № 01-266 / 29.12.2020 of the Director of NIGGG – BAS on competition for
academic position "professor" in the National Institute of Geophysics, Geodesy, and Geography at
the Bulgarian Academy of Sciences (NIGGG-BAS), Scientific field 4. Natural sciences, mathematics and
informatics, Professional field 4.4. Earth Sciences, Scientific specialty - Economic and Social
Geography, for the needs of the Department of Geography, announced in SG no. 93 of 30.10.2020,
with candidate: Assoc. Prof. Dr. Boian Yordanov Koulov.

RE: OPINION

Dear Mr. Chairman,

Documents for participation in the competition for a professor in the scientific field announced by
NIGGG - BAS - 4. Natural sciences, mathematics and informatics, professional field - 4.4. Earth Sciences,
scientific specialty Economic and Social Geography, announced in SG no. 93 of 30.10.2020, were
submitted by one candidate - Assoc. Prof. Dr. Boian Yordanov Koulov.

The submitted documents for participation in the competition (inventory of 8 documents signed by
the candidate) meet the requirements of the Law for development of the academic staff in the
Republic of Bulgaria (ZRASRB), the Regulations for its implementation, the Regulation of the Bulgarian
Academy of Sciences for ZRASRB's implementation, and the Regulations for ZRASRB's implementation
of the National Institute of Geophysics, Geodesy and Geography (NIGGG).

Candidate details

Assoc. Prof. Koulov graduated from the Faculty of Geology and Geography at Sofia University "Kliment
Ohridski" - Master / 1983 /. In 1988 receives from the High Attestation Commission the scientific
degree "Candidate of Geographical Sciences".

During the period 1990 - 2008. works as a lecturer and researcher at US universities - Assistant
Professor at George Washington University, Washington, DC; Visiting Professor at George Mason
University, Fairfax, Virginia; Assistant Professor at American University, Washington, DC; Visiting
Professor at West Virginia University, Morgantown, West Virginia; Visiting Researcher at West Virginia
University, Morgantown, West Virginia. During the period 2007-2008, he works as a Geographer at the
Geographical Institute at the Bulgarian Academy of Sciences. In 2008 he received the scientific title
SENIOR RESEARCHER FELLOW SECOND DEGREE in the scientific specialty 01.08.02. Economic and social
geography by competition announced by the Institute of Geography – BAS. In the 2008-2010 period
Koulov is a Senior Research Fellow II degree and Scientific Secretary at the Geographical Institute - BAS,
and in the 2010-2014 period - Senior Research Associate II degree and Scientific Secretary of NIGGG -
BAS. From 01.01. 2008 onwards he continues as Associate Professor at NIGGG - BAS. Assoc. Prof.
Koulov has extensive teaching and research experience. He has led six national and two international
research projects, including collaborative project work with PhD students.

2. Criteria for participation in the competition

To participate in the competition, the candidate has submitted a list of publications and copies of them, a declaration for fulfillment of the minimum requirements for academic title "Professor", according to the requirements of the regulations. The analysis shows that the requirements for the academic title "Professor" are fulfilled in accordance with the Regulations on the terms and conditions for acquiring scientific degrees and titles in the Bulgarian Academy of Sciences and its Annex №1. In Table 1 the candidate has indicated the minimum required number of points by groups of indicators for the academic position "professor", according to BAS regulations, as well as the achieved number of points by the candidate for the position of "professor".

Table 1. Minimum required points for the academic position "professor" by groups of indicators, according to the Rules of BAS for application of ZRASRB and points reached by the candidate

Group of indicators	Content	Professor	Achieved points by the candidate
A	Indicator 1	50	50
B	Indicator 2	-	-
C	Indicators 3 or 4	100	100
D	Sum of indicators from 5 to 9	220	233,3
E	Sum of indicators from 10 to 12	120	132
F	Sum of indicators from 13 to the end	150	240
Total	Candidate	640 - min.	754.3

Reference: Declaration of the minimum requirements and achieved points by the candidate.

The analysis shows that the candidate has achieved a "Doctor" degree, group A - 50 points. In group C, Assoc. Prof. Koulov presented a habilitation thesis - monograph - 100 points are awarded. In group D 18 publications are presented, of which in D 7 - six and D 8 - twelve. In D 7 all publications are in English and in three of them Assoc. Prof. Koulov is the first author, and in D 8 all six of the publications are in English and in six of them Assoc. Prof. Koulov is the first author. In group E the number of points, given the number of authors, is 233.3 (106%), which shows that they are in excess of the required minimum. In group F - indicator 10. *Citation or review in scientific journals, referenced and indexed in world-famous databases with scientific information or in monographs and collective volumes* - the candidate has submitted 19 articles, in six of which he is the only author. There are 25 citations of these articles, which form 125 points. According to indicator 12. *Citation or review in non-indexed journals with scientific peer review*, two articles are presented which carry three citations or 6 points. Thus, 131 points (109.2%) are awarded from group E. In group F Assoc. Prof. Koulov has been scientific guide of one successful doctoral student - 40 points. He has led six national scientific projects - 120 points and two international scientific projects - 80 points. In group E he achieved a total of 240 tons (160%). The sum of the points by groups of indicators shows that Assoc. Prof. Koulov has 754.3 points with a required minimum of 640 points (117.9%).

3. Scientific contributions of the candidate

In the extended reference for the scientific contributions of the candidate two thematic directions are singled out. **The first thematic direction** concerns contributions related to the geospatial inequalities and the sustainability of the regional development. The candidate adheres to the understanding of a number of researchers about "horizontal inequality." The large horizontal differences among European regions have been studied and scientifically proven. The same applies to the existence of significant geospatial positive autocorrelation in income, as well as in per capita income, i.e. the "rich" regions are geographically grouped together, as are the "poor" regions. The differences between the rich European core and the much poorer periphery are quite striking, but the resilience of this phenomenon is even more pronounced over time. The main publications and contributions of the candidate are in this thematic direction. The monographic research is of key importance (**"Core-Periphery Relations" and Horizontal Inequalities in Europe**"). Publications (B_3_1, D_7_3, D_7_4) identify and map the boundaries of the geospatial core and periphery of the European socio-economic system and the regions of greatest interest to territorial management practice and the public.

The proposed and tested, on the example of Bulgaria, theory of one way of formation of regions with a relatively lower standard of living, which introduces and justifies the effect of "overlapping peripheries" is considered a contribution. The proposed theory is used as a tool for identifying regions in decline or the so-called regions with special geographical characteristics: mountainous, border (especially along the external borders of the EU), ethno-political and others ((B_3_1, Г_7_3, Г_7_4, Г_8_1, Г_8_2, Г_8_4, Г_8_6, Г_8_7, Г_8_9).

The results of the proposed testing of the "index of horizontal inequality", which measured the differences in the average standard of living among regions at all levels, as well as their dynamics in the period between 2007 and 2017, are also considered contribution with practical significance. Other such contributions are:

- In the period under investigation, the tendency to reduce horizontal socio-economic inequality dominates in Europe;

- Despite this generally positive trend, the magnitude of the horizontal disparities remains too high, which poses corresponding in magnitude risks for both European cohesion and the social stability of the continent. (B_3_1)

On the example of mountain regions, the concept of sustainable development (Grundtland Report, 1987) and its management is further developed by adding to the economic, social and environmental aspects, political, cultural, and geospatial characteristics, i.e., the sustainability of management of the territory is enhanced through the, use of an integrated approach to its management and the identification of the most appropriate geospatial scale. (G_8_4, G_8_6, G_8_7, G_8_9, G_8_12). The results of the research and the conclusions reached by the candidate have an exceptional applied value. They are especially relevant now when preparing strategic planning documents for the programming period 2021-2027 and policies at different scales are formulated, based on an integrated approach.

The second thematic area contains contributions related to the implementation of the concept of ecosystem services, as well as geoinformation technologies, for sustainable environmental management and regional development. In publications (D_7_1, D_7_2, D_7_5, D_7_6) the

applied methodological framework of MAES (Mapping and Assessment of Ecosystem Services) in the administrative-territorial units of the country is of contribution importance and on this basis the proposed methodological guidelines on mapping of ecosystems and economic assessment of the services they provide locally in Bulgaria. In other publications (D_7_2, D_7_6, D_8_3, D_8_8, D_8_11) the introduction of the term "dysergy" of ecosystem services is defined and proposed, in order to develop the theory and practice of this type of assessment. The currently available knowledge base is upgraded, which supports geospatial planning and the sustainable development of territorial units at the local level in mountainous regions, as well as offers recommendations for improving the use of municipal ecosystem services, which include identification, analysis, and visualization of "hot" spots and areas of dysergies.

In separate publications are proposed GIS-based approaches, a database and cartographic products to help reduce the risk of hazardous natural phenomena and technological hazards. The potential for technological hazards is demonstrated from a geographical point of view, as well as the possibilities for their reduction. Aspects in which geographical expertise plays a crucial role are indicated. The basic principles of a theoretical model of GIS for hazard reduction are formulated, together with its elements, structure and the most important necessary functions. (G_8_3, G_8_5, G_8_8, G_8_12)

Conclusion

The documents submitted for participation in the competition by Assoc. Prof. Dr. Boian Koulov meet the requirements of Art. 52. (3) of the Regulations for application of the Law for the development of the academic staff in the Republic of Bulgaria (ZRASRB) and the Regulations for application of ZRASRB in the National Institute of Geophysics, Geodesy and Geography (NIGGG) - BAS. There is no legally proven plagiarism in the scientific papers submitted by Assoc. Prof. Dr. Koulov for participation in the competition for "professor". Article 58. (7).

Assoc. Prof. Koulov presented scientific papers of contributive nature regarding current research issues. In the presented scientific works of Assoc. Prof. Koulov feature theoretical and applied contributions that have received recognition among the scientific community. The total number of points by groups of indicators is more than the required for the academic position of "professor".

The analysis of the review of the documents for the competition, the references for fulfillment of the minimum requirements and for the original theoretic and applied contributions gives me grounds to express a completely positive attitude (YES) on the candidacy of Assoc. Prof. Dr. Boian Iordanov Koulov for the academic position "Professor" in Scientific field 4. Natural sciences, mathematics and informatics, Professional field - 4.4. Earth sciences, Scientific specialty - Economic and social geography.

Veliko Tarnovo, 25.01.2021

Prepared by:

(Prof. Dr. Ivan Markov)