

## OPINION

by Assoc. Prof. Dr. Poli Rukova,

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**Subject:** Competition for the academic position of "professor" in the professional field 4.4 Earth Sciences, scientific specialty "Economic and Social Geography" in the Department of Geography of the National Institute of Geophysics, Geodesy and Geography - BAS, announced in SG no. 93 / 30.10.2020.

The only candidate is Assoc. Prof. Dr. Boian Yordanov Koulov.

This opinion was prepared on the basis of order №01-266 / 29.12.2020 of the Director of NIGGG - BAS and the Decision of the first meeting of the scientific jury with minutes №1 / 05.01.2021. The opinion is in accordance with the requirements of the Act for Development of the academic staff in the Republic of Bulgaria (ZRASRB), the Regulations for its application (PPZRASRB), the Regulations of BAS for application of ZRASRB and the Regulations for application of ZRASRB of the National Institute of Geophysics, Geodesy and Geography (NIGGG) – BAS.

### I. Candidate details

The candidate in the competition, Assoc. Prof. Dr. Boian Yordanov Koulov is a scientist with many years of research and teaching experience in the field of economic and social geography. He graduated with honors from the Faculty of Geology and Geography at Sofia University "Kliment Ohridski". In 1988 he successfully defended his doctoral dissertation at the Geographical Institute of the Bulgarian Academy of Sciences. He has taught at US universities for over 15 years: George Washington University, Washington, DC, George Mason University, Fairfax, American University, Washington, DC, West Virginia University, Morgantown. He has lectured at the University of Masaryk - Brno, the Czech Republic and the University of Salzburg, Austria, the Institute of International Relations of the US Department of State, the Institute of Marine Research - Constanta, Romania, the World Federalist Association and the UN Association, Washington, DC, the University of Pennsylvania - Indiana, at the University of Thessaloniki, Greece and at Sofia University "Kliment Ohridski". Since 2008 he has been an associate professor in Economic and Social Geography at the Geographical Institute of the Bulgarian Academy of Sciences and has been elected as Scientific Secretary of the Institute. During the period 2010 - 2014 he was Scientific Secretary of NIGGG - BAS, and currently he is a member of the Scientific Council of the Institute and its Secretary. In 2020, he has been elected at the internationally prestigious position of member of the Steering Committee of the Commission for Local and Regional Development of the International Geographical Union. Assoc. Prof. Koulov has specialized in Harvard, USA (2009) and Japan (2005), as a fellow of the Japan-American Education Commission. Between 1993 and 1999, he was director and chairman of the Board of Directors of the European Specialty Group of the Association of American Geographers, USA.

Assoc. Prof. B. Koulov leads 16 and participates in 23 international and national research projects funded by Horizon 2020, ESPON 2020, OP NERD (2018-2023), Research Fund at the Ministry of Education and Science, Bulgaria, National Science Foundation of the United States (1991- 94), the MacArthur Foundation, USA (1991-94), the US National Research Council (1996) and the Board of International Studies and Exchange, USA (1999). Along with his research work, he contributed to the popularization of the Bulgarian language and culture, as founder and director of the Bulgarian Educational Center "St. Kl. Ohridski ", Washington, USA, as Chairman of the Board of Trustees of the Bulgarian Education Center (2002-2008) and as Founder and President of the Association of Bulgarian

Schools in the USA (2006-2008). He is the founder and chairman of the Association of Bulgarian Schools Abroad, Sofia, Bulgaria (2007-2015).

## **II. Information on compliance with the national research requirements according to the RASRB and the Rules of BAS for application of the RASRB**

The candidate, Assoc. Prof. Boian Koulov has presented a detailed report on compliance with the minimum research requirements for participation in the competition for the academic position of "professor". The analysis of the report shows the following distribution:

**Group A:** Dissertation for acquiring of the educational and scientific degree "Doctor" - on "Economic and geographical forecasting of the Burgas industrial territorial system" - 50 points.

**Group B:** Monograph: Koulov, B. (2020) Europe's Core-Periphery Relations and Horizontal Disparities. "Az-buki" Publishing House, MON - 100 points

**Group D:** Under item 7, six scientific publications are presented, of which 4 are referenced in SCOPUS and two in WoS with a total of 81.7 points. Under item 8, 12 scientific publications with a total number of points 151.6 are presented. In total, for group D the candidate has 233.3 points with required minimum number of 220 points.

**Group E:** Under item 10, 25 citations are presented in scientific publications, referenced and indexed in world-famous databases of scientific information of 12 publications with a total of 125 points. Under item 12, are presented 3 citations with 6 points total. The candidate has 131 points for group E with required 120 points.

**Group F:** The presented materials are for guiding one doctoral student, leading 6 national and 2 international research projects. The total number of points is 240 with a required minimum of 150 points.

According to the Rules of the Bulgarian Academy of Sciences for application of the Law on the Application of Academic Position "Professor", a minimum sum of 640 points is required, and the materials presented by Assoc. Prof. Dr. B. Koulov have a total number of 754.3 points. He has the required number of points for groups A and B and exceed the number of points for groups D, E and F.

## **III. Scientific contributions**

Assoc. Prof. Dr. B. Koulov presented an extended report on the scientific contributions with which he participates in this competition. A total of ten contributions are presented, grouped in two interrelated thematic areas:

### **1) Geospatial inequalities and sustainable regional development: theory, tools and policies**

There are seven contributions in the first area, the first of which relating to the identification and mapping of the boundaries of the geospatial formations "core" and "periphery", as subsystems of the European socio-economic system. The dynamics of their change for an 11-year period is analyzed and differentiated for the five territorial levels - from macro-regional (continent) to NUTS 3 level. The geospatial elements of the above subsystems are classified on the basis of the indicator "living standard of the population" and their transformations (magnitude and directions of expansion and contraction) analyzed. The obtained information is applicable and used in the geographical forecasting and the socio-economic and territorial planning of the development of the European regions at the studied levels.



Another important contribution is the identification and mapping of the regions that are of the greatest interest for management practice - the regions of the "deep periphery" category, where they predominate at least at one of the NUTS levels considered. These regions are generally the main goal of regional policy. The "Territorial Inequality Index" was tested to measure the differences in living standards between regions at all levels, as well as its dynamics for the period 2007-2017 studied. Two of the conclusions are of paramount importance for the territorial planning practice, namely: 1) in the studied time period in Europe the tendency of reduction of the horizontal socio-economic inequality dominates, but nevertheless 2) the magnitude of these disparities remains too high and creates, proportional to it, risks to the cohesion and social stability of the continent.

The concept of sustainable development and its management has been further developed, proving the key role of increasing the integrative character of sustainable management, by including all natural and anthropogenic elements of the respective geospatial scale.

The research proves that in a number of countries in Europe and in Bulgaria the importance of regional monitoring, availability and access to data at regional and local level is greatly underestimated, despite its crucial role for the purposes of strategic geospatial planning and ensuring transparency of territorial governance.

## **2) Application of the concept of ecosystem services and GIS for sustainable environmental management and regional development**

Three contributions are presented within the above topic: 1) The methodological framework of MAES (Mapping and Assessment of Ecosystem Services) is applied and further developed. The possibilities, challenges and limitations in the practical application of the concept for ecosystem services are analyzed. 2) The term "dysergy" of ecosystem services is proposed and defined. The knowledge base, which supports geospatial planning and sustainable development of territorial units, has been upgraded, especially at the local level, and for mountainous regions. Recommendations have been made to improve the use of ecosystem services in territorial governance, which include the identification, analysis and visualization of hotspots and dysergy areas. 3) GIS-based approaches, database and cartographic products have been developed to help reduce the risk of hazardous natural phenomena and technological hazards in ten Bulgarian municipalities. A definition of the term "technological hazard" from a geographical point of view is offered and the decisive role of geographical expertise within the field is substantiated. The basic principles of a theoretical model of GIS (elements, structure and functions) for reducing the risks and dangers are formulated.

I recommend Assoc. Prof. Koulov to promote the achieved research results among the authorized institutions, so that they can be applied in the regional management at different territorial levels.

## **IV. Conclusion**

For the current competition, the candidate, Assoc. Prof. Dr. B. Koulov, has presented significant and well-structured scientific publications that develop existing and create new science-based knowledge in economic and social geography. New methodological approaches have been developed that can be applied in the development of policies for sustainable regional development. The presented works of the candidate are the result of his work on research projects, individually and in a team.

The materials, publications and scientific contributions submitted for the competition are original. Assoc. Prof. B. Koulov has always worked in accordance with the principles of scientific ethics and has not illegally used other people's works. No reports of plagiarism were received until the preparation of this opinion. The research indicators for his scientific activity fully meet the requirements for holding the academic position of "professor" at the National Institute of Geophysics, Geodesy and Geography at the Bulgarian Academy of Sciences.

Associate Professor Dr. Boian Koulov is an established and internationally recognized scientist with significant research and teaching experience.

Based on this presentation and the compliance of the materials submitted for the competition with the requirements of ZRASRB and the rules for its implementation, I vote "FOR" the selection of the candidate, Assoc. Prof. Dr. Boian Yordanov Koulov to hold the academic position "Professor" under PN 4.4 "Earth Sciences", scientific specialty "Social and Economic Geography", announced for the needs of the National Institute of Geophysics, Geodesy and Geography at the Bulgarian Academy of Sciences.

January 18, 2021

Sofia

Assoc. Prof. Dr. Poli Rukova