

THE ROLE AND CONTRIBUTION OF PROFESSOR AGIM SHEHU TO ALBANIAN CARTOGRAPHY

Pal Nikolli, Bashkim Idrizi

Prof. dr. Eng. Pal NIKOLLI
Geography department; University of Tirana;
Rruga e Elbasanit; Tirana; Albania.
palnikolli@yahoo.com; pal.nikolli@unitir.edu.al

Assoc.Prof.Dr. Bashkim IDRIZI
Surveying and geoinformatics department; University of Tetova;
str. Xhon Kenedi, 25/4-20; 1010 Skopje-Chair; Macedonia.
bashkim.idrizi@yahoo.com, bashkim.idrizi@unite.edu.mk

Abstract

Quantitative revolution in science and especially in the social sciences and the increasing amount of geospatial information available, in the second half of the twentieth century in Albania, requested the development of cartographic processes more objective and precise; prof. Agim Shehu played a decisive role in this development.

Name of prof. dr. Agim Shehu, is known in Albanian academic and scientific environments, for outstanding contributions to the field of cartography, photogrammetry and Albanology. With the experience of a passionate researcher, Prof. dr. Agim Shehu, has left its mark on Albanian scientific thought. He has over 50 years of successful research, publishing and teaching activity.

The legacies of prof. Agim Shehu are varied and reflect his broad interests. Scientific works and his teaching will serve generations of today and tomorrow will be a guide for them. Even today, prof. Agim Shehu, continues to write and successfully contribute to the development of the science of cartography and development especially in Albanian mapping.

In this paper an effort is made to analyze the cartographic work of Prof. Agim Shehu and its impact on the development of Albanian, as well world cartography.

Keywords: Agim Shehu, cartography, history of Albanian Cartography, cartometry, thematic cartography, Albanology, Albanian cartographic thought.

INTRODUCTION

Cartography in Albania is developed through numerous scientific, professional, technological, educational and archival achievements, recorded in various publications. A major influence in this development have played cartography specialists who were formed and educated in various universities abroad and at the Polytechnic University of Tirana, after the 1957. In this group of specialists distinguished prof. Agim Shehu, who has published dozens of books and monographs, and hundreds of scientific articles, maps of various atlases, etc. Scientific activity of prof. dr. Agim Shehu is comparable to the best European cartographers of the world.

Prof. dr. Agim Ismail Shehu, was born in Leskovik on 02. 02. 1931. In this small town, but beautiful, he finished primary school. He has finished Secondary school in year 1951, at former Polytechnic "7 Nëntori", Tirana. In the years 1952-1957, prof. Agim Shehu, has conducted studies in the Faculty of Cartography, the Institute of Geodesy, Photogrammetry and Cartography in Moscow. After graduation, was appointed a lecturer at the Faculty of Engineering, Department of Geodesy and Geography of former State University of Tirana (today –Tirana University). In year 1978, prof. A. Shehu, won the scientific degree "Doctor" after successfully defended dissertation topic about some original variants of pseudoconic projections which are used in many Albanian maps and atlases. In year 1998, he retired, but continued to teach at the geography branch of the Faculty of History and Philology at the University of Tirana until 2012.



During the activity as a lecturer, Prof. A. Shehu has prepared and published textbooks (about 20), monographs (3) and different scientific articles (over 100), etc. He has been consistently associated with cartographic production by providing appropriate assistance. Albanian cartographic experience has occupied a prominent place at the teaching – science work of prof. Agim Shehu. Under his leadership are realized scientific topics and some cartographers and geographers have received scientific degree "Doctor". In 1993, prof. Agim Shehu accepted correspondent of ISPRS International Association, at its Congresses he has sent and published several scientific articles. He has scientific correspondence with many of the world's cartographers and is known for his contributions at cartography.

Prof.dr. Agim Shehu is the most prominent researcher of Albanian cartography; leader of several generations in this field; mastermind of several projects and studies; outstanding speaker at conferences and symposiums at scientific and educational and commemorative activity held with in and outside the country; interlocutor erudite and passionate about cartography, photogrammetry, education and philology issues; author of many textbooks, as well as hundreds of articles in scientific journals and in newspapers. Published works and articles written by prof. Agim Shehu are diversified according to their themes and different characters. They are original contributions and special value at various disciplines of cartography, but also at albanology, organizing cartography, etc.

ORIGINAL CONTRIBUTION AT MATHEMATICAL CARTOGRAPHY

Prof. dr. Agim Shehu has provided a valuable contribution at the field of mathematical cartography, especially in the study of cartographic projections. He has analyzed at necessary depth and breadth the features of mathematical basis of geographical and topographical maps published by Italian Geographic Institute of Florence (IGUF), Geodetic and Cartographic Military Institute in the former USSR (IGHU), and former Army Topographic Institute (ITU) (today Military Geographical Institute - IGU), along with maps and diagrams (Shehu, 1994, 1995). In many works, such as articles, presentations, monographs, texts etc., prof. Agim Shehu has analyzed the mathematics elements that are used by geodesy-mapping services in Albania and has argued their unification (Shehu, 1962); has argued the possibility and usefulness of change sizes, denominations and central meridian of our topographic maps (Shehu, 1976), has analyzed cases of using cartographic projection in cartographic Albanian practice and has provided general formulas for calculating of equivalent projection (Shehu, 1979); has argued how constants χ and α affect in distortions size at the projection and has gave ways to minimize them (Shehu, 1958), etc. Prof. Agim Shehu, calculating and analyzing 35 projections, has developed itself two cartographic projections (pseudoconic and pseudocilindric) that are used to create thematic maps of Albania (Shehu, 1967, 1977, 1984, 1988).

SCIENTIFIC PUBLICATIONS WITH EXCEPTIONAL VALUES IN THE FIELD OF CARTOGRAPHY HISTORY AND ALBANOLOGY STUDIES.

Prof. Agim Shehu, is main author of two major works on the history of Albanian Cartography: "Albania on the maps of liberation front" (Shehu and Dragovoja, 1984) and "History of Albanian Cartography" (Shehu and Nikolli, 2001).

The monograph "Albania on the maps of liberation front" was published in Tirana, in year 1984, contains 105 pages and is divided into four chapters: 1. Antiquity; 2. Middle Ages and Renaissance; 3. New Time and 4. Present time. In the first chapter, are given the cartographic representations of the early and late antiquity and four maps of C.Ptolemaic that are republished in XVI and XVII century, in Italy and elsewhere, with a brief analysis of their content and importance. Then is written about the features of Roman road maps (tabula Peutengiriana - century III) and given a part of the Albanian territories. The chapter ends with a map of the Faith (Veith), showing the appointments of old and new beddings (1943) of Shkumbin (Genesys), Seman (Apsus) and Vjosa (Aous) rivers. In the second chapter, is written for the reasons of the cartography fall in Europe and blossoming of Arab cartography accompanied with the maps of Al Horezmit (v. 820) and Al Idrizi (v. 1156) containing the parts of our land. Then is written about the portulane maps of century XV-XVI. More detailed analysis was made for the maps of Piri Reis (v. 1529), G. Gastaldi (v. 1560), C. Comotio (v. 1571) and G. Mercator (v. 1569). Maps of the Jodee C. and A. Ortelit (century XVI), P. Mariette, G. Blaen, F. de Wit, G. Sanson and J. Nolin (century XVII) are provided with small scale for some parts of our lands. In the third chapter, is written for political events of XVII-XIX centuries, the development of geodetic and cartographic sciences in this period, coupled with interesting maps like those of G. Canteli, P. V. Coroneli (century XVII), G. Palma, D. Lapin, J. Hahn, H. Kieper, A. Baldachi, F. Nopcsa etc. In the fourth chapter, are treated the main geodetic and cartographic works carried out during I and II World Wars in Albania. In this chapter more in detail are analyzed the maps created by the warring forces: Austria-Hungary, Italy and France (the I World War), the International Commission maps defining the boundaries, the Italian maps and topographic map of H. Loui (between the I and II world wars), topographic maps up dated by the Germans and Yugoslavs (during II world War) as well as the contribution of Albanian Geographers as N. Lako, A. Gashi and N. Kasturi.

The monograph "The history of Albanian Cartography" was published in year 2001 contains 286 pages (of which 8 pages in English) and many maps published at different times. The monograph is divided into four parts: Part One -

History of Cartography in Antiquity-consists of three chapters, in which treated the perennial work of the authors in identifying of antique geographical objects in Albanian territories (human settlements, rivers and mountain tops estuary) with cartographic methods. Part two-History of Cartography in the Middle Ages and the Renaissance-consists of two chapters in which is written for the early cartography in the Middle Ages and mapping of the Albanian territories during the IX-XVII centuries. Part Three-New time-consists of two chapters in which is written for the mapping features of the Albanian lands during centuries XVII-XVIII, XIX century until the eve of the I World war. In this part are given the maps which reflect for projects of fragmentation of Albanian lands by "great powers" and neighboring states. Part Four - today Time - consists of three chapters in which are written for mapping of Albanian territories from World War until today. A special attention is paid to the creation of topographic maps at different scales and preparation of thematic maps, which are numerous in species and quantity.

Prof. Agim Shehu, has special merit in the identification of milestones of mapping of the Albanian territories [starting with maps of Ptolemy and the Roman road maps (Shehu, 1997), maps created later by domestic institutions and foreign authors (Shehu, 1997)—maps of XII - XVI centuries, maps of XVII century up to nowadays (Shehu, 1997)], analysis of topographic mapping in Albania, focusing on the Austrian maps (1913-1918), Italian maps (1927-1939) and maps published by the former – ITU (Shehu, 1994), identification of some of the achievements in the field of geodesy and cartography in Albania (Shehu, 1974, 1962, 1984, 1987, 1996, 1997); cadastral mapping analysis (1945-1996) (Shehu, 1997), etc., either through monographs, textbooks and numerous articles, but also through frequent press releases and presentations.

Prof. Agim Shehu noted that Albanian territory and its elements are mapping since ancient times. Drawings, graphic images, layout maps of various cities compiled at different times, are rich with geographical, historical, toponymic, ethnographic, statistical, demographic data for Albanian provinces, cities and villages. Map as a complex picture of the time with its mathematical elements, physical-geographic and socio-economic, serves as a source of information in various fields.

Through the study of the contents of old maps, prof. Agim Shehu, has analyzed the past of the Albanian people, which is a long story and valuables, during which the people who once lay in a vast space of the Mediterranean basin, where margins shrank in today is as a result of successive invasions. Cartographic data show that the Congress of Berlin (1878) found ethnic Albania with 5000 km² less. He gave about 24,458 km² of the Albanian territories. Greece was extended to 9275 km² of Albanian land, Serbia with about 10500 km² and Montenegro with about 4683 km² of Albanian land. The London Conference of 1913 broke again Albania giving Serbian 34000 km² of Albanian land, Montenegro 7000 km² and Greece 10,794 km² of Albanian land. Analysis of the names of ancient sites found in the old maps sheds light on autochthony and Illyrian origin of Albanian people in its land occurred outside the state borders of Albania.

It is important to note that, during the processing of geographic coordinates (taken from the works of Ptolemy), relying on the mathematical methods of mapping and cartographic logic, prof. Agim Shehu has determined: geographic location of some ancient human settlements, which, until now considered unidentified, or for which there are doubts and debates related to their affiliation. This study is also of interest to other areas of spatial information science, in particular in the fields of archeology, history, geography, geodesy, etc., which, together, specify the geographic position (i.e. the identification) of objects in the study. The problem addressed is not so simple, particularly in the identification of human settlements, as different literature sources give different geographical coordinates for many objects. In this context, prof. Agim Shehu chose those geographic coordinate systems (human settlements), better faced with the real position of these objects. For identification of antique geographic objects, in a high degree of confidence, the author has used two methods work: graph-analytical method and analytical method.

PRUDENT TREATMENT OF CARTOMETRY AND THEMATIC CARTOGRAPHY PROBLEMS

Prof. Agim Shehu has special contribution in solving many Albanian cartometric problems. Thus, on the basis of maps with a scale of 1: 50,000 and cartometric methods, he has given new size for some Albanian morphometric characteristics (Shehu, 1965). Relying on these morphometric features and in physical-geographical features, prof. Agim Shehu has divides the Albanian territory in three mapping regions (Shehu, 1975). Also, prof. Agim Shehu has analyzed the results of several years of the hydrographic measurements in floating channel at Durres and has given relevant recommendations (Shehu, 1971).

Even thematic mapping problems have always been the focus of prof. Agim Shehu. In many works he has shown ways of graphical presenting of objects and phenomenas before, during and after the occurrence of natural and technological hazards (Shehu, 1994, 1997); has been mulling over the content of the tourist, urban, rural and special maps, etc., (Shehu, 1995); has appreciated about 15 tourist atlases created by Geographic Study Center of Albania (GSCA) (Shehu, 1996), etc. Besides the analysis of the the above studies, prof. Agim Shehu has treated the problems of cartographic organization and education (Shehu, 1997), etc.

THE FOUNDER OF THEORETICAL CARTOGRAPHY IN ALBANIA

Modern cartography has two basic components: theoretical and applicative. Because of methodological viewpoint, conceptual analysis in cartography is very important, basic cartographic theory is treated for many years in theoretical cartography by ICA Commission. Even Albanian cartographers have given a special place the theoretical studies in the field of cartography. Prof. dr. Agim Shehu, stands on top of these cartographers, for his contributions in the fields of scientific research, professional education and the history of cartography, closely related to the practical aspects of cartography.

Prof. Agim Shehu has done a detailed analysis of some mapping theoretical concepts handled by different cartographers of world ranking, being confronted them with its own concepts, which have taken place in cartographic literature. According to prof. Agim Shehu, information and knowledge we get from the map not only through visual perception (the first stage of recognition), as some allege, but also through the second degree: conceptions, arguments, judgments and conclusions (Shehu, 1992).

Prof. Agim Shehu does not support the information concept of maps, provided this concept by quite foreign authors, as according to him, he is a very narrow concept that does not include the requirements of a wide spectrum of users. Even the concept of communication, says prof. Agim Shehu, cannot be considered universal, as people initially think then act. While the concept of linguistic (language of map) is narrower than the concept of cartographic semiotics. Development of cartographic semiotics depends mainly on the development of semiotics, what is insufficient (Shehu, 1993, 1994).

According to prof. Agim Shehu, a more universal and accurate designation about the map, gave Pravda (Pravda, 1994): "The map is a form of expression, expressive graphical method of spatial distribution, the dependences of interdependent objects and phenomena of the world, known by man. It is the result of the recognition and, simultaneously the source of knowledge". Relying on this definition, prof. Agim Shehu notes that it is sufficient and appropriate to use the word "map", i.e. is not required to put the suffix "geographic". Not all maps are among the groups of geographic maps (Shehu, 1994).

Prof. Agim Shehu critically analyzed some misconceptions about cartography, mapping and cartographer, which are reflected in the materials of the working group of the 15th and 16th International Conference of Cartography and Mapping (Shehu, 1993, 1994). Prof. Agim Shehu considers the cartosemiotics one of the most important disciplines of cartography, but even without elaborates theoretically, especially in semantics, sigmatic and pragmatic; the Professor raises theoretic always of strengthening them (Shehu, 1994). In contemporary literature given different opinions about mapping-GIS reports. Prof. A. Shehu argues that cartography and GIS are two different objects, with the mapping priority (Shehu, 1994). Processing with scientific culture of cartographic signs system and how to use them –is an urgent task for our specialists (Shehu, 1995).

CONCLUSIONS

Name of prof. Agim Shehu is known in the Albanian academic and scientific world, inside and abroad, for outstanding contributions to the field of cartography, photogrammetry and Albanology. He, with a wide activities and successful research, publishing and teaching, has left its mark on the Albanian scientific thought. Graduated at the Faculty of Cartography, the Institute of Geodesy, Photogrammetry and Cartography, in Moscow, he is known for original contributions and special value in various mapping disciplines as in mathematical cartography, particularly in the study of cartographic projections; in the field of the history of cartography; cartometry, thematic cartography and publication of maps; in terms of theoretical cartography and mapping organization, but also in the field of Philology, etc.

It is notable the contribution of Prof. Agim Shehu in the formulation and construction of two original cartographic projections, which are successfully used in the preparation of thematic maps in Albania.

During the processing of geographic coordinates (taken from the work of Ptolemy), relying on methods of mathematical mapping and cartographic logic, prof. Agim Shehu has determined: geographic location of some ancient human settlements, which, until now considered unidentified, or for which there are doubts and debates on relevance; geographical position for five estuary of rivers and geographical position for three mountain peaks.

Prof. Agim Shehu may be regarded as the founder of theoretical cartography in Albania. He has done a detailed analysis of some cartography theoretical concepts addressed by different cartographers of world ranking, being confronted them with its own concepts, which have taken place in cartographic literature.

Even today, prof. Agim Shehu works tirelessly and with tremendous passion. With his work he has contributed and is contributing to the successful development of cartography in general, especially of Albania mapping.

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BIOGRAPHY OF THE AUTHORS



Prof. dr. Eng. Pal NIKOLLI. Professor of subjects: "Elements of Cartography", "Thematic Cartography", "The interpretation of aerial photographs and satellite images" and "Geographic Information Systems (GIS)" in the branch of geography at the University of Tirana. His research interest is mainly oriented in cartography, GIS/Remote Sensing and analysis of the dynamics of the shoreline. "Doctor of Science" in cartography in 1994, "Associate Professor" in 1999 and "Professor" in 2016. Author and coauthor of more than 100 articles and studies published in scientific journals at inside and abroad, more than 80 papers and reports kept in seminars and conferences at inside and abroad, 11 textbooks, 3 monographs, some books, geographical atlases, several national and international research projects and about 20 items journalism scientific character. Member of several scientific organizations and associations as: "European VLBI Group for Geodesy and Astrometry", "Association for Geospatial Information in South-

East Europe", "South-East European Research Association on Geo Sciences - Geo-SEE", etc. Editor of the magazine "Gjeomatika" publication of Military Geographical Institute of Albania and Vice / Chief Editor of the magazine "Gjeoinformacionet & Gjeomatika" – publication of Albanian surveyors nationwide association "Karl Gega". Reviewer of several articles published in international scientific journals; member of the international organizing committee of the international conference on spatial data infrastructure, etc.



Bashkim IDRIZI, was born on 14.07.1974 in Skopje, Macedonia. He graduated in geodesy department of the Polytechnic University of Tirana-Albania in 1999year. In 2004, got the degree of master of sciences (MSc) in Ss.Cyril and Methodius University-Skopje. In 2005 he had a specialization for Global Mapping in Geographical-Survey Institute (GSI) of Japan in Tsukuba-Japan. On year 2007, he held the degree of Doctor of sciences (PhD) in Geodesy department of Ss.Cyril and Methodius University-Skopje. He worked in State Authority for Geodetic Works from May 1999 until January 2008. During that period, in 2004 he appointed for head of cartography department, i.e. geodetic works. From October 2003 up to January 2008, he worked

as an outsourcing lecturer in State University of Tetova. From February 2008, he works as a cartography and GIS Professor at the State University of Tetova-Tetova. He continues with working as outsourcing lecturer in geodesy department of the University of Prishtina-Kosova. He is the author of three cartography university books, and more than 90 papers published and presented in national and international scientific conferences related to geodesy, cartography, GIS and remote sensing. From March 2010, he is appointed as president of Geo-SEE Institute (South-European Research Institute on Geo Sciences). From November 2011 to February 2014, he was first President of Pan-national Association of Albanian Surveyors "Karl Gega".