

**Acta Scientifica Naturalis**

Former Annual of Konstantin Preslavsky University – Chemistry, Physics, Biology, Geography  
Journal homepage: <http://www.shu.bg>

Received: 30.10.2016

Accepted: 11.01.2017

**Climate Change, Risks and Natural Resources didactic issues of educational content geography of Bulgaria and the world in 9th and 10th grade**

Stela Dermendzhieva, Semra Nejdet

„Episkop Konstantin Preslavski” University of Shumen, Faculty of Natural Sciences, Department  
“Geography and Methodology of Teaching Geography”, Bulgaria

e-mail: [semra\\_nejdet@abv.bg](mailto:semra_nejdet@abv.bg)

**Abstract:** *The purpose of this paper is to follow "Climate change, risks and Natural Resources" in the curriculum of Geography of Bulgaria and the world in 9th and 10th grade and to interpret some didactic aspects.*

*Analysis of key themes, concepts and categories related to the environment, events and approaches to environmental protection and the environmentally sound development of sectors of the economy is didakticheski targeted. Considering the emergence and development of geo-ecological issues, their scope and their importance to the environment, systematize some species and some approaches to solving them.*

*Geography education in grade 9 and 10 involves acquiring knowledge, developing skills and composing behaviors of objective perception and assessment of the reality of global, regional and local aspect.*

*The emerging consumer and individualistic culture snowballing globalization, are increasingly occurring global warming, declining biodiversity form new realities which education must respond appropriately.*

*The objective, consistency, accessibility and relevance in real terms are meaningful, logical accents. Whether and how reproduced in the study of Geography of Bulgaria and the world is the subject of research study in this report.*

*Geoecological structuring of topics, concepts and categories can be done in different signs. In terms of their scope are local, national or regional, and global. Matter and interdisciplinary approach, which is to reveal the unity of the "man-society-nature" to clarify the complexity of their character with a view to forming a harmonious personality with high Geoecological consciousness and culture, and the activities carried out in their study.*

**Introduction**

Climate change on Earth and the adverse consequences are a common concern of humankind. Human activity leads to a significant increase in greenhouse gas concentrations in the atmosphere, this increase amplifies the natural greenhouse effect and further warming the Earth's surface and atmosphere, which may adversely affect natural ecosystems and humankind.

There are many uncertainties in predictions of climate change, especially regarding deadlines, magnitude and regional differences. [Framework Convention ..., 2015].

Climate change have specific regional dimensions, such as those seen in Southeast Europe also apply to the territory of Bulgaria. All regions are affected in one way or another and impact of global warming already observed in almost all areas of business are affected ecosystems and the people on the planet. The results published by the European Environment Agency in 2012 (EEA, 2012a), confirm that rising average temperatures on the continent, reducing rainfall in southern Europe and increasing them in the north.

The average temperature in the region has risen by 1.3 °S pre-industrial until now. Global and regional models of climate change indicate that, at the end of the 21st century, Europe will have 2.5 to 4.0 °S warmer. Such changes will undergo a serious test almost all spheres of our lives (World Bank, 2012). Continue to reduce areas with permafrost and ice shields of Greenland ice in the Arctic and glaciers across the continent. (IPCC, 2013). This process has increasingly influence on the quantity and the flow regime of the rivers fed by them, including and the river. River. The consequences of this will affect our country. There are changes in the areas of distribution of plant and animal species, and the question arises whether the ecosystem will have time to adapt to similar or more rapid and intense changes. This process will be accompanied by longer periods of heat waves, drought and drought, especially in Central and Southern Europe. The potential positive effect of reducing energy costs for heating will be offset by the increase in energy required for cooling.

Increased damage from extreme hydro-climatic events such as floods, extreme temperatures, storms caused by izvantropichni cyclones in northern parts of the continent, droughts, hailstorms and others. In the future they are expected to occur more frequently and are more intense.

Climate change and the need to adapt to pose a number of questions to the Public Management and Development whose solution becomes more imperative after each successive IPCC report since 1990. [Popov, A. et al., 2012].

This development is linked to some of the problems to be solved in the implementation of modern geographical education in secondary school. This coincides with the period of discussion and implementation of new school records in Bulgarian school, new state educational standards and curriculum in geography and economics.

Geography education in grade 9 and 10 involves acquiring knowledge, developing skills and composing behaviors of objective perception and assessment of the reality of global, regional and local aspect. The emerging consumer and individualistic culture snowballing globalization, are increasingly occurring global warming, declining biodiversity form new realities which education must respond appropriately.

## **Materials and Methods**

The purpose of this paper is to track climate change risks and Natural Resources in the curriculum geography of Bulgaria and the world in 9th and 10th grade and to interpret some didactic aspects.

To achieve the objective need focused analysis of key themes, concepts and categories related to the environment, activities and approaches to environmental protection and the environmentally sound development of the economy.

Geoecological structuring of topics, concepts and categories can be done in different signs. In terms of their scope are local, national or regional, and global. Matter and interdisciplinary approach, which is to reveal the unity of the "man-society-nature" to clarify their complex character with a view to forming a harmonious personality with high Geoecological consciousness and culture, and the activities carried out in their study .

When applying the conceptual analysis of the patterns of teaching Geography and Economics finds that natural climate component is taught in general-theoretical / natural geography / of pre-secondary level of education / 5<sup>th</sup> – 8<sup>th</sup> grade /.

Vertical training topic is relationships that are supported or developed through concepts, facts, regularities of higher rank. The main part in the study of the Earth's climate begins in fifth grade, where the concepts and leading ideas, laws are still preparatory / propaedeutic character / their upgrade in VI, VII and VIII class. In sixth and seventh grade now the climate is seen on a regional basis and concepts regularities acquire Scientific-grounded sense, knowledge integration in horizontal and vertical direction / Africa-South America-North America in the VI class and Asia, Australia and Oceania VII grade / the new

134  
Corresponding author: semra\_nejdet@abv.bg

DOI: 10.1515/asn-2017-0009

©2017 "K.Preslavsky"University of Shumen. All rights reserved

Curriculum / effect from the 2016/2017 academic year, already Africa is taught in fifth grade. In VIII class which deals with Europe and smaller regional entities Balkan Peninsula and Bulgaria climate is considered more extensive and generalized nature of the relationship between natural components and its impact on human activity.

The terms are single pooled and regularities / causality / show the relationship between climate and other natural components. The generalized knowledge associated with longer follow the development of economic sectors, increasing adverse effects on the atmosphere - the greenhouse effect, ozone depletion. In order to prevent negative consequences of the impact of human activity on the atmosphere are organized special observations. Forming skills to evaluate changes in air quality that occur as a result of lifestyle and business.

Vertically in upper-secondary degree in IX class / under this Curriculum / study system Course General geography and economy dominated by public - geographical themes. The study of the natural structure of the land is developed in the core subjects of "Natural structure and resources of the Earth" with a focus on natural features, evaluation as a potential base of business and social life of the people. The course is the successor to the total course in geography in the fifth grade. / Earth as a planet and its natural and economic outlook / and geography of the continents in the sixth, seventh and eighth grade.

If you trace the vertical links and synergies students in fifth grade are introduced to the fundamental concepts earthquakes and volcanoes, but not by natural hazards, but as disasters associated with slow sinking and raising the ground and how people around the world can diminish the disastrous impact of earthquakes but natural hazards and disasters not is a separate issue.

The skills they acquire work with numerical data and seismic card. In VI, VII and VIII class fundamental knowledge and concepts update and specify associated with seismic and volcanic areas on a regional basis (by continent) are affected and some natural disasters (floods, landslides, hurricanes, typhoons, tornado, frost, tsunami, Forest fires).

In high school in the ninth grade at a high scientific-theoretical level students acquire knowledge and skills for major natural disasters endangering human life. Skills are related to patterns of behavior in various natural disasters, which is associated with the main objective forecasting and preparedness for response. In tenth grade theme design theoretically "Modern relief of Bulgaria", where he studied seismic areas in the country and focused on other natural disasters, local individual areas in Bulgaria, mainly due to anthropogenic influence Rights (landslides overflow of rivers, forest fires, air pollution, etc.).

Addressing risks is a global problem and the efforts of the world's researchers are focused on:

- Determination of species - area of particular natural disaster.
- System scientific observations - stationary tests near places with typical risk; space observations; construction of a communication system.
- Processing data using GIS.
- Preparation of short- and long-term forecasts - time, strength and extent.
- Preparation of a global warning system and alarms.

According to the UN during the second half of the twentieth century, the average number of fatalities from ekokatastrofi is about 250 000 e. / Year. Ekokatastrofite according to statistics are distributed as follows: 40% - floods; 20% - tropical cyclones; 15% - earthquakes; 15%. Droughts and 10% - volcanoes, avalanches, frost, lightning and more. Most casualties have taken tropical cyclones, floods and earthquakes.

In the course of teaching Geography and Economics in **ninth grade** theme of natural resources and sustainable development seen in the natural and geographical area. Supporting knowledge and skills are connected vertically with concepts learned in class 5: natural resources; types of natural resources; wisely and sparingly use of natural resources at the global level. Skills available to students teamwork (natural resources in the homeland), observations, descriptions, collection of natural resources and creating places; working with thematic and contour maps, graphic materials. Stimulated evaluative respect for nature conservation and sensible business. In VI, VII and VIII class support knowledge and skills related to natural resources at regional level (by continents, regions and countries) features, spatial distribution and conservation, restoration and wise use. Causation based on the wealth of natural resources in the world - species use; laws relating to the state of resources, their use and protection of the environment. The leading

ideas focus on the relationship and interaction between natural resources, the integrity, orderliness and the need to preserve and use sparingly.

In the course of teaching geography and economy in **tenth grade** theme of natural resources and sustainable development be considered at a higher level - summarizing theoretical for natural resources and conservation, rational use in Bulgaria. The main problems are related to the environmental education of students affected in the curriculum. In the eleventh and twelfth grade theme acquires summarizing character and ending with the application importance. Students through independent work as a team, prepare reports for the Study of native nature, homeland; prepare forecasts and educational projects; up tables; Mapped studied phenomena and processes; participate in discussions and exhibit personal attitude regarding conservation of the homeland.

## Results and Discussion

The analysis of the content of the courses in ninth grade includes 30 topics taken to 5 cores / all included in the SER without core geography of Bulgaria - first level / mandatory training / and 14 topics taken to 5 cores - Second level / specialized training / and their corresponding standards of the curriculum. The content of the courses in the tenth class includes 12 topics relative to 1 core (Geography of Bulgaria) - first level / mandatory training / 8 threads relative to 1 core - second level / specialized training / 1-4 and their corresponding standards the curriculum. Standard 5 of the curriculum studied in Class XI (first level) - Geographical regions in Bulgaria. Traditionally, the training of students in secondary school ends with studying the geography of Bulgaria. The course, taught in the tenth and eleventh grade in Secondary School / first in September 2016 - High school / in tenth grade in vocational schools, reflects the questions about geography, nature, people, villages, farm and geographical regions country. On an organizational level in the tenth grade study the topics of natural and socio-economic geography of Bulgaria, and in the eleventh grade - geography of the regions in the country / in this Curriculum /.

Considering the functional role of education for the formation of joint competence of the students, separated in key areas of the role of education in Geography of Bulgaria:

The training contributes to the orientation of students in the spatial dimensions of the most important natural, demographic, economic and environmental problems of the home; Training contributes to the patriotic and environmental education of students to form their national identity and worldview; Training contributes to the understanding of the need to integrate our country into the European economic, political and cultural space; training contributes to better orientation, adaptation and realization in modern democratic society for future public participation in the social life of the country. Through training courses in geography tenth-eleventh grade knowledge / theoretical and methodological / and skills / work with different sources of information to analyze statistical and graphic materials and documents and to draw conclusions; alone be able to produce maps and images with different thematic content and use them to speak reasoned and reasonable opinion; participate in discussions; to submit observations and to develop an essay, report, essay with geographic content and more. /pupils are final expression in civic competences formed based on geographical knowledge. [Dermendzhieva,C.etal.2012]. Targeted analysis of key themes, concepts and categories related to the environment, activities and approaches to environmental protection and the environmentally sound development of sectors of the economy can be achieved through a comprehensive review of existing curricula and SER. Examining the emergence and development of geo-ecological issues, their scope and their importance to the environment and some types of approaches to solving them can be traced through the theme of "Climate change, risks and Natural Resources" **in ninth and tenth grade.**

In the course of learning in **ninth grade (first level)** topic of climate change risks and Natural Resources studied by: core 1: Structure and Natural Resources of the Earth Standard 2: Revealing the regularities in the geographical distribution of natural components and connections between them Theme 3: Natural components and systems on Earth Standard 3: Compares natural areas on Earth and assess their natural-resource potential Topic 5: Natural areas on Earth Standard 4: Clarifies global issues relating to the conservation and rational use of natural resources and the environment; knows the concept of sustainable development Topic 7: Global problems - raw-energy and environmentally friendly. Standard 5: Identify the causes of various natural hazards (earthquakes, floods, landslides, etc.) And their consequences Topic 8: Natural hazards.

Core 3: Political and economic organization of society. Geography of world economy

Standard 4: Exposes knowledge about global problems of modernity (raw-energy, environmental, food, etc.) And justifies the ways of their solution Topic 7: Global problems of modernity.

Core 4: Geographical regions in the world and countries at them

Standard 5: Outlines the problems of regions and discusses their solution according to the concept of sustainable development Topic 5: Global problems of modernity and their manifestation in the regions.

Core 6: Geographical and economic information and work with it

Standard 5: Examine and analyze various types of documents and retrieve information from them; draw abstract and essay geographic content.

In the course of learning in **ninth grade (second level)** topic of climate change risks and Natural Resources studied by: Core 1: Natural structure and resources of the Earth

Standard 1: Explains the process of global warming and ozone depletion Theme 1: Current Problems in the development of modern geography. Standard 2: Illustrates with examples territorial manifestation of elemental natural phenomena and analyze opportunities to combat them Theme 3: Laws territorial manifestation of natural hazards. Standard 3: Knowledge of the principles of environmental monitoring and realizes the need for it. Topic 4: Environmental monitoring.

Core 4 geographical regions in the country and the world Standard 2: Analyzing the geographical and economic aspects of regional conflicts. Theme 3: Regional conflicts.

Core 5 Geographical and economic information and work with it

Standard 1: systematic and presented in graphical form geographic and economic information.

Standard 2: Comments scientific texts and documents containing geographic and economic information.

Standard 3: Develops student projects with geographical and economic issues.

In the course of education in the **tenth class (first level)** topic of climate change risks and Natural Resources studied by:

Core 5 Geography of Bulgaria Standard 2: Characterized natural components; distinguish between natural and geographical areas in Bulgaria and assess their potential prirodnoresursen. Topic 1: Natural Environment. Standard 4: Explains the specifics of the transition to a market economy; characterized the national economy, economic sectors and the various sectors and activities in them. Formulates the problems of the national economy in the context of the national economy in the context of global issues; Reveals eco-depressed areas as a result of the activity of enterprises in the secondary sector. Standard 5: Demonstrate knowledge of geographic regions and makes geographical survey of the local municipality or administrative district. Determine the specific problems of each region (natural, demographic, economic, environmental).

Training course in **tenth grade (second level)** topic of climate change risks and Natural Resources studied by:

Core 5 Geography of Bulgaria Standard 1. Makes conclusion about changing the functions of the state borders of Bulgaria Theme 1. Limits of Bulgaria. Standard 2. Evaluate geopolitical, natural-resource and human factor for economic restructuring, infrastructure development and improving the quality of life. 2. Subject Natural Environment of Bulgaria. 3. Prirodnogeografski topic areas assessed natural-resource potential of natural and geographical areas as a factor in forming their economic structure and formulate environmental problems. Standard 4. Discuss Sustainable Development of Bulgaria Theme 1. Problems of sustainable development in Bulgaria.

Core 2 "references and work with them" is shown in an exploded view to any standards of core 1 "Geography of Bulgaria".

When conducted a research study in this report are analyzed textbooks and school kits to be used in the system of school education for the school year 2016/2017, approved by Order № RD09-143 / 19.02.2016 year and amended by Order № RD-09 -444 / 13.04.2016 year the Minister of education and science.

The theme of this paper in textbooks on geography and economics in ninth grade (mandatory training) **authors St. Karastoyanov al ed. Anubis** is seen in the second section "Natural structure and resources of the Earth" in the horizontal direction as 11 thematic lessons: geosphere structure of the Earth. Lithosphere - Atmosphere - hydrosphere, biosphere, pedosphere - Natural components and systems on Earth - Natural zones and zones, natural hazards - Prirodnoresursen potential of the world - Energy and mineral-raw material resources - Land, biological and water resources - raw materials, energy and environmental

problem - Natural resources and structure of the Earth (summary) - Check what you know and you (thematic control).

The textbook authored by **R. Penin and team ed. Bulvest 2000 (mandatory training)** theme seen in the first section of "natural geography" in the horizontal direction as 16 thematic lessons: Atmosphere - hydrosphere - lithosphere - pedosphere - Biosphere (Prirodnogeografski complexes Natural zones and zones, natural geosystems - summary and natural risks. continued in the second section "Social and economic geography" through thematic lessons: World natural-resource potential - Types of natural resources - raw materials, energy and environmental problem.

The textbook authored by **R. Penin and team ed. Bulvest 2000 (specialized training)** theme seen in the horizontal direction as the 11 thematic lessons: The problem of global climate problems - Reduction of ozone - Effects of global warming - Climate and Economy - Laws territorial manifestation of natural hazards - Environmental monitoring.

The textbook authored by **R. Gaytandjieva al ed. "Dr. Ivan Bogorov" Ltd. (mandatory training)** theme seen in the first section "Natural structure and resources of the Earth" in the horizontal direction as 12 thematic lessons: geosphere structure of the Earth . Internal construction. Lithosphere - atmosphere and hydrosphere - pedosphere and Biosphere - Natural components and systems on Earth - Prirodnoresursen potential in the world. Raw-energy and environmental problem - Natural risks - we compare the present and natural areas, evaluate the natural-resource potential (activity) - Natural structure. Natural resources of the Earth (summary) - Theme control. Continues in section three "Geography of world economy" - one lesson topic World Economy. Global problems (summary).

The textbook authored by **N. Dimov et al (mandatory training) ed. "Prosveta-Sofia"** theme seen in the second partition "Prirodnoresursen potential of the Earth" in the horizontal direction as 14 thematic lessons: geosphere Earth - Atmosphere and processes it - hydrosphere and processes it - the lithosphere and processes it - Biosphere - living shell of the Earth. Pedosphere - Natural ingredients and complexes. Natural areas - natural resources. Prirodnoresursen potential of the world of the planet - Working with documents. Development of cartograms - Global problems of modernity. Movement towards sustainable development. Establishment of an essay, scientific communication and paper - Natural hazards - Natural structure and resources of the Earth (summary) - Prirodnoresursen potential Earth (test 1). Continues to share fifth "Geography of world economy" - lesson unit Global problems of today.

The textbook authored by **N. Dimov et al (specialized training) ed. "Prosveta-Sofia"** theme seen in the horizontal direction as 5 thematic lessons: The problem of global climate problems - Practical lessons. Exercises. Discussions. Working with documents. - Natural hazards: occurrence, consequences regularities in the spatial manifestation - natural risks and the future of humanity - Environmental monitoring.

The textbook authored by **R. Penin and team ed. Bulvest 2000 (specialized training)** theme seen in the horizontal direction being studied in four sections by 14 thematic lessons: Natural Environment in Bulgaria - Geocological monitoring - Climate; Reading and analysis of complex natural and geographical profile - Geographical aspects of environmental protection and rational use of natural resources in Bulgaria; Problems of sustainable development of Bulgaria - territorial issues, cross-border pollution.

The textbook authored by **R. Gaytandjieva al ed. "Dr. Ivan Bogorov" Ltd. (mandatory training)** theme first seen in the "Natural Environment of Bulgaria" in the horizontal direction and 17 thematic lessons: Natural components (climate) - Prirodnogeografski areas (We evaluate and present business potential of prirodnogeografskite areas comment on their problems - National economy.

The textbook authored by **N. Dimov et al (specialized training) ed. "Prosveta-Sofia"** topic is addressed in Title III "Natural Environment and Natural Resources of Bulgaria" - Prirodnoresursen potential - quantitative and qualitative assessment - Discussion on the issues of biodiversity - Problems of conservation and rational use of nature. Natural and anthropogenic landscapes - Geocological monitoring - Technogenic disasters - rules of conduct forecasts; Title IV Prirodnogeografski areas - assessment of resource potential - Quality of the environment. Geocological expertise and forecasts; share sixth Regional Development and Regional Policy of Bulgaria - Discussion on Sustainable Development of Bulgaria and Eastern European region.

The main approaches for the realization of the test subjects are acquiring knowledge, developing skills and composing behaviors of objective perception and assessment of the reality of global, regional and local aspect. Form and intellectual and practical skills to work with different sources of information;

Working with the map images of natural-resource potential; evaluating, comparing and conclusions; ways to implement the ideas of sustainable development and construction valued attitude to environmental protection.

Suitable forms, provoking thinking as cognitive and practical educational issues and tasks are interactive methods, combined with the use of ICT in teaching Geography and Economics in ninth and tenth grade. The methods commonly used in the study of the themes of this report are: discussion; discussion; debate; case; case; accident; Game methods; brain attack; role games; dramatization; simulation games; interview; project development (multimedia presentation, poster); problem solving;. All the methods are combined most often with interactive techniques, group and team training.

Modern innovative approaches to mastering the educational content is the design of intellectual cards and different models of graphic organization of the material, such as spray pattern; conceptual table; Network-web; Venn diagram; T - table; SWOT - equipment; cycle / circle; in evaluative terms apply critical thinking through reading and writing (I know / I want to know / I learned); five-minute essay; herringbone; method of the 4 "P" and the like. [Dermendzhieva, S. et al, 2012].

## **Inference**

The global nature of climate change calls for the widest possible cooperation by all countries and their participation in effective and appropriate international response. Global climate agreement was adopted at the 21st Conference of the UN Framework Convention on Climate Change, which took place in Paris at the end of 2015. It marks the beginning of a common objective of limiting the increase in global average temperature below 2 degrees Celsius, which should serve as a kind of transition to zero carbon emissions at the end of the century. The Agreement will enter into force in 2020.

Especially interesting are defined challenges of our time in the International Charter on Geographical Education: population dynamics, the problem of feeding and hunger, migration and urbanization; disease, crime, gender inequality; extinction of plant and animal species, deforestation, soil erosion and desertification; spontaneous natural events (natural disasters, natural hazards); toxic and radioactive waste; atmospheric pollution; water pollution; global warming ("greenhouse effect"); ozone holes; depletion of resources; land use; ethnic conflicts; separatism; globalism. All these issues have a strong geographical dimension.

Conflicts they create, present a challenge to geographical education and makes it possible to produce hope, faith and the ability to work for a better world [International Charter on Geographical Education, 1992].

At present, more and more public recognition gets the idea that one of the indicators of the progress of our society can and should be the sum of Natural-resource potential that we as a society are willing to pass on to posterity and our ability to provide stable and sustainable development natural processes and conducive living environment.

In this context is the need for education to address global problems of modernity. The leading idea of 'geographical' understanding of the processes of social development and finding creative solutions for environmentally friendly development and progress are the main task of contemporary Bulgarian geographical education. [Dermendzhieva, C. et al. Geography and education. Methodology of Teaching Geography, I section 2010].

## **Conclusions:**

1. Targeted analysis of key themes, concepts and categories related to the environment, activities and approaches to environmental protection and the environmentally sound development of sectors of the economy helped to track climate change risks and Natural Resources in the curriculum of Geography Bulgaria and the world in 9th and 10th grade, made an attempt to interpret some didactic aspects.
2. Considering the emergence and development of geo-ecological issues, their scope and their importance to the environment, systematize some species and some approaches to solving them.
3. The study was motivated by our belief that the emerging consumer and individualistic culture snowballing globalization, are increasingly occurring global warming, declining biodiversity form new realities which education must respond appropriately.

4. The actuality of the topic of climate change, the risks and causes depletion of resources, which are enshrined in the teaching of geographic education in grade 9 and 10 involves acquiring knowledge, developing skills and composing behaviors of objective perception and assessment of the reality of global, regional and local aspect.
5. The purpose of the research study is realized through the implementation of basic tasks, namely study the problem of climate change with a view to establishing regularities that are specified by various natural hazards and limit and exhaustion of natural resources in the pedagogical and methodological literature in "Geography and Economics"; analyze school documentation "Geography and Economics" in ninth and tenth grade in the study of share "structure of the Earth Natural and Natural Environment in Bulgaria - natural-resource potential."
6. Leading matter and interdisciplinary approach, which is to reveal the unity of the "man-society-nature" to clarify their nature complex with a view of forming a harmonious personality with high geo-environmental consciousness and culture, and of activities in studying them.

## References:

- [1]. Gaytandjieva, R. technological approach in pedagogical activity of the teacher of geography. -In: Teaching Geography, **1992**, №4.
- [2]. Gaytandjieva, R. strategy of geographic education in the school in the new realities, S., **2000**. p. 253.
- [3]. Gaytandjieva, R. Using interactive techniques in the strategy of skilled training teachers of geography. -The Education and Training, **2000**, №3.
- [4]. Gaytandjieva, R. et al. Geography and Economics. Textbook for Grade 9 ZP ed. "Iv. Bogorov "C., **2012**.
- [5]. Gaytandjieva, R. et al. Geography and Economics. Textbook for 10th grade AP ed. "Iv. Bogorov "C., **2012**.
- [6]. Gaytandjieva, R. et al. Geography and Economics. Teacher's Grade 10 / VP / ed. "Iv. Bogorov "C., **2012**.
- [7]. Dimov, N. et al. Geography and economics textbook for AP and RP 9 ed class. "Prosveta-Sofia" AD, **2012**.
- [8]. Dimov, N. et al. Geography and economics textbook for AP and PP 10 ed class. "Prosveta-Sofia" AD, **2012**.
- [9]. Dermendzhieva, C. et al. Geography and education. Methodology of Teaching Geography, I part. Veliko Tarnovo, Univ. Ed. St. Cyril and Methodius, **2010**.
- [10]. Dermendzhieva, C. et al. The lesson in geography. Veliko Tarnovo, Univ. Ed. St. Cyril and Methodius, **2012**.
- [11]. Ivanova, D. Using Web-based tasks in lessons for new knowledge. -In: Geography 21, **2007**, №3 p. 30-36.
- [12]. Yordanov B. The computer, electronic textbooks and educational sites in the Bulgarian school. - The Education and Training, **2006**, №5, p. 39-49.
- [13]. Karamanov M. ICTs in educational management in Bulgaria-condition and prospects. -In: Pedagogy, **2006**, №6, p. 53-57.
- [14]. Krasteva, T. et al. Book teacher. Geography - 7th grade. "D.Ubenova", S., **1994**.
- [15]. Mandova - Rusinchovska M. et al. Geography and Economics, area - 10 ed class, SD "Teacher 6" - Delev, Luizova & Co, **2012**.
- [16]. The International Charter on Geographical Education. - In: Changes in Bulgaria, Europe and the world ... etc. Veliko Tarnovo, **1992**.
- [17]. Penny R. Geography and Economics - Grade 9 (RA and RP). "Bulvest 2000", S., **2012**.
- [18]. Penny R. Geography and Economics - 10 class (RA and RP). "Bulvest 2000", S., **2012**.
- [19]. Penny R. book teacher. Geography and Economics - 9th and 10th grade. "Bulvest 2000, S. **2012**.
- [20]. Popov, A., M. Nikolova, S. Dimitrov. Analysis and assessment of risk and vulnerability of sectors in the Bulgarian economy from climate change, **2012**.
- [21]. Karastoyanov, St. al. Geography and Economics, area - 9th grade. IK "Anubis" Ltd., **2012**.



- [22]. Framework Convention of the United Nations on Climate Change, **2015**.  
[23]. Curricula in Geography and Economics - 5, 6, 7, 8, 9, 10, 11 and 12 grades.