



Journal
of Danubian
Studies
and Research

The Potential Risks for the Ecological and Social Security in the Danube Region and their Overcoming in the Context of the New European Agenda

Krasimir Koev¹, Ana Popova²

Abstract: Objectives: The aim of this paper is to interpret some risks for the ecological and social security in the Danube region, such as: risks of fire in the forest areas, risks of floods, risks for the natural and cultural heritage, risk of economic and social disproportions in the cross-border areas, etc. Another aim of the study is to discuss the possible solution of risk coping within the frames of the new European agenda for the green transition and carbon-free economies. **Prior Work:** Theoretical and experimental research of the authors in the field. **Approach:** Secondary data analysis and overview of cross-border projects and their results focused on the risk overcoming in the Bulgarian-Romanian cross-border region along the Danube river. **Results:** There is sufficient European funding (Interreg VA Romania-Bulgaria program, Interreg Danube program, Horizon Europe), providing favourable conditions for risk overcoming in the Danube region. It is necessary to increase the capacity of the human resources in the region (public administrations, businesses, NGOs), to elaborate common strategic documents for the cross-border regions and to use the research and innovation potential of the universities within the region in benefit of the economic and social prosperity. **Implications:** The paper can stimulate a larger discussion in the scientific circles about the necessity of joint research on the new risks and their overcoming. **Value:** The study will contribute to the interdisciplinary interpretation of the risks in the contemporary societies and will outline the value of the cross-border projects with European funding for risk prevention and management.

Keywords: risk; ecological security; social security; risk prevention; cross-border projects

JEL Classification: R11; Regional Economic Activity; Growth; Development; Environmental Issues; Changes

¹ Senior Assistant Professor, PhD, University of Ruse, Bulgaria, Address: "Studentska"8, 7017 Studentski grad, Ruse, Bulgaria, E-mail: kgkoev@uni-ruse.bg.

² Senior Assistant Professor, PhD, University of Ruse, Bulgaria, Address: "Studentska" 8, 7017 Studentski grad, Ruse, Bulgaria; Bulgarian Academy of Sciences, Institute of Philosophy and Sociology; Corresponding author: apopova@uni-ruse.bg.

1. Introduction

With a total area of 801,463 km², the Danube River Basin (DRB) is Europe's second largest river basin and the world's most international river basin. More than 83 million people from 19 nation states, speaking 20 languages, call the Danube region their home. The Danube is a hub of biodiversity and an essential lifeline of Europe.

The waters of the DRB form an aquatic ecosystem of high economic, social and environmental value. It includes important natural areas and supports the drinking water supply, agriculture, industry, fishing, tourism and recreation, power generation, navigation and the end disposal of waste waters for a densely populated region of Europe like the Danube region. (https://wwf.panda.org/wwf_news/?338711/The-Danube-River-and-its-Delta-well-known-but-threatened-by-multiple-pressures)

Despite its utmost importance, in the recent years the DRB is threatened by a number of ecological and social risks in the context of the Global Risk Report 2020 of the World Economic Forum, namely: risks of extreme weather events with great damage to property, infrastructure and human life, risks stemming from the climate changes, risks of great loss of biodiversity and collapse of ecosystems (The Global Risk Report 2020 <https://reports.weforum.org/global-risks-report-2020/>).

The aim of this paper is to identify the potential ecological and social risks for the DRB and to indicate some opportunities for their overcoming in the context of the European Agenda for decarbonisation, dematerialisation and renaturalisation.

2. Theoretical Background

2.1. The Concept of Risk in the Contemporary Societies

According to F. Ewald (Ewald, 1996), 20th and 21st century are characterized by a progressive putting the world at risk. The author has in mind the way in which the individuals perceive a given event. For example, the Spanish flu, which killed between 20 and 50 million people at the end of World War I, has not been perceived as a risk at that time because the people have not been tried to prevent and control it. On the other hand, the coronavirus pandemic in the period 2020-2022 is perceived as a risk, as measures are taken on a global scale to overcome this threat to people's health and life. According to Ewald's view, a threat, a danger becomes a risk when the social groups become aware of its presence and control it through prevention mechanisms (Ewald, 1996).

The concept of risk is based on presenting the threat as a random event. On this basis, for example, the marine insurance has appeared in France in the 15th century or the industrial accident insurance in the 19th century. In the 20th century, with the establishment of the welfare state, more and more events are perceived as risky (illness, disability, unemployment, etc.), and the insurance expands its scope to include other risky events (theft, road accidents, floods, etc.) (Ewald, 1996).

According to the British sociologist Anthony Giddens (Giddens, 1991; 1994), the modernity is characterized by the predominance of the “risk culture”. He means that the society constantly pushes the individuals, who have acquired greater autonomy, to take responsibility for their lives, to become entrepreneurs of their own existence, including their own health, being alert to anything that might pose a threat in their environment or in the possibilities for their future well-being. In order to make their individual choices, the society, through its institutions, provides them with expert knowledge and quantitative data. A good example in this regard are the information campaigns to prevent the risk of infection with the new corona virus or for mass vaccination against COVID-19.

The Giddens’s view about the individual responsibility for risk management is consistent with Foucault’s position on the role of power in shaping desirable practices of behavior. Instead of using coercion and force to make people form desired behavior, the authorities make them participants in the regulation of social practices. This concept of individual responsibility is at the heart of all health prevention campaigns (smoking, breast cancer and many others). Therefore, in the modern societies, everyone must be aware of the risks and control their own lives, to “colonize the future”, in the words of Giddens, by relying on available knowledge and statistics.

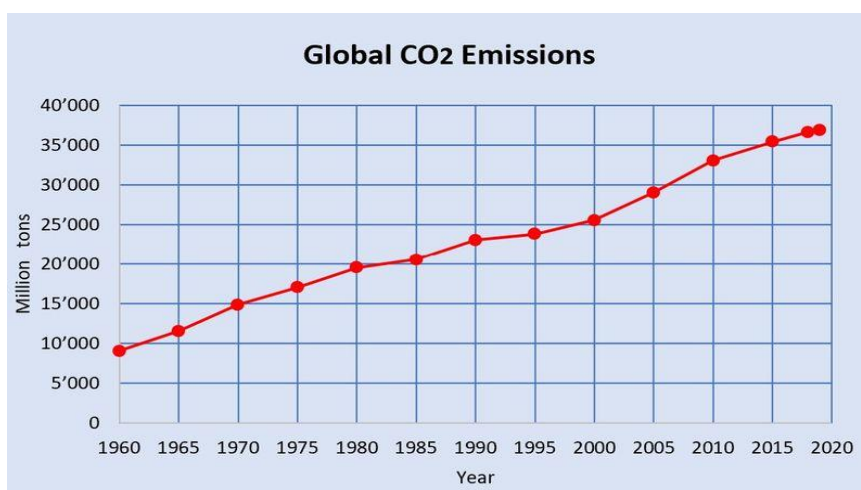
A distinctive feature of the today’s globalized and highly interconnected societies is the change in the nature of risk. Another leading author on risk issues, the German sociologist Ulrich Beck (Beck, 2001) argues that today’s risks, which he calls “the risks of the new modernity”, are threats that escape our senses: we don’t see them, we don’t hear them, we don’t feel them. This is the case with the risk of viruses, environmental pollution or nuclear radiation. According to Beck, this is one of the paradoxes of the “risk society” - thanks to the technological progress the societies are becoming safer, but at the same time generate new risks. Beck also argues that the societies ignore invisible risks because they value above all the material goods.

According to Tim Jackson the main reason for the risks in the contemporary societies is the so called “growth dilemma” postulating that “giving up on growing our current economy means the risk of economic and social collapse but maintaining the conventional growth means the risk of destroying the global ecosystems that are our basis of existence” (Jackson, 2016).

2.2. Some Risks Stemming from the Growth Dilemma in the Danube River Basin (DRB)

Some data from recent research show that within the lifetime of one single generation of the world population the global CO₂ emissions, resource and energy consumption increase at an unprecedented rate: population X 4; carbon emissions X 7; resource consumption X 8; energy consumption X 10. These facts deepen the growth dilemma described above and increase the risks for the ecosystems. (<https://www.europarl.europa.eu/news/en/headlines/society/20180703STO07129/eu-responses-to-climate-change>)

The first risk is related to the increasing emissions of carbon dioxide into the atmosphere. According to the European Environment Agency, the EU was the world’s third biggest greenhouse gases emitter after China and the US in 2015. The figure below demonstrates the constant growth of such emissions, which peaks in 2021.



According to the Global Energy Review: CO₂ Emissions in 2021. Global emissions rebound sharply to highest ever level. International Energy Agency IEA. March 2022

The second major risk is for the water in a global context. It is known that the oceans, seas and rivers absorb a quarter of the global carbon dioxide emissions but at the same time they are becoming increasingly acidic as carbonic acid is formed during the absorption of CO₂.

The next risk is for the biodiversity which is experiencing a dramatic, human-induced mass extinction worldwide. This also reduces the capacity of the ecosystems to contribute to climate regulation and food security (WBGU German Advisory Council on Global Change, 2020).

Last but not least, the business model of the rich western countries - economic growth based on exploitation of the nature - has reached its limits. The exploitability of the ecosystems leads to human migration and catastrophic environmental impacts. (Blom, 2017)

The indicated risks also apply to the ecosystems in the DRB and threaten their security. The intensity of the agricultural, industrial and urban activities in the DRB has created problems of water quality and quantity and reduced the biodiversity in the basin. These changes have caused significant environmental damage, such as reduced sediment transport, increased erosion and reduced self-purification capacity, including public health aspects in connection with the drinking water supply. (Mitchell, 2018 [iaea.uoregon.edu/treaty-text/3925](https://www.iaea.org/newsroom/news/2018/05/2018-05-20-treaty-text-3925)).

The threats to the nature in the DRB are also a direct threat to human welfare, livelihoods and well-being. As it was mentioned above, the Danube region is home to over 80 million people. Many of them depend on the natural resources of the region for their livelihoods and well-being. 20 million people depend on the basin's rivers for their drinking water. The region and its natural resources are significant for providing a host of ecosystem services, including climate regulation, water purification and flood management.

(https://www.panda.org/wwf_news/?338711/The-Danube-River-and-its-Delta-well-known-but-threatened-by-multiple-pressures)

For overcoming the risks for the DRB some special regulations and directives are created during the years which will be discussed in the next section.

3. Risk Management in the DRB and Normative Regulations

A well-known paradigm for the management of risk is to allocate each risk to one of four categories:

- **Tolerate:** The risk has been detected, can be monitored and, after appropriate analysis, it is decided that the risk is acceptable and that it would not be cost-effective to take additional risk control measures.
- **Terminate:** Eliminate the risk through control actions, for example by stopping a particular line of activity.
- **Transfer:** Contractually shift the risk from one party to another, for example by legal agreement.
- **Transform:** Control the risk by modifying its nature to make it safer or more intrinsically manageable. (Daykin, 2004)

In the case with the identified risks for the DRB it is impossible to tolerate or transfer them. The best way of risks' mitigation for the ecosystems is to apply control actions and to transform the risks in more manageable. There are a number of normative regulations especially established for risk management in the DRB, namely:

- **Danube River Protection Convention**, signed in 1994 in Sofia, Bulgaria and came into force in 1998. Its aim is to ensure that surface waters and groundwater within the Danube river basin are managed and used sustainably and equitably. The signatories of the convention have agreed to co-operate on fundamental water management issues. Climate change is addressed in an indirect way by aiming at, inter alia, the conservation, improvement and rational use of surface waters and groundwater as well as at preventive measures to control hazards originating from accidents involving floods. In order to undertake the required steps, an International Commission for the Protection of the Danube River (ICPDR) has been created for coordinating the implementation of the convention. It was asked to develop a Climate Adaptation Strategy for the Danube River Basin.
- **Danube Declaration**, endorsed in February 2010 by the ministers and high-level representatives responsible for water management in the Danube countries. It expresses the commitment to further reinforce transboundary cooperation on sustainable water resources management within the Danube river basin and emphasizes that adaptation measures are needed to avoid significant threats from climate change impacts.

• **EU Strategy for the Danube Region (EUSDR)**, adopted by the European Commission in December 2010 and endorsed by the European Council in 2011. It is a macro-regional strategy, jointly developed by the EC, Danube countries and stakeholders in order to address common challenges together. The strategy seeks to create synergies and coordination between existing policies and initiatives taking place across the Danube region.

• **EU Action Plan for the EUSDR** addresses climate change impacts on extreme weather events (floods, drought, forest fires, storms, erosion, icing, and water scarcity), hydrological cycles, precipitation patterns and water level variations, which affect water management throughout the Danube River basin in manifold ways. Among the 11 priority areas of the EUSDR, climate change impacts and climate adaptation issues prominently feature in the environmental pillar of the strategy, which is composed of priority area 4 ‘To restore and maintain the quality of waters’ (PA4), priority area 5 ‘To manage environmental risks’ (PA5) and priority area 6 ‘To preserve biodiversity, landscapes and the quality of air and soils’ (PA6). Among these, PA5 has up to now the highest relevance to adaptation. Targets defined in PA5 include addressing the challenges of water scarcity and droughts and supporting the implementation of the Danube Flood Risk Management Plan, taking into account potential impacts of climate change and adaptation strategies.

• **Joint Paper on Cooperation and Synergy for the EUSDR Implementation**, elaborated and agreed by ICPDR in order to improve the coordination of trans-boundary water management activities – also related to climate change adaptation and disaster risk reduction in the Danube River basin.

• **Strategy on Adaptation to Climate Change**, adopted in December 2012 in response to the ‘Danube Declaration. It provides the knowledge base and a strategic framework for integrating adaptation of the water sector to climate change into the implementation of the EU Water Framework Directive and the EU Floods Directive. On a more operational level, this is done by mainstreaming climate change adaptation into the Danube River Basin Management Plan (DRBM Plan) and the Danube Flood Risk Management Plan (<https://climate-adapt.eea.europa.eu/countries-regions/transnational-regions/danube>).

Except these especially designed normative regulations for the ecosystems in the DRB, there are many latest developments connected with the Europe’s environmental protection and future existence. Under the **Paris agreement**, the EU committed in 2015 to cutting greenhouse gas emissions in the EU by at least 40%

below 1990 levels by 2030. In 2021, the target was changed to at least 55% reduction by 2030 and climate neutrality by 2050.

The European Green deal is the roadmap for the EU to become climate-neutral by 2050. The concrete legislation that will allow Europe to reach the Green Deal targets is laid down in the Fit for 55 package that the Commission presented in July 2021. It will include the revision of existing legislation on emissions reduction and energy.

The EU is also working on achieving a circular economy by 2050, creating a sustainable food system and protecting biodiversity. In order to finance the Green Deal, the European Commission presented in January 2020 the Sustainable Europe Investment Plan, which aims to attract at least €1 trillion of public and private investment over the next decade. (<https://www.europarl.europa.eu/news/en/headlines/society/20180703STO07129/eu-responses-to-climate-change>)

All these strategic documents and regulations concerning the protection of the ecosystems in the DRB illustrate the long-term policy of the EU and the Danube countries to preserve the natural resources and the human capital in this large European region. One more advantage for the development of the region are the existing European schemes for project funding.

4. Overcoming the Risks in the DRB on the Basis of European Project Funding – the Case with the Project “Partnerships for Overcoming the Disasters for a Safe Region”, e-MS code: ROBG-427

One of the opportunities for effective risk prevention in the DRB is through project funding and implementation. There are two major program schemes dedicated to resolving different problems in the Danube region - INTERREG V B Danube Programme (DTP) and INTERREG V A Romania-Bulgaria Programme.

The INTERREG V B Danube Programme (DTP) 2014-2020 covers the Danube River basin, which is the most extended in Europe and stretches from the Alps and the Carpathian to the river plain and its mouth in the Black sea. It has the same geographical scope as the EU Strategy for the Danube Region (EUSDR), supporting its implementation. For the period 2014-2020 the DTP focuses on four priority axes:

- Innovative and socially responsible Danube region;
- Environment and culture responsible Danube region;

- Better connected and energy responsible Danube region;
- Well-governed Danube region.

The goal of the INTERREG V A Romania-Bulgaria Programme is to develop the border area between the two countries by financing joint projects. The funds are allocated to 5 priority axes: 1. A well connected region 2. A green region 3. A safe region 4. A skilled and inclusive region 5. An efficient region.

The two programmes are very successful. The evidence of this are the successfully implemented trans-national and cross-border projects in the period 2014-2020 contributing to the overall development of the Danube region, to keeping its sustainability, diversity and cultural heritage. Each of these projects is dedicated to a specific environmental, infrastructural or social problem of the DRB and ends with concrete practical results.

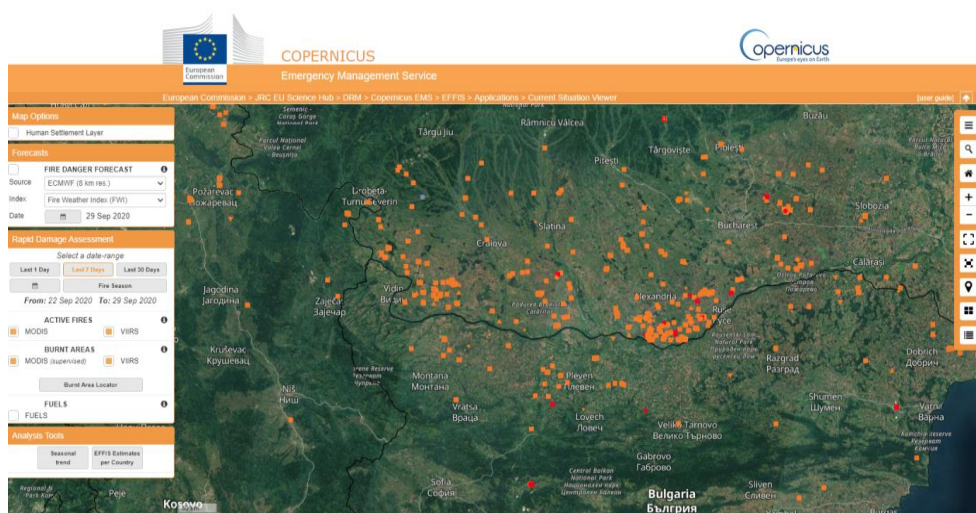
In the context of the main topic of the paper – overcoming the risks in the Danube region – one concrete project will be presented and analyzed. The project “Partnerships for Overcoming the Disasters for a safe region”, e-MS code: ROBG-427, is cofinanced by the European Union through European Regional Development Fund under the Interreg V-A Romania-Bulgaria Programme. The project is implemented by Giurgiu County Council – leading beneficiary, Romanian Red Cross Giurgiu Branch, Bulgarian Red Cross and University of Ruse “Angel Kanchev”. The period of project implementation is May 2020 – May 2023.

The main goal of the project is to increase the capacity for response and prevention of forest fires or floods in the Giurgiu-Ruse cross-border region along the Danube river, as well as to improve the cooperation and communication between the relevant institutions involved in overcoming crisis situations. The specific project objectives are, as follows:

- To increase the public awareness in Giurgiu-Ruse cross-border region about the risks of forest fires and floods through trainings and communication campaigns;
- To develop a capacity to respond to forest fires by equipping specialized operational centers in Giurgiu and Ruse;
- To develop a joint mechanism for intervention in the event of forest fires or floods in Giurgiu-Ruse cross-border region.

The topicality of the project goal is demonstrated in the picture below where the danger of forest fires in the Romanian-Bulgarian cross-border region along the

Danube river is presented. It is evident that the risk of forest fires in the region is very high and that is why cooperative actions are needed in order to prevent them.



In order to achieve its goals the project envisages the following activities:

A1 Training of trainers on raising the public awareness about the risks of forest fires and floods in Giurgiu-Ruse cross-border region.

A2 Seminar for the prevention of the staff engaged with the management of forest fires and floods in the cross-border region.

A3 Information days for the large audience regarding the danger of forest fires and floods in the cross-border region.

A4 Preparation of the population of Giurgiu and Ruse for response to possible floods.

A5 Equipping modern operational centers in Giurgiu and Ruse with capacity for communication and intervention in forest fires and floods.

A6 Signing cooperation protocols with all institutions engaged with the prevention and response to forest fires and floods in the cross-border region.

A7 Development of a complete bilingual set of materials identifying the areas that can be affected by forest fires in the cross-border region.

A8 Equipping a lab at the University of Ruse with Geographic Information System for mapping the identified areas where there is a risk of forest fires.

A9 Assessment of the risks from eventual forest fires in the cross-border region Giurgiu-Ruse.

A10 Development of a common strategy for intervention and preventive actions against forest fires in the cross-border region Giurgiu-Ruse.

The project results will serve not only for resolving the problem with the forest fire and floods in the Giurgiu-Ruse cross-border region along the Danube river. They are significant for the Danube region as a whole because the project uses the potential of the university research as well as the practical experience of the public authorities and responsible institutions in facing and fighting against a concrete security problem concerning the area along the Danube river. The created analytical and strategic documents and study programs during the project implementation present an action guide with scientific and applied value for the environmental and social policies in the Danube River Basin. One more advantage of the achieved project results is the publication of the main project documents in Romanian, Bulgarian and English which make them accessible to all stakeholders and the large audience.

5. Conclusions

The following conclusions can be drawn on the basis of the presented above:

- The Danube River Basin is one of the most important natural and economic areas in Europe but serious risks due to the growth dilemma threaten the quality and quantity of the waters, the biodiversity in the area and the well-being of its population.
- The risks for the DRB cannot be tolerated or transferred to other parties. They should be eliminated through control actions or modified on manageable levels.
- The especially designed regulations (convention, declaration, strategy, action plan) for the DRB present a good normative basis for the protection and risk prevention in the Danube region.
- The European programme schemes Interreg V-B and Interreg V-A covering the trans-national and cross-border areas along the Danube river give effective opportunities for concrete projects resolving ecological, infrastructural, social or cultural problems in the DRB.

References

- *** (2020). *The Global Risk Report 2020*. <https://reports.weforum.org/global-risks-report-2020/> Accessed June 2022.
- *** (2020). *WBGU German Advisory Council on Global Change*. Rethinking Land in the Anthropocene: from Separation to Integration.
- Beck, U. (2001). *La société du risque, Sur la voie d'une autre modernité* (trad. de l'allemand par Laure Bernardi, préface de Bruno Latour). Paris, Aubier. Première édition: Risikogesellschaft. Auf dem Weg in eine andere Moderne (1986).
- Blom, Ph. (2017). *Was auf dem Spiel steht*.
- Daykin, Ch. (2004). Financial governance and risk management of social security. International Social Security Association. *Technical Report 15*.
- Ewald, F. (1996). *Histoire de l'État-providence*. Paris, Grasset et Fasquelle/Le Livre de Poche.
- Giddens, A. (1991). *Modernity and Self-Identity*. Stanford, Stanford University Press.
- Giddens, A. (1994). *Les Conséquences de la modernité*. Paris, L'Harmattan.
- Jackson, T. (2016). *Prosperity without Growth - Foundations for the economy of tomorrow*.
- Mitchell, R. (2018). *International Environmental Agreements Database Project. 2002-2020*. <https://iea.uoregon.edu/treaty-text/3925> Accessed June 2022.
- <http://ses.ens-lyon.fr/articles/sociologie-du-risque-et-crisis-sanitaires-un-eclairage-sur-la-pandemie-du-coronavirus> (Accessed October 2021).
- https://wwf.panda.org/wwf_news/?338711/The-Danube-River-and-its-Delta-well-known-but-threatened-by-multiple-pressures Accessed June 2022.
- <https://www.europarl.europa.eu/news/en/headlines/society/20180703STO07129/eu-responses-to-climate-change> Accessed June 2022.
- <https://climate-adapt.eea.europa.eu/countries-regions/transnational-regions/danube> Accessed June 2022.