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CHALLENGES FOR SUSTAINABLE BLUE ECONOMY DEVELOPMENT IN BULGARIA

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Abstract
Bulgarian Blue Economy represents a critical strategic opportunity for national economic diversification, coastal resilience, and sustainable resource management in the context of the EU Green Deal.
This report presents a comprehensive analysis of the key challenges that sustainable development of Bulgarian Blue Economy is facing, employing the PESTEL-G framework (Political, Economic, Social, Technological, Environmental, Legal, and Geopolitical factors). The seven dimensions of PESTEL-G framework are further segregated to contextual factors and evaluated using a qualitative document-based methods.
Findings from the analysis reveal persistent structural weaknesses: fragmented governance, underinvestment in innovation and infrastructure, skill mismatches, and weak enforcement of marine environmental legislation. The pollution, loss of biodiversity and deterioration of the quality of the natural ecosystems represent serious challenges for sectors of blue economy. Limited human capital and undeveloped workforce skills in combination with dificult access to innovative technologies and insufficient direct and indirect support for business R&D, are serious obstacles for digital and green transformation of companies from Blue economy sectors.
Identified institutional, environmental, and technological barriers limit the country's ability to capitalize on sustainable blue growth. Sectors such as maritime transport, aquaculture, fisheries, coastal tourism, and offshore renewable energy all exhibit varying degrees of exposure to these multidimensional challenges. Additionally, Bulgaria's maritime sectors remain vulnerable to geopolitical instability in the Black Sea region, with the Russian-Ukrainian conflict reshaping regional trade and security dynamics.
To address the major barriers to sustainable blue economic development in Bulgaria, the report recommends enhanced coordination between ministries and local authorities and establishment of cross-sectoral governance, strengthening of the institutional capacity, targeted public and private investment investment in coastal infrastructure and innovation, strengthening of vocational training and stakeholder engagement, accelerated implementation of marine spatial planning, and geopolitical risk-mitigation strategies. The report recommends the

Keywords: blue economy, sustainable development, governance, PESTEL-G analysis
JEL code: Q01, Q56

Background and Rationale

The Blue Economy, encompassing all economic activities related to oceans, seas, and coasts, is increasingly recognized as a cornerstone of sustainable development (Halpern et al, 2015); (European Commission, 2021). The use of the term 'blue

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economy' has increased over the last decade (Mulazzani and Malorgio, 2017), but there is no common internationally agreed definition that allows for conceptual and practical ambiguities and misinterpretation and misapplication (Voyer et al, 2018). The analysis of literature sources found that when defining the "blue economy", the authors included the achievement of the three sustainability goals of environmental protection, economic growth and social justice, driven by an integrated approach to ocean governance and technological innovation (Keen et al, 2018), (World Bank & UN DESA, 2017), (World Bank, 2019), (WWF, 2015), (Giraud et al 2017). However, researchers studying international experience in implementing the blue economy recognise the danger of national blue economies focusing on pursuing economic growth, with little attention paid to environmental protection and social justice (Bennett et al, 2019), (Cisneros-Montemayor, 2019).

For Bulgaria, the Black Sea represents not only a vital ecological resource but also a strategic economic and geopolitical interface.

The importance of the blue economy as an alternative to achieving accelerated socio-economic development of our country, preserving natural resources and marine and coastal ecosystems sensitive to anthropogenic pressures, has been the subject of research by a number of authors (Shivarov, 2022), (Marenova, 2018), (Baltov, 2019), (Baltov, 2018).

However, despite its natural endowments and access to EU funding, Bulgaria's Blue Economy remains underdeveloped and fragmented. Persistent institutional, environmental, and technological barriers limit the country's ability to capitalize on sustainable blue growth. The COVID-19 pandemic and geopolitical instability in the Black Sea have further exposed the vulnerabilities of the maritime economy, especially in sectors reliant on global trade, tourism, and regional cooperation.

This report responds to the growing need for a systematic, forward-looking analysis that integrates both sustainability and resilience into Blue Economy policy planning in Bulgaria.

Objectives of the paper

The transformation to a sustainable blue economy based on innovative, resource-efficient and low-carbon technologies will preserve the economic potential of the Bulgarian coastal and marine ecosystem (Dimov, 2018), but to achieve this transition requires intgrated policies, cross-sectoral governence and effective accelerated implementation of EU and national legislation (World Bank, 2020), (Nikolova, 2024).

The objectives of this survey are to identify and categorize the major barriers to sustainable blue economic development in Bulgaria, applying the PESTEL-G framework; to offer policy-relevant recommendations that align national development strategies with EU priorities.

Methodology

The analytical framework is developed in order to analyze and evaluate the primary obstacles to Bulgaria's establishment of a sustainable blue economy.
The methodology applied for the survey is inspired by the foundational tool for strategic management – PEST analysis (Aguilar, 1967**),** later expanded to PESTEL (Stoyanova and Harizanova-Bartos, 2017), that is further eleborated to address the geopolitical situation in the Black Sea region by including the Geopolitical dimension into the traditional framework: PESTEL-G**.**
The seven dimensions of PESTEL-G framework are further segregated to contextual factors (Fig. 1) and evaluated using a qualitative document-based method.

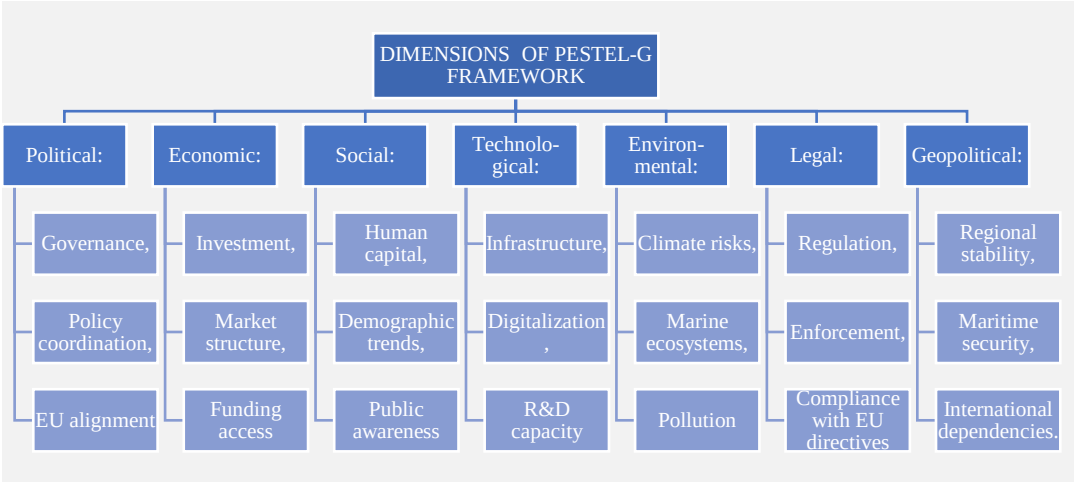

Figure 1. PESTEL-G framework; Source: Author's research

This study is baced on a comprehensive literature review and analysis of of official documents of international organizations and institutions (UN, OECD, EC, World Bank, etc.), national strategic documents and peer-reviewed academic publications. The study focuses on the main six sectors of the blue economy, so-called traditional sectors: coastal/maritime tourism, marine living resources, marine non-living resources, port activities, shipbuilding and repair, and maritime transport (European Commission, 2023). Each of them includes a different type of economic activities, described below as sub-sectors/activities:

- "Coastal and maritime tourism" includes cruise and maritime/coastal tourism and is divided into three main sub-sectors: accommodation, transport and other expenses;
- "Marine living resources" covers primary production, including harvesting/ collection of renewable biological resources – fisheries and aquaculture (Primary

production); Processing of fish/aquaculture products; Transport and trade – distribution of fish/aquaculture products;

- 'Marine non-living resources' consists of three main subsectors: extraction of crude oil and natural gas; Extraction of other minerals, including salt; support activities for the extractive industry;
- "Port activities" continue to play a key role in trade, economic development and job creation in Europe. These include cargo and warehousing (cargo handling and warehousing and storage), port and water projects (construction of water bodies and water transport service activities);
- "Maritime transport" plays a key role in the global economy and is expected to make a decisive contribution to the EU's decarbonisation challenge, and includes passenger transport, freight transport, transport services such as the rental and leasing of waterborne transport equipment;
- "Shipbuilding and repair" includes shipbuilding (shipbuilding and floating structures, construction of pleasure and sports boats, including repair and maintenance) and equipment and machinery (manufacture of ropes, ropes, twine and nets, textiles, sports goods, engines and turbines).

These sectors are the backbone of the blue economy of Bulgaria, and they depend on the quality of the natural ecosystems (World Bank, 2020). This is a large and fast-growing segment of the Bulgarian economy, which has taken significant steps to modernize and diversify over the last decade, and which will play an important role in improving environmental, social and economic development. The development of the blue economy can decisively stimulate growth and economic development, as well as the creation of jobs in Bulgaria.

Key Challenges to the Blue Economy in Bulgaria

The blue economy represents a strategic priority for the European Union and its coastal Member States, including Bulgaria. It encompasses the sustainable development of marine and coastal resources through sectoral activities such as fisheries, aquaculture, maritime transport, tourism, renewable energy, and marine biotechnology.

Situated on the western coast of the Black Sea, Bulgaria is directly involved in regional and European marine frameworks such as the Common Maritime Agenda for the Black Sea (CMA), the European Green Deal, and the EU Blue Economy Strategy.

The sustainable development of the blue economy in Bulgaria is confronted with a complex set of interrelated challenges spanning the ecological, economic, social, and geopolitical domains. These challenges reflect both national structural weaknesses and regional dynamics specific to the Black Sea basin.

Political challenges

In its Communication "Transforming the EU's Blue Economy for a Sustainable Future", the EC shifts the focus from the blue growth to a sustainable blue economy and emphasises the need to implement a new systemic approach that integrates ocean policy into the new European economic policy (European Commission, 2021). As an EU Member State, Bulgaria adheres to the EU blue economy policies, which sets out the context of sustainable management of coastal and marine resources, as well as the transition to climate neutral, circular economy.

The governance of the Blue Economy in Bulgaria is fragmented between many ministeries and agencies (see Table 1). Fragmented governance and lack of inter-agency coordination is one of the main challenges that results in overlapping mandates and lack of coordinated vision (Word Bank, 2020).

Table 1. Institutional Roles and Strategic Documents Relevant to Blue Economy Policy

Institutions	Competences / Role	Political documents
Ministry of Transport • *Maritime Administration;* • *Bulgarian Ports Infrastructure Company*	Implementation of TPRD, Maritime transport management, Maritime traffic control, infrastructure and safety	Integrated Transport Strategy 2030; Maritime safety and infrastructure strategy; Transport Connectivity Strategy, TEN-T Plans;
Ministry of regional development and public works, MRDPW	Territorial and regional development policy; Lead institution for maritime spatial planning	MSPRB 2021-2035; National Concept for Spatial Development 2013-2025
Ministry of Environment and Water • *Basign Directorate;* • *Regional Environmental Ditectorates;* • *Executive Environmental Agency*	Development, implementation and control of environmental protection policies; Lead institution for implementation of MSFD	Maritime strategy and program of measures; River Basin Management Plan for the Black Sea Basin; Flood risk management plan for the Black Sea Basin; National Climate Change Adaptation Strategy and Action Plan until 2030; Strategy for the transition to a circular economy 2022 – 2027; Strategy for the biological diversity;
Ministry of Tourism	Implementing tourism policy, incl. development of sustainable maritime tourism	National Strategy for Sustainable Tourism 2014-2030
Ministry of innovation and growth	Promoting innovation and competitiveness	Innovation Strategy for Smart Specialisation

Institutions	Competences / Role	Political documents
The Ministry of Economy	Developing and implementing a low-carbon economy and promoting investments and competitiveness	
The Ministry of Energy	Responsible for the energy sector, concession for non-living resources	Energy Strategy 2030;
The Ministry of Agriculture	Lead institution for fisheries and aquaculture; regulation and implementation of the CFP	Maritime and Fisheries Programme, CFP Strategies; National strategic plan for aquaculture;
The Ministry of Education and Science *(The National Council for Science and Innovation).*	Responsible for primary and secondary, vocational and higher education, as well as science	National Research Strategy, the Innovation Strategy for Smart Specialisation
Local Authorities (Municipalities)	Implementation of policies at local level and participation in the processes	Sustainable development plans for municipalities

Source: Author's research

The analysis of strategic documents shows that Bulgaria is progressing in aligning the sectoral policies with the EU blue economy framework, however there is a contradiction in the priorities and goals of the sectoral, cross-sectoral policies regulating the sectors of blue economy, and the horizontal policies related to the welfare and rights of the local community, and the protection of the environment.
Despite the existence of strategic documents, the implementation, monitoring and reporting are poorly institutionalized, and the lack of performance and accountability indicators further hampers progress.
In addition, the formal involvement of stakeholders – especially NGOs, local communities and the scientific community – in the political process is limited or symbolic. Furthermore, the local authorities often lack administrative capacity to participate in maritime planning and do not have access to up-to-date data.

Table 2. Political challenges

Political Challenges **Sectors Affected**: Ports, fisheries, aquaculture, marine energy, tourism			
Fragmented Maritime Governance: Institutional fragmentation and overlapping competencies among national agencies hinder coordinated maritime policymaking and project implementation.	**Insufficient Policy Integration**: National maritime policies often lack strategic alignment with the EU's Integrated Maritime Policy, Green Deal, and Blue Growth agenda.	**Short-Term Political Priorities**: Frequent changes in leadership and political cycles undermine continuity in coastal and marine policy planning.	**Weak Stakeholder Engagement**: Public consultations are often symbolic, with limited impact on decision-making processes related to marine spatial planning or local development strategies

Source: Author's research

Economic Challenges

The economic footprint of Bulgaria's blue economy remains limited compared to its potential. 72,4 thousands persons are employed in the traditional sectors of Bulgarian blue economy in 2022, and 52,7 thousands are FTE employees. The sectors of blue economy contributes EUR 983,4 million to the country's GVA, achieving turnover of EUR 4 317,9 million and gross profit of EUR 381,4 million (data from EU Blue Economy Observatory). A critical factor influencing the state of the blue economy sectors was the COVID-19 pandemic, but "coastal and marine tourism" keeps the leading role, accounting for 51% of the GVA generated by the national blue economy and more than 61% of the "blue jobs' in 2022 (Fig. 2).

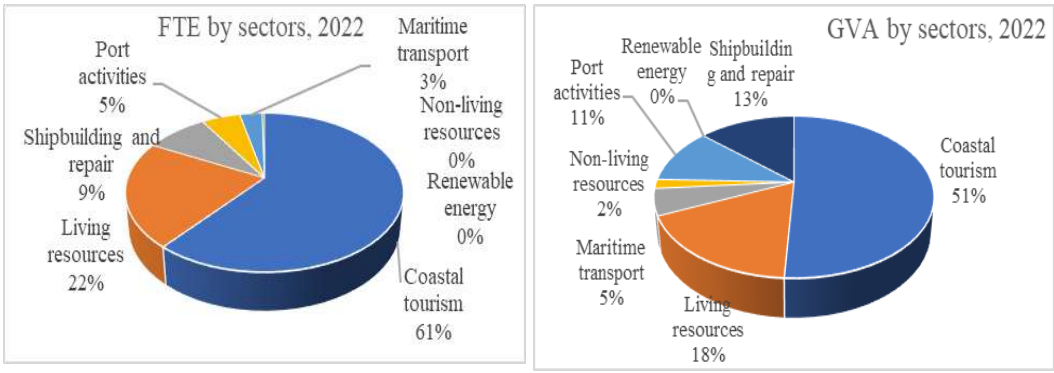

Figure 2. Contribution of sectors of blue economy to employment and GVA

Source: Authors' calculations based on data from the EU Blue Economy Observatory

Public and private investment in innovation is scarce, and funding mechanisms are fragmented. Access to EU programmes such as the European Maritime, Fisheries and Aquaculture Fund (EMFAF) is often hindered by low administrative capacity and unclear strategic priorities. Maritime transport infrastructure, including ports and logistics corridors, is underdeveloped.
The pollution, loss of biodiversity and deterioration of the quality of the natural ecosystems represent serious challenges for sectors of blue economy.
Strengthening science-based management of the marine environment and economic development (including the blue economy) is key to addressing growing risks.

Table 3. Economic challenges

Economic Challenges **Sectors Affected**: Shipping, aquaculture, offshore energy			
Underinvestment in Infrastructure: Bulgaria's ports, aquaculture facilities, and coastal tourism infrastructure lag behind EU peers in terms of modernization, capacity, and service integration.	**Overdependence on EU Funding**: A large share of investments in the maritime sector is tied to EU programs (EMFAF, Interreg, Horizon Europe), exposing the system to funding volatility.	**Low Value-Added Production**: Blue Economy sectors are primarily based on low-skill, low-value activities (e.g., small-scale fishing, seasonal tourism), which limits economic resilience.	**Poor Access to Credit**: SMEs and startups in the blue economy face difficulties accessing financing, especially in innovative areas such as blue biotechnology or renewable marine energy.

Source: Author's research

Social Challenges

The coastal regions of Bulgaria face demographic decline, and youth outmigration. Maritime communities are vulnerable due to limited economic alternatives, an ageing population and poor economic diversification.
Following the COVID-19 pandemic, there has been a decline in tourism activity and services sectors, limiting the capacity of the local economy to participate in the new opportunities offered by the blue economy.
Fisheries remain a key livelihood for some coastal settlements, but declining fish stocks, combined with outdated technology and difficult access to investment finance, pose risks to the sustainability of the sector. The underskilling of the workforce and the lack of training and reskilling mechanisms in maritime professions also limits social integration in blue sectors.
Educational and vocational training programmes related to the maritime sector are insufficiently developed, limiting the availability of a qualified workforce. In

addition, there is low stakeholder awareness and limited community involvement in blue economy planning processes.
Limited human capital and undeveloped workforce skills are significant challenge for the accelerated development of Bulgarian blue economy, especially in emerging sectors such as biotechnology, marine engineering, and digital maritime services (4BIZ, 2023).

Table 4. Social challenges

Social Challenges **Sectors Affected**: Fisheries, tourism, vocational training, education			
Demographic decline: youth outmigration and aging coastal populations, leading to labor shortages and a loss of generational maritime knowledge.	**Skills Mismatch**: Existing education and vocational training programs are misaligned with the emerging needs of sustainable blue economy sectors (e.g., marine robotics, sustainable fisheries).	**Limited Public Awareness**: Citizens and local stakeholders lack knowledge about the ecological value of marine resources and sustainable practices, weakening demand for reform.	Limited social dialogue platforms

Source: Author's research

Technological Challenges

The analysis of data EU Blue Economy Observatory shows the negative tendency in investments in sectors of Blue economy of Bulgaria. The negative trend is not only in absolute values: from EUR 99,0 million in 2009 to EUR 59,2 million in 2021, but in investments per person employed (Fig. 3).
The negative tendency of the ratio between investment and value added at factor cost flags the challenges in technological transformation of sectors of Blue economy of Bulgaria.
The insuficient investments in modernization of public infrastructure and dificult access to innovative technologies are serious obstacles for digital and green transformation of companies from Blue economy sectors. Obsolete port facilities and fisheries infrastructure, lack of digital logistics systems and smart technologies, reduce efficiency and competitiveness of the companies.
Bulgaria is an emerging innovator with performance at 46% of the EU average in 2024 and its performance is increasing less than the EU (EC, 2024).

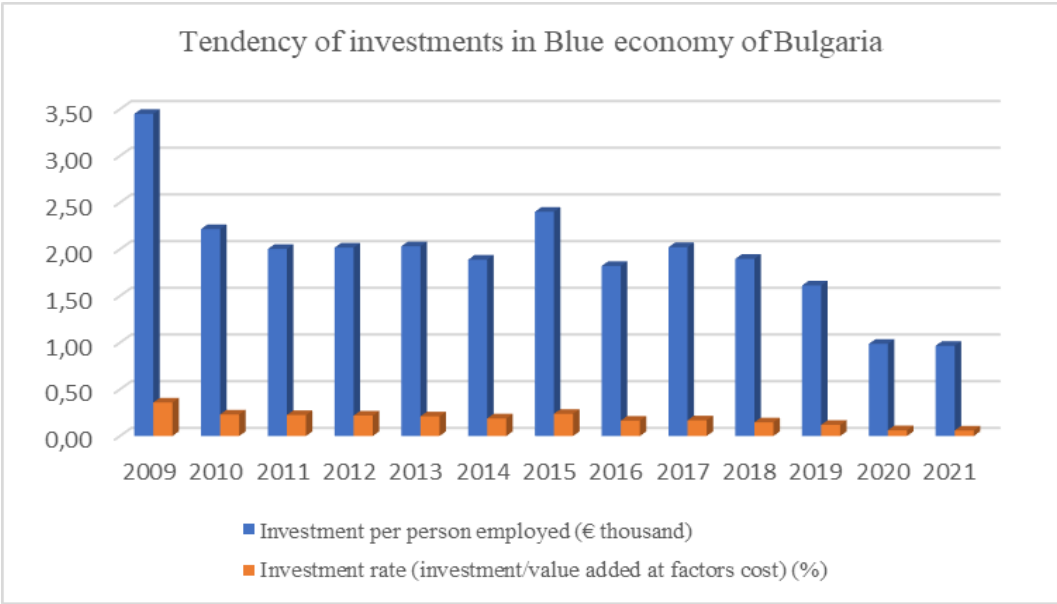

Figure 3: Tendency of investments in Blue economy

Source: Authors' calculations based on data from the EU Blue Economy Observatory

Direct and indirect government support for business R&D has experienced a negative trend and at the same time, both R&D and non-R&D expenditures of business have decreased. On the national level is observed strong decreases in introduction of product innovations, business process innovations by SMEs, including maritime sectors.

The companies also face barriers such as access to financing for larger investments, complex regulations and availability of skilled staff.

Moreover, the country's eco-innovation index trails noticeably behind (57.7 vs. 121.5), reflecting slower adoption of eco-friendly technologies and policies essential for sustainable development.

The technological achallenges that afect all sectors of blue economy are presented bellow:

Table 5. Technological challenges

Technological Challenges All sectors affected			
Low R&D and Innovation Capacity: Bulgaria ranks among the lowest EU countries in R&D intensity and innovation in maritime sectors.	**Limited Adoption of Digital Tools and smart technologies**: Most maritime businesses operate without access to GIS systems, marine monitoring technology, etc.	**Obsolete infrastructrure and technologies:** reducing efficiency and competitiveness	**Limited access to innovative technologies for decarbonization and circularity**: Difficulties in implementation of requirements of green transition

Source: Author's research

Mario Draghi's report, "The future of European competitiveness", highlights the need for deep reforms in the EU market and priorities. Furthermore, it recommends significant investment in research and development of advanced tech industries, which includes marine and ocean tech innovations, and renewable energy generation. Additionally, the report suggests fostering an innovation-friendly regulatory framework to make the European Union more attractive for corporate "unicorns", thus potentially boosting the growth of blue startups (Draghi, M., 2025).

Environmental Challenges

The Black Sea is a semi-enclosed ecosystem characterized by high sensitivity to anthropogenic impacts. Black Sea waters are exposed to serious problems, including eutrophication, plastic pollution and loss of marine biodiversity (European Commission, 2024).

Bulgaria faces significant environmental pressures along its coastline and in its marine ecosystems. According to information provided by the European Marine Observation and Data Network (EMODnet) the quality of seawater remains below the standards of the Marine Strategy Framework Directive (2008/56/EC).There is need of further efforts and significant investments for builing up of efficient infrastructure for wastewater treatment, as well as transition to zero-pollution sustainable production of consumption, incl. all sectors of blue economy (World Bank, 2025).

The low level of designation and enforcement of marine protected areas (MPAs) further contributes to the degradation of biodiversity and marine habitats. Bulgaria legally protects 8% of marine areas (EU-27 coverage: 12.3%).

Table 6. Environmental challenges

Environmental Challenges All sectors affected			
Coastal Erosion and Sea Level Rise: Climate change has led to increased erosion along Bulgaria's Black Sea coast, threatening tourism assets and port infrastructure.	**Marine Pollution**: Excessive nutrients from agriculture, plastic pollution, and insufficient wastewater treatment damage marine ecosystems.	**Biodiversity Loss**: Overfishing, habitat degradation, and invasive species have contributed to declining fish stocks and the weakening of ecosystem services.	**Weak Implementation of Climate Adaptation Measures;** Insuficient marine-oriented climate resilience measures, particularly for tourism and fisheries.

Source: Author's research

Legislative challenges

Bulgaria is progressing in harmonization of legislaton and in aligning the sectoral policies with the EU blue economy framework, as well as the fulfillment of the obligations of the country under EU directives such as Water Framework Directive (2000/60/EU); Marine Strategy Framework Directive (2008/56/EC), EU Maritime Spatial Planning Directive (2014/89/EU), etc.

The legal frameworks and instruments regulating the development of the blue economy in Bulgaria is complex and includes large number of acts. The most important are presented bellow:

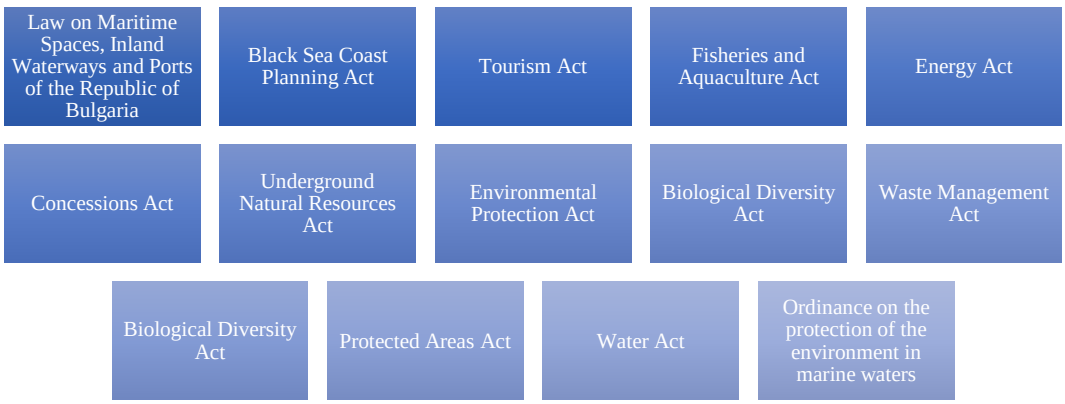

Figure 4. Legal framework regulating the Blue Economy in Bulgaria

Source: Author's research

Although the country formally fulfills its commitments under international agreements, as well as transposing European legislation, the practical implementation of policies and the achievement of key goals remains a challenge for Bulgaria (World Bank, 2025).

Bulgaria does not achieve a good state of the marine environment for the most of the monitored indicators, and in the new period a large part of the planned measures are of an institutional nature, including ensuring effective coordination between the competent authorities for the implementation of the Marine Strategy. The Commission has therefore launched an infringement procedure against Bulgaria for the non- reporting of its updated programme of measures, which is required under Article 13 of the MSFD.

An important step towards a more sustainable use of the Black Sea and its more effective protection, as well as towars transition to a sustainable blue economy in Bulgaria is the adoption of the Maritime Spatial Plan of the Republic of Bulgaria (MSPRB) for the period 2021-2035.

However, the country lags behind in implementation of prioritis and measures, as required under the EU Maritime Spatial Planning Directive (2014/89/EU).

The low level of designation and enforcement of marine protected areas (MPAs) – 8%, indicate a non-compliance with the commitments under the EU Biodiversity Strategy for 2030.

Table 7. Legal challenges

Legal Challenges **Sectors Affected**: Offshore energy, fisheries, marine conservation, port management	
Inadequate Enforcement of Regulations: Weak enforcement of EU environmental directives; deficiencies in marine spatial planning and protected area designations. Fisheries, environmental protection, and port operations often suffer from weak enforcement and low institutional capacity.	**Complex regulatory frameworks**: Slowing innovation and investment; Exessive administrative load, especially for micro-SMEs, overlapping rules for fisheries, maritime transport, energy, and tourism hinder synergistic development.

Source: Author's research

Geopolitical and Regional Challenges

The Black Sea region becomes increasingly unstable due to the escalation of military conflict following Russia’s aggression in Ukraine. Naval militarization and the presence of mines and maritime incidents reduce the attractiveness of the region

for private investment and affect Bulgaria's blue growth prospects. Furthermore, limited cross-border coordination and data-sharing between Black Sea countries disrupt maritime trade routes, increase security risks, geopardise environmental protection (European Commission, 2024), (European Commission, 2025).
Existing regional cooperation platforms – such as the Black Sea Synergy, the Common Maritime Agenda for the Black Sea, the Strategic Research and Innovation Agenda (SRIA), the Interreg NEXT Black Sea Basin programme, the Black Sea Economic Cooperation (BSEC) – provide frameworks for dialogue, but remain weakly institutionalised. The EU's vision is the Black Sea region to be a secure, interconnected and prosperous space. In May 2025 the European Union's strategic approach to the Black Sea (European Commission, 2025) was presented to advance peace and security, economic development, and democratic consolidation in a region, prioritising investment in the blue economy. However, there is no EU regional strategy for the Blck Sea region.

Table 8. Geopolitical challenges

Geopolitical Challenges **Sectors Affected**: Port operations, offshore energy, maritime logistics, blue security, marine conservation				
Black Sea Security Instability: The war affects maritime safety, shipping routes, investor confidence, cooperation; Risk of militarization reduces potential for cross-border environmental monitoring and multi-country agreements; Port traffic is impacted by sanctions and maritime risk zones declared near conflict zones.	Energy Security and Regional Dependencies •Dependency on Russian fossil fuel imports has forced Bulgaria to explore alternative maritime energy routes and partnerships •The EU's REPowerEU plan pushes Bulgaria to accelerate offshore wind and hydrogen development	EU Enlargement and Neighborhood Policy Tensions:Engagement in EU Black Sea Synergy or the Eastern Partnership is complicated by strained relations with non-EU Black Sea states; Blue growth strategies are increasingly shaped by EU sanctions regimes, defense cooperation, and maritime surveillance efforts, creating overlaps with civilian maritime goals.	Migration and Border Pressures •Increased migration pressure: spillover effects on port services and investment prioritization.	**Strategic Vulnerabilities in Port Infrastructure**: Security risks related to dual-use infrastructure (civil and military) complicate investment planning and may increase militarization pressures in port areas

Source: Author's research

Conclusions and recommendations

Bulgaria's Blue Economy has notable potential to contribute to sustainable national development and regional integration within the Black Sea and the EU.

The study, structured into six sections reflecting the key dimensions of concern: policy and governance, economic development, social equity, technological innovation, environmental sustainability, legislative framework and enforecement, and geopolitical conflicts, identifies the challenges confronting the sustainable development of the blue economy in Bulgaria.

The analysis shows that the governance of the Blue Economy in Bulgaria is fragmented and lacks a coordinated vision. Furthermore, the economic impact of the blue economy remains underdeveloped due to an inadequate infrastructure, fragmented financing, and weak innovation systems. The environmental sustainability of Bulgaria's marine areas is threatened by pollution, insufficient marine spatial planning, and weak biodiversity protection. Social disparities and limited public awareness hinder inclusive participation in the blue economy. Geopolitical instability in the Black Sea region significantly undermines investment security, maritime mobility, and regional coordination.

The PESTEL-G analysis reveals that achieving resilience and sustainability in the Bulgarian Blue Economy requires more than sectoral reform; it necessitates a paradigm shift toward integrated, inclusive, and ecosystem-based governance, including improved Black Sea diplomacy and building trust through regional cooperation. Recommendations include strengthening of the institutional capacity, including enhanced coordination between ministries and local authorities and establishment of integrated governance structures, R&D stimulation, Increase public and private investment in blue economy sectors with high value-added potential, especially infrastructure modernization and greeningup, marine research, and innovation, enforcement of environmental laws and accelerated implementation of marine spatial planning, stakeholder engagement and geopolitical risk-mitigation strategies.

A comprehensive and long-term strategy for the blue economy is essential to ensure that Bulgaria can fully exploit its marine potential while contributing to ecological resilience, economic growth, and social inclusion in the region.

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