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# THE IMPACT OF THE NEW COMPLEX OF THREATS ON HUMAN AND SOCIETAL RESILIENCE IN THE BALTIC SEA REGION COUNTRIES DURING PERIODS OF SHOCKS

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***Annotation.*** The contemporary world is increasingly shaped by multiple overlapping threats, including pandemics, socio-economic inequality, geopolitical tensions, climate change, and technological risks. These challenges create new forms of uncertainty that affect both individuals and societies. In this context, strengthening human and societal resilience has become an important condition for sustainable development. This paper examines the impact of this new complex of threats on human and societal resilience in the Baltic Sea Region (BSR) countries during periods of shocks. The aim of the study is to assess how major global threats influence human development and resilience in the BSR countries and to identify possible directions for strengthening resilience. The analysis focuses on ten countries of the region: Denmark, Sweden, Finland, Germany, Estonia, Latvia, Lithuania, Poland, Norway, and Iceland. The research relies on the analytical framework of the United Nations Development Programme and uses indicators such as the Human Development Index (HDI), the Inequality-adjusted Human Development Index (IHDI), and the Planetary Pressures-adjusted Human Development Index (PHDI). The results show that although human development in the BSR countries has generally improved, significant differences remain between country groups. Inequality and planetary pressures reduce the potential of human development and weaken resilience, while countries with higher development levels demonstrate greater capacity to withstand shocks. The findings highlight the importance of reducing inequality, strengthening human potential, and integrating social, economic, and environmental policies in order to build more resilient societies in the Baltic Sea Region.

***Keywords:*** human resilience; societal resilience; Baltic Sea Region; human development; inequality; planetary pressures.

***JEL classification:*** I31; O15.


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## Introduction

The growing human insecurity, the threat of incurable disease pandemics, unprecedented socio-economic inequality, the escalation of international conflicts, climate change and its ecological consequences, the dangers posed by artificial intelligence and IT, as well as the failure to recognise these threats and the means to mitigate them, are all increasing human vulnerability and fuelling a sense of anxiety and instability. The world is living through an era permeated by pervasive anxiety. The UNDP Human Development Report (2021/2022) emphasises that the global society is experiencing a time of uncertainty, where individuals struggle to effectively manage their lives (UNDP, 2022a). The COVID-19 pandemic continues and has already caused a decline in the Human Development Index (HDI) in nearly all countries, with new, unforeseen virus variants continuing to emerge. Hostilities in Ukraine persist, alongside armed conflicts in other hotspots. In the context of shifting geopolitical orders and rising tensions, the number of human casualties continues to grow. Record-breaking temperatures, wildfires, storms, floods in some regions, and droughts in others pose significant threats to the planet's stable condition, further disrupting its balance. Acute crises are giving way to chronic uncertainty and global-scale shocks, undermining human and societal development.

Currently, new levels of uncertainty are emerging that interact with one another to create and reinforce new forms of uncertainty, thus forming a complex of uncertainties unprecedented in human history. Varying types of uncertainties overlap and interact in ways that disrupt the traditional ways of life, causing unparalleled disturbances. These uncertainties, combined with growing inequality and widespread polarisation, are generating new, complex sources of potential shocks for individuals and societies across the globe.

People worldwide increasingly admit to feeling unsafe and vulnerable. The UNDP Special Report (2022) revealed that six out of seven people globally reported feeling insecure during numerous periods of their lives even before the pandemic (UNDP, 2022b). It is not surprising that the societies of most countries are struggling to withstand the pressures of polarization and political extremism, further amplified by social media, artificial intelligence, and other powerful information technologies. This is reflected in the decline of the HDI for two consecutive years following the COVID-19 pandemic.

The situation raises questions and problems that need to be addressed urgently. The first research question is formulated as *What impact will these new uncertainties have on people and societies in the Baltic Sea Region (BSR) countries?* The second research question considered in this study is *How can these effects be assessed and measured?* The third research question raised is *What ways and means are available to reduce vulnerability and strengthen the resilience of individuals and societies to shocks and uncertainties?*

The aim of this paper is to examine the impact of a new set of uncertainties on the socio-economic situation of individuals and societies in the BSR and to propose innovative research-based approaches for building socio-economic resilience, with the goal of enhancing the capacity of people and societies to withstand shocks. To achieve this aim, the paper focuses on building resilience in the face of uncertainty and shocks by:

- Identifying the threats that increase human insecurity and vulnerability, and critically analysing theoretical conceptual approaches to socio-economic resilience as an alternative to insecurity and vulnerability;

- Developing a research methodology based on the ideological foundations of the authors' concept of resilience building, and creating a model to assess the impact of the new threat complex on human development in the BSR countries;
- Conducting an empirical study that includes an assessment of the impact of the threat complex on groups of BSR countries, as well as an analysis of insecurity and resilience-building processes.

The research methodology reflects the overlap of economics, sociology, and psychology. The link between human resilience and psychological characteristics is particularly significant. The methodology for studying socio-economic resilience is rooted in psychological research, drawing on the esteemed 3C model introduced by Maddi (Maddi, 2006), the work of Frankl (Frankl, 2006), Taleb's findings on the "Black Swan" phenomenon (Taleb, 2007), and others. Research on societal resilience encompasses multiple dimensions. At the macro level, the research focuses on two main directions:

1. Resilience analysis of groups of BSR countries using UNDP methods and data from sources such as the UNDP, Eurostat, and the World Bank;
2. Specific focus on assessing the impact of threats on human resilience in BSR countries using UNDP research techniques.

The proposed framework for strengthening resilience serves as the ideological and methodological basis for research conducted at the level of human development in the BSR countries. The object of the study consists of the BSR countries: eight EU Member States (Sweden, Denmark, Estonia, Finland, Germany, Latvia, Lithuania, and Poland), as well as Iceland and Norway, which are not part of the EU.

In the authors' view, one of the most important indicators for studying human and societal resilience across countries (i.e., at the BSR level) is the HDI, as it encompasses three fundamental dimensions of human development that align with key resilience characteristics: life expectancy at birth (indicating health), education level (measured by years of schooling for adults aged 25 and expected years of schooling for children entering the education system), and a decent standard of living, measured by gross national income (GNI) per capita. The key focus of our macro-level empirical research includes threats such as COVID-19, inequality of opportunity, and the impact of planetary pressures on human development and resilience. To address these aspects, we use indicators such as the HDI and its structure and dynamics, the Inequality-adjusted Human Development Index (IHDI), and the Planetary Pressures-adjusted Human Development Index (PHDI), along with the relevant structural components of these indices.

The study focuses on assessing the impact of the most pressing and significant current threats: COVID-19, inequality, and planetary pressure, on the HDI. The relevance of the identified issues is confirmed by the results obtained. At the level of the BSR countries, the study emphasises assessing the impact of a new set of uncertainties on socio-economic resilience, based on HDI dynamics across groups of BSR countries and in comparison with other countries worldwide. First, a paradoxical trend was observed over time. Despite socio-economic progress and rising HDI levels, there has been a growing sense of human insecurity, vulnerability, and an inability to exercise control over one's life. Second, the assessment of resilience in the BSR countries showed that between 2015 and 2022, human development in the BSR advanced; however, this progress was accompanied by increasing inequality between two groups of BSR countries. Significant inequality was also noted within clusters, i.e. among individual countries. The impact of inequality on human development, measured by the IHDI, revealed a decrease in human potential for

resilience, resulting in losses for BSR countries. Third, the interaction between planetary pressures and social imbalances is triggering dangerous changes for humanity and all forms of life on the planet, while also mutually reinforcing these threats. As various forms of inequality grow, climate change further exacerbates other alarming social shifts, including declining social mobility, rising social instability, and increasing social fragmentation and division. These challenges call for urgent efforts to strengthen human and societal resilience. Based on the authors' research findings, priority areas of action and measures for strengthening human and societal resilience in the BSR countries will be proposed.

## 1. Theoretical Aspects of Human and Societal Vulnerability and Resilience during Periods of Shocks

In recent years, research emphasising human socio-economic vulnerability and resilience has become particularly relevant when describing the erosion of human potential and choice during periods of shocks. The main criterion characterising resilience is human endurance – the ability to withstand life's challenges, cope with difficulties and changes, adapt to them, and emerge stronger by drawing on acquired experience. As emphasised by Achim Steiner, Administrator of the United Nations Development Programme (UNDP), the true wealth of nations is their people (UNDP, 2024). Each new crisis reminds us that human capabilities, choices, and future expectations can collapse very quickly, threatening people's well-being in every country around the world. The choices individuals make today, under conditions of uncertainty, can lead either to harm or to benefit. A simplified and superficial approach to these challenges will not yield the desired results. In this context, human and societal resilience should be viewed not only as a goal for continued development during times of shocks and instability but also as a crucial lever for overcoming difficulties. The diversity, creativity, and potential of people are the driving forces capable of confronting and managing emerging threats.

Based on an analysis of strategic documents, programmes, annual reports, and publications by international organisations (UNDP, OECD, IMF, WEF, ILO, BSI), new threats increasing human vulnerability and insecurity in the era of uncertainty and shocks have been identified. These include growing human insecurity and vulnerability, the threat of incurable pandemics, unprecedented socio-economic inequality, particularly inequality in access to energy resources, climate change, the emergence of a new complex of threats in the Anthropocene epoch, the dangers posed by artificial intelligence and information technologies, and the escalation of international conflicts. One important aspect is the lack of understanding of these threats and of measures to mitigate them.

As an alternative approach to confronting these threats, theoretical perspectives on reducing human vulnerability and strengthening resilience are explored. The fundamental works of renowned global authors, including psychology classics, economists, philosophers, and political figures, such as Salvatore Maddi (1998, 2006), Viktor Frankl (2006), Nassim Taleb (2007), Samuel Huntington (1996), Joseph Stiglitz (2012, 2014), and Henry Kissinger (2022), among others, have, in our view, directly or indirectly contributed to the development of resilience theory.

Comparative analysis methodologies offered by researchers such as Gall (2013), Birkmann *et al*. (2013), Tate (2012), and Holand *et al*. (2011) were employed in examining the socio-economic vulnerability. Resilience research draws on the contributions of Norris *et al*. (2008) and Friborg (2005), among others. Psychological resilience was studied using Luthans' Psychological Resilience Subscale (Luthans *et al*., 2007) and a questionnaire developed from a review of the scientific literature on psychological resilience and its cognitive and emotional resources (Brown *et al*., 2001; Khan *et al*., 2002; Sareen *et al*., 2005; Have *et al*., 2009; Crump *et al*., 2013; Ishtiak-Ahmed *et al*., 2013). The methodology for studying male and female

resilience was based on literature reviews by Gibbs (2005), Cohen (2006), and Hollis (2006a, 2006 b). The importance of socio-economic resilience during periods of shocks was also highlighted and examined by Michel-Kerjan (2012), Ganin (2016, 2017), Linkov, Trump, and Keisler (2018), Epstein (2020), and Rakauskienė, Streimikienė, and Volodzkienė (2025), among others.

## 2. The Baltic Sea Region Strategy and Its Priority Objectives

The BSR has a long tradition of cooperation, as evidenced by multiple networks and organisations in the region. Based on that tradition, in 2009, the EU Member States in the region decided to start a new type of transnational cooperation. The EU strategy for BSR (EUSBSR) is the oldest of the four EU macro-regional strategies. The EUSBSR provides a unique platform for cooperation and coordination between eight EU Member States (Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, and Sweden), including the neighbouring non-EU countries in the region where relevant and appropriate. It focuses on challenges and opportunities, which are more efficiently addressed when working in a coordinated manner within the region.

The first EU Strategy for the Baltic Sea Region (EUSBSR) was adopted in 2009 by the European Commission and the European Council as an official EU macro-regional strategy. Its objective is to strengthen cooperation among the EU Member States surrounding the Baltic Sea, which is home to nearly 80 million people, by addressing shared challenges and ensuring the sustainable growth of the BSR and its neighbours. The implementation of the EUSBSR in 2017 focused on three main long-term objectives: saving the sea, connecting the region, and increasing the prosperity of its inhabitants (EUSBSR, 2021).

In 2021, the Action Plan underwent another update, reflecting new global challenges, the European Union's evolving strategic priorities, and the 2021–2027 Multiannual Financial Framework. This revision integrated the policy areas more closely with overarching frameworks, such as the UN Sustainable Development Goals, the European Green Deal, and other key European and international initiatives. The EU Strategic Agenda for 2019–2024 emphasises four main priorities: safeguarding citizens and their freedoms; fostering a robust and dynamic economic foundation; building a climate-neutral, green, fair, and socially inclusive Europe; and promoting EU interests and values globally. The Action Plan for the EU Strategy for the Baltic Sea Region (EUSBSR) underwent further updates during 2024-2025. This Action Plan serves as a core instrument for implementing the strategy by outlining activities and tasks within each policy area. It is regularly revised to ensure that its actions remain aligned with emerging issues and opportunities relevant to the Baltic Sea Region. The current update reinforces the alignment of the strategy with the EU's top priorities, especially in areas where the EUSBSR can contribute meaningfully. Gender equality, a fundamental value of the EU, is embedded in the strategy's actions. In addition, in line with the European Green Deal and the EU's climate-neutrality goal, the strategy emphasises the integration of the climate action and sustainable development across all policy areas. To this end, all thematic areas are expected to reflect the EU's environmental and climate objectives. Enhancing efforts to protect the environment, improve climate resilience, and support adaptation and sustainability is essential. These goals should also guide public and private investment decisions. This approach reflects the EU's strong political will to tackle climate change, as confirmed by the European Council. Although the EUSBSR is an EU initiative, its success depends on effective regional cooperation. Close collaboration with neighbouring countries and stakeholders across the Baltic Sea Region, particularly those with established ties and shared challenges, remains essential for achieving the strategy's objectives (EUBSRS, 2025).

The European Union's macro-regional strategy aims to support the countries of the BSR by jointly addressing challenges, more effectively harnessing their shared potential, and strengthening regional

integration. However, the emergence of a new set of threats complicates the achievement of these goals, highlighting the need to enhance individual and societal resilience across the BSR. In light of the objectives set out by the EUSBSR, the ability of people and societies to respond to the emerging challenges plays a crucial role under conditions shaped by new threats.

In this context, the authors of the article propose addressing issues related to BSR integration, prosperity enhancement, and climate challenges not through traditional integration and cohesion policy instruments, but by strengthening societal resilience amid uncertainty and external shocks. This involves fostering strong individuals who (a) pursue meaningful goals, take responsibility for their lives, and actively engage in shaping them; (b) are capable of responding to and adapting in stressful situations; and (c) utilise their experiences and inner strength to support continuous personal development and human flourishing.

## 3. Methodology for Investigating the Impact of the Threat Complex on Human and Societal Resilience in the Baltic Sea Region

In developing the research concept, the authors highlight and emphasise several assumptions that, in their view, are of particular importance. The first assumption is that resilience to life's hardships is closely linked to vulnerability. It serves as a lever for reducing vulnerability, as its counterforce or opposition. These two concepts are opposites that form a unified whole. Socio-economic vulnerability refers to the potential risk faced by certain social groups, communities, regions, or states in the face of economic crises, natural disasters, climate change, or military conflicts. This vulnerability arises due to limited human potential, low social status, or critical phases of the life cycle. In order to reduce vulnerability, it is essential to enhance the resilience of individuals and society to life's difficulties, crises, threats, and shocks.

There is an ongoing global discourse around the concept of vitality, endurance, and resilience to life's adversities. The study focuses specifically on individual resilience to life's hardships, which ensures stability and reliability in people's ability to make choices now and in the future. This resilience allows them to better cope with shocks, adapt to them, and use the experience gained for further growth and flourishing. Resilience to life's hardships refers to the ability to remove obstacles that hinder a person's free agency and participation in shaping their own life and destiny. The core idea is that every person should have the opportunity to live a life they find valuable and meaningful. Promoting resilience means fostering the capacity to make choices, increasing competencies (knowledge and professionalism), and improving quality of life.

Another assumption is that human potential is shaped throughout an individual's entire life, and it must be nurtured and supported, otherwise, it may stagnate. The development of a person's life potential is significantly influenced by their level of knowledge and education, which in turn depends on investments in science and education at all stages of life. The earlier these investments are made, the greater the individual's prospects. Conversely, if such investments are untimely or short-term, there is a high likelihood that the individual will be unable to realise their human potential or achieve self-fulfilment. In this context, investments in the education of children and youth are crucial.

Equally important is a person's health potential, which affects their expected life expectancy. Investments in healthcare, a healthy lifestyle, proper nutrition, immune system strengthening, and physical activity are essential in building human resilience, both in extending the duration of a healthy and active working life and in increasing resistance to viruses during the pandemic period. People with insufficient basic health potential are less able to live the kind of life that matters to them, and their capacity to make meaningful choices is also constrained.

The impact of inequality on human development reduces an individual's potential for resilience, ultimately leading to losses for society as a whole. The root cause lies in human inequality, particularly in the areas of health, education, and standard of living. The present study emphasises that reducing inequalities in both basic and expanded human capabilities is a necessary condition for strengthening resilience. Research shows that while basic capabilities, such as access to primary and secondary education, basic healthcare, and minimum income, are generally met in most countries, income inequality remains a pressing issue, including in several EU Member States. Moreover, excessive inequality in access to higher-level health and education services, as well as the ability to utilise advanced technologies, i.e., in the realm of expanded capabilities, undermines resilience not only at the individual level but also across social groups and at the national scale.

Additionally, strengthening resilience at the level of individuals, society, and the state during periods of disruption requires the ability to (1) be prepared for unknown and unexpected events or crises; (2) respond appropriately to them; (3) adapt to new circumstances; and (4) crucially, extract value from the experience, treating it as a gained advantage that contributes to future success and well-being. It can be argued that the foundation and starting point for these capacities lies in the strengthening of human potential, which encompasses indicators of health, education, and material well-being.

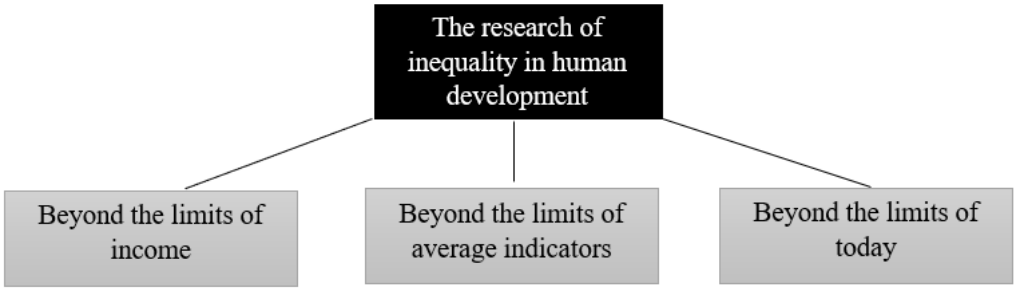
Considering the assumptions outlined above, the authors posit that one of the most important indicators for examining human and societal resilience at the macro level, both globally and in the BSR, is the HDI. This index encompasses three core dimensions of human development, which align closely with the main characteristics of resilience: average life expectancy, representing health; knowledge and education level, which is measured by mean years of schooling (for adults aged 25) and expected years of schooling (for children entering school); and a decent standard of living, assessed through gross national income (GNI) per capita. In its deeper sense, the HDI is closely linked to the resilience paradigm and its fundamental premises. Therefore, for the macro-level analysis and assessment of resilience, the HDI and its structural components were selected to be employed.

In the current era of uncertainty and disruption, the interaction and overlap of various threats are giving rise to a new complex of risks. The present research focuses on the fundamental factors that increase human vulnerability and hinder human development, including the spread of incurable pandemics; inequality that intensifies into polarization, both between and within BSR countries; and an alarming planetary changes of the Anthropocene, meaning the dominant influence of humans on nature and the planet, and its interplay with inequality.

A new divide has emerged in the fields of education and new technologies, namely, access to higher education and high-speed information channels, which were once considered a luxury but have now become essential for successfully competing and belonging to a particular social group. This is occurring in a knowledge-based economy, where the number of educated young people using digital communication tools and the internet is growing, yet many become stuck at the same level without opportunities for further advancement. This process is unfolding in parallel with a reduction in disparities in basic living conditions, as a numerous people are being lifted out of poverty, hunger, and disease. Simultaneously, the skills and competencies required to remain competitive in the near future are evolving, thus demanding new types of experience and abilities. In addition, climate change, inequality, and armed conflicts are reinforcing both basic and new manifestations of inequality, thereby weakening the resilience of individuals and society. The inability to resolve these systemic problems further deepens inequality and strengthens minority rule and political dominance.

Inequality is a barrier to individuals realising their potential and to developing resilience and endurance in the face of life's hardships. This refers not only to inequality in income, consumption, and wealth, but also to inequality that cannot be measured solely by general average figures focused on a single narrow aspect. The study of resilience through indicators of inequality in human development must move beyond income levels and average values. Traditional measures to reduce basic inequality, such as progressive tax systems, higher corporate taxes, tax exemptions for low-income earners, and taxation of minimum wages and pensions, are insufficient and, in some cases, may not even be appropriate. A broader, systemic perspective is needed. To reduce inequality in human development, it is proposed to apply a concept that links the expansion of opportunities with income distribution, focusing on both basic and advanced capabilities.

First, in assessing individual and societal resilience from the perspective of inequality, the researchers rely on the UNDP conceptual framework, which is based on three core principles: the analysis must go beyond income levels, beyond average values, and beyond the present, taking into account future prospects (*Figure1*).

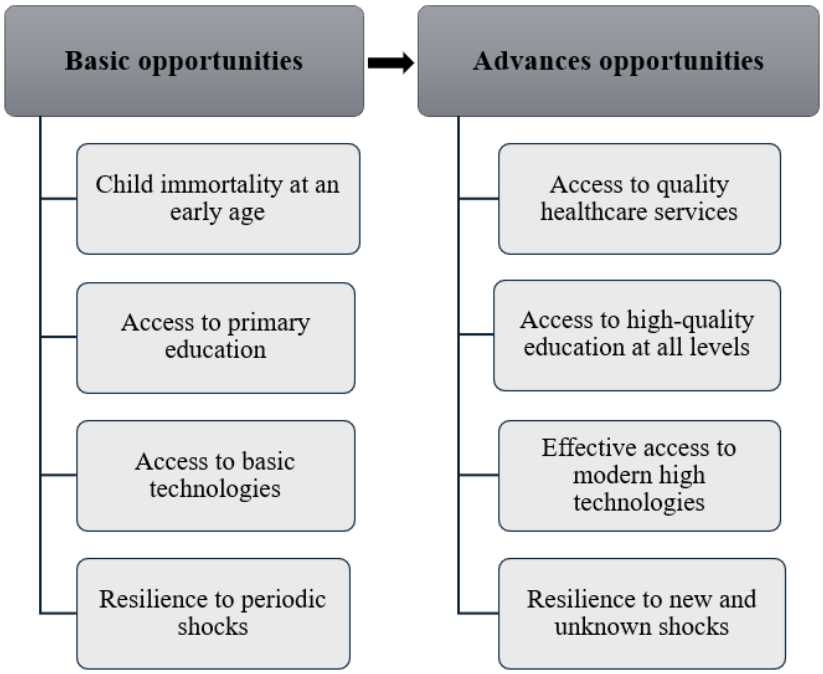



*Source:* created by the authors.

*Figure 1*. **New Approach of Evaluation Inequality in Human Development**

It is important to emphasise that, in order to understand the significant and growing disparities among the countries of the Baltic Sea Region, this study that builds on previous research firmly maintains the position that analysis must go beyond average indicators. This approach is consistent with the perspectives of Stiglitz, Sen, and Fitoussi (2010), Deaton (2013), and is reflected in the methodological principles of the UNDP (2019). When analysing the issue of inequality, it is important not to limit the focus solely to income and consumption inequality. It is more appropriate to move beyond these boundaries and concentrate on inequality in human capabilities, which holds far greater significance. This study emphasises both basic and advanced capabilities. Full alignment is found with the perspective of Nobel Laureate Amartya Sen (1980, 2009) and experts at UNDP, who argue that it is not enough to reduce only basic inequality, thus disregarding the gap in advanced capabilities undermines the realisation of human potential. These include access to healthcare, access to education, and opportunities to earn a livelihood. Human development reflects the expansion of individual freedoms and enhanced opportunities for people to shape their own life paths based on personal values and goals, rather than following a limited set of externally prescribed options.

Today, having only a basic set of capabilities, those associated with extreme deprivation, is no longer sufficient. Advanced capabilities have become a decisive factor in enabling people to independently choose meaningful and self-directed life trajectories (Figure 2).




*Source:* created by the authors.

*Figure 2.* **Human Basic and Advances Opportunities**

Basic capabilities include early childhood survival, access to primary education, access to basic technologies, and resilience to routine, recurring life difficulties. Advanced capabilities, in turn, comprise access to high-quality healthcare services, access to quality education, access to efficient modern high technologies, and resilience to new and unforeseen shocks. These capabilities provide individuals with greater freedom of choice and action in life. The transition from basic to advanced capabilities is reflected in the use of technology and the ability to cope with life's challenges. This evolution of human aspirations from ensuring basic needs to expanding advanced capabilities illustrates a shift from addressing elementary goals of human development toward goals focused on strengthening resilience.

The position of this article's authors fully aligns with the UNDP experts' view that economic growth is a means, not an end, in realising human potential. While economic growth is essential, especially in low-income countries, for a number of nations, increasing emphasis is placed not on total national wealth but on its individual components. What matters more is whether that wealth is distributed equitably, and whether it respects planetary boundaries, as these are the factors that truly expand human capabilities.

The HDI, based on income, in a certain sense reflects the resources that enable the realisation of basic human capabilities, which in turn serve as the foundation for developing advanced capabilities. These advanced capabilities, such as living a healthy life and acquiring quality education, hold intrinsic value. Unlike income or economic growth, these indicators are not only means to other ends, but also goals in themselves, which are central to a fulfilling human life. Human development is a process whose focus has never been limited to merely meeting basic needs. At its core is the expansion of human rights and freedoms, empowering individuals to choose their own path of development in accordance with their personal understanding of a meaningful life. This process is rooted in the expansion of individual freedom

of choice, where the person is responsible for their own life and is seen as a subject who acts, not as an object influenced by external forces.

The main focus of the empirical macro-level analysis lies in examining the impact of major threats, such as COVID-19, inequality in human capabilities, and planetary pressures on human development and resilience. For this purpose, the following indicators are utilised: the Human Development Index (HDI) (its structure and dynamics); the Inequality-adjusted Human Development Index (IHDI); and the Planetary Pressures-adjusted Human Development Index (PHDI), along with the structural components of these indices.

Two main levels of directions for strengthening resilience are distinguished. The first level focuses on concrete changes in the areas of investment, insurance, and innovation:

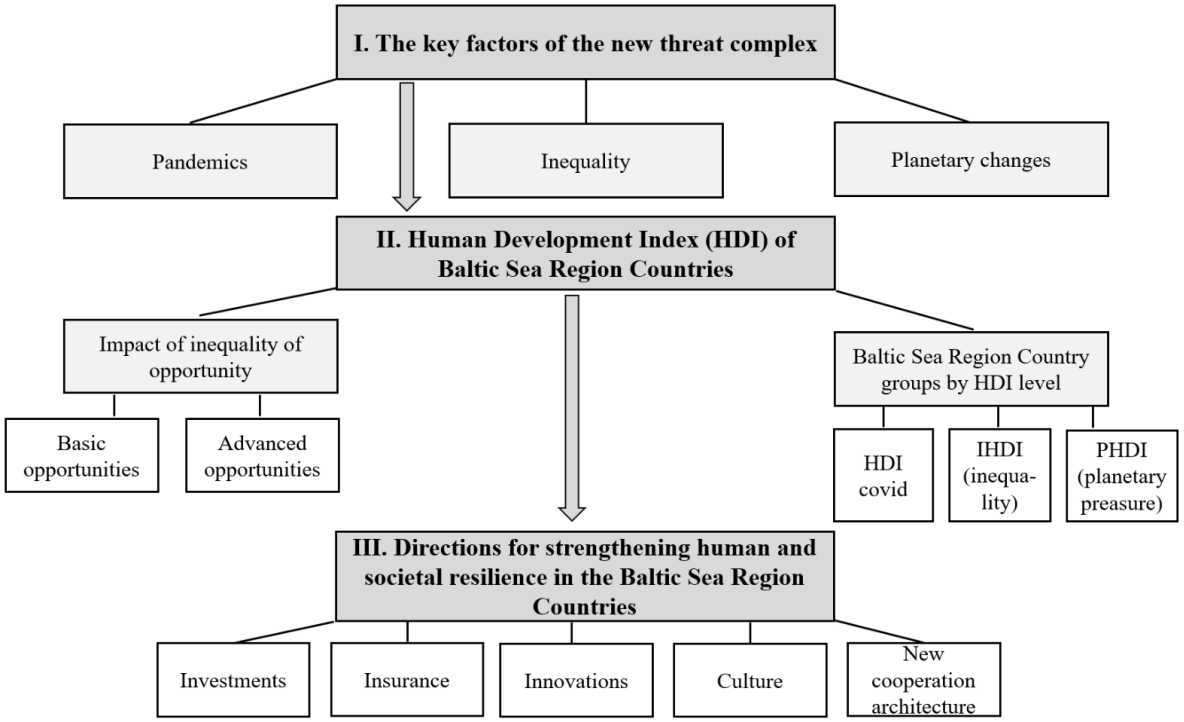
- Investment in the capabilities people need to create social, economic, and environmental conditions for human flourishing;
- Insurance to protect individuals from unavoidable and unforeseen circumstances during difficult periods, safeguarding their capabilities and fundamental freedoms (enhancing human security);
- Innovation for expanding opportunities, including those that may not yet exist today.

The second level is aimed at creating broader social and environmental conditions to support and embed these changes, highlighting the role of culture:

- Education, to strengthen freedom of action and empower individuals to shape their own future;
- Recognition of human rights, respect for individual dignity and human values, with the aim of transforming prevailing scenarios and narratives, thereby fostering trust in society;
- Empowerment and the right to voice, promoting active participation in social processes and expanding freedom of action, laying the foundation for a new architecture of cooperation.

The assumptions outlined above are reflected in the resilience-strengthening model proposed in this study for the countries of the Baltic Sea Region. The model consists of three blocks:

  - Block I: the key drivers of the new complex of threats;
  - Block II: their impact on the HDI across groups of BSR countries;
  - Block III: the strategic directions for strengthening resilience (*Figure 3*).




*Source:* created by the authors.

*Figure 3.* **A Research Model for Strengthening Human and Societal Resilience in the BSR Countries**

These assumptions provide the basis for understanding resilience as both an individual and societal capacity shaped by human potential, health, education, and equity. They highlight that resilience is not merely a reaction to crises but a condition that must be nurtured proactively through long-term investment and systemic change. In the context of growing risks and complex inequalities, strengthening resilience becomes a strategic priority for sustainable human development. The proposed model offers a structured path for analysing and enhancing resilience in the BSR.

## 4. Research Findings: Assessing the Impact of the Threat Complex on Human and Societal Resilience in the BSR Countries

### *4.1 The Impact of the COVID-19 Pandemic on Human Development in BSR Countries*

After the COVID-19 pandemic, its impact continued to be felt in countries for several years, and its consequences persist to this day. The pandemic disrupted the normal course of human activity worldwide, claiming millions of lives and exposing the vulnerability of countries, regardless whether they had high or low HDI scores. On the one hand, within a year, several vaccines against the COVID-19 virus were developed, which is undeniably a major scientific achievement. These vaccines saved hundreds of millions of lives. In 2021 alone, vaccination programmes prevented an estimated 20 million deaths (UNDP, 2022). On the other hand, access to vaccines was highly unequal, and critically low in some countries. In low-income countries, only 21% of the population, or roughly 1 in 5 people, were vaccinated, compared to 72% in high-income countries, or about 3 out of 4 individuals. This stark contrast highlighted severe inequalities in access to healthcare services. Moreover, even in developed countries, the use of vaccines faced challenges. Debates around vaccine effectiveness and public trust emerged, and within EU countries, a lack of solidarity became evident, further complicating coordinated responses to the health

crisis. Unequal and unjust access to vaccines is one of the clearest manifestations of capability inequality. Looking deeper, it was inequality itself that contributed to the spread of the pandemic. Social groups occupying the lowest positions in the income distribution were significantly more vulnerable and less resilient to health-related threats during the pandemic. A well-known example is the situation of women, who were more exposed than men due to their roles in caregiving and household responsibilities, areas that saw a notable rise in domestic violence during lockdowns. In addition, isolation measures further widened existing gaps in access to information technologies and quality education, particularly for those already disadvantaged.

During the COVID-19 pandemic, the key question was when it would end. Although the peak of the crisis subsided by 2023–2024, its consequences continue to be felt to this day. Recurrent waves of a deadly virus, its mutations, and ever-changing isolation regulations intensified individuals' sense of uncertainty, mistrust in the future, and feelings of disempowerment and lack of control over their lives. The pandemic struck suddenly and unexpectedly, leaving people unprepared and forcing them to search hastily for quick solutions under pressure. The pandemic significantly intensified the global sense of insecurity. Even after the height of the crisis, more than 6 out of 7 people worldwide continued to feel unsafe (UNDP, 2022). A paradoxical trend has been observed: despite ongoing socio-economic progress and rising HDI levels, feelings of insecurity, vulnerability, and a lack of control over one's life have grown stronger.

A deeper analysis of the impact of threats on human development within the group of EU countries with very high HDI scores, according to UNDP methodology, reveals important nuances. In light of the objectives of this research and the underlying dynamics of current processes, it is appropriate, within the Baltic Sea Region, to distinguish two country groups. These groups are characterized by (1) a shared HDI level; (2) similar development trends among countries; and (3) distinct features of HDI structure, reflecting different developmental trajectories and the varying intensity of threat-related consequences. The first group of BSR countries includes four countries with the highest HDI values, ranging from 0.930 to 0.936. This cluster is composed of long-standing EU Member States and regional leaders: Denmark, Sweden, Germany, and Finland. The second group of BSR countries encompasses the remaining four countries in the region, with average HDI values ranging from 0.865 to 0.883. This group consists of countries that joined the EU in 2004: Estonia, Poland, Lithuania, and Latvia.

When analysing HDI development trends and the impact of threats, it is important to compare the HDI indicators of EU countries with those of other countries around the world. For instance, Switzerland, which consistently ranks as the global leader in HDI, serves as a benchmark within the group of countries classified as having very high HDI (according to UNDP methodology). It is followed by Norway in second place and Iceland in third place globally. For a more comprehensive comparison, it is also useful to include an underperforming country from the low HDI group, such as Afghanistan, which ranks 182$^{nd}$ out of 193 countries worldwide. In parallel, global attention has recently been focused on China (ranked 75$^{th}$) and India (ranked 134$^{th}$), recognised as the fastest-growing economies globally. To better contextualise the situation of the BSR countries, comparisons should also be made with the United States, which ranks 20$^{th}$ globally and remains a global leader in both economic and technological development. According to the UNDP classification, the US is part of the very high HDI group. Special attention in the current geopolitical context is directed toward Ukraine, which is undergoing an armed conflict. Ukraine is ranked 100$^{th}$ globally and is classified by UNDP as a country with high HDI.

When analysing the HDI trends of the BSR country groups from 2015 to 2022, a significant progress in human development was observed across all countries in the region (*Table 1*). In Group I, which includes

the countries with the highest HDI, Denmark is ranked first. Over the indicated period, Denmark's HDI increased by 1.7%, rising from 0.936 in 2015 to 0.952 in 2022, placing it 5th globally. Within the same group, the most notable HDI ranking decline was recorded in Germany, which, despite maintaining a high HDI value (0.950), dropped three positions, falling from 4th to 7th place worldwide. Denmark, Sweden, and Finland represent countries whose global HDI rankings either advanced by one position or remained stable over the seven-year period. Similar trends are also evident in Norway and Iceland, which continue to be among the global HDI leaders. The decline in HDI rankings observed among some BSR countries during the 2015–2022 period is primarily attributable to the impact of the COVID-19 pandemic, which affected human and societal resilience through pressures on healthcare systems, education, and overall living standards, factors that were felt across all EU member states.

**Table 1. The Impact of COVID-19 on HDI Trends by BSR Countries Groups, 2015–2022**

| Country / Claster | HDI rank | Human Development Index (HDI) (value) | | | | | Change in HDI rank | The impact of Covid | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 2015 | 2019 | 2020 | 2021 | 2022 | 2015-2022 | 2020/2019 | 2021/2020 | 2022/2020 |
| **Group I** | | | | | | | | | | |
| Denmark | 5 | 0.936 | 0.946 | 0.946 | 0.947 | 0.952 | 1 | 0 | | |
| Sweden | 5 | 0.937 | 0.947 | 0.944 | 0.949 | 0.952 | 0 | -3 | | |
| Germany | 7 | 0.941 | 0.951 | 0.948 | 0.948 | 0.950 | -3 | -3 | | |
| Finland | 12 | 0.930 | 0.939 | 0.939 | 0.941 | 0.942 | 0 | 0 | | |
| **Group II** | | | | | | | | | | |
| Estonia | 31 | 0.883 | 0.893 | 0.891 | 0.890 | 0.899 | -2 | -2 | -1 | |
| Poland | 36 | 0.869 | 0.880 | 0.874 | 0.876 | 0.881 | -2 | -6 | | |
| Latvia | 37 | 0.853 | 0.873 | 0.873 | 0.865 | 0.879 | 2 | 0 | -12 | |
| Lithuania | 37 | 0.865 | 0.886 | 0.880 | 0.875 | 0.879 | -2 | -6 | -5 | |
| **The neighbouring non-EU countries in the region, where relevant and appropriate** | | | | | | | | | | |
| Norway | 2 | 0.952 | 0.961 | 0.963 | 0.964 | 0.966 | -1 | | | |
| Iceland | 3 | 0.948 | 0.958 | 0.955 | 0.957 | 0.959 | 0 | | | |
| **Other** | | | | | | | | | | |
| Switzerland | 1 | 0.952 | 0.960 | 0.957 | 0.965 | 0.967 | 0 | -3 | | 0 |
| United States | 20 | 0.924 | 0.933 | 0.923 | 0.921 | 0.927 | -5 | -10 | -2 | -5 |
| China | 75 | 0.741 | 0.775 | 0.781 | 0.785 | 0.788 | 18 | +6 | +4 | 18 |
| India | 134 | 0.619 | 0.638 | 0.638 | 0.633 | 0.644 | 4 | | | |
| Afghanistan | 182 | 0.479 | 0.492 | 0.488 | 0.473 | 0.462 | -8 | -4 | -15 | -11 |
| **World** | | **0.724** | **0.739** | **0.736** | **0.735** | **0.739** | | | | |

*Source:* UNDP (2023a).

In 2020, compared to 2019, a marked decline in the HDI was observed across all countries globally, including EU Member States, which is an evident result of the impact of the COVID-19 pandemic. The largest HDI losses were experienced by Spain, which dropped 10 positions in the global ranking; Italy, with a 7-position decline; and Belgium, which fell by six positions. The negative impact of the pandemic was felt in nearly all countries, with the exception of Ireland, whose HDI ranking improved by three positions, likely influenced by its relatively isolated geographic location. Importantly, by 2021, all countries had begun to

recover, and their HDI values exceeded 2020 levels. In fact, EU Member States implemented strict and generally effective measures to address the consequences of the COVID-19 crisis.

Describing the dynamics of Group II BSR countries, which have medium-high HDI values (ranging from 0.851 to 0.899), it should be noted that in absolute terms, the HDI of all countries in this group was significantly higher in 2022, as compared to 2015. However, over the 2015–2022 period, most of these countries dropped in global HDI ranking. This decline was particularly evident in Estonia (-2 positions), Poland (-2), and Lithuania (-2). In contrast, Latvia was the only country in this group to experience a ranking improvement, moving up by two positions.

These changes were strongly influenced by the COVID-19 pandemic, which affected this group of countries more severely than the countries in Group I. The most significant HDI ranking losses within this cluster were recorded in Lithuania and Poland, each dropping six positions. Other countries in the cluster were also negatively impacted, with ranking declines ranging from two to three positions. A key specific feature of this group is that the effects of the pandemic persisted into 2022, the second year after the initial outbreak, in half of the countries. For instance, Latvia's ranking dropped by 12 positions, Lithuania by 5, and Estonia by 1. Two main conclusions can be drawn. First, the cohesion policy within the BSR is not sufficiently effective, as HDI disparities among the countries remain evident. Second, the COVID-19 pandemic further deepened these inequalities, disproportionately affecting countries with medium and lower HDI, placing them in a more disadvantaged position compared to those with the highest HDI levels.

When comparing the BSR countries with other countries worldwide, inequality in human development within the BSR is not as stark as it is on a global scale. In many parts of the world, inequality is significantly more pronounced, and in some countries, the consequences of the COVID-19 pandemic continued to be felt even in the third year following the outbreak. The pandemic impacted even economically powerful nations. For example, the United States experienced a 5-position drop in HDI ranking between 2015 and 2022. The contribution of the pandemic was especially significant, with a 10-point drop in 2020 alone, followed by a further 2-point decline in 2021. Even Switzerland, a consistent global leader in HDI rankings, lost three positions due to the pandemic. However, the most severe consequences were clearly observed in Afghanistan and Ukraine. Afghanistan experienced a development setback of approximately a decade, while Ukraine's HDI dropped by 18 points, reaching its lowest level since 2004. In contrast, China achieved remarkable progress in human development. Between 2015 and 2022, China's HDI ranking improved by 18 positions. Notably, during the pandemic year of 2020 alone, its HDI ranking increased by 6 positions, followed by an additional 4-position rise in 2021.

The analysis of HDI in the BSR countries revealed the following key trends. First, during the period 2015–2022, progress in human development was achieved across BSR countries. However, this progress was accompanied by inequality between the two BSR country groups. The average HDI of Group I countries, with high HDI levels, reached 0.949, clearly exceeding the EU-wide HDI average of 0.876. In contrast, the average HDI of Group II countries stood at 0.845, falling below the EU average. Inequality was also evident within each group. For example, in Group I, the HDI difference between Denmark and Finland amounted to nearly 1.0%. In Group II, the difference between the highest and lowest-ranked countries in the cluster reached 2.0%. Second, the progress of BSR countries in human development was noticeably disrupted by the COVID-19 pandemic, whose impact varied across the region. Countries in Group I, with the highest HDI levels, demonstrated greater resilience to the effects of the pandemic. They recovered more quickly compared to countries of Group II, which required a longer recovery period due to their lower capacity to absorb and respond to systemic shocks.

### *4.2 The Impact of Inequality on Human Resilience*

*4.2.1 Inequality in Basic and Advanced Capabilities in BSR Countries*

When addressing the question of what kind of inequality matters most, Nobel Laureate Amartya Sen (1980) emphasised that human capabilities, freedom of choice, are fundamental. Capabilities form the foundation of human development, and therefore, one of the most important aspects in the study of inequality is inequality in capabilities. The authors of the present research fully support the perspective widely endorsed by global experts. Today, it is no longer sufficient to focus solely on a set of basic capabilities related to the elimination of extreme deprivation. In order for individuals to independently choose their own life paths, the decisive factor lies in the presence and accessibility of advanced capabilities.

Advanced capabilities expand personal freedom in life. Given that some capabilities are acquired progressively throughout a person's life, achieving a basic set, for example, obtaining primary and secondary education, establishes the foundation for developing more advanced capabilities in later stages. Similarly, the transition from basic to advanced capabilities is reflected in the ability to utilise modern technologies, or to cope with socio-economic shocks, moving from everyday challenges toward resilience in the face of major and unpredictable threats.

**Table 2. HDI and Its Components by BSR Countries Groups (2022)**

| Country / Claster | HDI rank | Human Development Index (HDI) | Life expectancy at birth | Expected years of schooling | Mean years of schooling | Gross national income (GNI) per capita | GNI per capita rank minus HDI rank |
|---|---|---|---|---|---|---|---|
| | | Value | (years) | (years) | (years) | (2017 PPP $) | |
| **Group I** | | | | | | | |
| Denmark | 5 | 0.952 | 81.9 | 18.8 | 13.0 | 62,019 | 6 |
| Sweden | 5 | 0.952 | 83.5 | 19.0 | 12.7 | 56,996 | 10 |
| Germany | 7 | 0.950 | 81.0 | 17.3 | 14.3 | 55,340 | 11 |
| Finland | 12 | 0.942 | 82.4 | 19.2 | 12.9 | 49,522 | 11 |
| **Group II** | | | | | | | |
| Estonia | 31 | 0.899 | 79.2 | 15.9 | 13.5 | 37.152 | 9 |
| Poland | 36 | 0.881 | 77.0 | 15.9 | 13.2 | 35,151 | 7 |
| Latvia | 37 | 0.879 | 75.9 | 16.6 | 13.3 | 32,083 | 13 |
| Lithuania | 37 | 0.879 | 74.3 | 16.4 | 13.5 | 38,131 | 2 |
| **The neighbouring non-EU countries in the region, where relevant and appropriate** | | | | | | | |
| Norway | 2 | 0.966 | 83.4 | 18.6 | 13.1 | 69,190 | 6 |
| Iceland | 3 | 0.959 | 82.8 | 19.1 | 13.8 | 54,688 | 16 |
| **Other** | | | | | | | |
| Switzerland | 1 | 0.967 | 84.3 | 16.6 | 13.9 | 69,433 | 6 |
| United States | 20 | 0.927 | 78.2 | 16.4 | 13.6 | 65,565 | -11 |
| China | 75 | 0.788 | 78.6 | 15.2 | 8.1 | 18,025 | 0 |
| India | 134 | 0.644 | 67.7 | 12.6 | 6.6 | 6,951 | -6 |
| Afghanistan | 182 | 0.462 | 62.9 | 10.7 | 2.5 | 1,335 | 2 |
| **World** | | **0.739** | **72.0** | **13.0** | **8.7** | **17,254** | |

*Source:* UNDP (2023a).

When analysing the HDI structural indicators of the BSR countries, it is essential to address key aspects such as inequality in access to basic and advanced capabilities. As outlined in the methodological section, basic capabilities include indicators such as early childhood survival, access to primary and secondary

education, access to basic technologies, and resilience to recurring life difficulties. In contrast, advanced capabilities refer to access to quality healthcare, high-level education, modern technologies and knowledge, and resilience to new and unpredictable shocks. Inequality in human development among and within BSR country clusters is shaped by differing levels of healthcare systems, education accessibility, technological access, and standards of living. These differences reflect the varying capacities for strengthening human potential and resilience. The concrete expression of these factors influencing human resilience is captured in the structural indicators of the HDI, namely, life expectancy at birth, expected years of schooling, mean years of schooling, and gross national income per capita (adjusted for purchasing power parity) (*Table 2*).

In the Group I BSR countries, life expectancy at birth is relatively high, consistently exceeding 80 years in all countries of this group, with an average of 82.2 years. In Group II, life expectancy remains below 80 years (average is 76.6 years), yet it still significantly surpasses the global average of approximately 72 years. When comparing BSR countries to other parts of the world, this indicator remains relatively strong. For instance, in the United States, life expectancy is 78.2 years, in China, it is 78.6 years, whereas in Switzerland (ranked first globally in HDI), it reaches 84.3 years. In contrast, Ukraine and Afghanistan reflect markedly low life expectancies: 68.6 years and 62.9 years, respectively. Based on life expectancy data, inequalities in access to healthcare services become apparent. Although access to healthcare in BSR countries is generally high, the differences in life expectancy between countries are significant. In Group I, the expected healthy life expectancy after the age of 65 is 11 years, while in Group II, it is 6.7 years. Globally, the average for survival beyond the age of 70 is 5 years.

Comparing basic and advanced capabilities among BSR countries highlights clear disparities (see *Appendix 1 Figure 4A*). The average life expectancy at birth, which is an indicator of basic health capabilities, is 6.4% higher in Group I than in Group II. However, the healthy life expectancy after age 65, representing advanced capabilities, is 64.2% higher in Group I than in Group II. Thus, while the inequality in basic health capabilities among BSR countries may be considered acceptable or manageable, the inequality in access to quality healthcare, reflected through advanced health capabilities, is particularly pronounced and underscores a deeper structural gap.

An analysis of basic and advanced education capabilities in the BSR countries reveals minor differences between the two groups. In terms of basic capabilities, measured by the mean years of schooling, Group I countries average 13.2 years, while Group II slightly exceeds this with 13.4 years. This indicates that the level of basic education is satisfactory and relatively equal across both groups. For comparison, the same indicator stands at 13.6 years in the United States, 8.1 years in China, and 11.1 years in Ukraine. Looking at advanced education capabilities, reflected in the expected years of schooling, Group I countries reach an average of 18.6 years, which is 2.4 years higher than the 16.2 years observed in Group II. Within Group I, the highest education expectations are found in Finland, Sweden, and Denmark, each averaging around 18.6 years. In contrast, Group II countries average 16.2 years. The global average for this indicator is 13 years. These figures demonstrate that access to education in the BSR is relatively high compared to the global context, although notable differences exist between countries, particularly regarding advanced educational opportunities.

According to global indicators of basic education, in countries with low HDI, only around 42% of adults have completed primary education, and merely 3.2% have attained higher education. In contrast, in countries with very high HDI, approximately 94% of the population has completed primary education, and 29% hold a higher education degree. This comparison underscores that access to both basic and advanced educational opportunities in BSR countries is relatively high, and inequality in this domain is far less

pronounced than on a global scale. However, when comparing access to technology across the two BSR country groups, a clearer inequality emerges between basic and advanced capabilities. Based on the share of the population with only basic digital skills, Group I stands at 67.6%, while Group II lags behind at 51.29%, which is below the EU average of 55.56%. At the same time, access to higher-quality technologies, such as internet usage, is very high across the BSR, covering almost the entire population: 96.4% in Group I countries and 90.11% in Group II countries.

It can be stated that the BSR countries exhibit a paradoxical phenomenon: inequality in basic capabilities is more pronounced than inequality in access to advanced, high-quality technological opportunities. This can be explained by the relatively high level of education characteristic of the Baltic countries in Group II, which supports broader access to advanced digital tools despite lower performance in basic digital skills. Simultaneously, income inequality remains significant across the BSR. The gross national income (GNI) per capita based on purchasing power parity (PPP) in Group I countries is 1.6 times higher than in Group II countries. Within Group I, the highest income level, exceeding the group's average, is observed in Denmark, where GNI per capita reaches $62,019. The causes of the current situation lie in and are revealed through the human development inequality among BSR countries, both between the two groups and within each group, as measured by HDI.

Despite the fact that good results have been achieved in the domain of basic capabilities across BSR countries, such as access to healthcare, primary education, and basic technologies, reflecting a certain level of preparedness and resilience to everyday life challenges, significant inequalities emerge when it comes to advanced capabilities. These include access to high-quality healthcare, quality higher education, and efficient advanced technologies, areas that determine a country's readiness to respond to unforeseen and complex future shocks. More developed countries, particularly the older EU Member States, are less affected by global disruptions, whereas countries with lower levels of development experience greater impacts, which in turn intensify existing inequalities. This divergence highlights the structural gap in resilience potential within the Baltic Sea Region.

In summary of the discussed points, several key conclusions can be drawn.To begin with, despite ongoing convergence in basic capabilities, a new generation of inequality is emerging, marked by the divergence of advanced capabilities. While inequalities in basic areas such as life expectancy at birth are diminishing, disparities in access to advanced capabilities, which reflect life aspects of growing importance for the future, are increasing. These include opportunities tied to human rights, personal freedoms, and the ability to respond to future challenges. People who nowadays enjoy broader rights and capabilities are better equipped to overcome obstacles, manage stress, and adapt in the face of uncertainty.

Moreover, manifestations of inequality accumulate throughout the life course and often reflect a deep imbalance of power. These inequalities are less about the causes of injustice and more about its long-term consequences, driven by entrenched social, economic, and political structures, such as the accumulation of privilege over time. Traditional policy tools, effective in the 20$^{th}$ century, are no longer sufficient to reduce inequality. It is under these very conditions that the imbalance of forces has deepened, further reinforcing inequality.

Furthermore, the assessment of inequality in human development requires a new perspective and updated measurement approaches. The new generation of inequality demands a new generation of indicators. More precise concepts, advanced analytical tools, and a more nuanced and sensitive understanding of contemporary dynamics are necessary to properly capture these processes. In addition, the elimination of inequality in human development in the 21$^{st}$ century is possible, but only if action is taken now, before the imbalance of economic power transforms into entrenched political dominance. Reducing inequality in basic capabilities is not enough; it is essential to also address the growing gap in advanced capabilities, as these are the key to fully realising human potential.

*4.2.2 Human Inequality*

The highest Human Inequality Coefficient, which reflects inequality in life expectancy, education, and income, is observed in the Group II of BSR countries. This is primarily due to the pronounced income inequality, a characteristic feature of this group, whereas educational inequality is less significant. In contrast, Group I countries demonstrate lower and more balanced levels of human inequality across all three dimensions (*Table 3*).

**Table 3. Human Inequality and Its Components by BSR Countries Groups (2022)**

| Country / Claster | HDI rank | Human Development Index (HDI) | Coefficient of human inequality | Inequality in life expectancy | Inequality in education | Inequality in income |
|---|---|---|---|---|---|---|
| | | Value | | (%) | (%) | (%) |
| **Group I** | | | | | | |
| Denmark | 5 | 0.952 | 5.6 | 3.1 | 2.6 | 11.0 |
| Sweden | 5 | 0.952 | 7.6 | 2.5 | 3.4 | 16.9 |
| Germany | 7 | 0.950 | 7.1 | 3.3 | 3.8 | 14.3 |
| Finland | 12 | 0.942 | 5.8 | 2.6 | 2.1 | 12.8 |
| **Group II** | | | | | | |
| Estonia | 31 | 0.899 | 6.9 | 3.2 | 1.9 | 15.7 |
| Poland | 36 | 0.881 | 9.3 | 3.9 | 4.2 | 19.8 |
| Latvia | 37 | 0.879 | 8.3 | 4.2 | 1.8 | 19.0 |
| Lithuania | 37 | 0.879 | 9.1 | 4.2 | 2.9 | 20.4 |
| **The neighbouring non-EU countries in the region, where relevant and appropriate** | | | | | | |
| Norway | 2 | 0.966 | 6.3 | 2.4 | 2.3 | 14.3 |
| Iceland | 3 | 0.959 | 5.0 | 2.2 | 2.2 | 10.7 |
| **Other** | | | | | | |
| Switzerland | 1 | 0.967 | 7.6 | 3.0 | 2.0 | 17.7 |

*Source:* UNDP (2023c).

Inequality in life expectancy across BSR country groups and within countries is relatively minor and consistent, indicating substantial progress in this area throughout the region. Among BSR countries, Lithuania stands out with a Human Inequality Index of 9.1%, driven mainly by high income inequality (20.4%), while inequality in education, representing advanced capabilities, remains low at 2.9%, close to that of highly developed countries such as Finland (2.1%) and Denmark (2.6%), which show an overall low human inequality and acceptable income disparities. In comparison to the global average, where the Human Inequality Coefficient reaches 21.7%, the BSR countries do not exhibit extreme inequality overall, although several countries in the region demonstrate higher inequality levels than the most advanced countries. For example, in Switzerland, the coefficient is just 7.6%. In the United States, the figure is 10.7%, with very high income inequality (23.9%), despite low educational inequality (2.6%). In China, both dimensions are strongly unequal, as the income inequality reaches 30.3%, and educational inequality is at 15.3%. The situation is even more severe in Afghanistan, where income inequality is among the highest globally (34.2%), and educational inequality exceeds all limits at 48.8%, reflecting extremely pronounced inequality in both basic and advanced capabilities.

Human inequality trends in the BSR countries reveal specific patterns. Countries in Group I demonstrate the greatest access to healthcare, education, and income opportunities. In these highly developed countries with the highest HDI, income inequality is the primary driver of overall human inequality. In contrast, educational inequality is significantly lower, and inequality in life expectancy is the least

pronounced among the three dimensions. This suggests that in Group I countries, both basic and advanced human capabilities are generally well ensured. In adidition, income-generation opportunities are broader in these countries compared to others in the region.

The situation in Group II is noticeably less favourable. These countries exhibit higher inequality in life expectancy and income, although they show lower inequality in education. A distinct characteristic of Group II countries is their relatively high access to education, yet this is accompanied by substantial income inequality. This contrast between the groups highlights the importance of income distribution in shaping human inequality in the BSR. While educational access has improved broadly, unequal income opportunities continue to deepen disparities, especially in countries with medium HDI levels.

*4.2.3 Income Inequality*

It is important to emphasise that in all BSR countries, income inequality continues to have a significant impact on overall human inequality. However, as shown in previous research, certain countries exhibit excessive income inequality, exceeding what could be considered normal or justifiable disparity. For example, Lithuania ranks among the most unequal countries in the region, with a Gini coefficient of 36.0%, placing it in the group of inequality outliers. More recently, Bulgaria has surpassed Lithuania with a Gini index of 40.5%. Between 2010 and 2022, in Lithuania, the top 10% of earners captured 28.5% of total income, while in Bulgaria, this share reached 32.6%. In terms of income concentration among the top 1%, the highest values are observed in Estonia (16.3%) and Poland (15.2%), highlighting notable imbalances in income distribution within several BSR countries (*Table 4*).

**Table 4. Income Distribution by Poorest and Richest of EU Countries Groups (2022)**

| Country / Claster | HDI rank | Income shares held by (%) | | | Gini coefficient |
|---|---|---|---|---|---|
| | | Poorest 40 percent | Richest 10 percent | Richest 1 percent | |
| | | 2010–2022 | 2010–2022 | 2021 | 2010–2022 |
| **Group I** | | | | | |
| Denmark | 5 | 234 | 22.9 | 13.4 | 27.5 |
| Sweden | 5 | 22.0 | 22.4 | 11.7 | 28.9 |
| Germany | 7 | 20.9 | 25.2 | 13.3 | 31.7 |
| Finland | 12 | 23.5 | 22.6 | 11.8 | 27.1 |
| **Group II** | | | | | |
| Estonia | 31 | 21.1 | 23.5 | 16.3 | 30.7 |
| Poland | 36 | 22.3 | 23.1 | 15.2 | 28.8 |
| Latvia | 37 | 18.6 | 27.5 | 8.6 | 35.7 |
| Lithuania | 37 | 19.0 | 28.5 | 12.5 | 36.0 |
| **The neighbouring non-EU countries in the region, where relevant and appropriate** | | | | | |
| Norway | | | | | |
| Iceland | | | | | |
| **Other** | | | | | |
| Switzerland | 1 | 19.9 | 25.8 | 9.9 | 33.1 |
| United States | 20 | 16.6 | 30.1 | 19.0 | 39.8 |
| China | 75 | 18.2 | 29.4 | 15.7 | 37.1 |
| India | 134 | 20.0 | 27.8 | 21.7 | 34.2 |
| Afghanistan | 182 | .. | .. | 16.2 | .. |
| **World** | | 18.4 | 29.4 | 17.5 | |

*Source:* UNDP (2023c).

The United States stands out as one of the countries with the highest levels of income inequality globally. When comparing EU countries to others worldwide, the top 1% of earners in the US hold 19.0% of total income, while the top 10% control 30.0%. In stark contrast, the poorest 40% of the population receive only

16.6% of total income. At the other end of the spectrum, Ukraine is currently among the poorest countries, where 40% of the population, a significant share, has access to just 24.3% of total income.

These figures illustrate that globally, income inequality remains extreme. In comparison, income inequality in the BSR countries is significantly milder, particularly in Group I countries, where opportunities to earn income are broader. This not only supports more equitable income distribution, but also lays the foundation for stronger access to advanced human development opportunities.

*4.2.4 The Impact of Inequality on the Human Development Index*

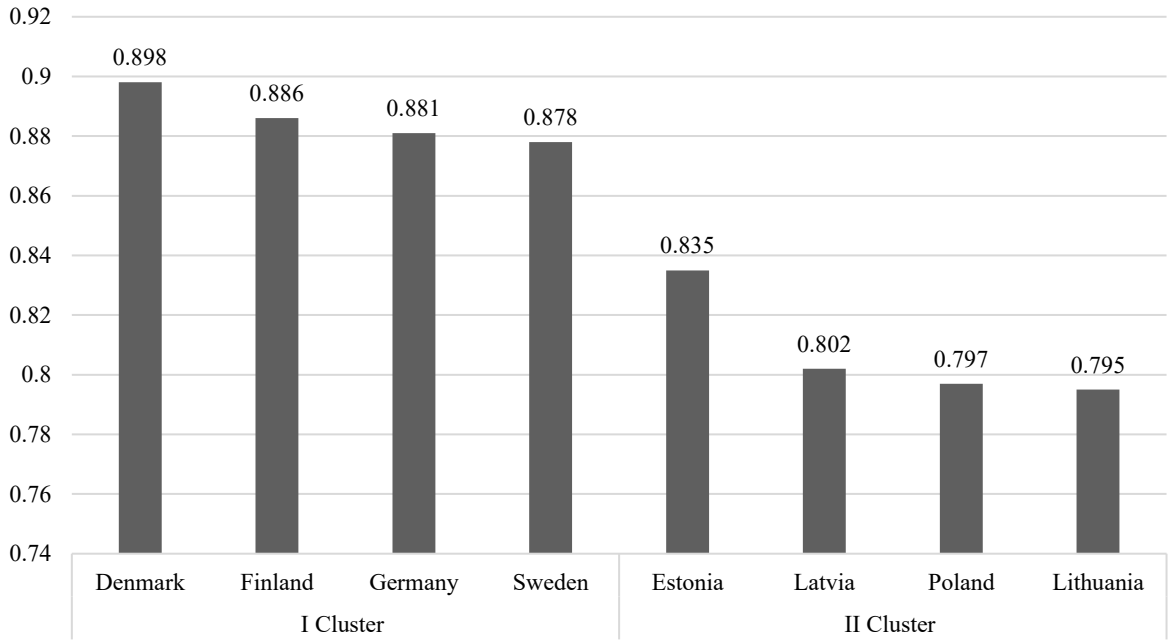
Human development in the BSR countries incurs losses due to inequality, as indicated by the IHDI when compared to the standard HDI (see *Table 5*). Among the Group I countries, Denmark (5.7%) and Finland (5.9%) experience the smallest losses due to inequality. These figures significantly alter the countries' rankings based on HDI. For example, Sweden, despite relatively moderate inequality, drops by five positions, with an IHDI-to-HDI difference of 7.8%. Conversely, Finland's ranking improves by seven positions under the IHDI. These shifts reflect previously discussed outcomes in access to both basic and enhanced capabilities. Group I countries are characterised by a higher degree of equality in extended opportunities, particularly in access to quality healthcare and education. In contrast, Group II countries show greater losses due to inequality, with Lithuania (9.6%) and Poland (9.5%) standing out. These losses are primarily driven by pronounced income inequality, resulting in a decline of four and three ranking positions respectively. Nevertheless, both countries have achieved notable results in terms of access to education, which mitigates the overall impact of inequality on human development.

**Table 5. Inequality-adjusted Human Development Index and Its Components by BSR Countries Groups (2022)**

| Country / Claster | HDI rank | Human Development Index (HDI) | Inequality-adjusted HDI (IHDI) | | |
|---|---|---|---|---|---|
| | | Value | Value | Overall loss (%) | Difference from HDI rank |
| **Group I** | | | | | |
| Denmark | 5 | 0.952 | 0.898 | 5.7 | 2 |
| Sweden | 5 | 0.952 | 0.878 | 7.8 | -5 |
| Germany | 7 | 0.950 | 0.881 | 7.3 | -2 |
| Finland | 12 | 0.942 | 0.886 | 5.9 | 7 |
| **Group II** | | | | | |
| Estonia | 31 | 0.899 | 0.835 | 7.1 | 6 |
| Poland | 36 | 0.881 | 0.797 | 9.5 | -3 |
| Latvia | 37 | 0.879 | 0.802 | 8.8 | 2 |
| Lithuania | 37 | 0.879 | 0.795 | 9.6 | -4 |
| **The neighbouring non-EU countries in the region, where relevant and appropriate** | | | | | |
| Norway | 2 | 0.966 | 0.903 | 6.5 | 0 |
| Iceland | 3 | 0.959 | 0.910 | 4.1 | 2 |
| **Other** | | | | | |
| Switzerland | 1 | 0.967 | 0.891 | 7.9 | -3 |

*Source:* UNDP (2023c).

The IHDI criterion introduces significant changes and a completely different ranking order among the BSR countries.




*Source:* UNDP (2023c).

*Figure 5.* **BSR Groups with the Highest and Lowest HDI**

Among the countries with the highest IHDI are Denmark (0.898), Finland (0.886), and Germany (0.881) (*Figure 5*). When compared to global indicators BSR countries are performing notably better, as the average loss between HDI and IHDI worldwide stands at 22.1%, with a global average IHDI of only 0.576,. For example, in China, human development losses due to inequality amount to 16.0%, and in Afghanistan, they reach as high as 35.1%. In contrast, BSR countries show an average loss of just 8.1%. However, relative to the most developed countries, such as Switzerland (losses of 7.9%, IHDI of 0.891) and the United States (losses of 11.2%, IHDI of 0.823), certain states in the BSR Group II reveal a noticeable lag in human development when adjusted for inequality. Moreover, substantial disparities remain between Group I and Group II countries in the BSR with respect to IHDI values at the national level. On average, losses due to inequality in Group II BSR countries are 31.3% higher than in Group I countries. When compared to leading nations such as Norway and Iceland, the losses in Group II countries are approximately 66% greater.

### *4.3 The Impact of Planetary Pressures on Human Development in BSR Countries*

Planetary pressures, which are environmental burdens triggering dangerous changes for humanity and all life forms, are increasingly interlinked with social imbalances, creating a feedback loop. Various forms of inequality are intensifying, while climate change exacerbates other critical social challenges, such as declining social mobility, growing instability, and societal fragmentation. A defining feature of the current era is the continuous transition from one crisis to another. Scholars argue that we are witnessing the emergence of a new reality: the Anthropocene, a proposed geological epoch in which humans have become the dominant force shaping the planet's future. The trajectory of that future depends on human choices. The PHDI modifies the traditional HDI to reflect environmental sustainability. First, it introduces a metric tailored to the realities of the Anthropocene. Second, it serves as a central tool for assessing human development in the context of reducing planetary pressure.

In the BSR, when adjusted for planetary pressures, countries experience tangible declines in human development scores. The PHDI illustrates how environmental degradation reduces actual progress. Notably, on a global scale, countries with lower HDI levels generally exert less environmental pressure than high-HDI countries. However, within the BSR, planetary pressures are relatively similar across both high and medium-HDI country groups, indicating that environmental burdens are not solely a function of economic development but also of policy choices and consumption patterns.

**Table 6. Planetary Pressures-adjusted Human Development Index**

| Country | Human Development Index (HDI) | Planetary pressures-adjusted HDI (PHDI) | | | Adjustment factor for planetary pressures | Carbon dioxide emissions per capita (production) | Carbon dioxide emissions (production) index | Material footprint per capita | Material footprint index |
|---|---|---|---|---|---|---|---|---|---|
| | | Value | Difference from HDI value (%) | Difference from HDI rank | Value | (tonnes) | Value | (tonnes) | Value |
| **Group I** | | | | | | | | | |
| Denmark | 0.952 | 0.839 | 11.9 | 2 | 0.881 | 5.1 | 0.934 | 24.2 | 0.828 |
| Sweden | 0.952 | 0.839 | 11.9 | 2 | 0.881 | 3.7 | 0.952 | 26.7 | 0.811 |
| Germany | 0.950 | 0.833 | 12.3 | 1 | 0.876 | 8.1 | 0.894 | 19.9 | 0.859 |
| Finland | 0.942 | 0.787 | 16.5 | -12 | 0.835 | 6.9 | 0.911 | 33.9 | 0.760 |
| **Group II** | | | | | | | | | |
| Estonia | 0.899 | 0.766 | 14.8 | -8 | 0.852 | 7.8 | 0.898 | 27.3 | 0.806 |
| Poland | 0.881 | 0.780 | 11.5 | 3 | 0.885 | 8.6 | 0.887 | 16.5 | 0.883 |
| Latvia | 0.879 | 0.782 | 11.0 | 7 | 0.890 | 3.9 | 0.950 | 23.9 | 0.830 |
| Lithuania | 0.879 | 0.748 | 14.9 | -10 | 0.851 | 5.0 | 0.935 | 32.8 | 0.767 |
| **The neighbouring non-EU countries in the region, where relevant and appropriate** | | | | | | | | | |
| Norway | 0.966 | 0.808 | 16.4 | -12 | 0.837 | 7.6 | 0.901 | 32.1 | 0.772 |
| Iceland | 0.959 | 0.806 | 16.0 | -14 | 0.841 | 9.5 | 0.876 | 27.4 | 0.805 |
| **Other** | | | | | | | | | |
| Switzerland | 0.967 | 0.826 | 14.6 | -6 | 0.854 | 4.1 | 0.946 | 33.6 | 0.761 |
| United States | 0.927 | 0.740 | 20.2 | -30 | 0.798 | 14.9 | 0.805 | 29.3 | 0.792 |
| China | 0.788 | 0.679 | 13.8 | -22 | 0.862 | 8.0 | 0.896 | 24.3 | 0.828 |
| India | 0.644 | 0.625 | 3.0 | 7 | 0.971 | 1.9 | 0.975 | 4.8 | 0.966 |
| Afghanistan | 0.462 | 0.459 | 0.6 | 1 | 0.994 | 0.3 | 0.996 | 1.2 | 0.992 |
| **World** | **0.739** | **0.685** | **7.3** | **–** | **0.926** | **4.5** | **0.941** | **12.5** | **0.911** |

*Source:* UNDP (2023d).

For the BSR countries in Group I with the highest HDI, the difference between HDI and the Planetary-adjusted HDI (PHDI) is generally modest (see *Table* 6). However, the most significant losses in human development, when adjusted for planetary pressures, are observed in Finland. Despite its high HDI, Finland experienced a notable 16.5% reduction in its development index due to environmental impacts, resulting in a drop of 12 positions in the global ranking.

The average $CO_2$ emissions per capita in Group I countries stand at approximately 6.0 tonnes, and in Group II, they are similarly around 6.3 tonnes. The material footprint averages 26.2 tonnes in Group I and 25.0 tonnes in Group II. Although the BSR shows relatively small differences between its two clusters, unlike the stark contrasts observed globally between highly developed and less developed countries, development levels still influence emissions and footprint indices. Notably, countries with higher development levels tend to have lower planetary pressure indices, meaning that $CO_2$ emissions have a more substantial negative effect on their HDI. Conversely, countries where $CO_2$ emissions contribute less to HDI reduction tend to show higher raw emission levels.

The analysis of planetary pressures in the BSR reveals three key insights:

1) PHDI inequality among BSR countries is far less pronounced than among global country groups. For instance, while $CO_2$ emissions in the highest HDI countries globally are 24 times greater than in the lowest HDI group, the difference between Group I and Group II countries within the BSR is relatively minor.

2) The relationship between development level and planetary burden in the BSR differs from global trends. Notably, $CO_2$ emissions and material footprints are comparably distributed between the two clusters.

3) Contrary to global patterns, the average PHDI is higher in the BSR's lower-HDI Group II countries (6.3%) than in Group I (5.9%), suggesting a unique regional dynamic where less developed BSR countries exhibit slightly lower relative environmental burdens on their development outcomes.

Reducing planetary pressures compels us to recognise how deeply life on Earth, our biosphere, underpins everything that humans take for granted. Increasingly, the restoration and regeneration of the biosphere, not its depletion, must become a priority. This calls for a critical awareness of how society utilizes energy and raw materials, the extent to which renewable energy sources like solar power are truly inexhaustible, and the degree to which raw materials can be reused rather than discarded as waste that pollutes the environment. The accumulation of carbon dioxide in the atmosphere and plastic in the oceans are just two among many examples that highlight the risks we face.

Equally significant is the loss of biodiversity, which is often accompanied by a decline in cultural and linguistic diversity, both of which impoverish the fabric of society. Reconciling human well-being with the reduction of planetary burdens will only be possible if sufficient attention is paid to inequality, innovation, and the sustainable management of natural resources. These factors must be placed at the core of decision-making and redefined as central to what it means to live well.

In the context of the Anthropocene, it is essential to eliminate the deep divide between humanity and nature. Over the past decade and beyond, the world has faced a series of intersecting crises: a financial crisis, a climate crisis, an inequality crisis, the COVID-19 pandemic, and dangerous conflicts in various regions. Together, these developments pose serious threats to planetary sustainability. Traditional approaches have become increasingly ineffective, including the conventional understanding of human development, which now requires continual revision and adaptation in response to rapidly evolving global challenges. To navigate the turbulence of the Anthropocene era, it is essential to retain the foundational principles of human development while simultaneously building new frameworks that reflect emerging realities. Strengthening human resilience is now more crucial than ever. The central aim is to ensure that people can live lives they personally value and find meaningful, which becomes the guiding direction for enhancing both human development and societal resilience. This gives rise to a fundamental dilemma: as the future grows more uncertain, will humanity be capable of choosing new developmental pathways that expand human freedoms while reducing planetary pressure? Or will our lack of preparedness, and the absence of adequate tools to face unknown future risks, undermine this effort entirely?

Ecological threats to the future, such as floods, droughts, cyclones, rising temperatures, sea level rise, population growth, and water and food scarcity, reflect the unprecedented challenges of the Anthropocene epoch. In responding to these global risks, three key dimensions of human development come to the fore. First, the objective is not only to expand individuals' capabilities to lead lives they value,

but also to broaden the range of meaningful choices available to them. This calls for recognition of two additional core aspects of human development: representation, which refers to people's ability to participate in decision-making and make choices aligned with their preferences, and a value system, which encompasses the priorities and aspirations that define desirable and meaningful life paths.

Human development thus entails the expansion of rights and freedoms, enabling individuals to chart their own paths in pursuit of a fulfilling life based on their personal conceptions of well-being. It reflects an increase in substantive freedoms and enhanced opportunities for self-determined choices, grounded in personal values rather than externally prescribed trajectories. Particular attention must be devoted to the interaction between humans and the environment and to the rational management of the planet's natural resources. In the context of the Anthropocene, capabilities, representation, and value systems are inseparable dimensions of human development. However, it cannot be assumed that expanding individual capabilities will automatically reduce the planetary burden. Historical trends of the HDI indicate that countries with the highest HDI levels tend to exert a greater strain on planetary systems than those with lower HDI levels. The scale of resource extraction in highly developed nations results in elevated consumption of biomass, fossil fuels, and metal and non-metal ores, resources used to satisfy the final demand for goods and services both domestically and internationally. Similarly, expanding representation, i.e., involving more people with broader capabilities in decision-making, does not necessarily guarantee that these decisions will prioritise mitigating dangerous planetary changes.

The value system serves as the foundational framework shaping perceptions of what it means to live well. It defines the direction of life choices. Yet individuals cannot actualise these values without access to extended capabilities and the ability to participate meaningfully in governance and decision-making processes, that is, without representation. In order to navigate life paths under the conditions of the Anthropocene, humanity must strengthen capabilities, representation, and value systems. These elements are essential for reducing inequality, fostering innovation, and cultivating a culture of responsible and sustainable management of natural resources. Only by integrating these dimensions can society align human well-being with the long-term resilience of the planet.

## 5. Discussion: Strengthening Directions of Human and Society Resilience in the BSR

Globally, the focus is on understanding uncertainty and shocks not only as problems to be overcome, but also as opportunities and prospects for the future. The complex web of uncertainties creates new opportunities for success. Individuals are given new opportunities to use the potential cultivated in times of uncertainty. The experience gained encourages the development of new options that can enable further prosperity. To achieve better results, it is essential to expand the boundaries of conventional thinking. It is important to broaden the concept of human behaviour beyond mere well-being to include the crucial aspect of freedom of choice so that individuals can lead lives that are meaningful and important to them. Policies and institutions must move beyond the traditional view that individuals act solely according to their personal, private interests. While this view is relevant, it does not capture the totality of human activity. A new approach evaluates the influence of emotions and culture, analysing interpersonal interactions and the development of individual and community values. Their relationship with nature needs to be reformed, with cultural narratives serving as the basis for this change.

The authors recognise the intricate, meaningful and logically sound two-tiered framework proposed by UNDP specialists (UNDP, 2024) to mitigate deficits in uncertain times. This framework closely aligns with the resilience principles emphasised by the authors of this monograph. To overcome the deficits in uncertain times, the focus of the resilience concept proposed by the authors of the monograph relies on a

profound and logical two-tiered structure proposed by the UNDP experts. Weak institutions and policies lead to a mismatch between the social mechanisms designed to strengthen the population's resilience and individual capacities. Conversely, there is a cultural mismatch, a divergence between the values, beliefs, moral-ethical principles and social norms of the individual and the conditions and requirements necessary to cope with the difficulties of ambiguity. The first phase comprises targeted changes in the areas of investment, insurance and innovation, which are central to promoting advanced human development. Prosperity can be achieved in the midst of uncertainty. These three structural aspects can enhance the potential capabilities of individuals and their ability to cope with the uncertainties associated with major planetary changes, the unknown difficulties of transitional periods, inequality and polarization. The second phase aims to cultivate expansive social and environmental conditions conducive to change, highlighting the importance of culture and education. Cultural transformations can encourage investment, insurance and innovation. Education, social recognition and representation are mechanisms whose application drives cultural change and cultivates progressive values. Education is a powerful tool to cultivate reflective practices and critical thinking; it can inspire individuals to engage with climate change and the Anthropocene and empower them with the autonomy to influence and take responsibility for their own lives. Putting resilience strategies and policies into practice, the authors of the monograph describe concrete strategies and measures for implementing resilience policies to manage the complexity of uncertainties in epidemic response, reduce inequality, mitigate environmental pressures and their impact on climate change, avoid international conflict, and offer guidance for reducing energy inequality.

The authors also endorse the new architecture for global public services proposed by UNDP experts, which takes into account the realities of the 21st century and four critical areas for action. It takes into account the realities of the 21st century and four critical areas for action: planetary public goods to combat climate change amid the unique challenges of the Anthropocene; digital public goods to improve equity through innovative technologies for equitable human development; new and expanded financial mechanisms; and a redefined approach to international cooperation to complement humanitarian aid and conventional support for low-income countries.

The strengthening of human resilience, the future and the quality of life of the individual depend on the person himself. Individuals must learn to master difficult situations, striving for more than just adaptation. By utilising the experience gained as an advantage, they can direct their future towards greater achievement and prosperity. A basic prerequisite for human resilience is the autonomy to lead a life that is valuable, important and meaningful to the individual, as well as the ability to regulate and manage their behaviour accordingly. Greater potential, particularly through education, increases an individual's autonomy: the ability to act. However, this alone is not enough. Genuine individual agency requires liberation from social and institutional constraints that hinder the ability to act autonomously. In a culture characterised by weak social cohesion, minimal solidarity and pronounced individualism, and where people live in isolation, the ability to act collectively in response to threats or unpleasant events is significantly limited.

Social institutions and government support vulnerable populations in contexts characterised by strong community solidarity. In cultures with low solidarity, social institutions only offer support to specific social groups and never address several groups at the same time due to limited financial resources. Putting research into practice can help solve problems. Policy measures to strengthen personal and societal resilience should focus on three key areas: shock prevention, promoting human potential, and protecting choice. Particular attention must be paid to programmes that address all three dimensions simultaneously and strengthen the resilience of the individual.

At the micro level, the authors propose the following primary strategies for strengthening human resilience. First, it is suggested to increase human potential by investing in health, education and cultural promotion. Second, resilience should be strengthened through crisis preparedness. Third, it is proposed to adapt to and cope with emerging challenges. Fourth, lessons should be derived from experience to promote resilience in order to use this knowledge for further human progress and prosperity. In this context, the need to be prepared for unexpected emergencies and to use lessons learned as an advantage for future success and prosperity is emphasised.

The impact of crises can be effectively mitigated through proactive preparation and strategic responses to their consequences. By strengthening individual and collective resilience, communities can more effectively address unforeseen issues such as climate change and armed conflict, which often cause significant disruption to development. Building resilience requires promoting preparedness and strengthening capacity within community groups. Such programmes enable these communities to cope with shocks more effectively, reducing the risk of loss of life and resources while enabling faster recovery. Promoting inclusive communities and strengthening social cohesion, especially in conflict-affected regions, can reduce the risk of violence. In addition, the introduction of early warning systems and the establishment of organisations that prioritise human needs can significantly mitigate the impact of natural disasters. Given the global nature of the causes and effects of hazards, joint efforts and an improvement in international policy are urgently needed. Challenges such as pollution, climate change, natural disasters, pandemics, conflicts and economic crises transcend national borders and show that individual governments cannot address these problems independently. The effectiveness of global institutions in tackling these urgent problems is insufficient. To mitigate the impact of global shocks and respond quickly to crises, it is essential to improve coordination between international institutions and promote cooperation with national governments. National initiatives can be implemented more effectively with the support of international organisations. Consequently, a comprehensive global initiative must be launched to mitigate risks and increase resilience across all sectors.

Achim Steiner (UNDP, 2024) argues that in an increasingly polarized and alienated world, failure to engage in mutually beneficial international cooperation poses a significant threat to human welfare and security. National policies and measures of BSR countries alone cannot solve complex global challenges such as pandemic prevention, inequality reduction, climate change mitigation, international conflict management and regulation of digital technologies. These problems are closely interlinked and require comprehensive, integrated solutions that take into account the unique characteristics of nation states, including their interests, culture and mindset. Strategies of cooperative and collective action are a means for human growth to manage uncertainties and shocks, increase resilience and promote a peaceful and sustainable future.

The challenges of our time, which are characterised by uncertainties, shocks, and profound changes, require a paradigm shift in dealing with human and societal resilience. This study underscores the importance of promoting resilience not just as a defence mechanism, but as an essential strategy for empowerment and growth. By addressing vulnerabilities through investments in human potential, education, cultural values and equitable access to resources, societies in the BSR states can move from reactive to proactive approaches in dealing with uncertainty.

The resilience of individuals and communities depends on their autonomy, adaptability and ability to learn meaningful lessons from adversity. Building resilience requires collaborative efforts at multiple levels: local, national and global, with a focus on solidarity, innovation, and inclusivity. Given the increasing

interconnectedness of global challenges, the need for coherent, comprehensive strategies is becoming more urgent. This work not only sheds light on the theoretical and empirical foundations of resilience, but also offers actionable insights for policy makers, institutions and communities to tackle the complexity of the Anthropocene and create a sustainable, equitable future for all.

## Conclusions

The assessment of the resilience of BSR countries revealed a paradoxical trend in its dynamics, as socio-economic progress advances and HDI rises, there is a simultaneous increase in individuals' sense of insecurity, vulnerability, and inability to take control over their own lives. The progress in HDI across BSR countries has been noticeably disrupted by the emergence of a new set of threats, which has further intensified the public's sense of insecurity.

The development of the HDI in the BSR countries was significantly hampered by the COVID-19 pandemic, which affected the individual BSR states differently. The countries in the first group, which are characterised by the highest HDI, proved to be more resilient to the pandemic than the countries in the second group. The countries in the first group recovered more quickly from the effects of the pandemic than the countries in the second group, resulting in a longer recovery time. In the future, countries with a lower HDI could face obstacles to human growth.

The study of the structural indicators of the HDI in BSR countries highlights an important problem: inequality in access to basic and advanced possibilities. Differences in human development across and within BSR country groups are influenced by different levels of health care, educational access, technological availability, and differences in living standards. These variables represent the essential components that strengthen human potential and resilience: autonomy and the ability to lead a life that is meaningful and valuable to the individual. Addressing these inequalities is essential to creating a fairer society and improving the overall wellbeing of communities in the BSR.

Different patterns emerge in terms of human inequality in the BSR countries. Countries in Group I, which are characterised by exceptionally high HDI scores, have the best prospects in the areas of healthcare, education and income generation. Conversely, countries in Group II, which are characterised by a moderate HDI, have comparatively good access to educational resources; nevertheless, they face a significant wealth gap. Income inequality is considerable worldwide. Among BSR countries, however, this form of inequality is much less pronounced than in other regions. The countries in Group I of the BSR have a higher income potential, creating the basis for better prospects for advanced human development in these countries. This increased income potential not only strengthens economic stability, but also improves access to excellent education, healthcare and other vital services, thus strengthening the resilience and well-being of populations.

Human development in BSR countries is negatively affected by inequality, as revealed by the comparison between the inequality-adjusted IHDI and the HDI. The global average loss attributable to inequality reflects a greater degree of inequality at 22.1%, while the average loss in the BSR is comparatively lower at 8.1%. However, when looking at developed countries such as Switzerland (with a decline of 7.9%), Denmark and Finland (around 5%), this highlights the impact of inequality on human development within the BSR and underlines the persistent discrepancies between Baltic See States, pointing to the need for specific policy measures to correct these inequalities and promote more equitable development.

Human development in EU countries shows significant disadvantages when assessing the impact of planetary pressures, especially when analysed using the PHDI. The HDI declines significantly in all BSR groups. It is important to emphasise that the BSR countries exemplify a broader global trend, as countries with a lower HDI tend to have a lower environmental impact than developed countries with a higher HDI. This suggests that although the detrimental impact of human activity on the health of the planet is significant for all nations, the most developed countries often have a larger environmental footprint relative to their level of human development. This discrepancy underscores the urgent need for sustainable practices and policies to mitigate the adverse impacts of human activities, particularly in high HDI countries, and to promote human growth and environmental sustainability.

The study presents priority measures and strategies for strengthening the resilience of individuals and society from practical view. The focus is on understanding uncertainty and shocks not only as problems to be overcome, but also as opportunities and prospects for the future. The complex web of uncertainties creates new opportunities for success. Individuals are given new opportunities to use the potential cultivated in times of uncertainty. The experience gained encourages the development of new options that can enable further prosperity. To achieve better results, it is essential to expand the boundaries of conventional thinking. It is important to broaden the concept of human behaviour beyond mere well-being to include the crucial aspect of freedom of choice so that individuals can lead lives that are meaningful and important to them. Policies and institutions must move beyond the traditional view that individuals act solely according to their personal, private interests. While this view is relevant, it does not capture the totality of human activity. A new approach evaluates the influence of emotions and culture, analysing interpersonal interactions and the development of individual and community values. Their relationship with nature needs to be reformed, with cultural narratives serving as the basis for this change.

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## NAUJO GRĖSMIŲ KOMPLEKSO POVEIKIS ŽMOGAUS IR VISUOMENĖS ATSPARUMUI BALTIJOS JŪROS REGIONO ŠALYSE SUKRĖTIMŲ LAIKOTARPIAIS

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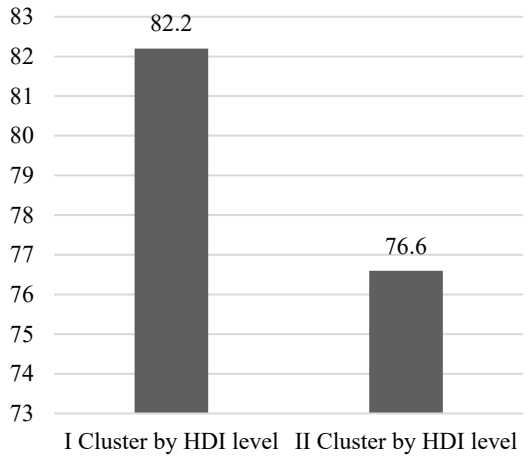
***Santrauka.*** Šiuolaikinį pasaulį vis labiau formuoja susikertančios grėsmės, tokios kaip pandemijos, socialinė ir ekonominė nelygybė, geopolitinė įtampa, klimato kaita ir technologinės rizikos. Šie iššūkiai kuria naujas neapibrėžtumo formas, kurios veikia tiek individus, tiek visuomenes. Šiame kontekste žmogaus ir visuomenės atsparumo stiprinimas tampa svarbia tvaraus vystymosi prielaida. Straipsnyje nagrinėjamas naujo grėsmių komplekso poveikis žmogaus ir visuomenės atsparumui Baltijos jūros regiono (BJR) šalyse sukrėtimų laikotarpiais. Tyrimo tikslas – įvertinti, kaip pagrindinės globalios grėsmės veikia žmogaus raidą ir atsparumą Baltijos jūros regiono šalyse bei nustatyti galimas atsparumo stiprinimo kryptis. Analizė apima dešimt regiono valstybių: Daniją, Švediją, Suomiją, Vokietiją, Estiją, Latviją, Lietuvą, Lenkiją, Norvegiją ir Islandiją. Tyrime remiamasi Jungtinių Tautų vystymo programos (UNDP) analitine sistema ir pasitelkti tokie rodikliai kaip Žmogaus raidos indeksas (ŽRI), Nelygybe pakoreguotas žmogaus raidos indeksas (IHDI) ir Planetos spaudimo pakoreguotas žmogaus raidos indeksas (PHDI). Tyrimo rezultatai rodo, kad nors žmogaus raida Baltijos jūros regiono šalyse apskritai gerėjo, tarp valstybių grupių išlieka reikšmingi skirtumai. Nelygybė ir didėjantis spaudimas planetos ištekliams mažina žmogaus raidos potencialą ir silpnina visuomenės atsparumą, o aukštesnio išsivystymo lygio šalys pasižymi didesniu gebėjimu atlaikyti sukrėtimus. Tyrimo rezultatai pabrėžia nelygybės mažinimo, žmogaus potencialo stiprinimo bei socialinės, ekonominės ir aplinkos politikos integracijos svarbą, siekiant kurti atsparesnes visuomenes Baltijos jūros regione.

*Reikšminiai žodžiai:* žmogaus atsparumas; visuomenės atsparumas; Baltijos jūros regionas; žmogaus raida; nelygybė; planetos spaudimas.

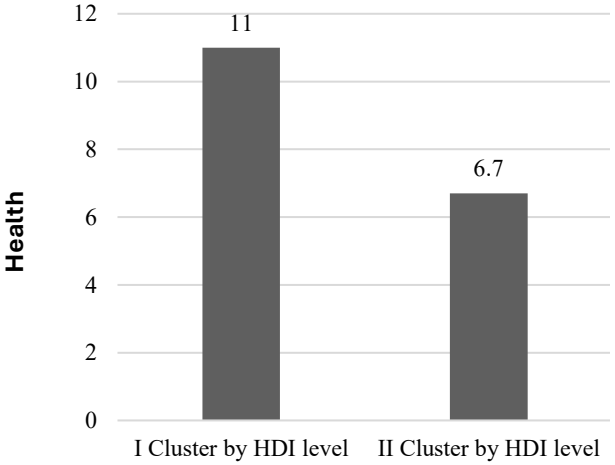
**Appendix 1**

| Basic opportunities | Advanced opportunities |
|---|---|

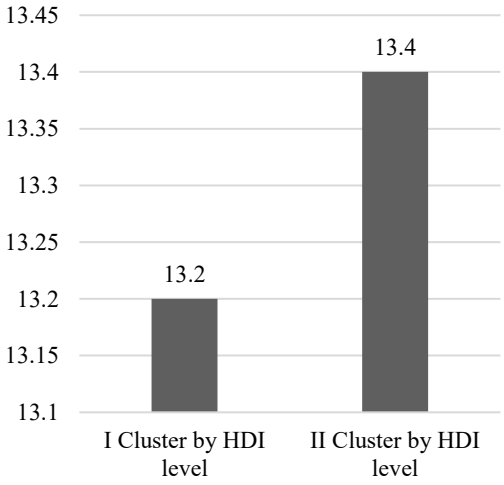
Life expectancy at birth (years) in 2022



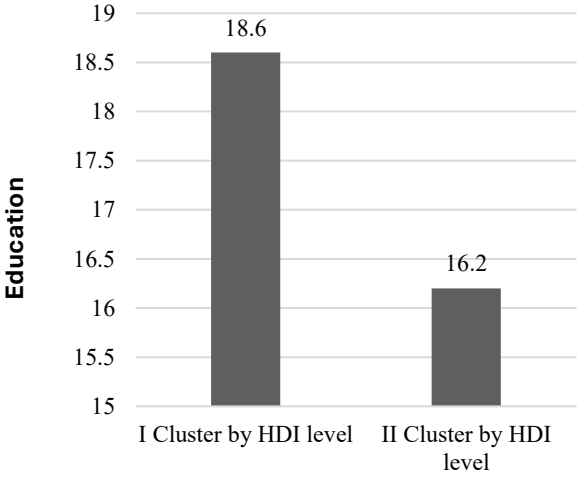

Healthy life expectancy (years) after age 65 in 2021




Number of years of basic education 2023

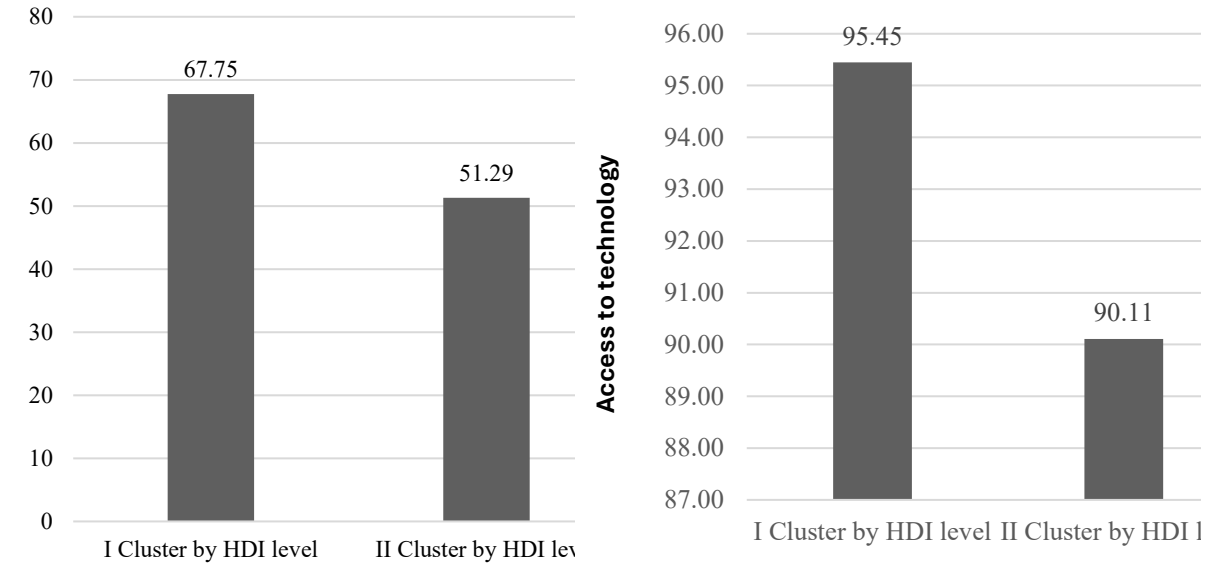



Expected duration of education (in years), 2023




Basic digital skills (%), 2022

Number of fixed broadband Internet subscribers in percent, per 100 inhabitants in 2022




*Source:* UNDP (2023b).

*Figure 4A.* **Inequality in Basic and Advanced Capabilities in EU Country Clusters by HDI**