



Institute for Human Rights



THE SUSTAINABLE DEVELOPMENT GOALS

How to Accelerate Their Achievement in North Macedonia and Leave No One Behind



Title:

The Sustainable Development Goals - How to Accelerate Their Achievement in North Macedonia and Leave No One Behind

Publisher:

United Nations Development Programme North Macedonia
(UNDP North Macedonia)

Edited by:

Marija Chekredji
Vesna Stefanovska
Kristina Doda

Institute for Human Rights

Proofreading:

Goran Tanaskov

Graphic design:

Bisera Atanasovska

Published:

Skopje, 2023

This publication is available at:

<https://www.undp.org/north-macedonia> | <https://ihr.org.mk/mk>

Publication commissioned by the UNDP country office in North Macedonia

The views expressed in this publication do not necessarily represent those of the United Nations, including UNDP, or the UN Member States.

TABLE OF CONTENTS

JOINT ACTION FOR THE SUSTAINABLE DEVELOPMENT GOALS [SDGS]

Armen Grigoryan 6

THE TRANSFORMATIVE POTENTIAL OF THE SDGS

Laurel Patterson 8

LEAVING NO ONE BEHIND IN OUR PURSUIT OF A JUST AND SUSTAINABLE WORLD

Institute for Human Rights 10



MAXIMIZING FINANCE FOR SUSTAINABLE DEVELOPMENT GOALS

Aleksandar Stojkov, Fatmir Besimi 11



BOOSTING HEALTH AND REVENUE: TOBACCO TAX HIKE FOR A SAFER, SMOKE-FREE FUTURE IN NORTH MACEDONIA

Tamara Mijovic Spasova, Bojana Mijovic Hristovska, Marija Trpkova-Nestorovska, Biljana Tashevskaa 21



SDG 4 (QUALITY EDUCATION) + SDG 13 (CLIMATE ACTION) = CLIMATE LITERACY HOW IS NORTH MACEDONIA SOLVING THIS EQUATION?

Radmil Polenakovikj 30



GENDER EQUALITY IN LAND OWNERSHIP AND CONTROL IN NORTH MACEDONIA: TOWARDS THE ACHIEVEMENT OF SDG 5

Veronika Efremova 39



THE ENERGY TRANSITION EQUATION: CITIZEN PARTICIPATION FOR A SUSTAINABLE AND RESILIENT FUTURE

Vanja Djinlev 49



A STUDY ON CIRCULAR ECONOMY AWARENESS AMONG STUDENTS IN NORTH MACEDONIA

Tatjana Drangovska, Marica Antovska-Mitev, Elena Mujoska Trpevska 58



FOSTERING SUSTAINABLE ECONOMIC GROWTH THROUGH YOUTH EMPLOYMENT, EDUCATION AND TRAINING: THE CASE OF THE REPUBLIC OF NORTH MACEDONIA

Katerina Shapkova Kocevskaa 69



TRANSPORT MODE PRACTICES AND EXTERNAL COSTS OF TRANSPORT IN THE REPUBLIC OF NORTH MACEDONIA

Zoran Krakutovski 81



WHAT MATTERS IS SOCIAL PROGRESS IN REDUCING INEQUALITIES

Fortesa Asani, Veli Kreci 91



TOWARDS SUSTAINABLE CITIES AND COMMUNITIES

Iva Petrunova 99



SOIL, FERTILIZERS AND COMBATING CLIMATE CHANGE

Vladimir Vuksanovikj, Slobodan Vuksanovikj **107**



THE MACEDONIAN CASE: MISUNDERSTANDING THE VALUE OF THE BIODIVERSITY AS A PUBLIC INTEREST

Kiril Arsovski **116**



CRITICAL PERSPECTIVES ON CLIMATE ACTION IN THE REPUBLIC OF NORTH MACEDONIA

Julija Brsakoska-Bazerkoska, Ljupcho Stojkovski **125**



ACCESS TO DIGITAL PUBLIC SERVICES: A PRIVILEGE OR A HUMAN RIGHT? PATHWAYS TO IMPROVING ACCESS TO DIGITAL PUBLIC SERVICES IN NORTH MACEDONIA

Tanja Paneva **134**

JOINT ACTION FOR THE SUSTAINABLE DEVELOPMENT GOALS [SDGS]

We are at the half-point to the deadline set for achieving the 2030 Agenda. The 17 sustainable development goals represent our collective commitment to address pressing challenges. The unwelcomed news is that ‘the world is off track on achieving the Sustainable Development Goals’, however what gives optimism is the ‘recognition that a fundamental shift is needed – in commitment, solidarity, financing, and action – to put the word on a better path’. Echoing the words of UNDP’s Administrator Steiner ‘In a world defined by uncertainty, we need a renewed sense of global solidarity to tackle our interconnected, common challenges’. Solidarity has been topic of interest for our UNDP country office in North Macedonia throughout 2023, when we opened a wide societal discussion about the renewed importance of solidarity in development work today. In this process, we collaborated with one of the leading think tanks in the country to jointly publish the first Compendium on Solidarity: from Overcoming crisis to Sustainable Development welcoming eminent professors, practitioners, young scholars, and students. These articles advocated for new ideas, ways of thinking useful not just to our UNDP country office, but also to public institutions.

Mid-September marked the international Summit dedicated to the SDGs, with the ambition to bridge the gap between the SDG ambition and our progress towards it. Leading up to the summit, North Macedonia was one of the countries that developed its own SDG Insights Report, a diagnostics of the SDG related trends in the country, its current priorities as well as interlinkages between different Goals. For our country, investing in human capital, creating more decent jobs, enhancing scientific research, managing more sustainably the natural resources, making the economy more sustainable, ensuring our decision making at all levels is inclusive, responsive, and participatory were just some of the ‘SDG interlinkages’ that reveal how actions directed towards one #SDG in North Macedonia can impact the goals in a holistic manner.

To enhance this conversation further we decided to continue with the practice of crowdsourcing ideas from people on how they believe we can design better policies and process that will allow us to address the development challenges of today and accelerate the achievement towards the SDGs. That is why we invited, all interested academics, practitioners, enthusiasts, young people and students to provide their diagnostics, insights and policy ideas on how we can move the Agenda 2030 forward and improve the status quo. It is a great pleasure to welcome all the authors to this publication and be a part of a process that creates space for new insights and ideas to shape the public discourse. I am particularly proud that this process is once again done in co-creation with one of the leading human rights organizations in the country, that has been a true partner to our team in this process. The diverse narratives within this compilation serve as both a source of inspiration and a call to action, urging each reader to consider their role in this process.

The UNDP country office in North Macedonia also works on multiple fronts towards accelerating the achievement of the SDGs. One process where we lend our support, is creating the National Development Strategy, a strategic document that aims to chart the country's development path for the next 20 years. This planning process is unique as its emphasis on citizens' active involvement. We also believe it will give the country a holistic programmatic push towards accelerating the Agenda 2030 and the journey of the country towards the European Union. We have also taken an integrated and holistic approach to addressing gender equality, particularly in terms of strengthening the institutional capacities for fighting digital gender-based violence, as well as in fulfilling national and international commitments to prevent and fight gender-based violence. Notably, we played a crucial role in facilitating the establishment of counseling centers for victims of gender-based violence in three municipalities, that offer a comprehensive range of services encompassing prevention, counseling, and crisis or post-traumatic intervention. The success of these critical services is attributed to the effective collaboration fostered through inter-municipal cooperation and close partnerships between municipalities and the civic sector. Our office over the years has initiated activities that promote development-oriented policies that support decent job creation, entrepreneurship, creativity and innovation, and has helped business survive and retain workers. UNDP has supported over 22,000 people to escape from poverty by supporting their activation on the labor market while 3500 people have been given trainings in skills to improve their prospect for employment. Finally, we are contributing towards achieving higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high value added and labor-intensive sectors: Assessment of several industries provides the needed know-how to bring the future skills needed, looking into potential of several industries for digital transformation. On air pollution, one of the great challenges the country is facing, UNDP has implemented a multipronged intervention to tackle the problem in the City of Skopje, focusing on the residential sector. Functional model for building low-emission districts was established, enabling 129 households to replace their old and inefficient heating devices, and to implement various energy efficiency measures.

The road to achieving the SDGs is long and winding, but it is a journey we must undertake together. Let this publication be a testament to the power of joint action—a declaration that by combining our strengths, wisdom, and resources, we can accelerate progress towards a world where no one is left behind. The SDGs 'carry the hopes, dreams, rights and expectations of people everywhere' stated the UN Secretary-General António Guterres, and it is our goal to bring them back to the forefront of policymaking in North Macedonia. Thank you for being a part of that journey with us.

Armen Grigoryan

UNDP Resident Representative in the Republic of North Macedonia

THE TRANSFORMATIVE POTENTIAL OF THE SDGS

Realizing transformative change amidst uncertainties and complexities requires infrastructures of connection and pathways of possibility. Earlier this year, UNDP set out to support countries in new commitments for the 2030 Agenda, and evidence based pathways to achieve the SDGs.

The UN Secretary-General reminds us that: “There are no perfect solutions in a perfect storm.” Our intention throughout the integrated SDG Insights initiative is to bring together the most important analysis so that we can tackle constraints head on – from the carbon intensity of growth pathways and restricted fiscal space - and seize opportunities to advance the SDGs.

The constraints countries are facing in their efforts to advance the SDGs are significant – and for most, growing. UNDP’s engagement with 95 countries found that most are trapped by the constant pressure to pursue economic growth at all costs. And ‘the growth we get’ is often driven by carbon-intensive fossil fuels, against the backdrop of soaring debt and domestic fiscal challenges. This default trajectory is therefore seeding further economic, social, political, and environmental turmoil and divergence.

On the other hand, the ‘development we want’, is based on mutually reinforcing forces for human and planetary well-being and is emerging through bold choices and courageous leadership. The ecosystem needed to enable this transformation involves lifting fiscal/financial constraints, but also strengthening institutional effectiveness, justice and governance.

And yet despite fiscal and financial constraints, and **despite** years of overlapping crises – there are signals of meaningful SDG transitions moving forward, including digital and energy trends that are moving in unsuspecting and transformative ways and multiplying the impact of SDG transitions. The connectivity revolution in the making: 5.3 billion people are connected today –connectivity was just 3.2 billion in 2015 and barely 1 billion in 2005 (UTI) –were young people aged 15 to 24 years of age are the driving force of connectivity with 75% coverage.

Renewable energy sources are also picking up speed. This year, renewables have added 107 gigawatts (GW), the largest absolute increase ever --which is more than the total power capacity of Germany and Spain combined. Solar and wind are leading the rapid expansion of the new energy sources. These are more than outliers or microtrends --they are opening new doors and crafting unforeseen futures thanks to the SDGs.

What holds progress back? Fiscal and financial constraints including challenges of debt overhang threatens to crowd-out social investment and energy transitions. 52 developing economies are in debt distress or at risk of high debt distress. 50 countries are expected to spend more than 10% of revenue on debt service this year¹, in low

income countries, economies are spending 2.3 times more on debt service than social assistance and 1.4 times more than health expenditures (UNDP global research).

Expansions of fiscal space alone is not enough; leading SDG transitions requires expanded policy space to make bolder decisions. The enabling environment for digital and green transitions includes institutional effectiveness, functioning justice systems and strong governance. SDG policy space is about enabling both intrinsic SDG goals like climate action and gender equality, but also instrumental goals that catalyze other dimensions of social, economic or environmental well-being.

Mapping hundreds of connections, UNDP's Insights Reports zeroed-in on key policy combinations that accelerate progress across multiple fronts. From decent work and effective institutions to resilient infrastructure and sustainable cities, countries are pinpointing the policy choices that have demonstrated multiplier effects – with the potential to maximize impact across the 2030 Agenda and target investment choices with the biggest return for people and planet.

Leveraging data and digital innovation, utilizing futures and systems methods, and grounding in national ownership and dialogue, this approach to the SDGs delivers something unique – these are 'playbooks' that combine strategy and tactics, and building the capabilities needed to navigate 21st century challenges.

The transformative potential of the SDGs doesn't exist in the halls of the UN – it is through building common ground to explore issues and their interconnections, building new movements of stakeholders to translate aspiration into policy choices, and to chart progress with robust evidence.

The SDGs are not only a declaration of the interdependence of our global community. They are fundamentally about the opportunities and choices that lie before us. In this moment of slow global recovery and multipolarity – under the threat of economic fragmentation and geopolitical rifts—**there has never been such a critical need to accelerate towards the ambition of the 2030 Agenda – to transform our world.**

Laurel Patterson

Head of the SDG Integration Portfolio in UNDP's Global Policy Network

LEAVING NO ONE BEHIND IN OUR PURSUIT OF A JUST AND SUSTAINABLE WORLD

In the pursuit of a better world, where every individual thrives and no one is left behind, we believe this publication can serve as an inspirational tool for achieving the Sustainable development Goals (SDGs) in North Macedonia. We, at the Institute for Human Rights, believe that the SDGs can serve as a roadmap towards a future where people live in harmony with the planet, fostering inclusive growth, and safeguarding the dignity and rights of every person.

This publication is composed of 14 articles, as a commitment, innovation, and dedication in advancing the SDGs.

Central to this pursuit is the unwavering principle of 'Leave No One Behind,' a cornerstone of the 2030 Agenda for Sustainable Development. It's a call to action, a commitment to ensure that the most vulnerable among us are not overlooked or marginalized in our journey towards progress.

Within these pages, the reader can find a profound exploration of the intersection between the achievement of SDGs and the promotion of human rights. The link between these two fundamental pillars underscores the importance of not only meeting development targets but doing so while upholding and protecting the rights and dignity of every individual.

We strongly believe that this publication will ignite conversations, spark collaborations, and inspire actions that will bring us closer to realizing the vision set forth by the Sustainable Development Goals, leaving no one behind and ensuring the protection and advancement of human rights for all.

We hope that together, we can continue this journey towards a more just, equitable, and sustainable future.

Institute for Human Rights

FINANCE



MAXIMIZING FINANCE FOR SUSTAINABLE DEVELOPMENT GOALS

Aleksandar Stojkov, PhD¹

Fatmir Besimi, PhD²

¹ Full Professor of Economics, Iustinianus Primus Law Faculty, University Ss. Cyril and Methodius in Skopje

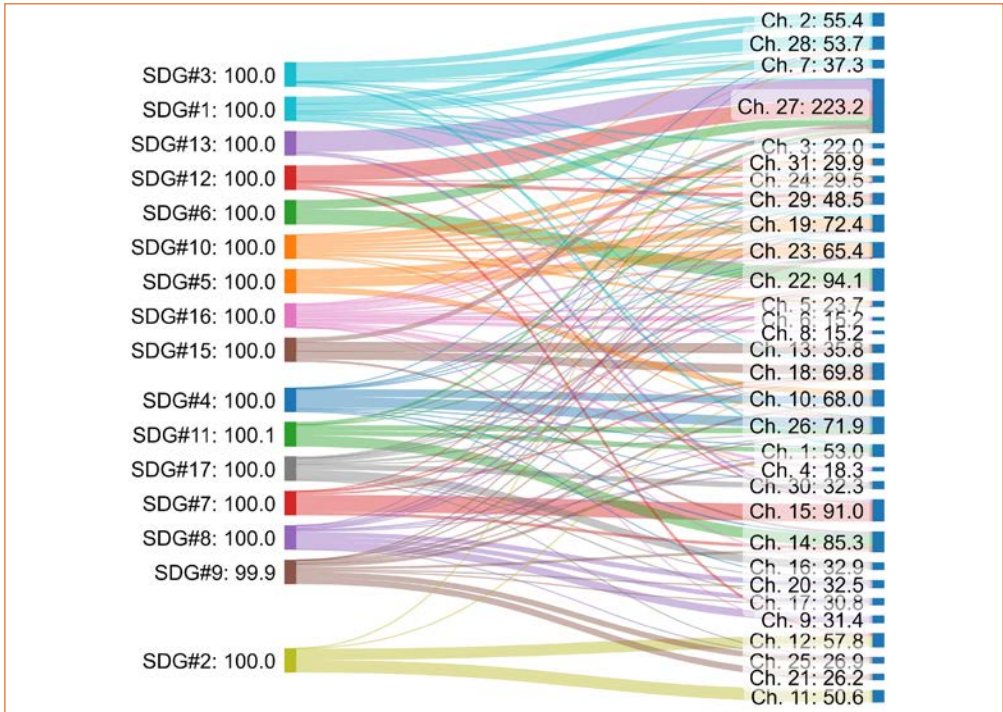
² Current Minister of Finance of the Republic of North Macedonia and Full Professor of Economics, Faculty of Business and Economics, University of Southeast Europe in Tetovo

1. INTRODUCTION

The initiatives for maximizing Sustainable Development Goals (SDGs) finance, optimizing the sustainable finance portfolio, or the “SDG Push” are only different perspectives on the concerted efforts of development partners (governments, International Financial Institutions (IFIs), non-governmental organizations (NGOs), businesses, etc.) to scale up SDG investment and achieve higher development outcomes. Existing mechanisms and instruments of financing of SDGs have generally been found to be insufficient to promote higher attainment of the SDGs (United Nations, 2023)¹. For instance, they do not mobilize sufficient private capital for the priority areas. Additionally, there has been some backsliding and reversals in development outcomes during the overlapping and cascading crises (pandemic, energy crisis, heightened inflation, and ongoing geopolitical conflicts).

While the initially crafted SDGs in 2015 were largely aspirational, nevertheless, they provided a guiding light for the economies about the expected major overhaul of the development model and a genuine generational contribution to the sustainable human-centered development. Content-wise, they also display a high degree of complementarities and synergies with the EU accession process (Figure 1).

Figure 1. Interlinkages between EU negotiating chapters and SDGs



1 United Nations (2023) The Sustainable Development Goals Report 2023. Special Edition. New York: United Nations.

Source: Based on annual EC progress reports for North Macedonia for 2017-2023.

Source: Text analysis tool designed by the European Commission (accessed in November 2023).

We can divide the SDG finance tools into two broad groups: (1) conventional financing instruments (such as traditional taxes, subsidies, grants, Eurobonds, etc.) and (2) innovative instruments: SDG-linked bonds, green bonds, innovative taxes, etc. Although conventional SDG finance tools will continue to provide a major portion of development finance, the role of innovative SDG finance tools will become increasingly important. Innovative instruments for financing sustainable development apply to both the public and private sectors. They include numerous stakeholders: the public and private sectors, the civil sector, the academic community, independent researchers, social innovators, etc. For a more comprehensive and in-depth overview of the conventional and innovative mechanisms, instruments, and sources of SDG finance, we refer to UNDP (2022).²

Due to space constraints, we will only outline opportunities for mobilizing additional domestic public and private resources in the short to medium term.

DOMESTIC PUBLIC RESOURCES

2.1. Tax4SDGs: Reshaping the Social Contract?

Taxation is at the heart of the social contract and widely considered as a social super-power. Taxes provide a tool for tackling socio-economic inequalities through redistribution policies, addressing the large infrastructure needs, supporting the green and digital transformation, improving the quality of human capital, reducing gender inequality, etc. There is an array of new taxes that can speed up the progress towards SDGs, in addition to their favorable fiscal effect. In a nutshell, modern governments increasingly align tax and fiscal policies with the SDGs. We focus on innovative tax instruments and tax administration capacities.

Tax4SDGs

Many academics and some of the IFIs have explicitly advocated for *progressive taxation* mostly of personal income (e.g., Stiglitz, 2023)³ and – to a lesser degree – of corporate income (e.g., Varoufakis, 2023).⁴ Progressive taxation has both a higher

2 UNDP (2022) Innovative mechanisms and instruments for financing strategic national documents. Skopje: UNDP Country Office.

3 Stiglitz, Joseph (2023). Opening remarks. Dialogue on Taxes and Sustainable Development Goals, November 14-17th, 2023. New York: Columbia University and UNDP

4 Varoufakis, Yannis (2023). Steering the Economic Vessel: From Global Debt to Interest Rates: The Role of Tax. Dialogue on Taxes and Sustainable Development Goals, November 14-17th, 2023. New York: Columbia University and UNDP.

revenue mobilization potential and a stronger element of fairness, although the latter is a somewhat controversial and normative topic. Varoufakis (2023) argues for introducing progressive corporate tax to combat “the highly professional industry for tax evasion”, whereas Payne (2023)⁵ suggests to appeal to high-income individuals, who would be taxed with higher rates.

The *carbon tax* is another innovative, non-traditional tax imposed on users of carbon fuels to compensate for environmental degradation. The carbon content of every fossil fuel, from lignite to heating oil and natural gas, is almost precisely established. A carbon tax would therefore impose a greater burden on the use of coal compared to the use of natural gas. A carbon tax is a direct tax levied on large industrial corporations for greenhouse gas emissions in order to encourage them to move towards cleaner and more efficient production. The carbon tax in Europe is applied by Sweden, Denmark, the United Kingdom, and the EU. The European Union’s “carbon tax” is essentially the EU’s Emissions Trading System. The entry into the EU also implies participation in the EU emissions trading system. The Energy Tax Directive will be reformed to improve incentives for switching fuel, and a Carbon Border Adjustment Mechanism (CBAM) will impose a fee on the carbon content (World Bank, 2023).⁶

Health (or ‘sin’) taxes are a group of excise taxes that have a direct impact on people’s health, by reducing the consumption of health-harming goods and by altering the producer behavior. UNDP not only provides support in designing effective ‘health taxes’, but also on addressing illicit trade and tax evasion locally, particularly in terms of improved tax administration. This is entirely aligned with health-related SDGs, in particular, SDG #3 and Universal Health Coverage efforts. Although consumption of alcoholic drinks is below the EU average and the Western Balkan peer countries, it requires vigilant approach by tax policymakers⁷.

Higher excise taxes on tobacco products. North Macedonia is among the countries in the World Health Organization (WHO) European Region with the highest prevalence of tobacco smoking. According to a new Behavioral and Cultural Insights (BCI) survey, almost half of the adult population (45.4%) are regular tobacco smokers, 70% of whom took up the habit before the age of 21 (WHO, 2023)⁸. It is surprising that only 17% of the population believe that the citizens disapprove of smoking. It is not surprising, therefore, that tobacco taxation is seen as one of the priority policy measures worldwide. The country needs a very aggressive plan for scaling up excise taxes on tobacco products and alcoholic beverages. This must be accompanied by a fierce fight against illicit trade and tax evasion, which is easier said than done.

5 Payne, Erica (2023) Balancing Wealth, Capital, and Socio-Economic Stability: A Global Perspective. Dialogue on Taxes and Sustainable Development Goals, November 14-17th, 2023. New York: Columbia University and UNDP.

6 World Bank (2023) Western Balkans Regular Economic Report – Testing Resilience. No. 23, Spring 23. Washington D.C.: World Bank Group.

7 https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Alcohol_consumption_statistics

8 World Health Organization (2023). New study points to solutions for quitting tobacco in North Macedonia. 23 June 2023. <https://www.who.int/europe/news/item/23-06-2023-new-study-points-to-solutions-for-quitting-tobacco-in-north-macedonia>.

Tax on Sugar Sweetened Beverages (SSB) and products with a high sugar content (the so-called “Sugar Tax”). Belgium, Finland, France, Hungary, Ireland, Latvia, Monaco, Norway, and Portugal are among the first EU members which have already introduced a tax on sugar sweetened beverages.⁹ The idea is to discourage the consumption of beverages, the continuous consumption of which almost inevitably leads to poor health outcomes, such as diabetes and obesity (e.g., UNDP Tax4SDGs Initiative Offer on Taxation and Health, 2023).¹⁰ For illustration, when the United Kingdom introduced a SSB tax in 2017, the producer behavior changed. The production was refocused to newly produced goods containing sugar just below the tax threshold.

The first two innovative approaches to taxation are closely aligned with the UNDP Tax4SDGs initiative. They call for a national health tax reform strategy, aligned with the SDG Taxation Framework, which would provide both financing and better attainment of SDGs.

Tax on financial transactions. This tax is recommended for certain types of transactions, such as the purchase of stocks and bonds. The Financial transaction tax is applied in Spain, France, Great Britain, Belgium, Switzerland, Poland, Finland, and Italy. For example, Italy imposes a tax on financial transactions of 0.1% and 0.2%, financial investments in stocks and shares, and the purchase of financial derivatives. Spain imposes a 0.2% financial transaction tax on the purchase of shares in companies whose market capitalization exceeds EUR 1 billion.

Digital Services Tax (Digital Taxation). According to the current system of taxation of digital services, multinational companies pay profit tax at the location of production, but not where the consumers of digital services are located. The principle of taxation of digital services according to the location of consumers is incorporated in Pillar One of the initiatives by the Organization for Economic Cooperation and Development (OECD), which is coordinated in 130 countries. By the end of 2023, a new solution for taxing digital services (for example, the use of Netflix services) according to the location of consumers is also expected.

Although it is not a classic tax, but rather a non-tax fee, in this category we will also mention the charge for traffic congestion in the city center (*city congestion charge*). Vehicle entry into central London is subject to a daily charge of £15 Monday to Friday 7 am to 6 pm and 12 pm to 6 pm on weekends and holidays. If the vehicle does not meet the ultra-low harmful gas emission standards, an additional fee is paid. In this way, traffic jams and ambient air pollution in the central city area could be prevented during high-pollution periods in the City of Skopje.

In a nutshell, the ideas of Tax4SDGs are to adjust consumer behavior towards healthier lifestyle, incentivize cleaner production, redistribute income towards vulnerable and lower-income individuals and finance SDG-aligned government investment projects.

9 https://globalfoodresearchprogram.org/wp-content/uploads/2020/08/SugaryDrink_tax_maps_2020_August_REV.pdf

10 UNDP (2023) UNDP Tax for SDGs (Sustainable Development Goals) Initiative Offer on Taxation and Health, mimeo.

Tax administration capacities

It is crucial to join multilateral efforts and address Base Erosion and Profit Shifting (BEPS) concerns, tackle potential avoidance of corporate income and withholding taxes as well as personal income by high-income individuals. Moreover, the UNDP-OECD initiative “Tax Inspectors Without Borders” holds strong potential to increase the revenue mobilization capacities of modern tax administrations by stronger international cooperation. The tax reform that has commenced, based on the Tax Reform Strategy 2021-2025 - which is just one segment of the overall Public Finance Management reform - is aimed at ensuring fairer, more efficient, transparent, and modern tax system, based on digital technologies and innovations in taxation, geared towards attaining accelerated, inclusive, and sustainable economic growth. The “left no one behind” principle must be observed, when taxing low-income individuals. The concept envisages upgrading of tax administration capacities and adamant fight against the informal economy.

2.2. Debt4SDGs

Debt4SDGs or *Bonds4SDGs* implies that public debt should also be repurposed and better aligned with the SDGs. We outline an array of innovative or thematic bonds. When investors provide funds to service providers in advance, contingent on the achievement of desired social goals, social bonds are also called social impact bonds or pay-for-performance bonds. Service providers return to investors their principal plus an agreed return on investment. Impact bonds often also involve several other key players, and in particular, a third-party validation.

Green bonds are offered to encourage projects that support the Green Agenda and the Green Transition. As outlined by ICMA (2018, p. 4),¹¹ the acceptable areas for issuing green bonds include the following: “renewable energy sources; energy efficiency; pollution prevention and control; environmentally sustainable management of living natural resources and land use; conservation of terrestrial and aquatic biodiversity; clean transport; sustainable water and wastewater management; climate change adaptation; products, production technologies and processes adapted to the circular economy.” Types of issuers include companies (corporations), utilities, municipalities, sovereign issuers (governments), and multilateral development institutions. These bonds presumably carry a ‘greenium’, a lower coupon interest rate accepted by responsible investors. The city of Zagreb has already issued a green municipal performance bond.

Social bonds (social impact bonds; social benefit or social purpose bonds) are designed to respond to a wide range of social needs. Their role is to provide capital for projects that contribute to socio-economic progress and empowerment - such as: basic infrastructure; access to basic services; allocation of social housing; job creation and programs designed to prevent and/or reduce unemployment resulting from economic downturns, including through the potential effect of SME financing and microfinance; food security and sustainable food systems; socio-economic progress and empowerment. Existing issues of social bonds range from 300 million euros to 1 billion.

11 ICMA (2018) Green Bond Principles: Voluntary Process Guidelines for Issuing Green Bonds. June 2018. The International Capital Market Association.

Gender bonds. A special type of social bond is the gender-related bond, also known as a gender-focused bond, or simply, a gender bond. Its general goal is to reduce gender inequality and support women's participation in economic life. There are several types of gender bonds, for which (1) the sole purpose may be to promote gender equality; (2) bonds for which the promotion of gender equality is a goal together with other sustainable development goals; (3) a sustainable bond, for which the advancement of gender equality is a goal along with other goals; (4) bond linked to performance targets related to gender equality.

Sustainability bonds or SDG-linked bonds. Sustainability bonds (“Sustainable” bonds; Sustainability-related bonds; Development bonds; Development impact bonds) are financial instruments with predefined targets for the SDGs, which the issuer has to achieve by a certain critical date (“critical date with potential penalty premium”). If the targets are not met, the issuer will be obliged to pay a “penalty premium”. This mechanism is absent in conventional green bonds. The coupon interest rate is increased by certain penalty percentage points (for example, 0.5 percentage points above the coupon interest rate).

Inflation-Indexed Bonds. In order to provide protection against loss of purchasing power, especially during periods of increased inflation rate, some governments also issue inflation-indexed bonds.

GDP-indexed bonds. GDP-linked bonds or bonds indexed to economic growth (Growth-Indexed Bonds, GIB) link government bond repayments to the rate of economic growth of the issuing country. They are focused on the economic dimension of sustainable financing and aim to reduce the procyclicality of fiscal policy and the likelihood of debt crises (Mauro and Chamon, 2006).¹²

Diaspora bonds. Appealing to the patriotic feelings, many governments and municipalities issue specialized bonds intended for the diaspora. To maximize participation and responsiveness, the use of the bond proceeds is usually also pre-determined. For example, Diaspora bonds can be issued to finance a reconstruction and modernization of a regional road. Because of the patriotic moment, the coupon interest rate on these bonds is usually lower than that of conventional government bonds of same maturity, thus reducing the borrowing costs. Israel and India already have a tradition of issuing diaspora bonds.

Structural municipal bonds. The municipal bond is one of the modalities for long-term borrowing of municipalities. Its amount should be in accordance with the borrowing limits. The issuance procedure is regulated and depends on the prior consent of the Ministry of Finance and the Securities Commission. Proceeds from structural bonds can be used for clearance of outstanding municipal arrears and increasing municipal financial capacities.

12 Mauro, Paolo and Marcos d Chamon (2005) “Pricing Growth-Indexed Bonds”. IMF Working Paper no. 2005/216, Washington D.C.: The International Monetary Fund.

2.3. Innovative state-funded institutions

Fund for Research and Development (R&D). The Fund might be established within the Development Bank of North Macedonia. This Fund, through favorable (concessional) credit products, would support export-oriented companies in R&D to boost exports, technological development, and the introduction of new products. The export support activities would also include a supplier development program aimed to increase technological readiness and capacities of domestic companies to take part in global value chains. Initially, the fund for supporting the companies in research and development could start with EUR 10 million. The experience of Serbia is very useful in this context.

Energy efficiency fund. This fund is being established within the Development Bank of North Macedonia. The funding was provided through the issuance of the first-ever green government bond in the amount of EUR 10 million. It will finance energy efficiency projects.

Agency for Balanced Regional Development. An agency of fund for balanced regional development is also highly important in reducing inter-regional socio-economic disparities and enhancing the cross-border territorial cohesion with the neighboring regions. The experience of Bulgaria provides a success story from the region.

3. DOMESTIC PRIVATE SOURCES: PARTNERING WITH THE PRIVATE SECTOR

The Business and Sustainable Development Commission (BSDC) has identified business opportunities for delivering the SDGs in 60 market “hot spots” of food and agriculture, cities, energy, and materials, as well as health and well-being. Better alignment of private sector projects is essential in accelerating the SDG progress. So called SDG investor maps have been designed by UNDP to reveal both sustainable and profitable investment opportunities. This is another promising avenue for unlocking the private sector capital towards SDGs. The SDG investor maps for North Macedonia will be developed during 2024.

The important role of guarantee funds. In the next decade, there is a huge potential to enrich the supply of guarantee funds. Following the example of the European Guarantee Fund, several sub-products or segments related to sustainable development could be developed, such as guarantees for improving the competitiveness of SMEs; sustainability guarantees, which would support the green and sustainable transition of SMEs in line with the EU Taxonomy for Sustainable Investments; guar-

antees for innovation and digitization; guarantees for support of culture and creative industries; guarantees for micro enterprises and social enterprises; guarantees for upgrading skills and education. The development of new guarantee funds would lead to an increase in private financing, which is also a priority in the EU, as well as to greater bank lending.

The untapped potential of the Development Bank to increase SDG finance is considerable. The Bank provides financing of infrastructure, supports the development of small and medium-sized enterprises, supports initiating exports and initiating environment protection, provides export credit insurance against commercial and political risks, and supports a more balanced regional development. Among the many activities, the Development Bank partially or fully subsidizes interest rates on bank loans provided by commercial banks. In the preliminary stage, commercial banks approve loan applications of viable projects and offer market-based interest rate on a loan. The Development Bank subsidizes part of the interest rate on loans. UNDP alone – or together with KfW – could provide financing and/or technical expertise in offering a portfolio of SDG-linked loans through the Development Bank. The criteria whether a certain project contributes to higher attainment of SDGs should be transparent and objective. Loans tackling multiple SDGs should have a priority. This approach can make financing of SDG-related investment projects more accessible, particularly for projects that have a strong developmental impact but may not be able to secure commercial loans at market interest rates. Subsidizing interest rates can help attract investment, stimulate economic growth, and address sustainable development challenges.

Greater involvement of commercial banks. North Macedonia has a bank-centric financial system, given that the banks' assets constitute nearly 80% of the assets of the entire financial system. Therefore, it is especially important to involve commercial banks as development partners and SDG allies. We identify two channels of desirable involvement of commercial banks: (1) by SDG-izing and greening their credit portfolios; and (2) by improving the financial intermediation and reducing the sizeable informal economy. The Green Financing Facility – led by UNDP and EBRD – are one of the successful examples of such type of blended finance options.

4. CONCLUDING REMARKS

The National Development Strategy, the EU accession, and the progress towards SDGs are highly compatible, interlinked and mutually enforcing processes. These processes have common objectives and can be reinforced by the same reform agenda. The policies for an accelerated, inclusive, and sustainable growth are entirely consistent with the EU integration agenda and the United Nations 2030 Sustainable Development Agenda. Since the latter two policy agendas can serve as powerful catalysts for sustainable development, the authorities should strive to capitalize on their transformative power.

While the government budget is indeed the largest SDG fund in each country, it is nevertheless important to introduce innovative financing instruments and mechanisms for scaling up SDG finance and SDG-aligned investment. Mobilizing private capital is crucial in complementing the scarce public resources. The main goals of innovative SDG financing are to generate additional funds for development by using new sources of financing, to improve the efficiency of financial inflows, and to make finance more outcome oriented. When assessing the importance of innovative financing, one must consider not only the absolute amount of financial support but also - more importantly - the multiplier effects or leverage effects. But foremost, there has to be a strong public awareness and renewed policy attention on the importance of the UN 2030 Agenda for Sustainable Development.

**GOOD HEALTH
AND WELL-BEING**



BOOSTING HEALTH AND REVENUE: TOBACCO TAX HIKE FOR A SAFER, SMOKE-FREE FUTURE IN NORTH MACEDONIA

Tamara Mijovic Spasova, MSc¹

Bojana Mijovic Hristovska, MSc²

Marija Trpkova-Nestorovska, PhD³

Biljana Tashevska, PhD⁴

1 Author - Researcher at Analytica think tank and PhD Candidate in Economics sciences at the Faculty of Economics at Ss. Cyril and Methodius University

2 Author - Researcher at Analytica think tank and PhD Candidate in Economics sciences at the Faculty of Economics at Ss. Cyril and Methodius University

3 Co-author - Professor at the Faculty of Economics at Ss. Cyril and Methodius University

4 Co-author - Professor at the Faculty of Economics at Ss. Cyril and Methodius University

INTRODUCTION

Tobacco prevalence in North Macedonia is among the highest in Southeastern Europe, reaching 48.4 percent in 2019. Around half of smokers (51.3 percent) begin to smoke very early in life - between 18 and 24 years of age. Smoking intensity is also very high: 44.4 percent of current smokers consume more than 20 cigarettes a day¹. In 2019, in North Macedonia 170.17 deaths per 100,000 people were attributed to smoking and the risk from tobacco increased by 2.4 percent between 2009 and 2019².

The prevalence of tobacco use in North Macedonia, particularly the high smoking rates, directly impacts progress towards Target 3.a.³ By strengthening the implementation of measures such as tobacco taxation policies and tobacco control initiatives, North Macedonia can contribute to reducing smoking prevalence and align itself with the global efforts outlined in the WHO FCTC.

Tobacco consumption is a major risk factor for non-communicable diseases (NCDs), including cardiovascular diseases and cancers. High smoking rates contribute to premature mortality, hindering the achievement of Target 3.4. Implementing effective tobacco control measures can significantly contribute to reducing premature deaths from NCDs.⁴

While not directly related to tobacco use, mental health and well-being are influenced by various factors. Smoking, often linked to mental health challenges, can indirectly impact the suicide mortality rate. Comprehensive tobacco control measures can contribute to overall mental health improvement, thus affecting Indicator 3.4.2.⁵

It is essential to integrate tobacco control strategies into broader health and well-being initiatives to maximize the impact on SDG 3. By addressing tobacco-related challenges, North Macedonia can play a pivotal role in achieving a healthier population and progress towards the Sustainable Development Goals.

According to the latest data, the tobacco industry comprises 4% of the total industrial production of the country, and the number of workers employed in the production of tobacco products was 3,489 in 2019—which, compared to 2000, represents a

1 Hristovska Mijovic, B., Spasova Mijovic, T., Trenovski, B., Kozeski, K., Trpkova-Nestorovska, M., & Trajkova-Najdovska, N. (2020). Tobacco consumption in North Macedonia. Analytica, Skopje, North Macedonia (PDF) Tobacco consumption in North Macedonia. Available from: https://www.researchgate.net/publication/346400700_Tobacco_consumption_in_North_Macedonia. [accessed Feb 19, 2023].

2 IHME (2019). Global Results Tool [database]. Seattle: Institute for Health Metrics and Evaluation. <http://ghdx.healthdata.org/gbd-results-tool>. [accessed Feb 17, 2023].

3 SDG 3: Ensure healthy lives and promote well-being for all at all ages. Target 3.a: Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control (WHO FCTC) in all countries, as appropriate.

4 Target 3.4: By 2030, reduce by one-third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.

5 Indicator 3.4.2: Suicide mortality rate

significant decrease (6,095). Employment in the tobacco production industry represents about 0.42 percent of total employment in North Macedonia as of 2019.⁶

While the average monthly net wage paid per employee for November 2022 was 33,011 MKD (or USD 572.11, with an exchange rate of 57.7 MKD per USD), according to the State Statistical Office (2023), the price of one pack of cigarettes varied from 105 MKD (1.82 dollars) to 160 MKD (2.77 dollars). This is relatively low compared to other regions, leaving significant room for price increases via higher excise taxes. In contrast, the average price per pack of cigarettes in the European Union in 2019 is 5.23 dollars. North Macedonia has both high smoking prevalence and the region's lowest cigarette prices⁷. In addition, North Macedonia has the most affordable cigarettes in the region, with 2.55 percent of average GDP per capita required to purchase 2,000 cigarettes⁸. The estimation of the illicit market in manufactured and hand-rolled tobacco in North Macedonia is also very low at 1.9 percent⁹—the lowest level of all countries in the region. Therefore, there is significant space for tobacco tax policy improvement.

The country has ratified the World Health Organization Framework Convention on Tobacco Control (WHO FCTC) in 2006, which introduced a general ban on smoking in public places but has become less restrictive on smoking bans in public places, contributing to exposure in bars and restaurants. The WHO FCTC recommends comprehensive bans on smoking in enclosed public spaces to protect non-smokers from exposure to secondhand smoke. This includes places such as bars, restaurants, and nightclubs. The aim is to create a smoke-free environment to reduce the health risks associated with passive smoking. Implementation Challenges in North Macedonia: Less Restrictive Bans: this information suggests that the smoking bans in North Macedonia have become less restrictive over time, particularly in places like bars and restaurants. This has led to a significant proportion of adults being exposed to tobacco smoke in these venues.

Exposure in Bars and Restaurants: The data indicates that a substantial percentage of adults (73.6 percent in bars or nightclubs and 44.2 percent in restaurants) are still exposed to tobacco smoke in these public places. **Aligning with WHO FCTC Standards:** To align with WHO FCTC standards and re-establish effective tobacco control, North Macedonia could consider the following measures: **Strengthening Smoking Bans:** Reinforce and strictly enforce smoking bans in all enclosed public spaces, including bars and restaurants. This can be achieved through regular inspections and penalties for non-compliance

6 THE ECONOMICS OF TOBACCO FARMING IN NORTH MACEDONIA, Spasova Mijovic, T., Hristovska Mijovic, B, Trpkova-Nestorovska, M., Tashevska, B., Trenovski. B & Kozeski,)

7 Zubović, J., Ljumović, I., Jovanović, O., Bodroža, D., Domazet, I., Vladisavljević, M., & Đukić, M. (2019). Improving Tobacco Taxation Policies in Southeastern Europe [Policy Brief]. IES. <https://www.tobacconomics.org/files/research/568/Policy-Brief-Southeastern-Europe.pdf>

8 Djukić Mihajlo, Zdravković Aleksandar, Zubović Jovan, Jovanović Olivera, Vladisavljević Marko (2021). Affordability of Cigarettes in Southeastern European Countries, Tobacconomics Working Paper Series, Institute of Economic Sciences No. 21/10/1 October 2021

9 Najdovska Trajkova, N., Mijovic Hristovska, B., Mijovic Spasova, T., & Trenovski, B. (2021). Tax evasion and avoidance in manufactured cigarettes and hand-rolled tobacco in North Macedonia: Results from a nationwide survey of smokers. Analytica, Skopje, North Macedonia.

The majority of adults in North Macedonia are exposed to tobacco smoke primarily in bars or nightclubs (73.6 percent) and restaurants (44.2 percent)¹⁰. To re-establish effective tobacco control, it is imperative to deliberate on a comprehensive set of tobacco control measures.

Tobacco taxation emerges as a crucial tool for reducing smoking prevalence and enhancing public health. With evidence linking higher taxes to lower consumption, it proves to be a win-win policy, generating revenue for positive programs such as health and education while curbing tobacco use consumption¹¹. Tobacco excise taxes increase the cost of tobacco products, making them less affordable to smokers. This reduces the demand for tobacco products and motivates many smokers to quit, lowering smoking prevalence and creating significant public health benefits, such as lower rates of smoking-related diseases like cancer, heart disease, and stroke. An increase in tobacco taxes likely also reduces youth smoking initiation, leading to lower long-term rates of smoking prevalence and avoiding potential premature deaths caused by smoking-related diseases.

According to the WHO, a 10-percent increase in tobacco prices can reduce tobacco consumption by four percent in high-income countries and up to eight percent in low- and middle-income countries. North Macedonia's current specific excise tax level needs a 67% increase to meet the EU-required minimum. As the country moves towards EU integration, the imperative for policy improvement becomes urgent.

This research aims to estimate the potential effects of tobacco taxation policies in North Macedonia, using tax simulation modeling. The goal is to provide policy-makers with detailed insights into how improved taxation policies can benefit both the government and the population by reducing cigarette consumption, improving public health, and increasing government revenues.

This article is based on calculations conducted within a comprehensive study that examines the impacts of potential tobacco tax excise increases on various aspects related to cigarette consumption, including prices, government revenues, and public health outcomes. By analyzing the effects of these tax increases, this article aims to provide evidence-based insights for policy makers in formulating effective tobacco tax policies. The calculations are done using the World Health Organization's Tobacco Tax Simulation Model (WHO TaXiM).

10 Hristovska Mijovic, B., Spasova Mijovic, T., Trenovski, B., Kozeski, K., Trpkova-Nestorovska, M., & Trajkova-Najdovska, N. (2020). Tobacco consumption in North Macedonia. *Analytica*, Skopje, North Macedonia (PDF) Tobacco consumption in North Macedonia. Available from: https://www.researchgate.net/publication/346400700_Tobacco_consumption_in_North_Macedonia. [accessed Feb 19, 2023].

11 World Health Organization (2018). The WHO tobacco tax simulation model: WHO TaXiM user guide. World Health Organization. <https://apps.who.int/iris/handle/10665/260177>. License: CC BY-NC-SA 3.0 IGO

TOBACCO TAX MODELING: FISCAL AND HEALTH IMPLICATIONS

Building on previous Analytica’s analyses¹², it is evident that a revision of the current tax policy would yield substantial benefits. The findings suggest that such a revision holds the potential for increased tax revenues and various positive outcomes associated with reduced tobacco consumption. Notably, the analysis indicates that the proposed tax increase does not exhibit a socially regressive dimension, as it places an additional tax burden on higher-income households. Interestingly, low-income households display a lower responsiveness to price increases in cigarette demand as compared to middle-income households, possibly stemming from reduced awareness of smoking risks. This emphasizes the pivotal role of the tax system as an instrumental tool in achieving health policy objectives by curbing cigarette consumption and generating additional revenue for the state budget in North Macedonia.

We assume three scenarios of specific excise increases (10 percent, 30 percent, and 50 percent). For each scenario, three models are estimated, each considering different assumptions about the consumers’ response to the price change, which is a central component of this modeling. The three models have very similar results, and this confirms the findings are substantial and robust.¹³

Table 1. Estimated effects of excise tax increases on government revenue (change in %)

Scenario 1: 10% specific excise increase				Scenario 2: 30% specific excise increase			Scenario 3: 50% specific excise increase		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Year	Total excise revenue			Total excise revenue			Total excise revenue		
2024	8.20%	5.28%	6.49%	16.81%	6.51%	11.92%	22.44%	2.72%	13.50%
2025	8.18%	5.23%	6.47%	16.48%	5.91%	11.50%	21.45%	1.54%	12.39%
	Total tax revenue			Total tax revenue			Total tax revenue		
2024	7.80%	4.89%	6.12%	15.43%	5.30%	10.64%	20.26%	1.01%	11.55%
2025	7.80%	4.86%	6.11%	15.34%	4.90%	10.43%	19.87%	0.25%	10.95%

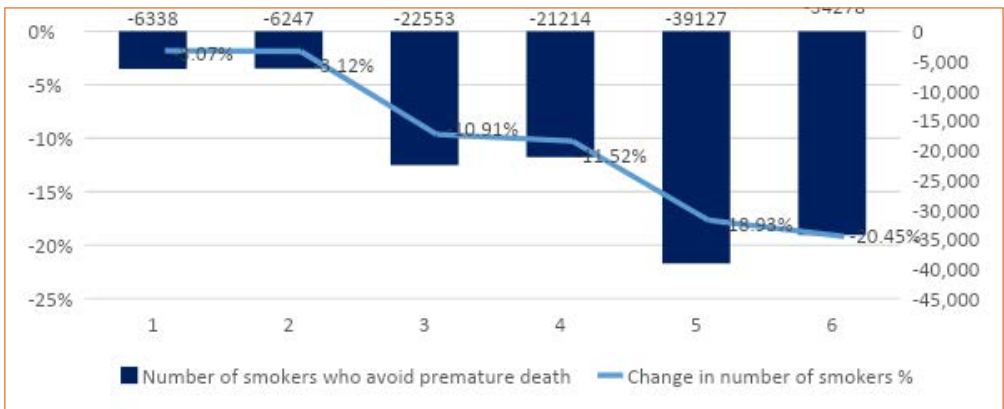
Implementing specific excise increases on tobacco products can lead to significant growth in excise revenues, ranging from 5.23 percent – 22.44 percent

12 Impacts of Tobacco Excise Increases on Cigarette Consumption and Government Revenues in Southeastern European Countries Regional study Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia, 2019. Available at: Regional-report-2019.pdf (analyticamk.org)

13 Mijovic Spasova, T., Mijovic Hristovska, B., Tashevska, B., & Trpkova-Nestorovska, M. (2023). Tobacco tax modeling: Evidence from North Macedonia. Analytica, Skopje, North Macedonia.

Increasing the excise tax has evident health benefits by reducing smoking-related deaths and smoking intensity. A comprehensive study covering 181 countries (98 percent of the world's smokers) was performed by Goodchild et al. (2016)¹⁴, who developed a model of the global cigarette market to quantify the impacts of an increase in excise on the retail price of cigarettes, cigarette excise revenue, cigarette consumption, the number of daily cigarette smokers, and the future number of smoking-attributable deaths averted among the world's adult population in 2014. They found that raising excise by \$1 (international, or I\$) per 20-cigarette pack would generate a substantial increase in cigarette tax yields in all countries, a decrease in global cigarette consumption of 18 percent, an increase in cigarette excise revenue generated throughout the world by I\$ 190 billion, a decrease in the prevalence of daily cigarette smoking among adults by nine percent, and a decrease in the expected number of smoking-attributable deaths by about six percent. They also found that the majority of the smoking-attributable deaths averted would be in low- and middle-income countries.

Figure 1. Effects of excise tax changes on the number of smokers who avoid premature death



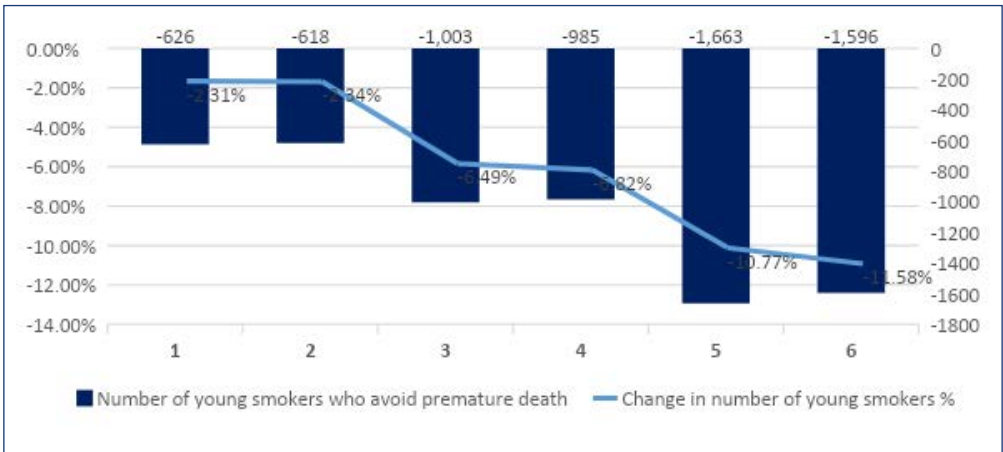
Scenario 1** - 10% specific excise increase; *Scenario 2** - 30% specific excise increase; *****Scenario 3** - 50% specific excise increase

Source: Authors' calculations

Figure 1 presents the health effects of a tax increase. Evidently, increase in the excise tax realizes noticeable health benefits in reducing the number of smoking-related deaths (decrease between -6247 and -39127). At the same time, increase in the excise tax decreases the number of smokers (decrease between -3,07% and 20,45%).

14 Goodchild, M., Perucic, A.M. and Nargis, N., (2016). Modelling the impact of raising tobacco taxes on public health and finance. Bulletin of the World Health Organization, 94(4), p.250.

Figure 2. Effects of excise tax changes on the number of youth smokers who avoid premature death



Source: Authors' calculations

On the youth population (Figure 2), an increase in the excise tax causes decrease in the number of smoking-related deaths (decrease between -616 and -1663). In addition, an increase in the excise tax causes prevalence reduction, leading to a certain decline in the number of young smokers (decrease between 2,31% and 11,58%). This means that a certain number of young people would not start smoking.

Increasing tobacco taxes can reduce premature smoking-related deaths among youth who are deterred from starting smoking in the first place.

The results imply that increasing the tax burden of cigarettes is beneficial for public health. A larger excise tax increase leads to more significant health benefits. If there is stronger response of smoking prevalence to price changes, we have the greatest impact in terms of smokers avoiding premature death.

Increasing the tax burden on cigarettes yields significant benefits for public health.

CONCLUSION & RECOMMENDATIONS FOR OPTIMIZING TOBACCO TAXATION FOR PUBLIC HEALTH AND FISCAL BENEFIT

As we draw conclusions from this analysis, it becomes increasingly evident that optimizing tobacco taxation policies, particularly through excise tax increases, holds transformative potential for both public health and fiscal resilience in North Macedonia. In recognizing these insights, it is crucial to contextualize the recommended actions within the broader framework of the Sustainable Development Goals (SDGs), specifically targeting SDG 3, which aims to ensure healthy lives and promote well-being for all.

The proposed gradual increase in the specific excise tax aligns with North Macedonia's active pursuit of EU integration, a goal intrinsically linked to the nation's commitment to achieving SDG 3. By adhering to EU-mandated levels, the country not only advances its accession prospects but also underscores its dedication to international health standards outlined in the WHO Framework Convention for Tobacco Control.

In tandem with excise tax adjustments, the reinstatement of a comprehensive ban on smoking in enclosed public spaces further fortifies the connection to SDG 3. Creating smoke-free environments contributes significantly to public health, directly addressing targets related to reducing premature mortality from non-communicable diseases, a key indicator within SDG 3.

Furthermore, comprehensive public awareness campaigns, especially targeting youth demographics, reinforce the commitment to health-oriented SDG objectives. Educating the population about the health risks associated with tobacco use is a proactive step toward reducing smoking prevalence, ultimately contributing to improved overall well-being.

By implementing these recommendations, North Macedonia not only takes substantial strides toward achieving SDG 3 but also fosters a society where health is prioritized. The optimization of tobacco taxation emerges not merely as a fiscal strategy but as a dynamic and integrated approach to building a healthier and more resilient nation in alignment with global sustainable development aspirations.

In pursuit of a healthier nation and optimized fiscal policies, North Macedonia can undertake strategic initiatives across various sectors. The government should implement a more ambitious increase in the specific excise tax on tobacco, aligning with EU standards, and enact or strengthen legislation supporting comprehensive tobacco control. Public awareness campaigns, especially targeting youth, can be in-

strumental. Civil society organizations play a crucial role in advocating for stronger laws, conducting community outreach, and collaborating with the government. The private sector can actively contribute to public health by aligning business practices with health-conscious strategies. Cross-sector collaboration, facilitated by intersectoral task forces, is essential for a holistic approach. Robust monitoring and evaluation mechanisms ensure evidence-based adjustments, while international cooperation provides access to expertise and resources. Embracing these measures positions North Macedonia on a path to achieve both national health goals and global sustainable development objectives.

**QUALITY
EDUCATION**



**CLIMATE
ACTION**



CLIMATE LITERACY: HOW IS NORTH MACEDONIA SOLVING THIS EQUATION?

Radmil Polenakovikj, PhD¹

¹ Full-time professor at the Faculty of Mechanical Engineering, Ss. Cyril and Methodius University - Skopje

INTRODUCTION

In July 2023, the world confronted the reality of its hottest month ever recorded¹. The Earth's temperature is now about 1.1°C higher than it was in the 1800s², and the NASA satellite shows a 1 cm sea level rise since 1993³. Between 1970 and 2021, weather, climate, and water-related disaster caused 2,087,229 deaths, with 90 per cent in developing countries⁴. The amount of carbon dioxide in the atmosphere has risen by 25% since 1958, and by about 40% since the Industrial Revolution⁵. Furthermore, corporate greed is accelerating climate change⁶, and the richest 1% of humanity is responsible for more carbon emissions than the poorest 66%, with dire consequences for vulnerable communities and global efforts to tackle the climate emergency⁷. These alarming statistics require urgent need for global action as a response to the escalating climate crisis.

However, the green transition holds promise, projected to create 24 million jobs by 2030, far more than the 6 million that could be lost⁸. A study conducted in June 2003, showed that global vegetation had increased for 6 percent from 1982 to 1999⁹. Addressing the climate crisis will also require innovation in many other areas, such as finance, institutional design, novel partnerships, philanthropy, and international cooperation, etc.¹⁰

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- 1 Guterres A. (2023). July 2023 is the hottest month ever recorded. Available at: <https://www.un.org/en/climatechange/july-2023-hottest-month-ever-recorded> (Accessed: 22 November 2023).
 - 2 UN (2023). Temperature Rise. Available at: <https://www.un.org/en/climatechange/science/key-findings> (Accessed: 22 November 2023).
 - 3 NASA (2023). Earth's Vital Signs. Available at: <https://climate.nasa.gov/effects/> (Accessed: 22 November 2023).
 - 4 UN (2023). Early Warnings. Available at: <https://www.un.org/en/climatechange/science/key-findings> (Accessed: 22 November 2023).
 - 5 NOAA (2023). Climate change impacts. Available at: <https://www.noaa.gov/education/resource-collections/climate/climate-change-impacts> (Accessed: 22 November 2023).
 - 6 Stiglitz J. (2019). Corporate Greed is Accelerating Climate Change. But We Can Still Head Off Disaster (April 21, 2019). Available at: <https://edition.cnn.com/2019/04/21/perspectives/joseph-stiglitz-earth-day-economy/index.html> (Accessed: 22 November 2023).
 - 7 Watts J. (2023). Richest 1% account for more carbon emissions than poorest 66%, report says (November 20, 2023, The Guardian). Available at: <https://www.theguardian.com/environment/2023/nov/20/richest-1-account-for-more-carbon-emissions-than-poorest-66-report-says#:~:text=great%20carbon%20divide-,Richest%201%25%20account%20for%20more%20carbon,than%20poorest%2066%25%2C%20report%20says&text=The%20richest%201%25%20of%20humanity,climate%20emergency%2C%20a%20report%20says>. (Accessed: 23 November 2023).
 - 8 UN (2023). Jobs. Available at: <https://www.un.org/en/climatechange/science/key-findings> (Accessed: 22 November 2023).
 - 9 Climate Policy Watcher (2023). Positive Effects of Climate Change. Available at: <https://www.climate-policy-watcher.org/greenhouse-gases-2/positive-effects-of-climate-change.html> (26 Oct 2023). (Accessed: 22 November 2023)
 - 10 Levin K., Steer A. (2021). Frightening Climate Change with Innovation. International Monetary Fund. Available at: <https://www.imf.org/en/Publications/fandd/issues/2021/09/bezos-earth-fund-climate-change-innovation-levin> (Sep 2021). (Accessed: 22 November 2023)

The project “Rapid Assessment Report on the Benefits of Circular Economy on Mitigation of GHGs emission in the Waste Sector” aims to identify opportunities and challenges for the mitigation of GHGs emissions by advancing circular practices in the waste management sector, in line with the European Green Deal and the EU Action Plan on Circular Economy. After considering the relevant policies of North Macedonia, six case studies were selected, in accordance to the priorities of the National Waste Management plan, to demonstrate the benefits from the shift to CE and a relevant methodological approach was developed. Overall, it was assessed that applying circular practices to six selected waste streams can deliver, by 2030:

- 951 Gg CO₂eq/year GHGs savings comparing to 2016
- 2,740 new jobs
- 47.17 million EUR of economic benefits

That means that the shift to circular practices, even if it is restricted to those six cases studies, is sufficient to counterbalance the emissions from solid waste disposal (almost double savings), and the emissions from the Waste and Industrial Processes and Product Use sectors. To achieve these benefits, a shift in governance practices is also required and several policy recommendations are made, starting with the proposal to create a governmental cross-cutting agenda on circular economy.

It is obvious that the majority of the population is aware of the destructive effects of climate change. By studying climate change, we can better understand its causes with the aim to develop strategies for mitigating its impacts and adapting to the changes that are already underway. Additionally, there is a broad consensus among scientists, politicians, journalists, and others, that raising awareness about the negative effects of climate change is very useful.¹¹ And this is where the education system comes into place. Education is one of the key answers that will help to reduce and prevent harm caused by climate change. It is obvious that we are tackling a huge problem, but thinking entrepreneurially, every problem needs innovative solutions that can bring long-term benefits to the local communities and the whole world. And, again – the educational system is the place where we can significantly influence the development of entrepreneurial mindset and innovative thinking among young generations, who can make our world a better place for living in the long run.

11 di Mauro, B.W., Oswald, A., Stern, N., Heal, G., Tirole, J., Spence, M., Frankel, J., Aghion, P., Hemous, D., Veugelers, R. and Metcalf, G., (2021). Combatting climate change: A CEPR collection. Centre for Economic Policy Research.

ensuring that no one is left behind. To achieve these goals, accelerated efforts are needed, and North Macedonia, like other countries, should contribute to these collective efforts.

Achieving the needed changes for a more sustainable, resilient, and low-emission future requires prompt implementation of policies. It is critical to put into place policies so technologies can develop, mature, become commercialized and deployed at scale, and economic actors can move faster towards a low-emission and sustainable world. And education, once again, is in the heart of this process.

How can we create synergetic effects and match quality education with climate action?

Is it possible to have synergy equation $2 + 2 = 5$ in these fields?

Where is North Macedonia standing in this equation $SDG4+SDG13=?$
(status December 2023)

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD) AND CLIMATE CHANGE EDUCATION (CCE)

We consider education as a critical agent in addressing the issue of sustainable development and climate change. Why is this the case?

Education is one of the key answers that will help to reduce and prevent harm caused by the climate changes. It is generally accepted that quality education is a basic human right and a foundation of social and economic development. In order for each individual, especially young people, to cope with the global challenges (including the consequences of climate change and the implementation of green technologies), it is necessary for them to have the appropriate knowledge, attitude, skills and competences, that correspond to the contemporary requirements of their personal and professional life. Therefore, in order to enable people to develop such competences that will guarantee them good job and decent life, with proper upgrading throughout life, it becomes necessary for education and training systems to be reformed and adapted to the requirements of the knowledge-based economy.

Education is a critical agent in addressing the issue of sustainable development and climate change. The UN Framework Convention on Climate Change¹⁵ assigns responsibility to Parties of the Convention to undertake educational and public awareness campaigns on climate change, and to ensure public participation in pro-

15 UNFCCC (1992). United Nations Framework Convention on Climate Change. Rio de Janeiro

grammes and information access on the issue. In this regard, the Government of the Republic of North Macedonia has an obligation to strengthen the education system with focus on increased “climate literacy” and Education for Sustainable Development - equipping young people with green competences to support the country’s future green transformation.

Education for Sustainable Development (ESD) is an educational approach that seeks to integrate the principles and practices of sustainability into all aspects of learning and teaching. It is a holistic and interdisciplinary framework aimed at equipping learners with the knowledge, skills, attitudes, and values needed to contribute to a more sustainable and equitable society by addressing pressing global challenges such as climate change, biodiversity loss, social inequality, and poverty.

Climate change education (CCE) addresses causes and impacts of climate change and helps students, and all members in the educational process, to understand those causes and consequences. Meanwhile, they are getting prepared to live a life with the effects of climate change and are getting encouraged to take appropriate measures in order to have a more sustainable lifestyle.

WHERE IS NORTH MACEDONIA STANDING IN ESD AND CCE

Some of the research and analyses carried out in the last couple of years have shown that a certain level of development has been achieved in the implementation of ESD and CCE in the education system in North Macedonia. The fact that some of the subject-related content is integrated in subjects such as: languages, civil society, life skills, ethics, arts..., is really gratifying. Apart from these subjects, there is climate change related content in geography, physics, chemistry, etc. For instance, language subjects include texts and literature related to climate change and ecology, while the natural sciences delve deeper into the causes and consequences of climate change. However, the inclusion of these contents in formal education is segmented, in individual subjects, without correlation between these topics¹⁶. There is still an absence of comprehensive, horizontal reviews that will examine the quality, depth and interrelation of climate change-related contents across subjects and educational levels.

It is obvious that the education system in the country is having some progress towards better implementation of the ESD and CCE in the formal education system. For instance, the ongoing project “Building capacity towards sustainable human capital development in North Macedonia”, implemented by GIZ office in North Macedonia and funded by Green Climate fund, intends to establish a coordination group for climate change education in the Ministry of Education and Science, that will work on opera-

16 Fourth National Communication and Third Biennial Update Report on Climate Change under the UNFCCC. (segment for climate change education in formal and informal education, 2021)

tional level and in which, not only representatives from the Ministry of Education and Science, Bureau for Development of Education, Centre for Vocational Education and Training, Adult Education Center, will be involved, but also representatives from NGOs and the business sector. This group should be linked to the National designated body and the national coordination mechanism related to Green Climate Fund.

As a positive example within this project, the Law on Secondary Education,¹⁷ Article 51: “Activities for sustainable development, climate change and green technologies” is directly related to educational elements related to the green transition.

In addition, the Concept for primary education¹⁸ supports green-related activities, but mainly as an extracurricular activity (eco-clubs, etc.).

The National standards for student achievement at the end of primary education¹⁹ include competences that are related to education for sustainable development and ecology, but not related to climate change issues.

The Concept for establishment of Regional Vocational Education and Training Centers²⁰ mentions that one of the main functions of the regional centers is: “Development, introduction and implementation of innovative programs and pedagogies that are not only focused on technical skills but also on transversal competences, e.g. entrepreneurship, climate change and digitalization.”

Another positive example towards green transition and strengthening capacities for climate literacy is the establishment of the Centre of Vocational Excellence in Green Innovation (CEGI) at the Faculty of Mechanical Engineering, Ss. Cyril and Methodius University in Skopje. This Centre is opened in December 2021 within the Erasmus + project GREENOVET²¹. The project fosters the development of Vocational Education and Training (VET) Excellence in Green Innovation across Europe through the establishment of Centers of Vocational Excellence (CoVEs) that will enable an innovative, inclusive, and sustainable economy.

The success of green and climate-related activities in education relies strongly on the awareness and involvement of teachers, educators, and professors. This year, in May 2023, the Center for Excellence in Green Innovation hosted a regional competition “Best Business Concept for Green Innovation 2023”. The winners participated in the International Competition “Green Innovation Excellence”, hosted again by CEGI, in September 2023. The competition attracted the interest of more than 100 students around the country, guided and mentored by their professors. Such competitions

17 Ministry of Education and Science (2023). Law on Secondary Education. Available at: https://ener.gov.mk/Default.aspx?item=pub_regulation&subitem=view_reg_detail&itemid=77227

18 Ministry of Education and Science (2021). Concept for Primary Education. Available at: <https://mon.gov.mk/content/?id=3785>

19 Ministry of Education and Science (2021). National standards for student achievement at the end of primary education. Available at: <https://mon.gov.mk/stored/document/standardi-USVOENI.pdf>

20 Ministry of Education and Science (2022). Concept for establishment of Regional Vocational Education and Training Centers. Available at: <https://mon.gov.mk/content/?id=5895>

21 GREENOVET. European VET Excellence Platform for Green Innovation. Erasmus + programme KA3 Action, EACEA 33/2019 (November 2020 – October 2024). More detailed info is available on: <https://www.greenovet.eu/>

bring together representatives from education, industry, NGOs, collectively fostering a culture of innovation among students, encouraging entrepreneurial thinking, and promoting eco-friendly initiatives.

It is evident that our country has a basic to medium focus on ESD and CCE. Within the frames of the project “Building capacity towards sustainable human capital development in North Macedonia” implemented by GIZ, an on-going survey is currently taking place with involvement of more than 120 school principals and almost 3,000 teachers from all primary and secondary schools in the country.²² Preliminary results showed that there is a need for much more focused continuous training of teachers on the topics related to climate change education and education for sustainable development. In addition, principals of schools are very important cornerstone for enabling an adequate learning environment for climate change, because they can support or discourage motivated teachers in the implementation of this type of education.

Stronger support seems to be coming from non-formal education and significant involvement of non-governmental organizations working in the areas related to these topics, ESD and CCE.

But this is not enough. We must significantly increase our activities towards development of climate literacy among youth and among all learners, as a part of the lifelong learning process that should be available for all citizens of North Macedonia.

CONCLUSION

As a country that is thriving to become a member of the European Union family, we must adapt best practices and recommendations and adopt them to our local conditions. Among others, there is a “Recommendation on learning for the green transition and sustainable development” adopted on 16 June 2022 by the Council of the European Union²³. The Recommendation is a key policy statement highlighting the crucial role of education and training in working towards the goals of the European Green Deal. This document provides a roadmap for Member States on supporting learning and teaching for the green transition and sustainable development in all phases of education and training. Building on this foundation, an analysis of education for climate change and sustainable development in North Macedonia²⁴, as well as a recent examination of the skills gap related to development of green innovation and sustainable practices²⁵, is leading to the following recommendations:

22 Preliminary results were presented on the workshop in Skopje on 26 October 2023 by consultant Dr. Petra Poprizova. Final results is expected to be published at the beginning of 2024

23 Council of the European Union (2022). Learning for the green transition and sustainable development. Available on: <https://education.ec.europa.eu/news/learning-for-the-green-transition-and-sustainable-development#:~:text=On%2016%20June%202022%2C%20the,of%20the%20European%20Green%20Deal>

24 Поленакoвиќ, Р. (2021) Анализа на вклученоста на климатските промени во образованието

25 Polenakovikj et al (2022) Green Innovation in VET – Status quo and challenges. Available on: https://www.greenovet.eu/site/uploads/paginas/documentos/7F4BA687-197A0_3.pdf

- learning for green transition, development of green, entrepreneurial and innovative skills should be a priority in the education system
- enable flexibility in the curricula, regardless of the subject, green and sustainable principles can and should be integrated
- encourage partnerships among different actors in the ecosystem (education, industry, public institutions, citizen organizations) and make the most out of European, and other, funds and opportunities
- support educators in developing their knowledge to teach about climate change, green transition and sustainable development

In this regard, we see this equation:

SDG 4 (quality education) + SDG 13 (climate action) = Climate Literacy for all,

as a perfect match to fulfill a significant part of the requirements in our journey to full membership of the European Union.

That is why we support the desire for radical reforms in the Macedonian education system, which is “responsible” for the future of many generations of young people in our country. The improving processes, in addition to the development of core competences (digital, entrepreneurial, life, language, etc., in line with the EU recommendations for key competences for lifelong learning), should also address the increase of “climate literacy” and “supply” of young people with “green” competences.

This is also the reason why sustainable development and climate change education is needed immediately. It will create a significant and stronger effect to all learners in our country and this will also create a synergetic effect to improve other SDG goals (SDG’s 7, 8, 9, 10, 11, 12).

**GENDER
EQUALITY**



GENDER EQUALITY IN LAND OWNERSHIP AND CONTROL IN NORTH MACEDONIA: TOWARDS ACHIEVEMENT OF SDG 5

Veronika Efremova, PhD¹

¹ Senior Rule of Law Advisor at Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

GENDER EQUALITY AND WOMEN'S ECONOMIC EMPOWERMENT

Women's economic empowerment is essential in promoting equality between women and men and a precondition for sustainable development in North Macedonia. Women's economic empowerment can be achieved with equal access to, and control over, economic resources and opportunities and the elimination of structural gender inequalities. Women and men's *de jure* access to land is regulated by the formal legal system (constitution or laws) that provide for gender equality in access to land but the laws for marriage, divorce and inheritance contradict these laws by discriminating against women and daughters.¹

Whilst women's land rights are vital to development, the reality remains that these rights are often unequally shared between men and women, and are routinely set aside, denied, or given insufficient protection and enforcement. Women have less access to land than men and are often restricted to so-called 'secondary land rights', meaning that they are able to hold land rights only via male family members. Women thus risk losing entitlements in the case of divorce, widowhood or their husband's migration. Clear ownership rights allow for these rights to be transferred via the sale or lease of land and facilitate borrowing on capital markets as land can be used as collateral.

The obstacles that prevent women from effectively enjoying these rights are complex. Empowering women requires investment in capacity building, institutions, and cultural change as much as in access to land, finance and markets. It aims to empower women in order to claim their rights to land, to provide leadership, opportunities and choices, and to participate in shaping laws, policies and programmes. It also engages with the government to develop and implement laws and policies that promote equal rights, opportunities and participation so that women can benefit from trade and finance, market their goods and make a strong contribution to inclusive economic growth.

1 FAO (2022). What is Land Tenure?, <https://www.fao.org/3/y4307e/y4307e05.htm>

LAND OWNERSHIP AND CONTROL AND SUSTAINABLE DEVELOPMENT GOAL (SDG) 5

Land ownership and secure tenure rights are essential factors for achieving the Sustainable Development Goals. Securing and strengthening women's rights and rights of disadvantaged and marginalized groups is of utmost importance. "Securing land tenure rights for all goes beyond land registration. It requires the establishment of additional legal arrangements between owners and users (tenants, leaseholders etc.) to ensure that they equally benefit from legal security and long-term prospects."²

In order to achieve SDG 5 and guarantee gender equality and empower all women and girls, it is necessary to undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws. Two indicators are set for measuring the achievement of SDG 5: the indicator 5.a.1 is designed to measure and monitor gender-disaggregated land tenure security, while the indicator 5.a.2 assesses women's equal rights to land ownership and/or control.³ These two indicators provide basis for policy measures aimed at securing equal opportunities and access to rights and resources.

Reporting on SDG indicator 5.a. helps countries realize the role of legal framework in achieving gender equality in practice. The reporting process allows them to take stock of the progress made and highlight important achievements. It also provides an objective baseline for countries to understand where the remaining gaps are, what solutions are available and how to translate policy goals into legal measures and concrete results. This is why Food and Agriculture Organization (FAO) of the United Nations invites countries to undertake the reporting on SDG indicator 5.a.1 in conjunction with SDG indicator 5.a.2, as the systematic collection of gender-disaggregated data on secure rights to land will help measure progress on gender equality in land ownership in practice.

2 GIZ (2019). Secure Land Tenure Rights for All: A Key Condition for Sustainable Development, p. 12, <https://www.giz.de/de/downloads/giz2019-en-secure-%20land-tenure-rights-successful-approaches.pdf>

3 UN (2015). SDG 5 Why Secure Land Rights and girls: Targets and Indicators, https://sdgs.un.org/goals/goal5#targets_and_indicators

WESTERN BALKAN'S GENDER AND LAND RIGHTS INITIATIVE

In the framework of the World Bank technical assistance project, FAO developed a Report on Gender Disaggregated Data for the Western Balkans for the period 2005-2013.⁴ The focus of the report was on the importance of effective management of land administration and improving data availability and use in the Western Balkans. Gender disaggregated data produced at economy level in 2013 indicated levels of female land ownership sometimes as low as 3% and not exceeding 30% in most administrative divisions. Therefore in 2013, the gender and land rights initiative in the Western Balkans was launched to address the disparity that exists between male and female land ownership in the region, such as legal and social barriers that still prevent women from accessing land ownership equally with men. Originally the initiative between FAO and the World Bank, it later evolved into a partnership the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and the International Union of Notaries (IUNL). The initiative led to more secure property rights for women that increase their resilience in the face of economic, social, environmental, and health challenges, and also contribute to women's empowerment. As a result, the Western Balkan countries have adapted their legislation and provided incentives for registration of the land titles for women; sensitization and training campaigns have been organized for notaries and for civil servants in relevant authorities in order to facilitate the enforcement of the women's rights.

NORTH MACEDONIA TOWARDS ACHIEVEMENT OF SDG 5

Sustainable Development Goals (SDGs) foresee reforms providing women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, in accordance with national laws. As a custodian agency for SDG 5 (guarantees women's equal rights to land ownership and/or control) to measure progress on Target 5a, FAO based the methodology to measure the indicator on a tool they developed, the *Legal Assessment Tool* (LAT) for gender-equitable land tenure. In 2015-2016 assessment of the legal framework in North Macedonia was carried out using FAO's LAT for gender-equitable land tenure and identified legal and technical impediments to women's access to land ownership. This tool serves to (1) assess the extent to which the national legal framework of any given country fosters gender-equitable land tenure; (2) identify the sources of gender differentiation in the

⁴ FAO and World Bank (2014). Gender Disaggregated Data – Western Balkans, Statistical Reports 2005-2013, https://www.fao.org/fileadmin/user_upload/nr/land_tenure/Genders_Report_WB.pdf

legislation; and (3) help determine the appropriate course of action for reform. The assessment of the legal framework revealed that while some gaps could be addressed through regulatory reform and the adoption of by-laws, notaries and land registration offices have an important role to play in ensuring that the law is implemented and that women's interests in land are registered and secure.

The importance of gender equality has been recognized by national institutions that made significant efforts to advance gender equality through the creation of an enabling legislative framework, adoption of policies and establishment of institutional mechanisms at central and local level.

The Constitution of the Republic of North Macedonia⁵ prohibits gender-based discrimination. The right of ownership over real estate is guaranteed in the Constitution. Women and men have equal rights to ownership and property (Articles 8 and 30). Article 8, Paragraph 6 of the Constitution stipulates legal protection of property and Article 30 guarantees the property right and the inheritance right. Paragraphs 3 and 4 stipulate the protection of all types of ownership right and guarantees that no one may be deprived of, or restricted from, property and the rights deriving therefrom, except in situations where the public interest is concerned, as established by law, whereupon fair compensation is guaranteed which cannot be lower than the market value.

Equal rights to ownership and property between men and women are regulated by several laws:

- Under the Law on Ownership and Other Real Rights,⁶ women and men are equal. Article 2 stipulates that the right to ownership can be acquired by all domestic and foreign natural persons and legal entities, including the state and units of local self-government, under conditions and in a manner stipulated by this and other laws.
- The Law on Inheritance⁷ grants equal rights to inheriting estates. Article 3 stipulates that citizens are equal in succession under the same conditions.
- The Law on Family⁸ provides for the joint ownership regime of matrimonial property for marriages and consensual unions. Article 204 stipulates that the property which spouses acquire in the course of marriage is their joint property, whereas Article 218 regulates that the property acquired by partners in the course of a consensual union shall be deemed joint property.
- Law on Obligations⁹ under Article 4 stipulates that obligation relations parties are equal, and men and women can conclude contracts under the same basic conditions, rights and obligations.

5 The Constitution of the Republic of North Macedonia, Official Gazette of the Republic of Macedonia no. 52/91,1/92, 31/98, 91/01, 84/03, 107/05, 3/09, 49/11, 6/19 and 36/19.

6 Law on Ownership and Other Real Rights, Official Gazette of the Republic of Macedonia, no.18/2001, 92/2008, 139/2009 and 35/10.

7 Law on Inheritance, Official Gazette of the Republic of Macedonia, No.47 /96.

8 Law on Family, Official Gazette of the Republic of Macedonia, no. 80/1992, 9/1996, 38/2004, 33/2006, 84/2008, 67/10, 156/10, 39/12, 44/12, 38/14,115/14, 104/15 and 150/2015.

9 Law on Obligations, Official Gazette of RM no. 8/2001, 78/2001, 04/2002, 59/2002, 05/2003, 84/2008, 81/2009 and 161/2009.

North Macedonia has also developed a National Action Plan for implementation of the Istanbul Convention on Preventing and Combating Violence Against Women and Domestic Violence, (2018-2023).

North Macedonia as a participating country to the Western Balkan's gender and land rights initiative was supported to establish multi-stakeholder gender team consisting of land administration specialists, government policy makers, gender officers, local NGOs, private sector (lawyers/ notaries) to improve gender equality and social inclusion in property rights. "Gender-disaggregated data on land ownership were produced in 2013, indicating low level of female ownership and demonstrating that producing disaggregated data does not have to be costly or time consuming, but can be instrumental in promoting and advocating gender issues with policy makers."¹⁰ The initiative facilitated not only the achievement of the global goals and the Voluntary Guidelines on the Responsible Governance of Tenure of Land (VGGT), but also the collection of gender-disaggregated data for stocktaking and reporting on specific SDGs, as well as to support informed decision-making.

The role of officials involved in the property registration process (notaries and land registration officers) is crucial. The joint registration of land jointly owned by married couples is compulsory or encouraged through economic incentives in North Macedonia. Notaries play an important role in strengthening gender equality in transactions related to real property and as court trustees in inheritance proceedings, since in their daily work they inform and advise parties, including women, of their land tenure rights and effects and the consequences of legal actions and omissions. While monitoring that the law is properly applied, they have to ensure that women's rights are protected with the final goal being to eliminate discrimination, build a healthy environment and support sustainable development. The Regional Guidelines on Strengthening Gender Equality in Notarial Practices South-East Europe were developed by GIZ and FAO, with the technical collaboration of the International Union of Notaries.¹¹ As a follow-up, the regional guideline was tailor-made to the country needs and practical guidance was provided to notaries when handling issues pertaining to gender sensitive property transactions, national guidelines on notarial practices in North Macedonia – Strengthening gender equality in land ownership and control were developed.¹² The purpose of these national guidelines is to help notaries and other legal professions to mitigate the effects of gender discrimination through the services that they provide across the country, raise awareness on women's rights, and anticipate any risks that might occur in the enjoyment of property rights by women. In collaboration with the Notary Chamber of the Republic of North Macedonia and the German Federal Chamber of Notaries (Bundesnotarkammer) trainings were provided for the Macedonian notaries for implementation of these guidelines

10 World Bank (2015). Brochure: A Good Practices Brief, Increasing Women's Access to Land, Approaches that Work, p. 5, <https://pubdocs.worldbank.org/en/265941444250962923/WB-Good-Practices-Brief-FINAL.pdf>

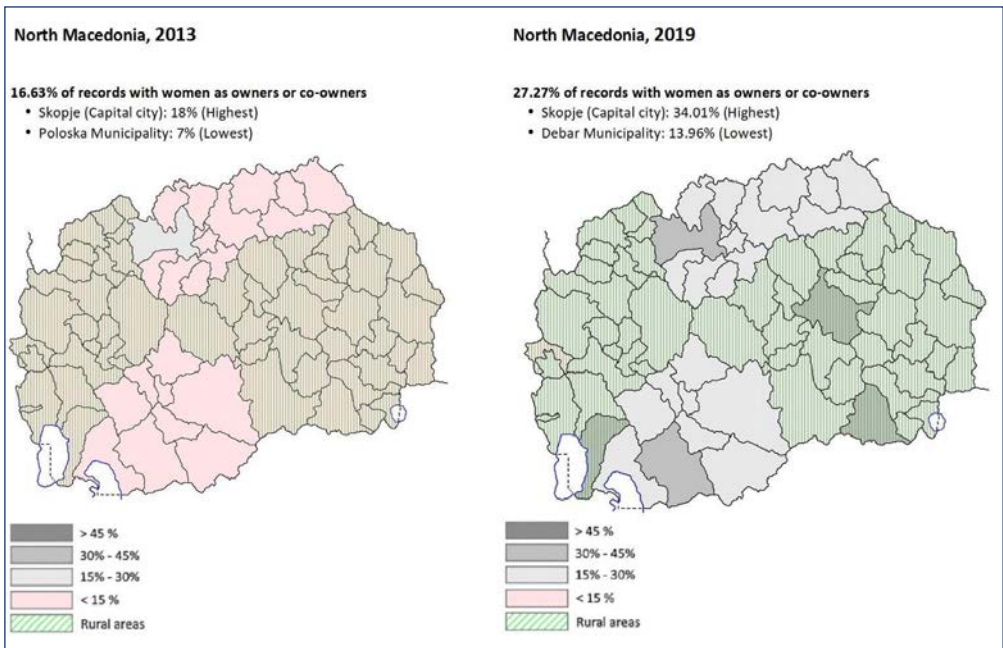
11 FAO and GIZ (2019). Guidelines on Strengthening Gender Equality in Notarial Practices – South-East Europe, Rome, Italy, <http://www.fao.org/3/CA2953EN/ca2953en.pdf>

12 FAO and GIZ (2021). Notarial practices in North Macedonia - Strengthening gender equality in land ownership and control. Rome, Italy, <https://www.fao.org/3/cb5715b/cb5715b.pdf>

in the notary's daily practice in the most efficient manner in order to avoid gender discrimination and to support the economic empowerment of women.

The Agency for Real Estate (Cadaster) of North Macedonia is committed to further improve gender equality in land ownership and control. Through the Real Estate Cadastre and Registration Project (RECRP), the World Bank helped the government change their property laws and regulations.¹³ Aiming to support Western Balkan countries to achieve SDG indicator 5.a.2, Guidelines on strengthening gender equality in land registration – Southeast Europe were developed by FAO and GIZ support.¹⁴ These Guidelines aim to inform cadasters and raise awareness of gender equality issues in relation to the registration of property rights.

The collaboration under the Western Balkan's gender and land rights initiative has resulted in a range of practical and concrete results. For example, North Macedonia is a leading country in the Western Balkan region by the number of property registrations with women as owners or co-owners which has increased from 16.6 percent in 2013¹⁵ to 27.3 percent in 2019 (picture below).¹⁶



13 World Bank (2017). "Why Secure Land Rights Matter", <http://www.worldbank.org/en/news/feature/2017/03/24/why-secure-land-rights-matter>

14 FAO and GIZ (2021). Guidelines on strengthening gender equality in land registration – Southeast Europe 2021, <https://www.fao.org/documents/card/en/c/CB2857MK>

15 FAO & World Bank (2014). Leaflet: Land and Gender. Improving Data Availability and Use in the Western Balkans, p. 3, http://www.fao.org/fileadmin/user_upload/nr/land_tenure/E_LandAndGender_Leaflet_Web.pdf

16 FAO and GIZ. 2020. Achieving SDG indicator 5.a.2 in the Western Balkans and beyond, Rome, Italy, p.12, <http://www.fao.org/3/cb0173en/cb0173en.pdf>

Following the trend, in 2021, 28.52% of properties in the Republic of North Macedonia are owned by women, while 71.48% are by men, with a very small percentage of women owning property rights.¹⁷ Namely 4.07% of women own property, versus 95.9% of men; 21.96%, their parents own the property.¹⁸

Other achievement is that North Macedonia, the Ministry of Labor and Social Policy as leading institution officially reports on SDG indicator 5.a.2. to FAO since 2021.

In 2019, the United Nations Entity for Gender Equality and the Empowerment of Women (UN Women) signed a Memorandum of Understanding (MoU) with the Ministry of Agriculture, Forestry and Water Economy (MAFWE) to promote gender equality in the Republic of North Macedonia. The cooperation is defined through the following steps: institutionalization of gender-responsive budgeting in the strategic planning of agricultural and rural development, policy development and budget processes in accordance with international and national commitments, including the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) and other UN human rights treaties, the Sustainable Development Goals (SDGs) and the Beijing Platform for Action. Agricultural gender statistics are important in determining the development of agricultural and rural development policies, as well as for SDG 5.a.1 implementation and reporting. Therefore, FAO and GIZ expanded their collaboration to support the State Statistical Office in North Macedonia in developing the most appropriate data collection vehicle for collecting data for SDG indicator 5.a.1 following the internationally recommended methodology and to formulate an action plan for regular data collection and reporting on SDG indicator 5.a.1. SDG 5.a.1 module was developed in 2023 and tested on 20 households in one selected municipality in Skopje. The module developed will be integrated as annex to SSO Farm Structure Survey and will start with the implementation in 2026.

Last but not least, the inspiring stories of successful women entrepreneurs serve as role models in the process of awareness raising and promotion of women entrepreneurship as an important segment for facilitation of the economic development of rural areas in North Macedonia. As part of the regional awareness campaign „Empowered women, empowered economy” motivational video was produced to promote economic empowerment of rural women in collaboration between GIZ, the Standing Working Group for Regional Rural Development in South Eastern Europe (SWG RRD) and National Federation of Farmers.¹⁹

17 MLSP (2022). Annual Report for the Activities and the Progress in the Implementation of Equal Opportunities for Women and Men, Годишен извештај на ЕМ на жените и мажите во 2022.pdf (misp.gov.mk)

18 UN Women (2019). Measuring Women's Empowerment in Agriculture with Survey-Based and Experimental Economic Method, publikacija_unwomen_fasf.pdf (ukim.edu.mk)

19 GIZ and SWG (2021). Empowered women in South East Europe: Stories that inspire, Empowered women in South East Europe: Stories that inspire - YouTube

WAY FORWARD

There is still a clear need to “bridge the implementation gap between the law (*de jure*) and the practice (*de facto*) to strengthen the property rights of women.”²⁰ North Macedonia must continue to proactively inform and educate women about their constitutional and legal rights to access, ownership and co-ownership of land and other forms of property, financial services, inheritance and natural resources (SDG 5). Secure property rights increase women’s resilience in the face of health and environmental crises and are critical to women’s empowerment. Additionally, achieving SDG 1 (No Poverty) and SDG 2 (Zero Hunger) is directly dependent on achieving SDG 5 (Gender Equality).

The role of the non-governmental organizations working in the field of gender related aspects, agriculture and rural development is crucial in the process of awareness raising and promotion of women entrepreneurship as an important segment for facilitation of the economic development of rural areas in North Macedonia.²¹

The country needs to focus on the following aspects towards further achievement of SDG 5:

- **Expand women’s access to land and rural finance:** providing awareness-raising and access to information for women on existing national legislation and policies while promoting and facilitating their equitable access to land ownership or co-ownership and starting their own business, where to address to buy and register their land and business, access to finance and subsidies.
- **Promote rural women’s networking:** sharing information in innovative ways and promoting action on rural women’s issues, in partnership with individuals, groups and non-government and government agencies through providing information relevant to rural women and communities, promoting activities such as rural women’s days, online workshops or gatherings, supporting the participation of women in decision-making in rural areas by means of their presence at various management and representation bodies, in rural development working groups and monitoring committees and in all types of agricultural organisations, associations and public institutions in which they are under-represented and sharing their stories and concerns.
- **Improve rural women’s access to training and information:** sharing information and educating women on accessible mentoring, training and other learning programs to acquire and/or improve their business development skills, knowledge, techniques, how to perform managerial and leadership roles, access to funding and micro-financing with a view to starting up and consolidating business activities and participate fully in the development of their communities.

20 GIZ (2019). Secure Land Tenure Rights for All: A Key Condition for Sustainable Development, <https://www.giz.de/de/downloads/giz2019-en-secure-%20land-tenure-rights-successful-approaches.pdf>

21 Faculty of Agricultural Sciences and Food – Skopje (2023). Towards More Gender-Responsive Policies and Budgets for Agriculture and Rural Development, p. 10, en_policy_brief.pdf (ukim.edu.mk)

- **Strengthen the inter-institutional cooperation and exchange of gender sensitive data and information** between the Ministry of Agriculture and the State Statistical Office in North Macedonia in the process of evidence-based agriculture and rural development policy design.
- **Strengthening capacities and skills of relevant institutions to facilitate gender disaggregated data collection:** data on land ownership divided by gender is crucial for monitoring gender equality, promoting women's empowerment, and crafting effective policies and programs to address gender disparities in land rights.
- **Produce materials that promote gender equality in agriculture in rural areas:** developing resourceful materials on promoting and ensuring gender equality and increasing women's voice and role in rural economy.

**AFFORDABLE AND
CLEAN ENERGY**



THE ENERGY TRANSITION EQUATION: CITIZEN PARTICIPATION FOR A SUSTAINABLE AND RESILIENT FUTURE

Vanja Djinlev¹

¹ Scientific assistant and a doctoral candidate at the Transdisciplinarity Lab (TdLab) at ETH Zurich, Switzerland.

INTRODUCTION

Nestled in the heart of the Balkans, North Macedonia faces a unique set of challenges that make it particularly vulnerable to the effects of climate change. Rising temperatures, intensified natural disasters, and shifting precipitation patterns threaten the society, economy, and the country's sustainable development efforts. All these occurrences further strain a system that is already troubled by environmental challenges, as North Macedonia is infamous for having one of the worst urban air pollution issues in Europe.¹ Furthermore, the country has a carbon intensive energy mix in both electricity and heat provisioning,² while the prevalent issues of energy poverty directly contribute to the environmental degradation.³ In essence, the climate crisis looms as a significant societal challenge to North Macedonia's journey toward a resilient and sustainable future, jeopardizing the country's economic growth prospects.⁴

This essay delves into the particularities of the climate crisis and the consequences on different sustainable development aspects, with North Macedonia taking the center stage. The overarching objective is to shed light on the pivotal role that citizens can play in steering the country towards a sustainable energy transition, paying particular attention to the issues of access to renewable energy and direct climate actions. The urgency of this transition cannot be overstated, as it is intrinsically linked to the country's resilience to climate change events and its ability to meet the sustainable development goals. When discussing resilience, the following broad definition is considered: “Resilience is the ability of an individual, a household, a community, a country or a region to withstand, adapt and to quickly recover from stresses and shocks”.⁵

In the first part of the essay, the focus is placed on the role and the varied manifestations of citizen participation in shaping the energy transition narrative. This part delves into the interplay between citizens and the Sustainable Development Goal 7 (SDG7)⁶ efforts, unravelling the specific roles and diverse forms of participation that can ensure access to affordable, reliable, sustainable, and modern energy for all. This part will also extend the exploration into the realm of Sustainable Development Goal 13 (SDG13)⁷ focusing on different forms and ways in which citizens can actively contribute

1 <https://www.theguardian.com/world/2023/sep/20/air-tastes-like-burnt-plastic-skopje-chronic-pollution-problem-north-macedonia#:~:text=Skopje%2C%20the%20North%20Macedonian%20capital,almost%20six%20times%20WHO%20guidelines>

2 IEA (2022). North Macedonia. Available at: <https://www.iea.org/countries/north-macedonia> [Accessed 29.11.2023]

3 <https://api.klimatskipromeni.mk/article/501#/index/main>

4 SECO (2022). North Macedonia. Available at: <https://www.seco-cooperation.admin.ch/secocoop/en/home/laender/complementary-measures/north-macedonia.html> [Accessed 15.11.2023]

5 European Commission (2022). Resilience Marker. Available at: https://ec.europa.eu/echo/files/policies/resilience/resilience_marker_guidance_en.pdf [Accessed 15.11.2023]

6 UN (2023). Ensure access to affordable, reliable, sustainable and modern energy. Available at: <https://www.un.org/sustainabledevelopment/energy/> [Accessed 15.11.2023]

7 UNEP (2023). Take urgent action to combat climate change and its impacts. Available at: <https://www.unep.org/explore-topics/sustainable-development-goals/why-do-sustainable-development-goals-matter/goal-13> [Accessed 15.11.2023]

to climate action and mitigation, thereby fortifying the country's resilience against the impacts of climate change across the individual, community, and national levels.

The arguments behind citizens' participation are based upon EU's push for an inclusive energy transition for all, leaving-no-one-behind. The European Commission's Clean Energy for all Europeans Package (CEP), unveiled in 2019, positioned citizens at the forefront of the energy transition. The introduction of Article 16 in the Electricity Market Directive (2019/944; "Electricity Directive") gave rise to the novel concept of Citizen Energy Communities (CEC), while the recast of the Renewable Energy Directive (REDII) established the notion of Renewable Energy Communities (REC)⁸. Within this essay, energy communities (ECs) are considered as a combination of the definitions of energy communities found in both CEC and REC. As such, "*Energy communities organize collective and citizen-driven energy actions that help pave the way for a clean energy transition while moving citizens to the fore. They contribute to increasing public acceptance of renewable energy projects and make it easier to attract private investments in the clean energy transition. At the same time, they have the potential to provide direct benefits to citizens by increasing energy efficiency, lowering their electricity bills and creating local job opportunities.*"⁹

The second part of the essay zeroes in on the case of North Macedonia. Here, the essay focuses on the intersection of citizen participation, SDG7, and SDG13 within the unique context of the country, exploring the steps that North Macedonia needs to take to boost citizen participation in the energy transition. This part offers insights into the forms of citizen engagement that can effectively mitigate climate change challenges. However, the examination is not mere observation; rather, it provides a pathway for action, grounded in the synergy between citizen-led initiatives and national sustainable development goals, following EU's policies and state-of-art projects.

By addressing the role of citizens in the energy transition, analyzing their contributions to SDG7 and SDG13, and applying these insights to the specific case of North Macedonia, the essay aims to articulate actionable strategies in the form of policy recommendations. These strategies, rooted in the principles of citizen empowerment and sustainable development, pave the way for a resilient and sustainable future - one where citizens are not merely spectators but active players in their energy urban and rural landscapes.

8 Bielig, M., Kacperski, C., Kutzner, F. and Klingert, S. (2022). Evidence behind the narrative: Critically reviewing the social impact of energy communities in Europe. *Energy Research & Social Science*, 94. <https://doi.org/10.1016/j.erss.2022.102859>

9 European Commission (2023a). Energy communities. Available at: https://energy.ec.europa.eu/topics/markets-and-consumers/energy-communities_en [Accessed 29.11.2023]

ROLE AND FORMS OF CITIZENS PARTICIPATION IN THE ENERGY TRANSITION

The global rush to combat climate change has brought citizen participation to the forefront of the energy transition, emphasizing its role in contributing to the global pursuit of achieving the Sustainable Development Goals (SDGs). The European Commission has strongly emphasized the role that citizens must have so a just energy transition can be ensured, recognizing the role that different citizen-led forms may have. Considering that the energy sector is responsible for more than 75% of Europe's greenhouse gas emissions,¹⁰ speeding up the uptake of renewable energy technologies which are also deemed clean necessitates a strong push from all societal stakeholders. Building on the insights from various European projects, the arguments presented hereinafter about the role and forms of citizen participation in the energy transition will directly be tied to their explicit positive impact on SDG 7 and SDG13.

Collective Energy Initiatives (CEIs), including ECs, stand as grassroots approaches to sustainable energy uptake, with communities and individuals assuming leadership roles in reshaping local power dynamics and challenging the energy system and its incumbents. In these initiatives, citizens actively engage in the investment and development of small-scale renewable energy projects, embracing technologies like solar panels and heat pumps to generate electricity and heat at a local, community level. This localized generation of clean energy represents a paradigm shift, empowering communities to chart their own course towards environmental sustainability and energy independence, as seen through many different H2020 projects such as ENCLUDE,¹¹ DECIDE,¹² EC2¹³ and others.

10 European Commission (2023b). Energy and the Green Deal. Available at: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/energy-and-green-deal_en [Accessed 29.11.2023]

11 <https://encludeproject.eu/>

12 <https://decide4energy.eu/>

13 <https://ec2project.eu/>

IMPACTS OF COLLECTIVE ENERGY INITIATIVES

By engaging in CEIs, citizens have the opportunity to become architects of their own energy future, contributing significantly to sustainable practices across various aspects while having a positive impact on the national climate and development goals. By investing in renewable technologies, communities simultaneously reduce their carbon footprint and embrace environmentally friendly energy alternatives as direct climate actions recognized under SDG13. The decentralized nature of these projects also fosters community resilience by lessening dependence on centralized power systems. This, in turn, enhances local energy security¹⁴ and ensures a reliable power supply even in the face of external disruptions.

The impact of decentralized renewable energy projects extends beyond environmental and energy security realms. Energy communities, for example, spark economic growth within communities, create job opportunities, promote local industry development, and foster a self-sustaining renewable energy market. The engagement of communities in decentralized renewable energy initiatives not only transforms their energy landscape but also signifies a collective commitment to a cleaner, more resilient, and economically vibrant future, contributing to both SDG7 and SDG13. In short, ECs have a positive environmental, technical, economic and social impact across the context where they are set up.¹⁵

14 European Commission (2022). In focus: Energy communities to transform the EU's energy system. Available at: https://energy.ec.europa.eu/news/focus-energy-communities-transform-eus-energy-system-2022-12-13_en [Accessed 21.11.2023]

15 Gjorgievski, V. Z., Cundeva, S. and Georghiou, G. E. (2021). Social arrangements, technical designs and impacts of energy communities: A review. *Renewable Energy*, 169, 1138-1156. <https://doi.org/10.1016/j.renene.2021.01.078>

NON-TECHNOLOGICAL COLLECTIVE ENERGY INITIATIVES

Stepping away from a techno-centric CEI manifestation that considers energy technologies as vital part of the citizen action, we turn to citizen-led renovation practices. In this innovative approach, individuals within a community actively participate in the revitalization and upgrade of existing built structures to enhance energy efficiency, reduce energy bills and environmental impacts. Whether through retrofitting homes with energy-efficient technologies or optimizing insulation, citizen-led renovation projects empower communities to take ownership of their environmental footprint, as envisaged with the new EU ‘Citizen-Led Renovation’¹⁶ initiative. Beyond the tangible benefits of reduced energy consumption, these initiatives foster a sense of collective responsibility, encouraging neighbors to collaborate towards a shared goal of creating more sustainable and resilient communities. By leveraging the expertise and financial capital of citizens, this movement is not only regarded as a direct action to combat climate change impacts (SDG13), but also to strengthen community bonds, outlining the potential for local bottom-up solutions in the broader context of the energy transition.

Another non-technological form of a CEI can be seen in the bottom-up opposition movements to projects that (are expected to) have devastating environmental impacts. Such efforts are mainly manifested through protests in which individuals harness the collective power of their voices to challenge unsustainable practices (such as the protests at Charles de Gaulle Airport in France that opposed the expansion of the airport),¹⁷ advocate for environmental preservation actions to be taken (including the protests against hydropower projects in Vietnam¹⁸ and North Macedonia)¹⁹ and demand alternative, cleaner solutions (such as the case of expanding the coal mine in Luetzerath in Germany),²⁰ as direct actions in support of SDG13. In essence, protests against environmental degradation projects show the transformative potential of collective actions, as citizens join together to shape a more environmentally conscious and resilient future through grassroots, largely non-violent forms of protests.²¹

16 https://energy.ec.europa.eu/news/launch-citizen-led-renovation-project-and-open-call-participation-2023-04-24_en

17 <https://climatecasechart.com/non-us-case/climate-activists-v-paris-airports/>

18 <https://www.iucn.org/content/two-dams-stopped-after-iucn-advises-against-world-heritage-nomination>

19 <https://www.euronatur.org/en/what-we-do/news/rejection-of-hydropower-plants-in-the-national-park-north-macedonian-revokes-concessions>

20 <https://edition.cnn.com/2023/01/14/europe/lutzerath-germany-coal-protests-climate-intl/index.html>

21 Scheidel, A., Bene, D. D., Liu, J., Navas, G., Mingorria, S., Demaria, F., Avila, S., Roy, B., Ertor, I., Temper, L. and Martinez-Alier, J. (2020). Environmental conflicts and defenders: A global overview. *Global Environmental Challenge*, 63. <https://doi.org/10.1016/j.gloenvcha.2020.102104>

THE CURIOUS CASE OF NORTH MACEDONIA

Situated in the heart of the Balkan peninsula, North Macedonia enjoys around 280 sunny days a year and has one of the highest solar irradiances among all countries in the region.²² This makes the country an attractive destination for investments in photovoltaics.²³ Indeed, the country's favorable solar irradiation and wind conditions have attracted many investments in the past years, making the country a regional hub for renewable energy sources.²⁴ Plans to expand up to 300 MW of solar power by the end of 2023 were announced,²⁵ while the EUR 500 million investment in a wind park in the north of the country by the German wind company²⁶ quickly became the news of the year. The most recent announcement by the European Bank for Reconstruction and Development (EBRD) and the World Bank (WB) detailing the EUR 3 billion²⁷ in support of North Macedonia and the country's efforts of phasing out coal power further demonstrates the country's future away from fossil fuels, with an energy system centered around renewable energy sources.

Considering the planned expansion of, and investments in, renewable energy technologies across the country from different development and domestic and international for-profit investors, one important aspect needs to be considered – the energy transition belongs to all. In simple terms and following the leave-no-one-behind principle, this means that the energy transition needs to include the interests of all stakeholders, with citizens' needs taking the center stage. Initial efforts by the government to include households in the energy transition by enabling them to install small-scale renewable energy technologies is considered as a right step towards including citizens in the transition. However, citizens' participation must not end here, and different approaches and changes need to be implemented to effectively include and enable bottom-up citizen-led initiatives.

22 GRID-Arendal (2015). Solar electricity potential. Available at: <https://www.grida.no/resources/7061> [Accessed 29.11.2023]

23 ICEOR-MANU (2022). Using mine lands and other brownfields for solar and wind power deployment in North Macedonia: study and methodology. Available at: https://inis.iaea.org/collection/NCLCollectionStore/_Public/53/119/53119812.pdf [Accessed 15.11.2023]

24 <https://www.reuters.com/business/energy/western-balkans-see-boom-solar-energy-grids-unprepared-2023-04-20/>

25 <https://balkangreenenergynews.com/kovacevski-north-macedonia-to-add-as-much-as-300-mw-in-solar-power-by-end-2023/>

26 <https://balkangreenenergynews.com/german-wind-farm-investment-in-north-macedonia-to-top-eur-500-million/>

27 <https://www.reuters.com/sustainability/sustainable-finance-reporting/ebird-backs-4-bln-euro-plan-wean-north-macedonia-off-coal-power-2023-11-17/>

WHAT SHOULD EC-RELATED POLICIES IN NORTH MACEDONIA CONSIDER?

Both the REC and the CEC aim to provide effective control within communities along with provisioning of environmental and social benefits and a focus on diversity and inclusion of different stakeholders. While ECs in the European Union are governed through REDII and EMD, any energy-related citizen-led collective actions are still not regulated in North Macedonia. If citizens want to become part of the energy transition, the only way to do that is through small-scale, individual renewable energy technologies.²⁸ Citizens or companies might install up to 6 kW and up to 40 kW of renewable energy technologies respectively, primarily intended for their self-consumption. However, if they want to join forces and take up any collective action around energy, they are not able to, as there is no policy that governs such actions in North Macedonia. Therefore, to allow collective forms of action in the energy transition (such as ECs), new policies need to be introduced. These new policies must be inclusive and consider the leave-no-one-behind principle, considering different aspects as explained hereinafter.

Barriers originating from (but not limited to) local authorities and the distribution system operator (DSO) across aspects that cover energy technologies, the built environment codes and regulation and the participation in the energy market need to be addressed. Introducing net metering will boost bottom-up participation in the energy market, enabling fair competition between prosumers and existing market players. Considering the importance of capital for upscaling citizen-led bottom-up initiatives,²⁹ financial support mechanisms need to be ensured, following the examples of Netherlands's Development Fund for Energy Communities or the Renewable Energy Support Scheme in Ireland.³⁰

To ensure speedy growth of energy communities in North Macedonia, the role of the DSO needs to be reconsidered. The DSO's obligation is to manage part of the grid and enable new connections while considering the technical constraints. As such, new technologies/energy communities might not be connected to the grid if the technical constraints prevent that. In other words, the grid must be rehabilitated and modernized to allow connections of new technologies, considering also the bi-directional power flow stemming from prosumers (entities that interact with the grid in both the production and consumption of energy). In short, the energy transition depends on the technical capability of the grid to integrate renewable energy tech-

28 <https://balkangreenenergynews.com/north-macedonia-to-subsidize-households-to-switch-to-natural-gas-for-heating/>

29 Heuninckx, S., Boveldt, G., Macharis, C. and Coosemans, T. (2022). Stakeholder objectives for joining an energy community: Flemish case studies. *Energy Policy*, 162. <https://doi.org/10.1016/j.enpol.2022.112808>

30 Arnould, J. and Quiroz, D. (2022). Energy communities in the EU: Opportunities and barriers to financing. Available at: <https://friendsoftheearth.eu/wp-content/uploads/2022/09/Energy-Communities-in-the-EU-opportunities-and-barriers-to-financing.pdf> [Accessed 30.11.2023]

nologies, placing, however, the burden solely on the DSO to modernize the grid risks the speed of the transition. Consequently, if new stakeholders or business models emerge for mobilizing the needed capital to modernize the grid, the incumbent power that the DSO has will be challenged - which is to be welcomed considering both short - and long-term perspectives.

Another aspect that needs to be considered is the inherent difference between rural and urban CEIs. Barriers that are associated with using common spaces/areas for installing shared renewable energy technologies might jeopardize the execution of the overall idea, which is mostly the case when using rooftops in residential buildings that are more commonly found across urban areas. **Who gets what, how, and how much?** are valid questions that stem from the community's self-consumption and control of the technologies; however, the main issues arise when consensus among the households living in the same building cannot be reached.

To provide effective support across technical, admin and financing aspects when setting up or expanding an EC, a centralized support office for energy communities needs to be established, following the example of Austria.³¹ This office, effectively acting as a one-stop-shop, will provide the needed know-how to citizens and communities aiming to acquire equipment, fill out the needed paperwork, or get clarification on the available financing schemes and technical support. This office will need to coordinate closely with the DSO, the local and the central government and interested businesses from the energy realm.

In conclusion, any policies intended to encourage, promote and sustain citizens' participation in the energy transition as part of the SDG efforts of the country need to be developed in an inclusive way, considering the leave-no-one-behind principle. The absence of regulations for energy-related citizen-led collective actions underscores the urgency for new policies to enable and govern such initiatives. To truly integrate citizens into the energy transition, these policies must go beyond individual small-scale installations and embrace collective actions like ECs, adapting EU's concepts of CEC and REC. Addressing the barriers that citizens currently face when attempting to become part of the energy transition as individuals is paramount, with the introduction of different forms of financial support mechanisms and net metering as a catalyst for fair competition. Additionally, addressing the technical challenges associated with grid integration requires a reevaluation of the DSO's role, opening avenues for new stakeholders and business models to mobilize capital for grid modernization. Recognizing the inherent differences between rural and urban Community Energy Initiatives (CEIs) is crucial, particularly in navigating shared spaces and ensuring consensus among households. Establishing a centralized support office for energy communities, akin to the Austrian model, emerges as a strategic step, serving as a one-stop-shop to provide essential know-how, streamline administrative processes, and foster collaboration between communities, DSOs, governments, and relevant businesses. By incorporating these considerations, North Macedonia can lay the groundwork for a robust, inclusive, and rapidly advancing energy transition.

³¹ <https://energiegemeinschaften.gv.at/>

DECENT WORK AND ECONOMIC GROWTH



A STUDY ON CIRCULAR ECONOMY AWARENESS AMONG STUDENTS IN NORTH MACEDONIA

Tatjana Drangovska, MSc¹

Marica Antovska-Mitev, PhD²

Elena Mujoska Trpevska, PhD³

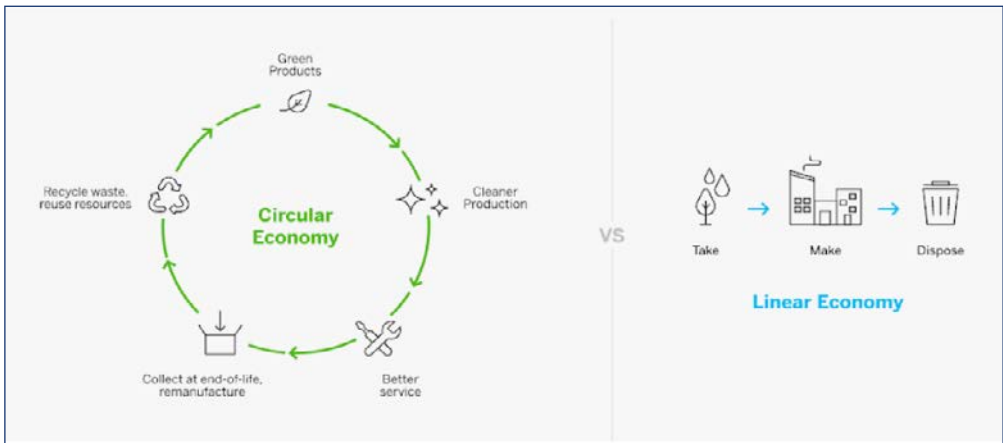
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- 1 PhD student at Faculty of Economics – Skopje, Ss. Cyril and Methodius University of Skopje, and Associate Researcher at the Macedonian Academy of Sciences and Arts, the Center for Strategic Research “Ksente Bogoev”
 - 2 Scientific Collaborator at the Macedonian Academy of Sciences and Arts, the Center for Strategic Research “Ksente Bogoev”
 - 3 Senior Research Associate at the Macedonian Academy of Sciences and Arts, the Center for Strategic Research “Ksente Bogoev”

INTRODUCTION

The circular economy (CE) provides two discourses that have been previously considered difficult to reconcile: the economic growth and environmental protection. The CE model breaks the linear economic model of production-consumption-disposal into a sustainable process of reuse-reduce-refurbish-repair-recycle. The transition from linear to circular economy requires a joint effort by stakeholders from all levels and sectors, including policy makers, academia, business, consultants etc.

According to many authors, the CE is a new paradigm that links the economic, environmental and social components and aligns them with the SDGs included in the Agenda 2030.¹

Picture 1. Circular economy vs linear economy



Source: www.sap.com

The CE is important for achieving multiple SDGs, but it has a significant magnitude for achievement of SDG 8 – Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. The academic research and literature provide evidence that the implementation of CE could have important positive effects on job creation, implementation of innovation, increase of productivity, resource saving, creation of value added for the economy and society in both developed and developing countries.²

- 1 Liu, Z., Adams, M., Cote, R.P., Geng, Y. and Li, Y. (2018). “Comparative study on the pathway of industrial parks towards sustainable development between China and Canada”. Resources, Conversation and Recycling, vol. 128, pp: 417-425.
- 2 Yaun, Z., Bi, J. and Moriguchi, Y. (2008). “The Circular Economy: A New Development Strategy in China”. Journal of Industrial Ecology, 10(1-2): 4-8.; Gower, R. and Schroder, P. (2016). Virtuous Circle: how the circular economy can create jobs and save lives in low and middle-income countries. Tearfund: Institute of Development Studies, London, United Kingdom.

North Macedonia has to invest a lot of effort to reach the EU average standards in economic prosperity and to achieve the targets defined in the Agenda 2030, mainly in terms of achieving sustained growth and decent work for all. By incorporating the CE as a way of forthcoming economic growth, the Macedonian business sector could increase the economic profit by implementing eco-friendly technologies, stimulating new innovative production processes, creating new jobs related to the implementation of the CE model, etc. According to a UNDP study, the implementation of circular practices in the waste management sector in North Macedonia, in line with the European Green Deal and the EA Action Plan on CE, can create 2 740 new jobs and 47.17 million EUR of economic benefits by 2030.³ In the Green Agenda for the Western Balkan, the CE is identified as one of the five pillars that enable the transition towards a green economy for the countries. Implementing CE is important for rebuilding North Macedonia to become more resilient after the COVID-19 pandemic and navigating the energy and price crisis through the creation of green jobs and achievement of green growth.

Universities play a significant role as a stakeholder in implementing the CE approach. They can support the transition to CE through teaching, research, social engagement and activities. The university students will shape the future society and economy as future corporate leaders, policy makers, researchers and innovators.

In light of this, the purpose of the study is to provide insights into the awareness of the university students in North Macedonia regarding CE, using the Knowledge, Attitude and Behavior (KAB) Framework. The KAB Framework is an important instrument for environmental policy-making decisions.⁴ The results of the research are important for two reasons. First, it provides information to policy makers and academia about university students' awareness of and familiarity with the CE concept. Second, it is an initial step to raise the awareness of university students as promoters and implementers of CE in higher education, economy and society.

3 UNDP (2021). Circular Economy and Climate Change – Policy Brief, Republic of North Macedonia. Authors Mavropoulos, A., Maalouf, A. and Kamariotakis, H.

4 Sousa, S., Correia, E., Leite, J. and Viseu, C. (2020). “Environmental knowledge, attitudes and behavior of higher education students: a case study in Portugal”. *International Research in Geographical and Environmental Education*, vol. 30, issue 4, pp: 348-365.

CIRCULAR ECONOMY – NEW ECONOMY FOR SUSTAINABLE DEVELOPMENT AND DECENT WORK

SDG 8 – Decent work and economic growth, part of the Agenda 2030, recognizes the importance of achieving sustained and inclusive growth that can drive progress, create new jobs for all and improve living standards. Part of SDG 8 are twelve targets to be achieved by 2030. The circular economy, as a new economic model - opposite to the traditional economic model, is recognized as a driving force for the achievement of economic growth. CE implies decoupling the economic growth from the use of natural resources and inputs. The CE is a regenerative system in which resource input, waste, emissions and energy leakages are minimized through long-lasting design, repair, reuse, remanufacturing, refurbishing and recycling activities.⁵ The implementation of a circular economy has positive economic effects in the medium term. Its implementation will produce structural change in investments, employment, capital depreciation and sectoral growth. Having in mind those positive economic effects, it can be considered that CE is strongly linked with the achievement of the following targets that are part of SDG 8: 8.1. sustained per capita economic growth; 8.2. higher levels of economic productivity; 8.3. support productive activities; 8.5. productive employment and decent work for all, with the main focus on young people and persons with disabilities. Additionally, the implementation of CE is very important for the achievement of target 8.4. global resource efficiency in consumption/production and decoupling economic growth from environmental degradation.

Moving towards a more circular economy will produce a range of benefits for our economy, our environment and our people. These include:⁶

- reducing the pressure on natural resources,
- improving the security of supply of resources,
- increasing competitiveness,
- stimulating innovation,
- encouraging economic growth,
- providing better, more durable and innovative products to consumers that will save them money in the long run.

North Macedonia is fully committed to the UN 2030 Agenda for Sustainable Development. The country is part of the group of countries with high-middle income. After

5 UN Economist Network. New Economics for sustainable development – Circular economy. circular_economy_14_march.pdf ([un.org](https://www.un.org))



6 <https://www.ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview#:~:text=The%20circular%20economy%20is%20based,Regenerate%20nature>

a decade fraught with economic and political challenges, North Macedonia launched an ambitious reform agenda for strengthening the economy, reforming the state institutions and enhancing the implementation of human rights. In the period that follows, the country will face complex development challenges. The social and economic progress achieved in the previous years is under threat of the implications of the Covid-19 crisis, and the recent energy and price crisis. Furthermore, the country is facing demographic challenges – aging of the population and a brain drain process which is undermining the human capital of the nation. Besides those challenges, North Macedonia has to achieve sustainable development that will enable the creation of green growth and productive jobs, with a focus on green jobs.

This paper further includes the main indicators that are part of SDG 8 and shows the current situation in the country regarding this goal, including the progress achieved compared with the previous years. In the past years the living standard in North Macedonia has improved, but some slowdown happened as a result of the Covid-19 crisis, and the price and energy crisis. The macroeconomic indicators reflect a stable macroeconomic situation, but still the economic growth is below its potential. In the past years the environmental expenditures and investments have increased, which is a good impulse for the achievement of green growth and the creation of green jobs. The employment rate has increased in recent years, while the unemployment rate and the informal employment rate have decreased. This is mainly a result of the established active employment measures, measures against the informal economy and informal employment, and a rapid emigration of the population. The resource productivity rate and domestic material consumption as indicators that are part of SDG 8 and circular economy indicate an improvement in this field in the country. The resource productivity has increased by 22 p.p.⁷ in 2021 compared with 2015, while the domestic material consumption has decreased by 0.3 tons per capita compared with 2015.







The investment in a green and circular economy, as well as the creation of green and decent jobs, is identified as one of the priorities for the improvement of the living standard, improvement of the employment and reaching sustained rates of economic growth in line with the potential of the economy.⁸

SDG 8 in North Macedonia - Main indicators

	<p>Real GDP per capita, 2020 4 100 euros +13.9% compared to 2010</p>		<p>Investments as % of GDP, 2020 23.5% +1 p.p. compared to 2017</p>
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⁷ Percentage points

⁸ ОН во Република Северна Македонија и Влада на Република Северна Македонија (2020). Рамка за соработка за одржлив развој 2021 – 2025. Достапно на: UNSDCF_21-25 MKD_PRINT (v2).pdf, пристапено на: 11.29.2023.

	<p>Environmental protection expenditures and investments, 2022 7 841 million denars +43.2% compared to 2015</p>		
	<p>Employment rate, 2022 47.3% +5.2 p.p. compared to 2015</p>		<p>Unemployment rate, 2022 14.4% -11.7 p.p. compared to 2015</p>
	<p>Informal employment, 2022 12.2 % -5.9 p.p. compared to 2017</p>		
	<p>Resource productivity, 2021 130,8 + 22 p.p. compared to 2015</p>		<p>Domestic material consumption, 2021 8.9 tons per capita -0.3 compared to 2015</p>

The analyses of the CE implementation in North Macedonia are relatively restricted due to missing data for the main indicators: circular material use rate and material flows for circular economy – Sankey diagram data. The country is also missing registers/platforms or databases where the CE practices or measures implemented by the Macedonian business sector can be recorded. There is also a lack of comprehensive analysis regarding the current green jobs, the potential for creating new green jobs, the implementation of new green technologies, R&D activities related to implementation of green innovation, economic benefits created by the implementation of CE practices, as well as the level of awareness among the main stakeholders responsible for implementation of CE concept and practices. Although companies that have invested in the circular economy are not very often found in the country, there are still many examples.

“Veze Shari” is a chicken farm for production of eggs and is one of the first companies in the country that took steps towards implementing circular practices with the investment in a biogas plant in 2013. The biogas plant became operational in 2015 and has a primary goal to properly collect waste that used to be just dumped into nature. Additionally, it provides the company with electricity for its own production, but also makes it possible to sell the excess electricity produced thus providing an additional profit source.

“Pakomak” is the first Macedonian company that has introduced the global trend of selection – returnable vending machines for collecting plastic bottles and cans. By selecting plastic packaging or cans in these machines, citizens have the opportunity to collect green points using the “Ecomak” application. Green points can further be exchanged for valuable benefits such as: vouchers for discounts in markets and other sales facilities, discounts when paying for public services and utility costs, donations, etc.

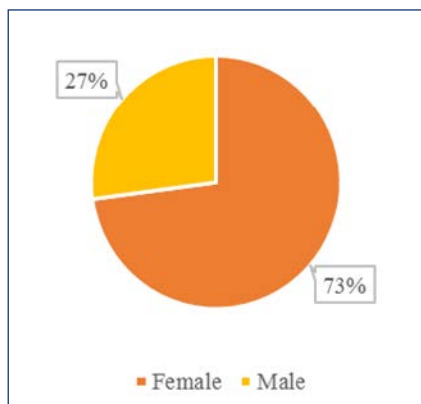
“Makstil”, as a leading company in the production of steel in the country, implemented the “Cinderella” project (2021), as a model of circular economy, financed by the “Horizon 2020” program of the European Commission, and managed to achieve the set objective of zero waste. In addition to its main product – steel sheet, which constitutes 85.5% of its output and which can be completely recycled, Makstil produces 10% black cane, 2% white cane, 1.5% covarine (iron oxide) and 1% filter dust as side products. The realization of this project enabled production of asphalt for revitalization of degraded space in a parking lot and reconstruction of access roads and concrete blocks which were used for construction of partition walls - all produced during the process of smelting scrap metal.

STUDENTS’ AWARENESS REGARDING CIRCULAR ECONOMY

The population included in the survey are university students in the first cycle of university studies. In this first phase, students from only one university, Ss. Cyril and Methodius University in Skopje (UKIM), were surveyed. The results are treated as preliminary data and this survey is treated as a pilot survey. In the next phase, the plan is to extend the survey to other universities and faculties in the country. The questionnaires were distributed to students in paper form. The survey was conducted in the period 13–17 November 2023. The participation in the survey was voluntary and the authors maintain the respondents’ confidentiality. The questionnaire is structured in four parts. The first part includes personal details about the respondent as gender, age, faculty, and familiarity with the CE concept. The second part has 5 questions identifying the knowledge, the third part has 6 questions identifying the attitude, and the fourth part has 5 questions identifying the behavior of the respondent regarding CE. In the second, third and fourth part, the respondents were asked to indicate their level of agreement using the Likert scale (strongly agree, agree, neutral, disagree, strongly disagree).

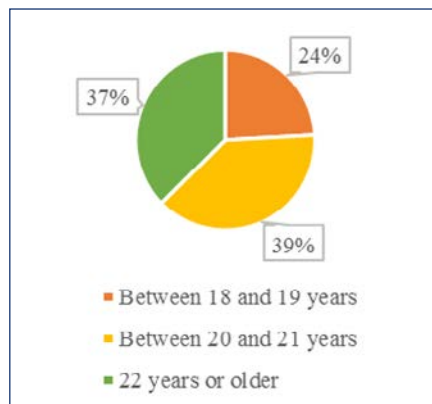
The survey covers a sample of 85 university students. The results related to the students’ gender, age and faculties in which they study are shown in the graphs below (Graph 1, Graph 2 and Graph 3).

Graph 1. Gender of the students



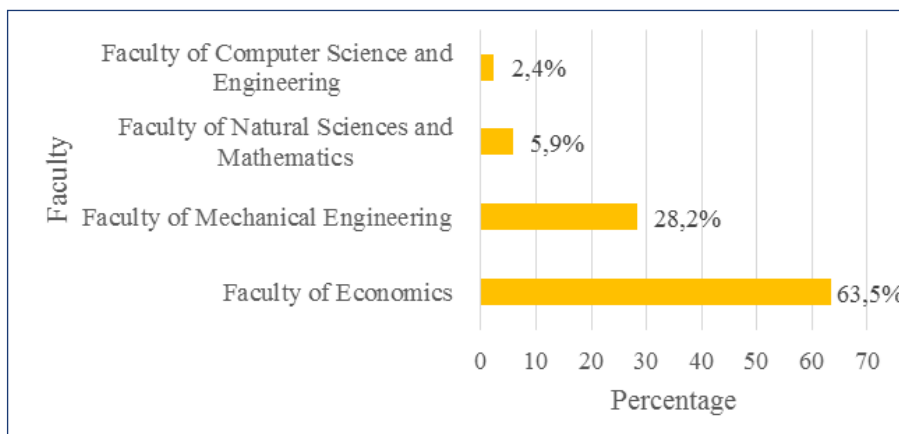
Source: Authors' calculations.

Graph 2. Age of the students



Source: Authors' calculations.

Graph 3. Faculties where the surveyed students study

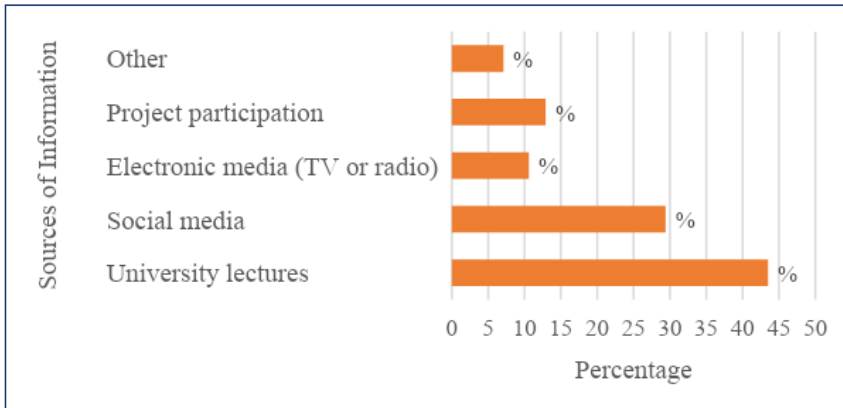


Source: Authors' calculations.

Most of the students (70.6%) said they know what the CE concept is, and almost one third of the students (29.4%) were not familiar with the CE concept.⁹ Graph 4 shows the main sources of information for students on the CE concept.

⁹ A question with multiple answers.

Graph 4. Sources of Information on the CE concept



Source: Authors' calculations.

Regarding the research question – What is students' awareness (knowledge, attitude and behavior) regarding the CE concept? – the survey results on the three variables – knowledge, attitude and behavior – are mainly categorized as high (strongly agree and agree) (Table 1). The results suggest that students generally tend to have good knowledge and a strong attitude towards CE. Also, they mainly show a good capacity for practicing activities related to CE in their daily life, but the results indicate there is room for improvement in this part.

Table 1. Student's KAB (knowledge, attitude and behavior) towards CE

Knowledge		Attitude		Behavior	
Category	Percentage	Category	Percentage	Category	Percentage
Strongly agree	22,1%	Strongly agree	34,6%	Strongly agree	26,6%
Agree	48,7%	Agree	36,9%	Agree	31,8%
Neutral	22,1%	Neutral	19,3%	Neutral	21,6%
Disagree	6,4%	Disagree	6,1%	Disagree	16,5%
Strongly disagree	0,7%	Strongly disagree	3,1%	Strongly disagree	3,5%
Total	100%	Total	100%	Total	100%

Source: Authors' calculations.

In order to answer the research question whether the students' knowledge, attitude and behavior toward CE correlate with each other, the Pearson correlation coefficient is calculated. The results show that there is a correlation between the knowledge and attitude (at level of significance 0,05), knowledge and behavior (at level of significance 0,05) and attitude and behavior (at level of significance 0,05). This means that if students have good knowledge toward CE, they also have a good attitude toward CE practices. The results also show that there is a positive correlation, but not so strong, between knowledge and behavior and attitude and behavior. This means that knowledge not so strongly constructs behavior and the positive attitude not so strongly affects the behavior of CE practices. Other research confirms the general positive correlation between the knowledge and behavior, knowledge and attitude and attitude and behavior, but the analyses by questions show that students have a good knowledge related to CE but they do not have positive behavior and attitude on certain issues/questions related to CE.¹⁰

Table 2. Correlation test results between KAB variables

Variable	r correlation	P value
Knowledge and Attitude	0,354	0,001
Knowledge and Behavior	0,279	0,010
Attitude and Behavior	0,284	0,008

Source: Authors' calculations.

¹⁰ Dewi, R., Arfani, W.J. and Herawan, D. (2022). A Study Of Circular Economy Awareness In University Students: The Assessment of Knowledge, Attitude, and Behaviour, Journal of World Trade Studies, vol. 7, no.1, 17 pp.

CONCLUSION AND POLICY RECOMMENDATIONS

In view of the analysis included herein and the results of the study, the main policy recommendations are summarized as follows:

- Acceleration of the CE implementation process provides the Macedonian businesses, government and organizations with the opportunity to create more sustainable development.
- Circular economy provides economic opportunity for the country by stimulating innovation and creating employment. New business models are also providing significant innovation opportunities. Many of the economic benefits are visible on the long run, at same time they require significant investment and incentives to drive the changes. This means that financial incentives should be established in North Macedonia for businesses to develop new innovative eco-friendly business models.
- Transition to CE in North Macedonia can create new green jobs, but there is also the fact that some jobs may be lost in the linear economy models, so investing in just transition via social dialog, reskilling programs and social protection is of key importance for the country. While the primary effect is creation of new jobs, another value added of the CE is the provision of formal work and improved working conditions for the informal workers, as the waste scavengers.
- The CE has social, economic and environmental benefits, but achieving those benefits requires ambitious action, where everyone in the country has an important role to play – business, government, civil society, financial institutions, education organizations, research organizations, etc.
- Strengthening the population awareness about the CE concept, especially among students, is of high importance, having in mind that they will be future corporate leaders, entrepreneurs, policy makers and researchers.
- Enhancement of the university lectures and the university programs is needed with issues related to the CE concept.
- Universities should not focus only on knowledge creation, but also on building positive attitude and positive behavior towards practicing CE related activities in the daily lives of the students.
- Improvement of the country's resilience to crises (COVID-19 crisis or the energy and price crisis, for example) can be done by creating green jobs and achieving green growth, as core elements of the CE concept.

DECENT WORK AND ECONOMIC GROWTH



FOSTERING SUSTAINABLE ECONOMIC GROWTH THROUGH YOUTH EMPLOYMENT, EDUCATION AND TRAINING: THE CASE OF THE REPUBLIC OF NORTH MACEDONIA

Katerina Shapkova Kocevska, PhD¹

¹ Associate professor at the University Ss. Cyril and Methodius - Skopje, Iustinianus Primus Faculty of Law - Skopje

1. INTRODUCTION

One of the key objectives outlined in the 2030 Agenda for Sustainable Development is the promotion of long-term, inclusive, and sustainable economic growth, as well as the attainment of full and productive employment, along with decent work opportunities for all individuals, commonly known as the eight Sustainable development growth (SDG8). The aim of this essay is to evaluate the progress achieved by the Republic of North Macedonia in its endeavors to attain this goal. Our focus is in monitoring the advancements made by countries in achieving the target of "substantially reducing the proportion of youth who are not engaged in employment, education, or training" (SDG target 8.6). The specificity of this target is in ways that differ from the other activities outlined in the SDGs, which are projected to be accomplished by 2030. In contrast, the objective of significantly decreasing the percentage of young individuals who are neither employed, nor enrolled in school or training (NEET youth) was set to be reached by 2020. In order to monitor the advancement towards the attainment of this objective, the UN has designated a specific indicator, which is the proportion of young individuals who are neither engaged in education, employment, nor training, commonly referred to as NEET rates.¹

This study assumes that persons between the ages of 15 and 29 are categorized as young people. We were motivated to choose these age parameters in defining of the young group by two causes. The phrase "young people" is clearly defined in relevant national law where youth as everyone between the ages of 15 and 29². Second, relevant targets about the proportion of NEET youth in the Republic in North Macedonia and in the European Union (EU) are set for the age group 15 to 29. This allows for international comparisons to be made, enabling an assessment of the country's progress in relation to the performance of EU member countries.

Based on the findings about the rates of NEET youth, relevant conclusions and recommendations were derived. It is hoped that the article will make an important step towards the advancement of the role of young individuals within Macedonian society and provide a framework that recognizes their strategic importance in achieving inclusive, sustainable, and equitable development.

1 Goal 8 | Department of Economic and Social Affairs. (n.d.). https://sdgs.un.org/goals/goal8#targets_and_indicators

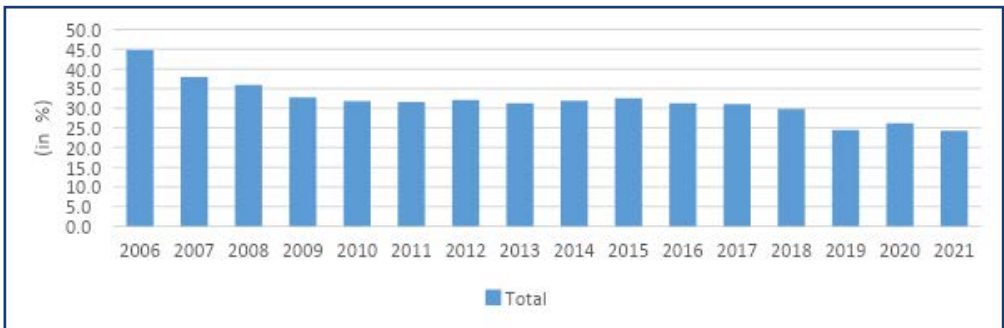
2 Law on Youth Participation And Youth Policies (Official Gazette of the Republic of North Macedonia, No. 10/2020).

2. NEET RATES IN THE REPUBLIC OF NORTH MACEDONIA

In 2021, the total youth population aged 15-29 years in North Macedonia was approximately 390.000 people. About one third of them (around 130.000 people) were employed and the number of unemployed youths was around 50.000 people. About 210.000 young people were inactive, mainly because of school attendance (78,1% of all young inactive people). The youth unemployment rate in the given year was 12,9% and nearly 40% of the unemployed were looking for a job in a period longer than a year.³ Approximately 94.000 young people were neither in employment nor in education and training at the same time.⁴

The NEET rate conveys the number of young people not in education, employment or training as a percentage of the total youth population. Figure 1 displays the NEET rates pertaining to young people between the ages of 15 and 29 in the Republic of North Macedonia in the time period between 2006 and 2021.

Figure 1. Young people (aged 15-29) neither in employment nor in education and training in the Republic of North Macedonia, by gender (2006-2021)



Source: State statistical office.

The analysis indicates that the Republic of North Macedonia has made substantial progress in reducing the proportion of young individuals who are neither employed nor engaged in education and training. Fifteen years ago, around 44,8% of the youth population in the country were not engaged in the employment, education, and training system. The NEET rate in the year 2021 was recorded as 24,3%.

3 International Labour Organization. (2022, March). Republic of North Macedonia YOUNG PEOPLE NOT IN EDUCATION, EMPLOYMENT OR TRAINING (NEET) MAPPING AND POLICY POINTERS. Retrieved November 29, 2023, from https://northmacedonia.un.org/sites/default/files/2022-09/MKD_NEET%20Mapping%20and%20Policy%20Proposals_EN.pdf, pg.7

4 <https://shorturl.at/opIT3>

The rate of NEET individuals remained largely stable between 2010 and 2018, with around 32% of the population aged 15 to 29 being classified as NEET. In 2019, a significant decrease of 5,3 percentage points in the NEET rate was observed, which may likely be attributed to the implementation of the Youth Guarantee program.⁵ The NEET rate had a notable increase of 1.7 percentage points in the year 2020 as compared to the preceding year, primarily attributed to the impact of the Corona crisis. In the year 2021, the NEET rate reverted to around 24%, which is consistent with the level observed before to the onset of the COVID-19 pandemic.

Youth Guarantee (YG) program was first piloted in 2018 in three local centers of the Employment Service Agency in North Macedonia. It was modeled by the Youth Guarantee program of the European Union.⁶ The target group of the YG program was NEET youth (aged 15-29) and its aim was to provide them with a quality offer of employment, continuing education or training, or a traineeship within four months of leaving school or becoming unemployed. In 2018 when the program was piloted, approximately 5200 youth NEET were registered in the YG program (coverage rate of the program was 4,2% of total NEET youth population in the country). In the upcoming years the coverage of the YG program was broadened to the whole country and the total number of the NEET youth in the program was around 20.000 NEET youth (coverage rate averaging about 20% of NEET youth population). The key indicators of the YG program in the 2018-2021 period are provided in Table 1.

Table 1. Key indicators for the service provision system from YG in North Macedonia

INDICATOR	2018 (pilot)	2019	2020	2021
Total number of registered youths for YG	5.266	20.248	25.502	19.298
<i>Women (%)</i>	51,1%	51,7%	50,4%	50,0%
Share of registered youth who received offer latest four months after entering the program	41,9%	36,8%	34,2%	43,5%
<i>Job offer (% of total registered)</i>	36,6%	31,0%	29,3%	37,1%
<i>Other offer (% of total registered)</i>	5,3%	5,7%	4,9%	4,8%

5 Ministry of Labor and Social Policy, Government of the Republic of North Macedonia (2021). National Employment Strategy 2021-2027 with Action employment plan for 2021 – 2023. Retrieved November 29, 2023, from <https://www.mtsp.gov.mk/content/pdf/2021/trud/NSV%202021-2027%20i%20NPV2021-2023.pdf>

6 Escudero, V., & Mourelo, E. L. (2018). La Garantie européenne pour la jeunesse: Bilan systématique des mises en œuvre dans les pays membres. Travail et Emploi, 153, 89–122. <https://doi.org/10.4000/travailemploi.7983>

Share of registered youth who are part of the YG program after the completion of the 4 month period	34,3%	45,8%	61,3%	41,8%
Share of registered youth with unknown destination (% of total registered)	23,7%	17,4%	4,5%	14,7%
Coverage rate of YG (% on NEET population)	4,2%	20.4%	24,5%	20,6%

Source: Employment Service Agency, Labor Force Survey (2018 – 2021) in Ministry of Labor and Social Policy, Government of the Republic of North Macedonia (2023), Youth Guarantee Implementation plan for 2023 – 2026 (pg. 10).

In addition, the Operational plan for active employment programs, measures, and services in the labor market for 2023⁷ again includes the YG program. In 2023, the YG program is planned to be implemented at a national level and the planned coverage of participants in the YG is about 10.000 young people. The program will be considered successful if at least 30% of the people involved in GM successfully exit it within a period of 4 months, that is, they will be employed, re-involved in the educational process or will be included in active employment programs and measures. The GM program enables different types of services provided to the NEET youth, including:

- **Services:** Professional orientation and career counseling; Help with job search; Motivational trainings; Individual and group counseling; Trainings for preparation for employment and for work; Mediation in employment.
- **Employment:** Subsidies for employment of young people; Incentives for employment of young people with disabilities and Self-employment program.
- **Continuing education:** Training for a known employer; Training for professional qualifications according to the requirements of employers; Professional trainings according to the request of the employers; Trainings for in-demand occupations; Trainings for the development of digital skills and "Second chance" programs
- **Internship:** Internship schemes for young people and participation in ERASMUS+ program.

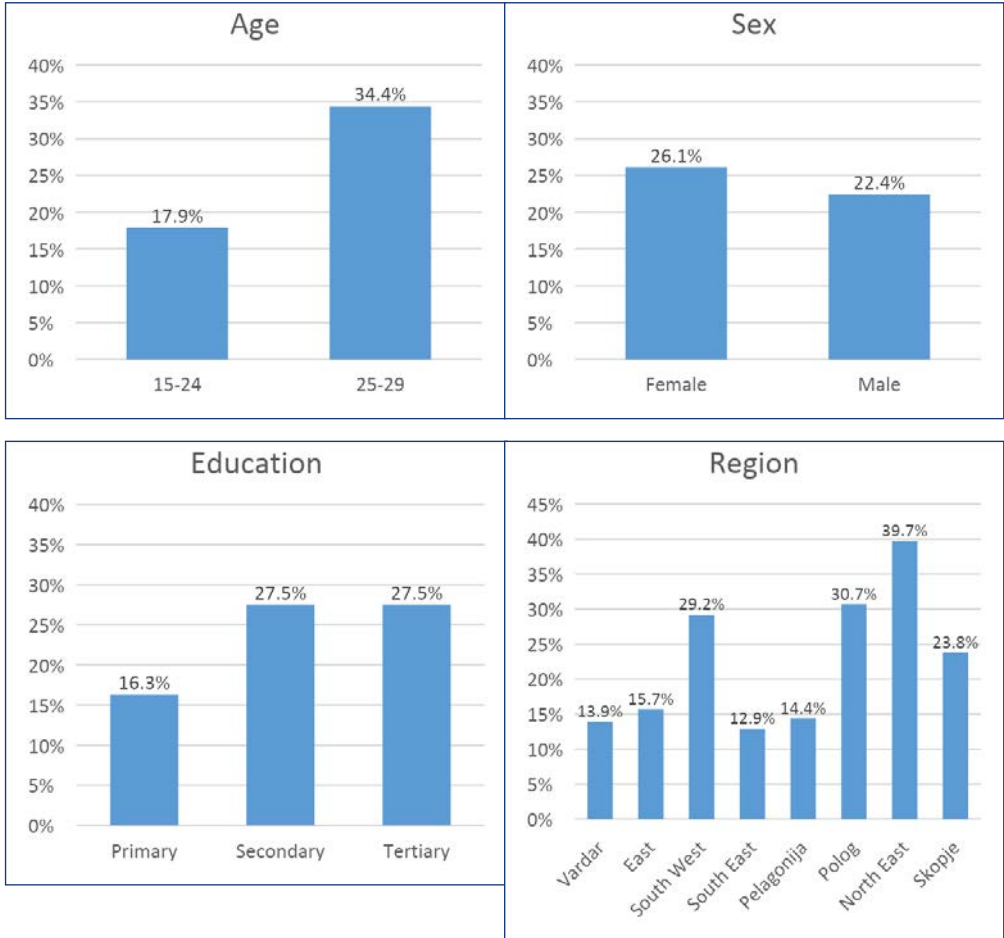
Successful realization of the YG program depends on the joint effort of the relevant institutions (Ministry of Labor and Social Policy, Employment Service Agency, Ministry of Education and Science, social partners and non-governmental organizations).

Considering the fact that the NEET youth represent a very heterogeneous group, we find it useful to provide insight to its complex structure by disaggregating the

⁷ Employment Service Agency of the Republic of North Macedonia (2023). Operational plan for active employment programs, measures, and services in the labor market 2023. Retrieved November 29, 2023, from <https://av.gov.mk/operativen-plan.nspix>

NEET rates with respect to different characteristics of the NEET population. In Figure 2, we show the NEET rates in North Macedonia in 2021 with regard to age group, gender, educational attainment and region.

Figure 2. NEET rates by age, sex, region and educational attainment, 2021 (%)



Source: International Labor Organization. (March 2022). Republic of North Macedonia YOUNG PEOPLE NOT INCLUDED IN EDUCATION, EMPLOYMENT OR TRAINING (NEET) - MAPPING AND POLICY POINTERS. <https://northmacedonia.un.org>

The age disaggregation of the NEET rate in 2021 shows a lower rate for the age group 15 - 24 compared to the NEET rate of the age group 25 - 29. Next, the NEET rate of the young women is higher than the NEET rate of the young men in the country. The NEET rates of the people with completed secondary and tertiary education is higher than the NEET rate of young adults with completed primary education. Finally, the NEET rates manifest different values among the regions in the country. The

highest NEET rates in 2021 were recorded in North East and Polog region, while the South East and the Vardar region had the lowest NEET rates at the same time.

Republic of North Macedonia has recently established national target for NEET rates in two important strategic documents: the National Employment Strategy 2021-2027⁸ and the National Youth Strategy 2023-2027⁹. **Both of these publications have a goal of reducing the NEET rate to 20% among young individuals aged 15-29 by 2027.**

According to the National employment strategy 2021 – 2027, the decrease of the NEET rate by 2027 should be achieved through two mechanisms. First, the reform of the education and training system is expected to lead to improvement of learning outcomes, pupils and students are expected to acquire the skills needed to pursue higher education or enter the labor market and reduces the mismatch of skills with the needs of the market. Second mechanism is through increase of the supply of vocational education and training, particularly at the postsecondary non-tertiary level education, enabling people to acquire competences demanded by the companies.

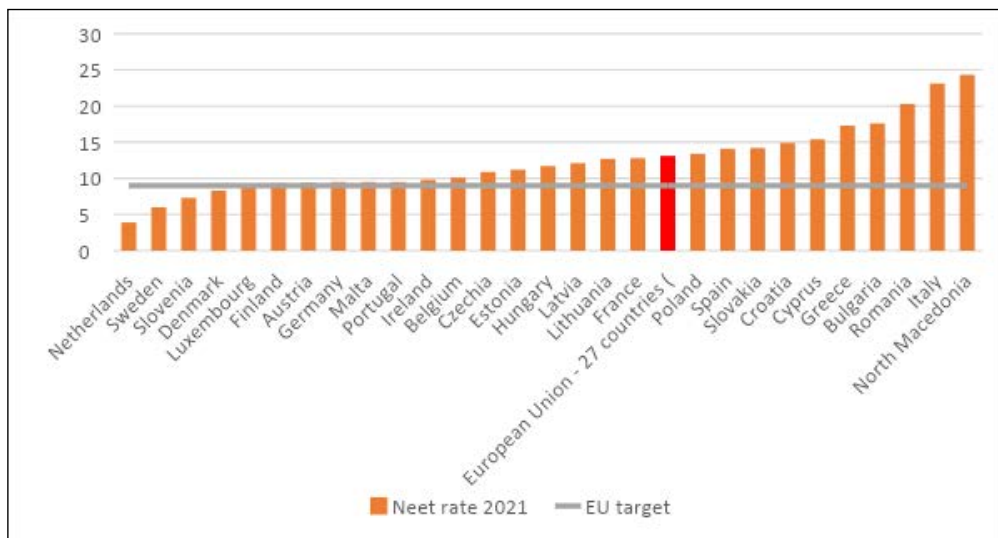
According to the National Youth Strategy, 20% NEET rate target is expected to be achieved through achieving the strategic goal of supporting young people to acquire knowledge and skills that make them a component on the labor market and securing continuous support to young people for choosing occupation in accordance with their affinities. The National Youth Strategy also introduces an intermediate target of 22% NEET rate that is expected to be achieved by 2025.

The comparison of the Republic of North Macedonia's efforts in reducing NEET rates with the accomplishments of other European nations is a compelling subject of study. Figure 3 illustrates the NEET rates of the European Union member states, together with the NEET rate specifically for the Republic of North Macedonia in the year 2021. It is noteworthy to acknowledge that the European Union (EU) has established a specific objective, which states that the proportion of young individuals who are not in employment, education, or training (NEET) should drop below 9% by the year 2030.

8 Ministry of Labor and Social Policy, Government of the Republic of North Macedonia (2023). National Employment Strategy 2021-2027. Retrieved from: https://www.mtsp.gov.mk/content/pdf/2021/trud/strategija_vrabetuvanje_2021_eng.pdf

9 National Youth Strategy 2023 – 2027 (Official Gazette of the Republic of North Macedonia, No. 204/2023).

Figure 3. Young people (aged 15-29) neither in employment nor in education and training in EU member countries and in the Republic of North Macedonia (2021)



Source: Eurostat and State Statistical Office.

In contrast to the individual member states of the European Union, the Republic of North Macedonia had the highest proportion of young individuals who were neither employed nor engaged in education and training. In 2021, the European Union (EU) exhibited an average NEET rate of 13.1%. Concurrently, the Republic of North Macedonia reported a NEET rate of 24.3%.¹⁰

NEET youth can be subdivided in two groups: youth who are unemployed and youth who are outside the labor force. The Republic of North Macedonia exhibits worse scores in comparison to the European Union average, not only in terms of overall NEET rates, but also in relation to the shares of unemployed NEET youth and young outside the labor force NEET share. In the period from 2013 to 2020, the share of the unemployed NEET youth in the Republic of North Macedonia has been decreasing, however it is still lagging behind the European average. Significant fall in the unemployment NEET rate has happened in 2019 compared to 2018. This occurrence might be a result from the introduction of the YG program that we have discussed about earlier. The proportion of NEET young outside the labor force is more stable, ranging between 10.6% and 12.9% throughout the examined period, although it is greater in each of the investigated years when compared to the EU average.

In addition, the NEET young may also be categorized into two distinct groups: those who express a desire to engage in employment, irrespective of their current job-seeking status, and individuals who exhibit a lack of interest in pursuing work opportunities. The NEET youth of persons who like to work share in the Republic of North Macedonia is higher than the unemployment NEET share in the country for

¹⁰ The average NEET rate of EU was 11.7% in 2022. Official data for the NEET rate of the Republic of North Macedonia is not published yet.

each of the analyzed years and higher than the EU average share. At the same time, the share of NEET youth who do not want to work is lower than the persons outside of the labor force NEET share in the Republic of Macedonia, meaning that there are persons outside the labor force who want to work but are not seeking for employment at the moment. Compared to the EU average, the NEET youth who do not want to work share is higher in each of the analyzed year. Detailed data about the shares of the different categories of NEET youth in the Republic of North Macedonia and EU are provided in Table 2.

Table 2. Different NEET rates in the Republic of North Macedonia and EU average (2013-2020)

Year	Not employed persons		Unemployed persons		Persons outside the labor force		Persons would like to work (seeking employment or not)		Persons do not want to work	
	EU	North Macedonia	EU	North Macedonia	EU	North Macedonia	EU	North Macedonia	EU	North Macedonia
2013	16.1	31.3	8.3	20.6	7.8	10.6	11.7	23.2	4.4	8.1
2014	15.7	31.9	7.9	20.8	7.8	11.1	11.3	24.3	4.3	7.6
2015	15.2	32.5	7.3	19.7	7.9	12.8	10.7	23.0	4.5	9.5
2016	14.5	31.3	6.6	18.4	7.9	12.8	9.9	22.6	4.6	8.7
2017	13.7	31.1	5.8	18.6	7.9	12.5	9.1	23.0	4.7	8.1
2018	13.1	29.8	5.3	17.5	7.8	12.3	8.4	22.2	4.7	7.6
2019	12.6	24.5	4.8	12.7	7.8	11.8	7.8	17.9	4.9	6.6
2020	13.8	26.2	5.2	13.4	8.7	12.9	8.9	19.5	4.9	6.7

Source: Eurostat.

3. CONCLUSIONS AND RECOMMENDATIONS

The significance of youth and their development as a fundamental element in attaining decent employment and sustainable economic growth has been acknowledged by the United Nations. One of the seventeen Sustainable Development Goals (SDGs) encompasses the objective of sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all individuals. In order to attain this objective, it is imperative to substantially decrease the percentage of youth who are neither employed nor engaged with education or training (NEET youth). The objective was expected to be achieved by the year 2020.

The Republic of North Macedonia is making notable progress in its pursuit of this objective. Specifically, in the year 2006, the proportion of individuals between the ages of 15 and 29 who were neither employed nor engaged in education or training amounted to 44,8% of the total population within this age group. In 2019, a significant decrease of 5,3 percentage points in the NEET rate was observed, which may likely be attributed to the implementation of the Youth Guarantee program. The NEET rate had a notable increase of 1.7 percentage points in the year 2020 as compared to the preceding year, primarily attributed to the impact of the Corona crisis. In the year 2021, the NEET rate reverted to around 24%, which is consistent with the level observed before to the onset of the COVID-19 pandemic. In 2021, the country has set a national target of 20% about the proportion of NEET youth to be achieved by 2027.

However, NEET rates differ among different groups within the population of young adults in the country. Thus, relatively higher NEET rates are recorded for youth in the 25-29 age group compared to the 15-25 age group, women compared to men, and youth with completed secondary and tertiary education compared to youth who completed only primary education. With regard to the regional structure of the NEET rates, NEET rates are highest in the North East and Polog region, while the South East and the Vardar region had the lowest NEET rates at the same time. It is imperative to acknowledge this discrepancy when formulating policies. Compared to EU, North Macedonia continues to fall behind the average NEET rate for the EU, and the national NEET rates of the individual member states of EU (data for 2021).

The increased NEET levels underlines the necessity for a suitable reaction to public policies in order to better address the needs of young people across the country and decrease the NEET in accordance with the objectives outlined in the Agenda for Sustainable Development. Optimal public policy responses should primarily target two policies: investment in the education and skills of young people, and the employment and job creation policy.

A coordinated set of proactive labor market policies is required to facilitate job creation. These policies should include skills initiatives, temporary hiring and transition incentives, improved employment services, and efficient use of existing funds. The prioritization of investment in skills pertaining to developing industries is crucial in order to offer viable employment opportunities to those who are at risk of redundancy or are currently unemployed. It is also important the relevant institutions to provide guidance for the integration of policy measures and the allocation of financing to facilitate the advancement of job creation and job-to-job transitions, particularly in areas that are experiencing growth, such as digital and green industries.

With regard to the Operational plan for active employment programs, measures, and services, the 2023 plan already contains measures and services that are targeting youth. For example, the enhanced YG offers support and direction aimed at facilitating a successful integration into the labor market, with a specific emphasis on securing high-quality work opportunities. However, supplementing of the Operational Plan could be done with implementation of new measures and allocation of more resources to existing and potential measures. This could also include broadening the coverage rate of the YG program and increasing the total budget dedicated to the service. Local support for youth employment is also crucial, given the significance of young people to the local economic growth. Therefore, it is imperative that the main stakeholders at the local level—including municipalities, businesses, educational institutions, and non-governmental organizations—respond with appropriate policies.

For job creation and job retaining of youth workers it also important to provide support to enterprises and entrepreneurs in order to enhance the job opportunities for young workers, hence fostering creative and competitive industrial ecosystems. One possibility is to provide additional support to small and medium-sized enterprises (SMEs) and entrepreneurship, with a particular focus on promoting female entrepreneurship (having in mind the higher NEET rates for young women). This will serve as a catalyst for fostering the growth and success of creative start-ups. In addition, in order to enhance business continuity, improve work-life balance, increase productivity, and have a beneficial environmental impact, it is recommended to advocate for the use of telework or remote work, therefore making it a more appealing option for the NEET young.

The second mechanism on how to improve the position of young people in the labor market and reduce NEET rates is by investing in skills and education. Education and training systems are essential in establishing the fundamental basis for lifelong learning, employability, and societal engagement, particularly among young individuals. A skilled labor force serves as the catalyst behind a thriving green and digital economy, fueled by inventive concepts, products, and technical advancements.

The imperative for ongoing investment in education and training systems is further necessitated by the green and digital transformations. The objective is to provide assistance in the establishment of a robust digital education ecosystem, while also improving digital skills and competencies to effectively meet the widespread digital transformation. The modernization and digitization of schools and vocational training facilities serve an essential part in enhancing the quality of education. Measures

could include improving the infrastructure, including the IT infrastructure, in the primary and secondary schools.

The vocational education and training system in North Macedonia should be strengthened through better resource mobilization and allocation. In addition, developing and pilot testing new teaching materials, including subjects related to specific jobs and careers is extremely important, as well as increase of the post-secondary non-tertiary vocational education and training courses, especially in the field of information technologies. The system should also improve knowledge acquisition through practical work and the use of dual education approaches.

In the end, the country needs decisive measures at both national and local levels that address stereotypes and prejudice in employment, training and education. Efforts are particularly urgent to address gender-based stereotypes and discrimination and empowering girls and women in the education system and at the labor market.

In order to meet the national NEET rate target of 20% by 2027, an organized and coordinated effort is needed from all of the relevant institutions and organizations, including the Ministry of Labor and Social Policy, the Employment Service Agency, the Ministry of Education and Science, education institutions, the Bureau for Development of Education, the Adults Education Center, the Bureau for Agency for Promotion of Entrepreneurship, the Association of the Local Self-Government Units and their Association, other governmental institutions and organizations, companies and their chambers, as well as the civil society organizations.

**INDUSTRY, INNOVATION
AND INFRASTRUCTURE**



TRANSPORT MODE PRACTICES AND EXTERNAL COSTS OF TRANSPORT IN THE REPUBLIC OF NORTH MACEDONIA

Zoran Krakutovski, PhD¹

¹ Full professor at the Department of Railways at the Faculty of Civil Engineering, Ss. Cyril and Methodius University in Skopje

1. INTRODUCTION

The transport activities significantly affect the environment and quality of life and produce additional costs reflected by air pollution, climate changes, noise, problems with safety and congestion. These supplementary costs are known as external costs of transport, or externalities.

The usage of transport modes and transport policy measures are very important factors concerning the level of external costs of transport. The old age of motor vehicles used in the road transport, as well as their large usage in the mobility practices in the Republic of North Macedonia, generate significant emissions of harmful substances, which reflects into high external costs of transport for the society. Subject of this article is analysis of the transport mode practice and its impact on the magnitude of external costs of transport. This paper contains recommendations for transport policy towards reducing these costs in the Republic of North Macedonia.

The subject of this paper relates to the Sustainable Development Goal 9 – industry, innovation and infrastructure, target 9.1. Develop sustainable, resilient, and inclusive infrastructures.

2. TRANSPORT MODES PRACTISES IN THE REPUBLIC OF NORTH MACEDONIA

2.1. General data about the country

Republic of North Macedonia is a landlocked country located on the Southern part of Europe and central part of the Balkan Peninsula. The geographic location allows development of transit routes for inland surface transport between Central Europe, the Aegean Sea, the Black Sea and the Adriatic Sea. The country area is 25,436 km².¹ It borders two EU countries - Bulgaria to the east and Greece to the south, Serbia and Kosovo to the north and Albania to the west. The administrative territory is divided into 80 municipalities.

According to the last census in 2021, the population is about 1.836 million residents. Around 61.6% are urban dwellers with about 550,000 living in the capital Skopje. The average density is 72 inhabitants per km². Two very important demographic phenomena influence local social and economic development - the ageing of population and a long tradition of emigration, which pose challenges to the labor market

1 State Statistical Office: Statistical Yearbook 2022, Environment and Geography

and production efficiency. The recent Census suggests that the population has decreased by about 9.2% compared with previous Census data (2002).

The average GDP growth rate from 2002 to 2022 is 2.8% with fluctuations that are positive or negative, depending on the year and the events that took place on the economic and political level. The nominal value of GDP in 2021 is 720,414 million denars, or about 11,714 million euros.² In the same year, the GDP per capita is 392,230 denars, or 6,378 euros/inhabitant. The Purchasing Power Standard (PPS) gives a more realistic comparison of the economic conditions in the States and in 2022, this indicator is 42% compared to the EU standard.

The Republic of North Macedonia applied for EU membership in 2004 and in 2005 was granted candidate country status by the European Council. In March 2020, the Council decided to open EU accession negotiations. The Republic of North Macedonia signed the NATO accession protocol and joined NATO in March 2020, a process that had stalled for years.

2.2. Indicators for transport modes and transport infrastructure

2.2.1. Transport infrastructure

The road network in the country in 2022 consists of 15,170 km of roads divided according to the administrative classification into main, regional and local roads. The main roads are 897 km, 3,794 km are regional, and the remaining 10,479 km are local roads. The main roads include 335 km motorways, 90 km expressways and 472 km two-lane roads. Since the total area of the country is 25,436 km², there were about 59.6 km of roads per 100 km² in 2022.

The total length of the railway network in 2022 includes 699 km open single track lines, the 227 km station tracks, as well as 102 km of industrial tracks. The total length of the electrified railway line is 324 km with a system of 25 kV, 50 Hz. The indicator for length of the railway lines for the overall country area is 2.7 km of railways per 100 km².

The principal transport infrastructures are located along the TEN-T³ core and comprehensive network on the Western Balkans. The railway links with Albania and Bulgaria along the TEN-T core network are not finished. The construction works are ongoing along the east part of this railway line, while the same have not begun along the west part of the railway line. The motorways and expressways on the TEN-T routes passing through the territory of North Macedonia are not completed and the construction works are ongoing currently for several motorway sections.

The Ministry of Transport and Communications and the Public Enterprises for Roads and Railway Infrastructure are the two responsible institutions for implemen-

² 1 euro = 61.5 denars

³ TEN-T – Trans-European Transport Network

tation of transport policy. The most recent National Transport Strategy 2018-2030 contains objectives, measures and projects in approximating the country transport policy with the EU strategic documents and regulations in the field of transport.

Figure 1. South East Europe Core Network Links and Nodes as a part of TEN-T



2.2.2. Transport services

According to the statistics published by the SSO⁴, the road transport is the dominant mode in the transport market services in the country. The share of road transport in the transportation of passengers in interurban and international transport is about 90% to 92%, while for the railway it is 8% to 10%. In 2019 the number of passengers travelling by road is 6.47 million, by railway it is 0.55 million passengers and 2.67 million passengers used air transport. There are 2.70 million passengers transported by road, 0.25 million passengers by rail and 1.39 million passengers by air transport in 2021. The decline of transport services is due to the Covid-19 pandemic in 2021. In freight transport, road transport again prevails with about 96-98%, while rail transport has a share of only 2-4% of the total transported cargo in the period 2019-2022. The volume of freight transported by road is 74.64 million tons and by railway is 1.37 million tons in 2022.

The road vehicle fleet in the country is continuously increasing for all categories of motor vehicles. The growth rate of passenger cars between 2018 and 2022 is 17.4% or a 5-year average is 3.5% of annual growth. The total number of registered motor

4 SSO- State Statistical Office (https://www.stat.gov.mk/Default_en.aspx)

vehicles is 570 thousand in 2022 from which about 85% are cars. The motorization rate increased significantly from 185.3 cars/1000 inhabitants in 2015 to reach 260.1 cars/1000 inhabitants in 2021. The average motorization rate in the EU countries is 567 passenger cars/1000 inhabitants in 2021. The vehicle fleet is quite old, especially passenger cars and buses are quite obsolete and more than 88% of them are older than 10 years.

The urban public transport in the bigger cities is only by bus, despite the fact that there is a very big need for *en mass* urban public transport, especially in the capital Skopje.

The intermodal transport road-rail is undeveloped due to the lack of special infrastructure and logistics. The number of TEU⁵ in 2021 is very important only for transit via railway line from the port of Thessaloniki – Greece, passing Serbia towards Central and Western Europe. In 2021, 24,704 TEUs were transported in total, and this number includes 23,451 TEUs for transit, 1,251 TEUs for import and only 2 TEUs for export. The yearly export of goods by TEUs in the last 5 years (2018 to 2022) is not more than 233 TEUs/year (in 2020).

3. ASSESSMENT OF EXTERNAL COSTS OF TRANSPORT

3.1. External costs of transport

The external costs of transport frequently considered when assessing transport projects are the following⁶: costs related to air pollution, noise, traffic congestion, climate changes and part of costs from traffic accidents with fatal consequences.

External air pollution costs are the most substantial category of external costs of transport caused by air pollutant emissions and include human health costs, damage to buildings and materials, losses of harvests and yields, costs for additional damage to ecosystems and biodiversity. Within these four categories, the human health costs are the most significant cost and, in terms of road transport, the main factor that affects the air pollution are the part of vehicle fleet in different standards for emissions of pollutants (EURO⁷ standards 0 to 6) that vehicles have depending primarily on their age.

External costs related to traffic noise are affected by three main factors: time during the day (at night this cost is higher), density of receivers that are close to the noise source, or number of populations exposed to noise, existing noise level.

5 TEU - Twenty-foot equivalent unit, unit of measurement to determine cargo capacity for container.

6 A. de Palma, R. Lindsey, E. Quinet, R. Vickerman, (2011) "A Handbook of Transport Economics", Edward Elgar Publishing, Inc. UK, USA, p.930.

7 EURO - European standards for vehicle emission pollution, published in a series of European Union directives for different types of vehicles.

External costs from traffic congestion result from increase in transport demand and traffic levels and can have the following effects: the most significant component of external cost from congestion is increasing of travel time, increase of vehicle maintenance costs, additional fuel consumption, increase uncertainty and increase travel time that directly affect the inability of passengers to plan their arrival time.

External costs of transport related to impact of climate changes concern the greenhouse effects (GHG) produced by vehicles whose engines use oil and oil derivatives. The general costs of climate change are impacts on rising sea levels, consumption of energy, impacts on agricultural production, water supply, health impacts, ecosystems and biodiversity, and extreme weather events.

External costs of traffic accidents are costs that are not covered by the premiums given by insurance companies for certain risks. Accordingly, the level of these costs also depends on the current insurance system.

3.2. Methodology for assessment of external costs of transport

The external costs evaluation uses methods that essentially aim to assess how much those who suffer from the harmful impact will be willing to accept compensation for the negative consequences. The study carried out in the research project HEATCO⁸, within the sixth framework research program of the EU 2002-2006 for harmonizing European practices in the assessment of transport costs and project assessment, pays particular attention to assessment of the external costs of transport in the EU countries. The HEATCO study proposes a general methodology for assessment of external costs of transport for air pollution through the impact pathway or the Impact Pathway Approach (IPA).

The internalization of external costs of transport is presented in the CE Delft study funded by the European Commission, in 2008⁹. This study is a continuation and addition to HEATCO study. The new EU publication of Handbook on the external costs of transport dates from 2019¹⁰. This version considers road transport, rail transport, inland waterway transport, maritime transport and aviation.

The estimation of external costs of transport in the Republic of North Macedonia is carried out using available official data published by relevant institutions and State Statistical Office¹¹ (SSO) in the country and the methodology proposed in the EU publications and handbooks.

8 HEETCO (Developing Harmonized European Approaches for Transport Costing and Project Assessment) (2006), "Economic values for key impacts valued in the Stated Preference surveys", p.176.

9 CE Delft, (2008) "Handbook on estimation of external costs in the transport sector", Report, Delft, p.336

10 European Commission, (2019) "Handbook on the external costs of transport", p.332

11 https://www.stat.gov.mk/Default_en.aspx

3.3. Data used for assessment of external costs of transport in North Macedonia

The estimation of pollutant emissions uses SSO data concerning the type of vehicle registered in the country in 2015. Additionally, it is necessary to have data on average annual kilometers travelled by type of vehicle and the area of influence separated in urban, suburban or rural areas. Data concerning average annual kilometers travelled by cars on urban, suburban and rural roads and highways are not accessible, and the assumptions are that cars have an average 10,000 km/year¹², of which 70% are on urban roads and 30% on suburban, rural roads and highways.

The publication Transport and Other Services¹³ shows that in 2015, on average, one bus travelled 79,000 km for which the assumption is that 70% are in urban areas, 20% in suburban areas, and 10% on highways and rural areas.

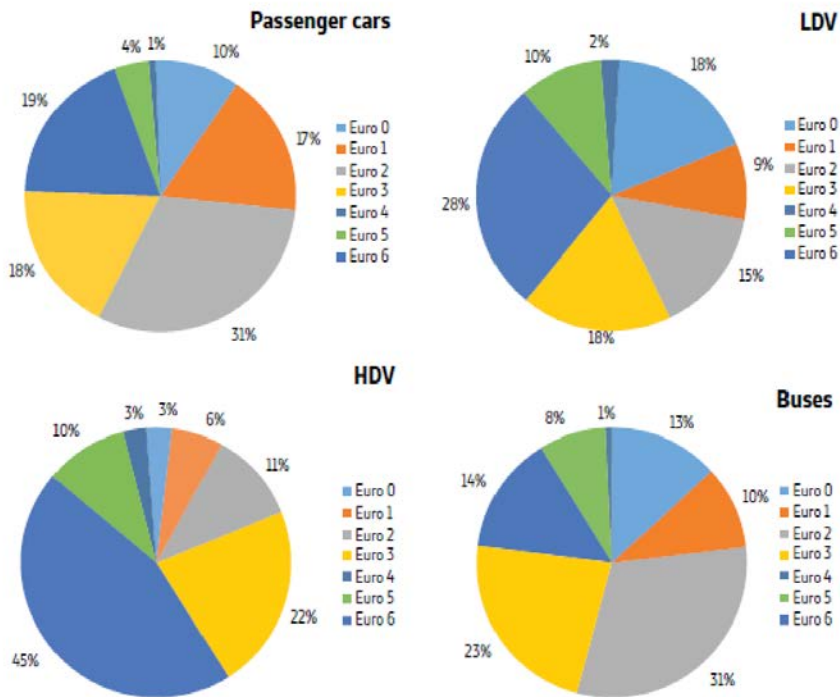
The data from SSO show that the total travelled distances by trucks in 2015 is 860 million km and in the same year there were 33,237 registered trucks, or on average one truck passed 25,875 km in 2015. In the absence of data, the assumption is that 30% of trucks travel in urban areas, 20% in suburban areas, and 50% in rural areas and highways.

The total number of registered vehicles in the country in 2015 is 451,724 and these include 88% of passenger cars, 8% of light duty vehicles (LDV), 1% of heavy-duty vehicles (HDV), 1% buses and 2% motorcycles. The vehicle fleet in 2015 is very old, notably the average age of cars is 18.7 years, for buses 18.1 years and for trucks 15.5 years, and half of the passenger cars and buses have EU standards with high pollutant emissions Euro 0, Euro 1 and Euro 2 (figure 2). The same year, 53% of passenger cars used petrol and 47% diesel.

12 The similar data for annual average kilometres by car travel is obtained in the survey of cars practices in the urban mobility in Skopje, made in 2006, Faculty of Civil Engineering in Skopje.

13 SSO, 2015 "Transport and other services", p.103

Figure 2. Share of types of vehicles and buses belonging the various emission classes of Euro 0 to 6 in 2015 in RNM¹⁴



3.4. Estimated external costs of transport in Republic of North Macedonia

The estimated external costs of road transport from air pollution only are 72.2 million EUR¹⁵, from noise pollution the assessment is 48.7 million EUR, and the external cost of road transport for climate change (emission of GHG) is 59.1 million EUR, or in total it is about 180 million EUR in 2015 for these three pollutants. Because of lack of appropriate data, the other external costs of transport (costs of traffic accidents and traffic congestion) are not assessed.

The estimations show that the external costs of road transport from air pollution in urban areas are predominant, specially produced by diesel cars in Euro 0, Euro 1, Euro 2 classes, or cars produced before 2004. About 64% of external costs of transport of road transport from noise are in urban area caused from car traffics.

14 Source: Ministry of Environment and physical planning, Macedonian environmental information center, (2017) “Macedonian Air Quality Assessment Report for the Period 2005-2015”, p.60

15 1 EUR = 61.5 MKD denars

4. POLICY RECOMMENDATIONS

The estimation of external costs of transport is not only important as an input in the economic cost benefit analysis and during decision making process, but also for definition of transport policy measures to improve quality of life of citizens. The transport policies recommendations to decrease external costs of transport concern the following measures:

- Aiding the citizens and transport operators to renew the existing old vehicle fleet and using more environmentally friendly vehicles by supporting them with government subsidies for replacement of old vehicles and penalizing the owners of older vehicles by special registration duty.
- Supporting the import and purchase of new electric cars with very low customs tariffs and promotional activities.
- Prescribe obligation of all petrol stations in the country to invest in electric vehicle charging infrastructure.
- Improvement of urban mobility planning by national legal framework for a Sustainable Urban Mobility Plan (SUMP) that will regulate a) obligation to prepare a SUMP in the largest urban settlements (more than 50,000 inhabitants), b) basic definitions to prepare a SUMP, procedure for development and adoption, implementation, monitoring, and evaluation.
- Financial support for the municipalities to invest in non-motorized transport infrastructure (bicycles, scooters, walking) and develop urban green spaces.
- Investment and development of green public transportation systems, such as electric buses and railway system in the demographically denser areas.
- Supporting development of multimodal transport nodes to practice multimodality in the logistic chain of freight transport, especially to increase the volume of intermodal transport of goods.
- Reorienting the transport policy towards important developments of railway infrastructure and implement the following measures:
 - * Construction of missing railway sections as a part of TEN-T core railway network to connect with neighboring railway lines on the east-west axis.
 - * Electrification and modernization of existing railway lines to increase trains speeds and make railway transport competitive with road transport for inter-urban trips.
 - * Planning and construction of new high speeds railway infrastructure to link the demographically denser regions as Skopje, Kumanovo, Veles, Tetovo and Gostivar.

- * Participate in the regional project for implementation of high-speed railway link on the axis north-south and connect to the EU high-speed railway network.
- * Improving accessibility to the existing railway stations for all people including persons with reduced mobility.
- * Increase the capacity and quality of railway transport supply by support of liberalization of railway services and allow new operators in railway transport.
- Invest in the ITS – intelligent transport systems for managing traffic flows and monitoring transport infrastructures for adequate preventive and urgent maintenance works.
- Creating social inclusion by improving accessibility to the public transport for all citizens, and special tickets for social groups in financial distress.

CONCLUSIONS

The external costs of road transport are predominant in urban areas compared with rural regions and highways. The very old vehicle fleet in the country and large presence of vehicles of Euro 0, Euro 1 and Euro 2 classes contribute widely to the air pollution. The most recent data from 2022 shows that there are more than 120,000 vehicles compared with 2015. About 89% of cars and busses are aged more than 10 years, and average age of cars is 19.6 years and of buses is 19.5 years in 2022. Consequently, the external costs of transport increase during this period of 2015-2022.

The existing SSO transport data are not sufficient and appropriated for estimation of external costs of transport, and new data collection should be involved to produce solid statistics for these analysis and estimations.

The external costs of transport of rail transport are not assessed in this paper, but the UIC estimation for 2008 in the 27 EU countries notes that these costs are only 2% of total external costs of transport.

**REDUCED
INEQUALITIES**



WHAT MATTERS IS SOCIAL PROGRESS IN REDUCING INEQUALITIES

Fortesa Asani, MSc

Veli Kreci, PhD

1 Research Assistant at the Max van der Stoel Institute, South East European University

2 Professor of Political Sciences & Public Policy; Director of the Max van der Stoel Institute, South East European University

Inequality is one of the greatest impediments to sustainable development and shared prosperity. Not everyone has equal opportunities to access food, health, education, jobs, and social protection, nor achieve equal outcomes. No society can speak of unity when disadvantaged communities do not get a chance to excel in a society that promotes an inclusive approach to all by supporting a prosperous future. Prosperity in a society is very much linked to the inclusiveness of an individual or group's feeling of being part of a particular society.

To understand the significance of equality one must look through the lens of societal dynamics, especially when inequalities are heavily present in societies. A society of inequalities based on income, gender, race, religion, and disability directly threatens long-term social dynamics in achieving social cohesion, and ultimately keeping humanity united. In understanding the consequences of inequality in terms of outcomes, Pickett and Wilkinson¹ in their book, *The Spirit Level* (2009) have analyzed the social and health problems of vulnerable groups. They argue that in countries with great income inequalities, disadvantaged communities tend to have worse outcomes in education, social mobility, physical health (life expectancy), violence, child well-being, etc. Furthermore, the crucial importance of inequality on the global agenda is emphasized by the words of the UN High Commissioner for Human Rights Mr. Zeid Ra'ad Al Hussein, during the UN Summit launching the 2030 agenda. He stressed that "inequalities and discrimination are the defining challenges of our time"² and it is essential and imperative to address inequalities which lie at the heart of the new Agenda, as 'Agenda for Equality'. Therefore, governments across the globe must put tackling inequalities at the forefront of their priorities and work harder to inclusively enable communities access to equal opportunities and achieve equal outcomes.

North Macedonia has been a member state of the United Nations since 1993 and endorsed the 2030 Agenda with the 17 Sustainable Development Goals in 2015. More specifically, the government of North Macedonia embraced the principles of "leave no one behind" and "reduced inequality" as fundamental pillars guiding its initiatives³. To accelerate the reaching of the SDGs, the country in early 2021 embarked on creating a National Development Strategy 2022-2024⁴ with a focus on establishing the roadmap for sustainable development based on social, economic, cultural, and environmental dimensions.

Focusing on the SDG10 which is about Reducing inequalities within and among countries, together with the 2030 Agenda's committed principle of "leave no one behind" (LNOB), this essay, firstly will analyze the current overall situation in the Republic of North Macedonia concerning income inequalities and its relation to poverty in the country. The second part will include policy recommendations and solutions on how SDG10 can be accelerated towards its achievement. More specifically, recommendations will focus on target 10.2 - empowering and promoting the

1 Pickett, K. and Wilkinson, R., 2010. *The spirit level: Why equality is better for everyone*. Penguin UK.

2 <https://www.ohchr.org/en/2015/09/agenda-equality-zeid-raad-al-hussein-united-nations-high-commissioner-human-rights>

3 Petreski, M., 2021. *SDG Financing Landscape in North Macedonia*. Finance Think-Economic Research and Policy Institute.

4 <https://www.nrs.mk/>

social, economic, and political inclusion of all, irrespective of age, gender, disability, race, ethnicity, origin, religion, economic or other status; and 10.3 on ensuring equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies, and action in this regard.⁵

The “leave no one behind” principle argues that the main cause of individuals being left behind is the prevalence of deeply ingrained forms of discrimination, translated into the systematic marginalization and exclusion of individuals, families, and entire communities.⁶ Whereas in the context of North Macedonia, groups that are left behind are Youth Not in Education, Employment, or Training (NEET); women and girls from ethnic communities, and rural areas; older women; the Roma community; People with disabilities; Refugees, asylum seekers, migrants.⁷

SITUATIONAL ANALYSIS OF NORTH MACEDONIA REGARDING INEQUALITY, POVERTY AND LABOR MARKET PARTICIPATION

Growing inequality apart from affecting social cohesion, is also harmful to sustained economic growth in the long run. According to the OECD Analysis,⁸ the reason for that is the growing gap between low-income households and the rest of the population. For instance, Dabla-Norris and colleagues⁹ show that if the proportion of income held by the top 20 per cent (the rich) rises by 1 percentage point, the subsequent GDP growth decreases by 0.08 percentage points over the next five years, implying that benefits are not distributed equally. Conversely, a similar increase in the income shares of the bottom 20 per cent (the poor) of the population is linked to a 0.38 percentage point increase in growth. Therefore, in order to reach growth and development potential policies should pertain to increasing the income share of the lower and middle class, by giving equal opportunities for access to education, health care, labor market and designing well-targeted social policies.

5 <https://sdgs.un.org/2030agenda>

6 <https://unsdg.un.org/2030-agenda/universal-values/leave-no-one-behind>

7 Republic of North Macedonia and United Nations Sustainable Development Cooperation Framework 2021-2025.

8 OECD (2015), In It Together: Why Less Inequality Benefits All, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264235120-en>

9 Dabla-Norris, M.E., Kochhar, M.K., Suphaphiphat, M.N., Ricka, M.F. and Tsounta, M.E., 2015. Causes and consequences of income inequality: A global perspective. International Monetary Fund.

North Macedonia became independent in 1991 after the break-up of the Socialist Federal Republic of Yugoslavia. Subsequently, the country experienced significant socioeconomic and political changes¹⁰ with significant effects on social dynamics with long-lasting social consequences. It shifted from a centrally planned to a market-driven economy, characterized by extensive reforms targeting state-owned enterprises. However, the transition was not without challenges, leading to an increase in unemployment, poverty, and a decline in living standards¹¹. This trajectory aligns with the observations made by Béland and Mahon¹², who argue that the transition to market capitalism, while fostering rapid economic development globally, also brings forth social cohesion issues and further exacerbates existing inequalities.

This is further demonstrated by historical country data of a Gini coefficient¹³ which was 27% during the time it became independent year 1991, followed by a rapid increase of 36% during the initial years of the transitional period year 1996¹⁴. The likely reason for this, according to Petreski (2020)¹⁵ is that the process of privatization of state-owned enterprises during that period led to the concentration of state-owned assets among a small group of socialist directors, thus leading to a notable surge of a one-third increase in income inequality. Following a period of moderation, income inequality began to rise again reaching out to be the highest in the history of the country - 42%¹⁶ in 2009.

The latest reports based on the measurements of the Survey on Income and Living Conditions (SILC) for 2018 show that the country's index has lowered to a moderate level of inequality at 31.9%¹⁷ whereas the Gini coefficient has slid down to 31,4 in 2020. However, there is still a significant disparity in income levels. In comparison to its aspiring counterparts and more developed European economies, North Macedonia exhibits apparent disparity in wealth and prosperity¹⁸. According to the most recent measurements conducted by the Ministry of Finance (MoF), utilizing tax records indicates that the wealthiest 1% possess a more substantial proportion of the overall income when compared to the corresponding demographic in the 12 most developed European countries with available comparable data¹⁹.

10 Sharlamanov, A., and Jovanoski, A. (2016) The Social Protection System in the Republic of Macedonia. International Journal of Scientific & Engineering Research.

11 *ibid.*

12 Béland, D. and Mahon, R., (2023). Advanced introduction to social policy. Edward Elgar Publishing.

13 Standard economic measure of income inequality; the number 0 means equal income distribution among all individuals, and value 1 means that one person possesses more income than the rest of people in society.

14 Petreski, M., 2020. Beyond income inequality in North Macedonia: An overview. Finance Think Policy Studies, (2020-04/27).

15 *ibid.*

16 North-Macedonia CPF (2019).

17 Petreski, M. (2020). Beyond income inequality in North Macedonia: An overview. Finance Think Policy Studies, (2020-04/27)

18 North-Macedonia CPF (2019).

19 *ibid.*

The link between inequality and poverty is that they are interconnected parts of the same problem. Whereas in contexts with high levels of inequality, economic growth tends to favor the wealthiest of the society, leaving those from the bottom of the population excluded from the market opportunities²⁰ meaning that the benefits of growth are less likely to reach the most disadvantaged groups. Therefore, in order to be able to design policies that would be targeted towards creating equal access to opportunities for the most vulnerable groups in the first place, we need to comprehend the situational analysis regarding poverty, participation in the labor market as well and which social groups and geographical regions are most affected.

Even though the country has made great efforts to lower the levels of poverty from 35% in 2009 to 17% in 2021, and the extreme poverty rate was reduced from 10 per cent in 2009 to 3.4 per cent in 2018²¹, it remains significantly higher than comparable country groups. When mapping out poverty by members in households and education level it is evident that “households with more children and with adults who are less educated are more likely to fall into poverty”²². When comparing ethnic communities, it is estimated that more than 40 per cent of the poorest quantile belong to ethnic Albanian households, which comprise 24.302 per cent of the population, with disposable income only two-thirds of the disposable income of their Macedonian peers²³. On the other hand, Roma communities, comprising 2.34 of the national population, not only belong to the bottom 40 per cent and are far from their peers in the labor market but are also discriminated against in many ways. When looking at urban vs. rural areas North Macedonia’s rural area presents a higher poverty rate nearly 30 per cent compared to 17 per cent per headcount poverty rate in urban areas²⁴. While urban-rural disparities in poverty persist, so do the regional disparities. Whereas Northeastern and Polog regions poverty reaches 40 per cent, the Southeast region is on a national average of 23 per cent and Pelagonia to 10 per cent.

Concerning women's participation in the labor market, the rate for women currently is at 51 per cent, a figure that juxtaposes with the European Union (EU) average by a significant margin of 14 percentage points²⁵. This discrepancy not only underscores the substantial gender gap within the national workforce but also positions North Macedonia below the EU benchmark, showcasing the imperative for comprehensive and targeted interventions to address this issue. The reasons for gender differences in paid work can be ascribed to many factors. Research shows that the traditional division of labor within the household places the caring responsibilities for others like children, elderly, or other family members on women²⁶ making

20 COMBATING POVERTY AND INEQUALITY. (2010). Available at: <https://www.bristol.ac.uk/poverty/downloads/keyofficialdocuments/UNRISD%20Combating%20Poverty.pdf>

21 Social Protection Situational Analysis: North Macedonia. (2022). The World Bank Open Knowledge Repository (World Bank). World Bank

22 World Bank (2018) Former Yugoslav Republic of Macedonia – Systematic Country Diagnostic: Seizing a Brighter Future for All, World Bank Group, Washington, D.C. p.22

23 *ibid.*

24 *ibid.*

25 North Macedonia -CPF-2019.

26 Mojsoska Blazevski, N. (2018) Trends in labour markets in FYR Macedonia: a gender lens. Washington, D.C.: World Bank Group.

it, therefore, a significant barrier to women's participation in the labor market. On the other hand, women's inactivity is further exacerbated by the gradual progression from education to work, and sociocultural norms.²⁷

POLICY RECOMMENDATIONS, SOLUTIONS AND GUIDELINES IN TACKLING INEQUALITIES WITH THE LEAVE NO ONE BEHIND PRINCIPLE

Addressing inequalities requires tailored strategies and policies. Therefore, the suggestions outlined in the following section are specific to the context of North Macedonia. First, policymakers should prioritize their attention towards the lower and middle-class quantiles of society. Countries that allocate greater resources to social sectors such as education, social protection, and health, coupled with adopting more redistributive tax systems, generally experience greater success in reducing inequality.²⁸

Improve the Targeting of Social Protection programs

Despite the fact that North Macedonia has taken proactive measures to reduce the levels of poverty and keep social cohesion by establishing a social protection system, currently it covers less than 25% of the households living below the poverty line²⁹. What follows is that Social Programs need to have better targeting. Various methods can be used to achieve this, including geographical targeting³⁰ (which involves selecting the regions with the highest levels of poverty, for instance, the Northeastern and Polog regions as having the highest poverty rates of 40 per cent). Another approach is for the government to adopt a national-level list by surveying individuals eligible to receive Social Assistance programs in contrast to the current one based on self-application. That would increase income within the bottom 40% of the population and at the same time will ensure that households do not slip further down the income ladder.³¹

27 OECD (2021) Multi-dimensional Review of the Western Balkans: Assessing Opportunities and Constraints, OECD Development Pathways, OECD Publishing, Paris.

28 <https://www.imf.org/en/Publications/fandd/issues/2022/03/Tackling-inequality-on-all-fronts-Amaglobeli-Thevenot>

29 World Bank (2018) Former Yugoslav Republic of Macedonia – Systematic Country Diagnostic: Seizing a Brighter Future for All, World Bank Group, Washington, D.C.I.

30 Bigman, D. and Fofack, H., 2000. Geographical targeting for poverty alleviation: An introduction to the special issue. *The World Bank Economic Review*, 14(1), pp.129-145.

31 OECD (2015), *In It Together: Why Less Inequality Benefits All*, OECD Publishing, Paris.

Overcome Barriers to Women's Participation in the Labor Market

In order to increase women's participation in the labor market, a multifaceted approach is essential. Firstly, the government should consider implementing policies that would promote work-life balance. A suggested step would involve amending the Labor Law to regulate parental leave, aiming to facilitate the smooth transition of women in the labor market, by facilitating more flexible working hours, and remote work as well³². Secondly, increasing the number of childcare facilities like kindergartens, in particular in remote areas and rural zones, in alignment with women's working schedules. Thirdly, addressing sociocultural norms is of immense importance. The civil society sector can play a significant role in creating public campaigns to challenge the pertinent stereotypes and biases, by promoting a more inclusive role of women in society and the workplace. Moreover, companies should adopt diversity and inclusion policies as well, ensuring equal opportunities for all women irrespective of their social position and creating fair representation at all levels.

Utilize Online Participatory Budgeting as a Mechanism for Social Inclusion

Individuals from disadvantaged and marginalized communities tend to have the least say in the decisions that affect them directly and are less likely to be included in the data and evidence governments use to allocate resources and shape policies. Drawing on the central idea of the 2030 Agenda of “leave no one behind” this recommendation is about increasing social inclusion in the decision-making processes. Each individual participates as an agent of change and a member of the political community in the formulation, design and implementation of policies and projects. One such way is to harness the power of this democratic innovation known as Participatory Budgeting (PB).

Participatory Budgeting is a process taking place mainly on local levels, including national level, by allocating a part of the public budget to the implementation of projects that are of a public nature. Projects could include improving road pavements, access to drinking water, building community spaces, redevelopment of public avenues, sustainable forms of mobility, etc. The central idea of PB is that citizens are at the forefront of voicing out challenges that affect them the most, by proposing solutions about the same. The process can be implemented in hybrid forms, in person by participating in gatherings or, most recently, through forms of online participation (for instance, the software for citizen participation Consul³³).

32 Women Employment Study for North Macedonia (2022). Regional Cooperation Council.

33 <https://consuldemocracy.org/en/>

The outcome of integrating this innovative technological approach in the municipal levels of the country will contribute to combating discrimination on multiple axes like gender, race, and ethnicity, as it will be created for everyone to equally participate, engage, and collectively propose and design solutions that benefit them directly.

Level the Playing Field by Creating Equal Opportunities in Education

Addressing the SDG10 goal of reducing inequalities is very much linked to the level of accessibility of the bottom 40 per cent to more opportunities for improvement of their standard of living. Many studies have shown that policy instruments designed to provide greater access to public services i.e., health, education, and infrastructure for the targeted group have a significant impact on the reduction of overall inequality in the short term. However, sustainable investments in the educational level by increasing accessibility to higher levels of education play a direct role in diminishing income inequality by increasing the share of the population with access to professional and social opportunities³⁴. Attainment of the desired educational level for groups at risk due to lack of opportunities will result in a more equitable distribution of educational opportunities in the long run. Although inequality shows many forms as a result of policy choices, the inclusivity dimension of a society has the potential to override consequences of unjust policy choices. Within this context effective approach for building community alliances in support of “quality education for all” to ensure a full commitment of various stakeholders i.e., education policymakers, professionals, institutions, and local communities is of utmost importance. Such collaborative efforts in shaping educational policies shall guarantee inclusive and high-quality education for all. Although North Macedonia’s existing policy framework as described in the Education Strategy 2018-2025 and the corresponding Action Plan puts great importance on preschool education’s low rates of attendance, it should be noted that more support in the implementation of the policy is needed. Access to equal educational opportunities begins with investing in social progress for sustainable development that aims to reduce inequalities.

34 Spada, A., Fiore, M. and Galati, A. (2023) ‘The impact of education and culture on poverty reduction: Evidence from panel data of European countries’, Social Indicators Research [Preprint].

**SUSTAINABLE CITIES
AND COMMUNITIES**



TOWARDS SUSTAINABLE CITIES AND COMMUNITIES

Iva Petrunova, PhD¹

¹ Architect, urban sociologist, and researcher.

1. INTRODUCTION – THE CITY, SDGS, AND THE 21ST CENTURY

People are, intrinsically, both, natural and sociological beings so they require natural surroundings and social interaction. From the very beginning, people lived in groups and developed into communities that grew into settlements and cities. The city enables the realization of human social nature, and at the same time protects it from all the dangers that lurk outside the city, in nature. In the city, man is safe and has a community with whom he can share his everyday life. All the scientific and cultural achievements that advance intellectual capacity and enable artistic spirituality take place in the city.

However, it is time to ask how much the cities can fulfill this function today - offer safe and healthy life for all citizens equally and at the same time enable daily advancement in all human and social areas without disturbing the natural ecological balance and biodiversity of planet Earth. About 56% of the world's population today lives in cities, which is about 4.4 billion inhabitants. The increase in population made the cities consumerist and political centers, which makes it more and more difficult to offer a dignified life with equal conditions for all. Citizens today may be safe from the dangers of the wilderness, but many new dangers and unsafe conditions have been created in the so-called urban jungle. It seems that, despite the increase in the average human lifespan, many citizens face daily challenges related to their mental and physical health caused by urban stress in urban environments. The prediction that 68% of the population will live in a city by 2050¹ puts cities under enormous pressure.

One of the ways to improve life in the city is by striving towards the realization of the 17 Goals for Sustainable Development. With their holistic approach, all social areas are covered in parallel in order to achieve an advanced and prosperous society for all and, at the same time, preserve the ecological balance of the planet. All points are interconnected and depend on each other's success.

Sustainable Development Goal 11: Sustainable Cities and Communities focuses on making cities and human settlements inclusive, safe, resilient, and sustainable. It encompasses various targets related to urbanization, housing, transportation, environmental sustainability, and access to basic services. All these aspects are important for all cities in the world, and the Republic of North Macedonia is no exception.

In the Republic of North Macedonia, the conditions in the cities are far from ideal. The 2021 Census showed how and where the population lives. Smaller cities are facing migration and extinction due to the uneven development of the economy in the cities. Young people often move away in search of better professional and economic

¹ Nations, U. (n.d.). 68% of the world population projected to live in urban areas by 2050, says UN. [online] United Nations. Available at: <https://www.un.org/nl/desa/68-world-population-projected-live-urban-areas-2050-says-un> [Accessed 21 Nov. 2023].

opportunities. The picture in the capital Skopje is different - Skopje is becoming an overpopulated city and is constantly being built and changed. Rapid daily changes that do not improve the quality of life, cause stress among its citizens and create a feeling of instability, insecurity, fear, and impermanence.

The problems in Skopje are many and exist across several aspects that all together make everyday life difficult.² Overcrowding, congestion, and traffic chaos due to poor traffic infrastructure and poor public transportation, streets that are not designed for such a large number of cars that create noise and air pollution, and stress among citizens during daily movement through city streets. The large number of cars on the streets and the poor traffic network are the result of the overproduction of housing. The Census showed that in the Republic of North Macedonia, there are 1 836 713 inhabitants, 598 632 households, and 839 174 apartments,³ of which 526 502 inhabitants, 171 171 households and 213 850 apartments officially live in Skopje, which compared to the data from 2002 is 50 105 more when 163 745 apartments were registered in the capital.⁴ This shows an irrational waste of space in the city by producing more apartments than there are households. Private empty spaces in the city represent an opportunity for profit.⁵ Citizens sell their properties with a family house to investors⁶ and in exchange receive several built apartments. The investor sells the rest of the apartments. The street remains the same as when there was a family house on it, although instead of one family, maybe 10 would live in the new building. The greenery of the yards has now been replaced by an asphalted ground floor that should serve as a parking space.⁷ Here we are not talking about quality housing and we are not looking at the complete infrastructure that the environment has - but about pure profit from the sale of apartments.⁸ In this way, family houses from Skopje neighborhoods (maala) with green yards are dying out, and in their place, there is a building with several floors and no greenery. Such production of apartments makes the city full of low-quality residential space, and this only does not provide quality housing but also does not provide access to basic human rights and needs such as sunlight, clean air and ventilation, and access to educational and health services... Such living

2 СТУДИЈА ЗА ГРЕЕЊЕ НА СКОПЈЕ* СТУГРЕС -АНАЛИЗА НА ПОЛИТИКИ И МЕРКИ. (n.d.). Available at: <https://api.klimatskipromeni.mk/data/rest/file/download/0ee48689f8dce86c60f786f21782efc-be42e2441daf8d8f6f7ce88366badaa1b.pdf> [Accessed 29 Nov. 2023].

3 popis2021.stat.gov.mk. (n.d.). Попис 2021. [online] Available at: <https://popis2021.stat.gov.mk/> [Accessed 21 Nov. 2023]

4 360 степени. (n.d.). Попис 2021: Скопје има речиси 20 илјади жители и над 50 илјади стана повеќе од 2002 година. [online] Available at: <https://360stepeni.mk/popis-2021-skopje-ima-rechisi-20-iljadi-zhiteli-i-nad-50-iljadi-stana-poveke-od-2002-godina/>.

5 Anon, (n.d.). Скопски урбанизам (1): Многу грешки во равенката за модерна метропола – МАРХ. [online] Available at: https://marh.mk/skopski_urbanizam_1/ [Accessed 29 Nov. 2023].

6 Сакам Да Кажам. (2023). 48 ХОТЕЛИ И 50 ЗГРАДИ ЌЕ МОЖАТ ДА СЕ ГРАДАТ ВО СКОПСКО МАЏИР МААЛО, НОВИОТ ДУП ГОТОВ, СЕ ЧЕКА УСВОЈУВАЊЕ ОД СОВЕТОТ. [online] Available at: <https://sdek.mk/index.php/dopisna-mrezha/48-hoteli-i-50-zgradi-ke-mozhat-da-se-gradat-vo-skopsko-madhir-maalo-noviot-dup-gotov-se-cheka-usvojuvane-od-sovetot/> [Accessed 30 Nov. 2023].

7 Anon, (n.d.). За градското зеленило (1): Слободниот простор пред раб на исчезнување – МАРХ. [online] Available at: <https://marh.mk/za-gradskoto-zelenilo-1-slobodniot-prostor-pred-rab-na-iscenznuvanje/> [Accessed 30 Nov. 2023].

8 Anon, (n.d.). Скопски урбанизам (2): Небулози против јавниот интерес – МАРХ. [online] Available at: https://marh.mk/skopski_urbanizam_2/ [Accessed 29 Nov. 2023].

conditions make it impossible to realize almost all SDGs. Local government budgets are small and government land was sold for additional income. Modern closed shopping centers are being built on the alienated state land, of which there are already too many in Skopje and they offer consumerism, but not green space, clean air, or opportunities for sports and recreation... This directly makes it more difficult to realize SDG 3 – good health and well-being, SDG 10 - reduced inequality, and SDG 12 - responsible consumption and production. During this construction expansion of apartments, shopping centers, and business complexes the ones who suffer the most are the traffic in the city, public spaces, and free areas intended for parks, greenery, sports and recreation. This problem again complicates SDGs such as 11 - making both the city and community unsustainable, SDGs 13, 14, and 15, and SDGs 6 and 7 due to overburdened infrastructure. The same goes for SDGs 3 4 and 8 due to overburdened old health and education centers as well as overpopulation that overloads the labor market. With such urban and concrete expansion, not only do the environment and clean air suffer, but the urban community weakens and loses its identity. Public space and green spaces are a measure of a society's democracy, as they are free and accessible to all. They are a space where all citizens can meet and exchange ideas, and such meetings encourage friendship and coexistence between citizens, build relationships, and make the community strong.

2. SUSTAINABLE CITIES AND COMMUNITIES AND OTHER SDGS

Sustainability, or sustainable development, refers to the concept of meeting the needs of current generations without compromising the ability of future generations to meet their own needs. This includes a balanced approach to resource use, environmental protection, and social responsibility. It is usually based on three basic aspects, known as the Three Pillars of Sustainability: economic, social, and environmental sustainability.⁹

The SDGs cover a wide range of issues, including poverty, hunger, health, education, gender equality, clean water, sanitation, affordable and clean energy, economic growth, industry innovation, reduced inequalities, sustainable cities, responsible consumption, climate action, underwater life, life on land, peace, justice, and strong institutions. Sustainable Development Goal 11 aims to make cities and towns inclusive, safe, sustainable, and resilient to climate change. Various aspects of urban planning are included such as safe and sustainable settlements, public transport and reliable and sustainable infrastructure, culture and natural heritage as important aspects of social sustainability, capacity to cope with climate change and disasters, reconciling urban growth with strategies for development.

⁹ ecosoc.un.org. (n.d.). Promoting Sustainable Development | Economic and Social Council. [online] Available at: <https://ecosoc.un.org/en/what-we-do/promoting-sustainable-development#:~:text=E-COSOC%20operates%20at%20the%20centre.>

Our cities and communities should be used by the next generations. The very idea of the city is exactly that – a place where all human power is concentrated,¹⁰ a place where the overall social achievement and culture are kept, a place that keeps the collective memory of the community. By walking through the city, we can notice and witness the visual remains of the cultures and societies that created that city. Those physical remains were created by the communities that lived in that specific place. If the city is the guardian of our civilization – it must be sustainable! We live in an unofficial geological era called the Anthropocene,¹¹ which represents a time when man changes the Earth and as a result, climate changes occur which are becoming faster and more noticeable every day. Such rapid climate changes, caused by the human influence on the Earth, bring new challenges and that is why human settlements must be transformed from consumeristic and polluting centers into safe, resistant, and sustainable ones. SDG 11¹² would make the cities and communities that have adequate, safe, and affordable housing for all, excellent roads and public transport, would improve urban planning, preserve world cultural heritage, improve the economy, reduce waste and pollution, provide green and public lands, all connections between urban and rural areas would be strengthened, holistic disaster risk management would be developed and sustainable and flexible buildings would be built from local materials.¹³ If this were realized, the rest of the SDGs would also be realized indirectly. For example: by providing affordable and safe housing for all, poverty would be reduced (SDG 1), gender equality would increase (SDG 5), citizens would have clean water and sanitation (SDG 6), and inequality would be reduced (SDG 10). Although the city mostly includes housing, it also includes other everyday areas such as various industries, sports and recreation, health, culture, etc. Better urban planning would not only improve the overall daily life of citizens but also contribute to good health and well-being (SDG 3), industry, innovation and infrastructure (SDG 9), considerable inequality (SDG 10), action to deal with climate change (SDG 13), life under water (SDG 14), life on land (SDG 15), peace, justice and strong institutions (SDG 16). In short, sustainable cities and communities would make the world healthier, happier, and a better place to live for all.

We can recognize the effects of SDG 11 with information on initiatives, policies, and projects that aim to improve urban sustainability, enhance infrastructure, promote inclusive and safe urban spaces, and address challenges related to rapid urbanization. In the Republic of North Macedonia, the indicators for the fulfillment of SDG 11 can be: the number of dwellings that have access to safe and sustainable environment such as clean air, clean water, an environment that is not polluted, the number of infrastructure projects for sustainable urban transport such as pedestrian and bicycle paths, development of public transport, accessible city green spaces,

10 Mumford, L. (1961). *The city in history: its origins, its transformations, its prospects*. New York: Harcourt, Brace & World, Inc.

11 National Geographic Society (2022). Anthropocene | National Geographic Society. [online] education.nationalgeographic.org. Available at: <https://education.nationalgeographic.org/resource/anthropocene/>.

12 northmacedonia.un.org. (n.d.). Цели за одржлив развој | United Nations in Северна Македонија. [online] Available at: <https://northmacedonia.un.org/mk/sdgs>.

13 northmacedonia.un.org. (n.d.). Sustainable Development Goal 11: Одржливи градови и заедници | United Nations in Северна Македонија. [online] Available at: <https://northmacedonia.un.org/mk/sdgs/11>.

number of energy-efficient buildings: newly built or renovated, number of citizens involved in city planning and decision-making, coping with climate change: projects and strategies to deal with climate challenges, such as city adaptation plans to climate change, safety and security in the city etc. In view of the above-explained context for the cities in the Republic of North Macedonia, it seems that the fulfillment and awareness of the SDGs, especially SDG 11, is still at a low level. We are working on raising awareness and on policies and strategies, such as the publication "Resilient Skopje"¹⁴, but it often happens that what is written remains only on paper. It is not rare that the idea of the common good of citizens, activists, and local and central authorities do not match. A wave of initiatives appeared in Skopje that would improve the urban experience through spatial interventions in public spaces.¹⁵ Some of them have been realized, such as roof gardens¹⁶, which aim to reduce the impact of heat islands. Sidewalks in the Municipality of Centar and Debar Maalo have been cleared of parked cars and the safety and accessibility of pedestrian traffic have improved. There have been independent initiatives by citizens and experts to improve neglected parts of the city.¹⁷

Unfortunately, the implementation of SDG in the Republic of North Macedonia still does not have solid continuity, it is not widely recognized among the citizens and depends on the political will.

3. POSSIBLE SOLUTIONS?

How to create sustainable cities and communities?! The answer lies in parallel action and strengthening of both cities and communities because there cannot be a sustainable city without a sustainable community and vice versa. First, one must start with education (SDG 4), which would be accessible to all citizens. Citizens must be educated on how the city, infrastructure, and surrounding environment affect their daily lives. They must be also encouraged to socialize with each other and create groups that would have the same hobby as urban gardening.

Public space can attract or repel citizens. The more suitable it is designed, the more it attracts citizens who would not only pass through it but also stay and thus

14 Град Скопје - Заштита на животната средина. (n.d.). Отпорно Скопје: поголема одржливост и иновации за справување со климатските промени. [online] Available at: <https://zivotnasredina.skopje.gov.mk/proekti/otporno-skopje-pogolema-odrzhlivost-i-inovatsii-za-spravuvane-so-klimat-skite-promeni/?fbclid=IwAR0o0ebcXWHmIhpyDHQzPJJRizPzIKDrdAkSKlc2rbtUzy7SfIOMvZZFEsA> [Accessed 29 Nov. 2023].

15 Anon, (2020). Изработени финални концепти од работилницата за редизајн Скопје 2.0 | СкопјеЛаб. [online] Available at: <https://skopjelab.mk/izraboteni-finalni-kontsepti-od-rabotilnitsata-za-redizajn-skopje-2-0/> [Accessed 30 Nov. 2023].

16 gtcskopje.com.mk. (n.d.). Тепаса ГТЦ. [online] Available at: <https://gtcskopje.com.mk/terasa-gtc/> [Accessed 29 Nov. 2023].

17 Anon, (n.d.). Проект: „Кензо“ – предлог за нов јавен градски простор во центарот на Скопје – МАРХ. [online] Available at: <https://marh.mk/proekt-kenzo-nov-javen-gradski-prostor/> [Accessed 30 Nov. 2023].

open greater, longer, and more frequent contact with each other.¹⁸ Such a space would encourage democracy. Citizens and authorities must act together, the local government must encourage citizens to improve the immediate living environment. It must be acknowledged that every citizen is responsible for the environment. We can start by mapping specific behaviors of citizens that are not sustainable and start initiatives to change them. It can also map out which civic behavior is sustainable and encourage it. The cultural specificity of the community and their tradition must also be taken into account, one can find many sustainable patterns that were characteristic of the particular community, but globalization and the fast way of life have suppressed them. In this case, communities can be encouraged, through local government, to practice sustainable behavior patterns. Providing opportunities and encouraging local sustainable businesses improves not only the economic stability of the same community but also creates a new driving motivation towards progress. The feelings of the citizens towards the place, their identification with the place, and the feeling of belonging to the communities are important. In order to encourage positive feelings, the collective memory must be very consciously preserved with places connected to culture and the past. These places can be natural and/or cultural landmarks and have been cherished for generations. Changes in the city should be according to the needs and wishes of the citizens. By creating spaces for the citizens and according to their needs, they would be encouraged to take care of the place and feel it as their own. One of the problems is the lack of awareness of public space and public good, sustainable communities strengthen this awareness through daily care for the surrounding environment. Such care gives a sense of security and belonging.

There is a new initiative that calls for beauty, sustainability, and togetherness and whose principles we can apply in the Republic of North Macedonia in order to contribute to the realization of SDG 11. The New European Bauhaus is a creative and interdisciplinary initiative that connects the European Green Deal to our living spaces and experiences. The initiative calls on all of us to imagine and build together a sustainable and inclusive future that is beautiful for our eyes, minds, and souls. Beautiful are the places, practices, and experiences that are: enriching, sustainable, and inclusive.¹⁹

We can learn from vernacular architecture that is still present in the Republic of North Macedonia. Vernacular architecture has features that have been maintained over a long period and are adapted to local specifications. It is built from local and natural materials and adapted to the local climate, the local tradition, and the needs of the local population. These characteristics make it authentic, functional, and economical. Vernacular architecture is complemented by common spaces that encourage social interaction and joint activities. From here we could explore the urbanism, architecture, and design we have had, find its sustainable features, and transform and improve it for the future.

18 Gehl, J. (2010). *Cities for people*. [online] Washington, Dc: Island Press. Available at: https://umranica.wikido.xyz/repo/7/75/Cities_For_People_-_Jan_Gehl.pdf.

19 new-european-bauhaus.europa.eu. (n.d.). *New European Bauhaus: beautiful, sustainable, together*. [online] Available at: https://new-european-bauhaus.europa.eu/index_en.

Implementing SDG 11 in the Republic of North Macedonia requires a lot of effort, dedication, and love for the city and the community. One can start with the inclusion of citizens and experts from different areas in the preparation of urban plans, greater financial independence of municipalities to not sell the state land, introducing minimum standards for housing, improving the city infrastructure, making a strategy for dignified and affordable housing, mapping the public space in the city, improving it and connecting it with pedestrian paths, strengthening the pedestrian infrastructure in the city, creating places for free cultural events and socialization open to all citizens, improving security by strengthening the local community, relocating employees in the public administration to the nearest workplace to their home.

Urbanism has the biggest part in creating great cities. Urban plans must be made very carefully with an interdisciplinary approach and in front of the public. Urban plans should consider sustainable land use, infrastructure development, resilience to climate change, and integrate smart city technologies to improve efficiency, reduce environmental impact and enhance the quality of urban life. Implement policies to increase the availability of affordable housing. Encourage public-private partnerships to invest in affordable housing projects. Invest in the development of public transportation systems to reduce traffic congestion, air pollution, and greenhouse gas emissions. Integrate different modes of transportation and promote non-motorized options like walking and cycling. Develop green spaces within urban areas to improve residents' well-being, air quality, and overall quality of life. Implement policies to protect and expand urban biodiversity. Design public spaces that are accessible, inclusive, and safe for all. Implement measures to reduce crime rates and enhance public safety. Establish mechanisms for meaningful community engagement in decision-making processes related to urban development. Implement policies and practices that enhance urban resilience to natural disasters and climate change. Encourage sustainable practices in construction, waste management, and resource use. Implement policies that incentivize businesses and individuals to adopt eco-friendly practices. Collaboration between government entities, civil society, businesses, and residents is crucial for successful implementation. This is the way SDG 11 would have a significant meaning in building a more prosperous society.

LIFE
ON LAND



SOIL, FERTILIZERS AND COMBATING CLIMATE CHANGE

Vladimir Vuksanovikj, PhD¹

Slobodan Vuksanovikj²

¹ Professor at the Faculty of Physical Education, Sport and Health, University of St Cyril and Methodius, Skopje and co-founder of Organika Nova LCC - specialised company for production of Californian red worms' organic fertilisers-Orgalife

² Entrepreneur, co-founder of Organika Nova LCC and Intus LLC, innovator of Orgalife organic fertilisers

WHAT DO WE KNOW ABOUT SOIL?

We need soil, to keep ourselves alive, on the earth! Soil is a stomach of the plants, as the digestive system is for humans (Patrick Holden, 2015¹). The fertility of soil is directly connected to the percentage of organic matter and humus in the soil.

Organic matter contributes to soil fertility, structure, and moisture retention. It serves as a source of energy and nutrients for soil microorganisms. Decomposed organic matter is often referred to as humified or stabilized organic matter.

Humus contributes to soil fertility by holding onto essential nutrients, making them available to plants. Humus also helps buffer soil pH and promotes beneficial microbial activity.

Organic matter and humus are the key to healthy soil.

The organic matter in soil serves several important functions², including nutrient cycling, water retention, soil structure, carbon storage.

Soil organic matter contains around 60% carbon. It is the defining factor in soil's influence on the global carbon cycle, which makes soil the second largest active store of carbon (40 000 billion tons) after the oceans (European Commission, 2011³). There is more carbon stored in soil than in the atmosphere.

WHAT ARE WE DOING TO EARTH'S SOIL?

The agriculture uses fertilizers. Synthetic fertilizers make up 74% of petrochemical industry production (+ other plastics), and they emit 2.6 gigatons of carbon per year (manure has its share as well), which is more than global aviation and shipping combined (Gao & Cabrera Serrenho, 2023⁴). Over 100 million hectares (about two siz-

- 1 Holden, P. (2015). Soil is the stomach of the plant - sustainable food trust, Sustainable Food Trust - A global voice for sustainable food and health. Available at: <https://sustainablefoodtrust.org/news-views/soil-stomach-plant/#:~:text=The%20layer%20of%20healthy%20topsoil,forms%20that%20plants%20can%20absorb>. (Accessed: 18 November 2023).
- 2 EIP-AGRI. (2016). EIP-AGRI Brochure Soil organic matter. Available at: https://ec.europa.eu/eip/agriculture/sites/default/files/eip-agri_brochure_soil_organic_matter_matters_2016_en_web.pdf. (Accessed: 18 November 2023).
- 3 European Commission. (2011). SOIL-the hidden part of the climate cycle. Publications Office of the European Union. ISBN: 978-92-79-19269-2 doi:10.2779/30669.
- 4 Gao, Y. and Cabrera Serrenho, A., (2023). Greenhouse gas emissions from nitrogen fertilizers could be reduced by up to one-fifth of current levels by 2050 with combined interventions. Nature food, 4(2), pp.170-178.

es of Greenland) of healthy and productive land, is degraded each year, from 2015 to 2019 (UN Division for Sustainable Development Goals No:15). Usage of synthetic fertilizers is changing the soil, the gut of plants and the normal carbon cycle. We, humans, striving to produce more food, use more fertilizers, spoil the soil's organic and humus matter and we put agriculture on a carbon positive list.

CURRENT SITUATION IN NORTH MACEDONIA

In the pursuit of sustainable development, the role of environmental stewardship and responsible resource management stands paramount. Recognizing that sustainable development is intricately tied to the well-being of the environment and its ecosystems, this exploration aims to shed light on the impacts of fertilizer usage on soil health and, consequently, its implications for achieving the Sustainable Development Goals (SDGs) in North Macedonia⁵.

As the country grapples with the impacts of climate change, including shifts in precipitation patterns and temperature, the need for resilient ecosystems becomes increasingly apparent. Focusing on soil health, a vital component of terrestrial ecosystems addressed in SDG 15, is integral to both climate action and land conservation efforts. Sustainable land management practices not only enhance soil fertility and productivity but also contribute to climate resilience by sequestering carbon and mitigating the effects of extreme weather events. By aligning climate action with the preservation of terrestrial life, North Macedonia can forge a path toward a more sustainable future, where soil health becomes a milestone in achieving both SDG 13 and SDG 15.

North Macedonia holds an SDG index ranking⁶ of 60 among the 166 countries assessed. The indicators reveal a stagnant rate for SDG 13 and a moderately improving rate for SDG 15.

Under SDG 13, the target (No.13.2) is to integrate climate change measures into national policies, strategies, and planning, as indicated by No. 13.2.2), which measures total greenhouse gas emissions per year. In alignment with SDG 15 from the United

5 Voluntary National Review 2020 Republic of North Macedonia. (n.d). Division for Sustainable Development Goals (DSDG) in the United Nations Department of Economic and Social Affairs (UNDESA). Available at: <https://sustainabledevelopment.un.org/memberstates/macedonia> (Accessed: 28 November 2023).

6 Rankings-The overall performance of all 193 UN Member States. (n.d). Sustainable Development Solutions Network a global initiative for the United Nations. Available at: <https://dashboards.sdindex.org/rankings>.(Accessed: 28 November 2023).

Nations Division for Sustainable Development⁷, target 15.3 strives to restore degraded land and soil, ultimately working towards achieving a land degradation-neutral world by 2030. This objective is measured by Indicator 15.3.1, assessing the proportion of land that is degraded relative to the total land area. But, according to the UNECE Roadmap⁸ for North Macedonia the green growth indicators are not being produced in the country and there is no monitoring of progress towards the global Sustainable Development Goals or their environmental dimension.

No national environmental information system was developed and established in accordance with the provisions of the Law on Environment and the 2005 governmental Strategy for Environmental Data Management.

Recommendation from the UNECE Roadmap are toward detailed actions of preparation of integrated Report on Environmental Indicators and State of Environment Report. Report⁹ is done but soil indicators are not included. In addition, the Law on Climate Action was announced in the last three years – but it is still not done.

The validity of the National Strategy for Sustainable Development¹⁰ of North Macedonia was extended until 2030. Outcomes from this Strategy are that the UN in North Macedonia will help country meet its climate change challenges and will work towards integration with global value chains in order to enhance agricultural productivity by implementing sustainable practices, which will lead to creation of awareness about carbon footprints and support industries and the private sector (including SMEs) in adopting resource-efficient and cleaner technologies.

Moreover, a strategic target could involve the establishment of a carbon market, particularly designed to assess, and recognize companies, including those involved in the production of organic fertilizers, that attain carbon negativity. This initiative not only provides a measurable framework for evaluating environmental contributions but also introduces a financial mechanism, fostering incentives for businesses to actively engage in sustainable practices, ultimately contributing to a greener and more carbon-neutral economy.

7 Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss. (n.d.). United Nations Division for Sustainable Development. Available at: <https://sdgs.un.org/goals/goal15> (Accessed: 18 November 2023).

8 United Nations Economic Commission for Europe. (2019). Roadmap for the implementation of the recommendations from the third EPR of North Macedonia. Available at: <https://unece.org/sites/default/files/2021-01/Roadmap%20North%20Macedonia%20-%203rd%20EPR.pdf>. (Accessed: 26 November 2023).

9 Ministry of environment and physical planning. (2022). Quality of the environment in the Republic of North Macedonia Annual Report. Available at: https://www.moep.gov.mk/wp-content/uploads/2023/07/VkupenGodisen2022_Final.pdf. (Accessed: 26 November 2023).

10 Sustainable development cooperation Framework 2021-2025. (2020). Government of the Republic of North Macedonia and United Nations North Macedonia. Available at: https://www.undp.org/sites/g/files/zskgke326/files/2022-11/un-sdcf-mk_english_signed_0.pdf. (Accessed: 25 November 2023).

WHAT CAN BE DONE?

According to the Enhanced Nationally Determined Contribution¹¹ the target level for 2030 is 82% reduction in net GHG emissions compared to 1990 levels (imported electricity not included). Agriculture field should produce 29% reduction (including **soil organic matters** as a default emission factors to be solved). Time frame of implementation is by 2030, with a single-year target delivery.

“What we need: Deep, rapid and sustained Green House Gases emission reductions by 43% by 2030 and net zero by 2050” (UN Division for Sustainable Development Goals No:13¹²)

EU regulation dictates reduction of all nitrogen inputs and soil nitrogen supply, but also a maximum amount of livestock manure to be applied, corresponding to 170 kg nitrogen/ha/year (European Nitrates Directive 91/676/EEC¹³). All Member States are required to adopt measures to reduce nitrogen pollution, closed periods when manure and chemical fertilizers cannot be disposed of, and limitations on manure storage and fertilizer application (Kryda, 2014¹⁴).

European Commission gives a direction to EU members (including North Macedonia as aspiring country), for reaping the benefits of healthy soils for people, food, nature, and climate and made healthy soil until year 2050 (EU Soil Strategy for 2030, Brussels, 17.11.202)

The 3rd Environmental Performance Review of North Macedonia¹⁵ clearly stated that the country did not perform soil monitoring systematically (source available only for heavy metals pollution in the Skopje area).

Actions proposed by United Nations Economic Commission for Europe UNECE¹⁶ are in the direction of preparation of national strategy and action plan on environmental monitoring, legislation specifically addressed to climate change (or an overall strategic document setting climate change priorities) and integration of climate change issues into primary, secondary, and tertiary education curricula.

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- 11 Enhanced Nationally Determined Contribution- Submission by the Republic of North Macedonia. Ministry of environment and physical planning of R.N Macedonia. Available at: <https://unfccc.int/sites/default/files/NDC/2022-06/Macedonian%20enhanced%20NDC%20%28002%29.pdf> (Accessed: 29 November 2023).
 - 12 Take urgent action to combat climate change and its impacts. (n.d.). Division for Sustainable Development Goals. Available at: <https://sdgs.un.org/goals/goal13>. (Accessed: 18 November 2023).
 - 13 European Nitrates Directive 91/676/EEC. (1991). Available at: <http://data.europa.eu/eli/dir/1991/676/2008-12-11>. (Accessed: 18 November 2023).
 - 14 Kryda, M. (2014). Factory farming makes Baltic Sea one of the world's most polluted. ARC2020. Available at: <https://www.arc2020.eu/factory-farming-made-the-baltic-sea-one-of-the-worlds-most-polluted-seas/>. (Accessed: 18 November 2023).
 - 15 United Nations Economic Commission for Europe. (2019). 3rd Environmental Performance Review of North Macedonia. United Nations, Geneva.
 - 16 United Nations Economic Commission for Europe. (2019). 3rd Environmental Performance Review of North Macedonia. United Nations, Geneva.

What direct actions can restore the carbon in the soil?

Carbon restoration in the soil is a multifaceted process that involves integration of various sustainable agricultural and land management practices in order to enhance soil health, carbon restoration in the soil and mitigate the impacts of climate change. For example, leaving crop residues on the field after harvest instead of burning them helps retain organic matter or/and manure management as composting manure and organic materials before applying them to the soil.

SOLUTION

Vermicompost Fertilizers

Composting (or casting¹⁷) manure offers several benefits, both for agricultural practices and environmental sustainability. One of the benefits is **pathogen reduction** (sterilization) of raw manure for reducing the risk of diseases in crops and animals.

Composting stabilizes and transforms the nutrients in manure into a more plant-friendly form which allow **nutrient enrichment** gradually over time, providing a sustained and steady supply of nitrogen, phosphorus, potassium, and other essential elements for plant growth.

Using this kind of inputs (fertilizers) **adds organic matter to the soil**, enhancing its structure and water retention capacity contributing to overall soil health. **Microbial activity** by microorganisms introduced during composting can further enhance soil microbial activity, fostering a healthy soil ecosystem. Composting manure helps **sequestering¹⁸ carbon in the soil**, contributing to the mitigation of greenhouse gas emissions. The stable organic matter created through composting acts as a carbon sink, promoting soil carbon storage.

Carbonization of soil is a complex and dynamic process influenced by multiple factors. Naturally made microbial, worm composting fertilizers can heal the soil. Those fertilizers (known as biohumus) are not made in laboratories. They are made on the field, as a product of vermicompost farming. The “Californian red worms”¹⁹ use manure as a food. Worms process manure within a period of one year and deliver biohumus. Biohumus is a solid fertilizer²⁰ rich in all organogenic elements, microelements, and bioactive microorganisms. Biohumus as a fertilizer, is applied directly

17 Casting is a process in which Californian red worms treat/use, as food, the manure originating from cows/ horses/ sheep. Composting is a process in which worms are feed with food leftovers or plant residues.

18 Carbon Sequestration -process of capturing and storing atmospheric carbon dioxide.

19 Eisenia fetida (Latin Binomial name)- species of earthworm adapted to decaying organic material.

20 It can be used for any kind of plants (organic / conventional agriculture).

to/above the root. Application of solid Biohumus for certain plants can be difficult. But innovative liquid form²¹ can be applied by: drip irrigation system, foliar irrigation, with sprinklers, atomizers (using tractor) or by airplane/ drone spraying. Process for obtaining Orgalife liquid fertilizer is patented²² under the patent number MK/P/2020/107 (Trade mark/ registration number: 31392²³)

Fertilizer's microbes and their value proposition

Microbes are a crucial component of the vermicompost fertilizers. The high number of microorganisms and their ferments revive the soil, increase soil fertility and can retain carbon back into the soil. Microorganisms representing integral parts of this fertilizer are in direct connection with fertilization restructuring as well. Due to their metabolism, microorganisms are able to endure the most extreme soil existence conditions, resulting in their long-term presence in soil. Those microbes are actually "soil microbes".

In liquid fertilizer²⁴ microbiological analysis²⁵ shows different types of soil microbes such as Nitrogen fixator, Cellulolytic bacteria, Nitrificator and Denitrificator bacteria. Also includes aerobic, heterotrophic and mesophilic bacteria, and yeasts + molds.

Microorganisms from worm fertilizer (Orgalife) stimulate the following processes: Nitrogen fixation²⁶ of molecular nitrogen from the air, the circulation of phosphorus²⁷, potassium synthesis²⁸ and Humification²⁹.

The Humification is the process by which organic matter in the soil is transformed into humus, a more stable and resistant form of organic material.

Humus is resistant to further decomposition and provides long-term storage of carbon in the soil. Microorganisms, particularly bacteria and fungi, play a crucial role in decomposing the complex organic compounds present in the organic materi-

21 Orgalife: liquid organic Microbiological Fertilizer, Biostimulator and Soil improver, www.organikanova.com

22 Technological procedure for obtaining liquid fertilizer and soil improver from California worms. (2023). State office of industrial property- R. of N. Macedonia. Available at: <http://www.ippo.gov.mk/Search/PatentSearchDetails.aspx?nr=107&series=2020> (Accessed: 18 November 2023).

23 Orgalife- Trade Mark. (2019). State office of industrial property- R. of N. Macedonia. Available at: <http://www.ippo.gov.mk/Search/TradeMarkSearchDetails.aspx?nr=869&series=2019> (Accessed: 18 November 2023).

24 Orgalife. (n.d.). Organika Nova. Available on: www.organikanova.com. (Accessed: 18 November 2023).

25 Microbial analysis Available at: <http://organikanova.com/wp-content/uploads/2018/02/MIKROB.-2017-ORGALI-EN.pdf>

26 Nitrogen fixation of molecular nitrogen from the ai. Organika Nova. Available at: <http://organikanova.com/nitrogen-fixation-of-molecular-nitrogen-from-the-air/> (Accessed: 18 November 2023).

27 The circulation of phosphorus. (n.d.). Organika Nova. Available at: <http://organikanova.com/the-circulation-of-phosphorus/> (Accessed: 18 November 2023).

28 Potassium synthesis. (n.d.). Organika Nova. Available at: <http://organikanova.com/potassium-synthesis/> (Accessed: 18 November 2023).

29 Decomposition of organic matter. (n.d.). Organika Nova. Available at: <http://organikanova.com/the-rapid-decomposition-of-organic-matter/>. (Accessed: 18 November 2023).

al, where complex organic materials are transformed into humus. This decomposition is part of the natural breakdown of organic matter.

All those processes occur in their balanced form. When using “microbial fertilizer”, there is no extra depositing of certain elements (such as when applying chemical fertilizers) since those are natural physiological soil processes resulting from existing and evolution processes of soil microorganisms. Humification process can be accelerated by vermicomposting.

This specifies the so-called balance or equilibrium level for importing and exporting natural nutrients in and out of the soil. It is sufficient for correct yields and preserving the natural fertility of soil to the level it used to have in the past.

In the end of their life cycle, microbes themselves contribute to the organic matter pool in the soil (formation of microbial biomass). As microbes decompose organic matter, they incorporate some of the carbon into their own biomass. Microorganisms in the soil multiply by dividing. A single bacterial cell could give rise to a large population, often referred to as exponential or logarithmic growth (Hagen, 2010³⁰). When bacteria die, their biomass becomes part of the soil, leaving behind a huge³¹ amount of organic matter.

Foundation of vermicomposting farms (for production of microbial fertilizer) can be crucial for manure displacement action (unsustainable industrial livestock production is the major contribution in overall pollution). North Macedonia does not have a strategy for manure (pollution) displacement.

By clear strategy and spreading the know-how of vermicompost farming, each of the livestock farms can be potential vermicompost farm, as a side activity. Organika Nova provides, free of charge, know-how for establishing and running the vermicomposting farm (brochure: Manual for raising Californian red worms³²). The farmers, with no extra efforts and in addition to livestock farm activities, can run vermicomposting farm and produce biohumus fertilizer. The Government should recognize the potential of healing the soil by vermicompost farming and usage of vermicompost fertilizers. This can be incorporated into the subsidizing of startups but also in subsidizing the “market placement” and usage of the fertilizer as a domestic product. With this action, in addition to environmental sustainability (healing the soil/ replacing the soils’ carbon reservoir), economic benefits for the rural parts can be in accordance with the “leave no one behind” strategy).

Industrialization is going forward fast. The food production as well.

30 Hagen, S.J., (2010). Exponential growth of bacteria: Constant multiplication through division. *American Journal of Physics*, 78(12), pp.1290-1296.

31 The specific quantity of dead bacterial body left in soil can vary because it is part of a broader cycle of organic matter turnover and decomposition in the soil ecosystem.

32 Manual for raising Californian red worms. (n.d.). Organika Nova. Available at: http://organikanova.com/wp-content/uploads/2023/08/Oganika_ENG_A4prirachnikPRINT.pdf. (Accessed: 18 November 2023).

CONCLUSION AND RECOMMENDATIONS

The imperative to prioritize soil health and responsible fertilizer use is inseparable from the global effort to combat climate change under the umbrella of the Sustainable Development Goals (SDGs). It is crucial to recognize the interconnectivity of these elements and underscore the need for comprehensive policies and initiatives. The success of these endeavors hinges on addressing the diverse needs of various communities, ensuring that advancements in soil management and fertilizer practices are inclusive and benefit all. For instance, policies should consider the challenges faced by smaller farmers, aiming to provide them with the necessary resources and knowledge for sustainable practices. Simultaneously, initiatives should strive to enhance food accessibility for marginalized communities, fostering a future where no one is left behind in our collective pursuit of a healthier, more sustainable planet.

At the policy level, it is imperative to implement financial instruments that support grassroots initiatives. Furthermore, the inclusion of soil indicators is essential. The development and production of green growth indicators within the country, along with a systematic monitoring of progress towards global Sustainable Development Goals, particularly in their environmental dimension, should be prioritized. Additionally, the adoption of the Climate Action Law is crucial to solidify these efforts.

LIFE
ON LAND



THE MACEDONIAN CASE: MISUNDERSTANDING THE VALUE OF THE BIODIVERSITY AS A PUBLIC INTEREST

Kiril Arsovski, MSc¹

¹ Researcher at the Department for Environmental Communication at the Institute of Communication Studies in Skopje/ Fellow researcher at Technical University Munich - Germany

THE BIODIVERSITY AS A PUBLIC INTEREST

Biodiversity, the variety of life on Earth, is a complex and interconnected web that sustains the health and well-being of our planet. It encompasses a myriad of species, ecosystems, and genetic diversity that coexist and interact, forming a delicate balance that has evolved over millions of years. This intricate tapestry is not merely a scientific curiosity; it is a matter of public interest that affects every facet of human life. Protecting and conserving the biodiversity as well as the interwork of the biodiversity in the human society lays in the center of the Sustainable Development Goal 15 - "Life on land"¹.

At its core, biodiversity is essential for the functioning of ecosystems and the provision of ecosystem services². These services, such as pollination, water purification, and climate regulation, directly affect human survival and livelihoods. The loss of biodiversity can disrupt these services, leading to food shortages, increased vulnerability to natural disasters, and the deterioration of essential resources³. Moreover, biodiversity holds immense potential for scientific and medical advancements. Many species, from plants to microbes, harbor unique compounds and genetic traits that can be harnessed for development of medicines, agricultural innovations and industrial applications. The loss of biodiversity not only limits our current knowledge but also impedes future opportunities for scientific and technological progress.

In addition to its tangible benefits, biodiversity also contributes to the cultural and aesthetic richness of our world⁴. The diversity of landscapes, flora, and fauna has inspired art, literature, and spiritual practices for centuries. Indigenous cultures often have deep connections to specific ecosystems and species, viewing them as integral to their identity and heritage. The loss of biodiversity can lead to erosion of cultural diversity and disappearance of unique knowledge systems that have sustained communities for generations.⁵ Furthermore, biodiversity plays a critical role in maintaining resilience and adaptability in the face of environmental changes⁶. As the global climate continues to shift, diverse ecosystems are better equipped to withstand and recover from disturbances. The adaptability of distinct species ensures that some

1 <https://www.globalgoals.org/goals/15-life-on-land/>

2 Yan P, Fernández-Martínez M, Van Meerbeek K, Yu G, Migliavacca M, He N. The essential role of biodiversity in the key axes of ecosystem function. *Glob Chang Biol.* 2023 Aug;29(16):4569-4585. doi: 10.1111/gcb.16666. Epub 2023 Mar 19. PMID: 36880889.

3 Cardinale, B., Duffy, J., Gonzalez, A. et al. Biodiversity loss and its impact on humanity. *Nature* 486, 59–67 (2012). <https://doi.org/10.1038/nature11148>

4 Haila, Y. Biodiversity and the divide between culture and nature. *Biodiversity and Conservation* 8, 165–181 (1999). <https://doi.org/10.1023/A:1008877628720>

5 McClanahan, T.R. and Rankin, P.S. (2016), Geography of conservation spending, biodiversity, and culture. *Conservation Biology*, 30: 1089-1101. <https://doi.org/10.1111/cobi.12720>

6 Kathy J. Willis, Shonil A. Bhagwat, Biodiversity and Climate Change. *Science* 326, 806-807 (2009). DOI:10.1126/science.1178838

can thrive in changing conditions, providing a buffer against the potential collapse of entire ecosystems.

Recognizing the public interest in biodiversity, governments, NGOs, and communities around the world are increasingly taking steps to conserve and sustainably manage natural resources. Conservation efforts range from establishing protected areas and wildlife corridors to implementing sustainable fishing practices and reforestation initiatives. International agreements, such as the Convention on Biological Diversity⁷, aim to promote the conservation and sustainable use of biodiversity at a global scale. Despite these efforts, biodiversity continues to face unprecedented threats, primarily driven by human activities. Habitat destruction, pollution, climate change, and overexploitation of natural resources are pushing many species to the brink of extinction. The urgency of addressing these threats cannot be overstated, as the consequences of biodiversity loss reverberate across ecosystems and societies.

The biodiversity is not an abstract concept confined to the realms of biology; it is a matter of public interest that underpins the very fabric of our existence. The intricate interplay of species and ecosystems sustains life as we know it, providing essential services, fostering cultural diversity, and offering potential solutions to pressing challenges.

THE ROLE OF THE POLITICAL WILL IN SUPPORTING THE BIODIVERSITY PROTECTION

As the world grapples with the consequences of biodiversity loss, the role of political will emerges as a critical factor in shaping the future of our planet's ecosystems. Political will, defined as the determination and commitment of political leaders to prioritize and implement policies for the common good, plays a pivotal role in biodiversity protection⁸.

Firstly, political will is essential for the development and enforcement of effective environmental policies⁹. Laws and regulations are the backbone of any conservation effort, providing the legal framework necessary to safeguard biodiversity. Leaders with a strong political can champion the creation of stringent regulations, ensuring that industries and individuals alike adhere to sustainable practices. Without politi-

7 Convention on Biological Diversity - <https://www.cbd.int/>

8 POST, L.A., RAILE, A.N.W. and RAILE, E.D. (2010), Defining Political Will. *Politics & Policy*, 38: 653-676. <https://doi.org/10.1111/j.1747-1346.2010.00253.x>

9 Zhihao Yu, Environmental Protection: A Theory of Direct and Indirect Competition for Political Influence, *The Review of Economic Studies*, Volume 72, Issue 1, January 2005, Pages 269–286, <https://doi.org/10.1111/0034-6527.00332>

cal will, these policies may remain mere words on paper, lacking the necessary enforcement mechanisms to make a tangible impact on biodiversity conservation¹⁰.

Furthermore, political will is instrumental in fostering international collaboration and cooperation.¹¹ Biodiversity knows no borders, and its protection requires a unified global effort. Political leaders who prioritize biodiversity are more likely to engage in diplomatic initiatives, working with other nations to address transboundary environmental issues.¹²

THE NATIONAL BIODIVERSITY AS PUBLIC INTEREST IN NORTH MACEDONIA

North Macedonia, a small landlocked country nestled in the heart of the Balkan Peninsula, boasts a remarkable biodiversity that reflects its diverse landscapes and unique geographical position. Despite its modest size, North Macedonia's ecosystems harbor a rich array of flora and fauna, contributing to the country's ecological significance. The national biodiversity of North Macedonia has been a point of immense pride and often used as a promotional focus of the objective to attract foreign visitors and investors. The national biodiversity can be found in all aspects of the Macedonian culture, tradition, and modern history. The regional and national endemic fauna can be found on the national currency¹³ such as the Ohrid trout (*Salmo letnica*), the Balkan Shepherd dog (Sharplaninec) and the Balkan lynx (*Lynx lynx balcanicus*) on the reverse of the denar coin, as well as representatives of the national flora such as the poppy flower (*Papaver somniferum*) on the denar banknote¹⁴. This trend can be seen with the Macedonian Oak¹⁵ on the code of arms of the country and the coat of arms of the President. Distinct species from the Macedonian agrobiodiversity are commonly mentioned in the national promotion of the country and are the core of the public diplomacy and tourism especially gastronomic tourism. Hence, often the country is promoting the traditional red bell pepper (*Capsicum annuum* – locally *ajvarka*; *kurtovksa kapija*)¹⁶, and locally produced tomatoes and varieties of beans. This can lead to the fact that, although unaware of the role of the biodiversity, it can be seen as a

10 I.Campbell, N. Individual rights and the environmental public interest: A comparison of German and Chinese approaches to environmental litigation. *RECIEL*. 2023; 32(1): 105-118. doi:10.1111/reel.12466

11 Leeds, B. A. (1999). Domestic Political Institutions, Credible Commitments, and International Cooperation. *American Journal of Political Science*, 43(4), 979–1002. <https://doi.org/10.2307/2991814>

12 Thad Kousser, Bruce Tranter, The influence of political leaders on climate change attitudes, *Global Environmental Change*, Volume 50, 2018, Pages 100-109, ISSN 09593780, <https://doi.org/10.1016/j.gloenvcha.2018.03.005>

13 https://www.nbrm.mk/kovani_pari_vo_optiek.nsp

14 <https://www.nbrm.mk/ns-newsarticle-100-denari.nsp>

15 <https://heraldika.org.mk/arms-of-the-republic-of-macedonia/>

16 <https://macedonia-timeless.com/eng>

crosscut in between public diplomacy, tourism promotion and national heraldry and symbolism in all its different forms and aspects. The protected natural areas in North Macedonia or one of the most visited places in the country and those locations are considered closely related with the national feeling and sense of the broader public. These rare and fragile ecosystems are part of the national ecosystem biodiversity.¹⁷ Hence, again we can witness how the biodiversity is influencing the public without the public being aware of its value. Often these landscapes, areas and localities are seen as the part of the inert and always present part of nature without realizing the fragility and the danger that they are into.

In the most stereotypical expression, the biodiversity in North Macedonia is seen by the public mostly as an endless source of resources and as something that is given to the people - something that is permanent and a value that will be always present in the future. This can be seen by the history of massive deforestation, overfishing, illegal hunting and improper waste management.

The most recognized part of the Macedonian biodiversity, besides the wildlife, is the agrobiodiversity. This is understood as every type of plant or animal that has been kept throughout the history and is part of the local and national diet or is used in various parts of the traditional industry. One of the most recognizable representatives of the national agrobiodiversity is the grape wine (*Vitis vinifera*) and the common apple (*Malus domestica*). Based on the national climate change scenarios¹⁸ both species are under huge threats and danger by the radical changes let by the climate change. This means that, if the country does not call on action to mitigate the changes, this will lead to damages for the national economy in the future, as both agricultural branches are the main sources of the industry. Until now, there is no official Governmental or local plan and strategy to protect this vital agricultural species. Although the role of the biodiversity conservation is well elaborated in the National Strategy for agriculture and rural development¹⁹, the agrobiodiversity is only partially mentioned as a natural value in the National Strategy for Nature Conservation, and beside few local species check lists²⁰ not much has been achieved. This is a prime example of how the Government is aware of the necessity and importance of these cultures, but at the same time there is a serious lack of political will and political investment to protect the future of this species which will lead to the protection of the local communities. The core in protecting the national agrobiodiversity is that by protecting this type of biodiversity we are protecting the local communities which are dependent of these cultures²¹. So, by protecting the biodiversity we are protecting the citizens, and we are meeting their needs.

17 Milevski, Ivica & Temovski, Marjan. (2018). Geomorphological heritage and geoconservation in the Republic of Macedonia. Glasnik Srpskog geografskog drustva. 98. 10.2298/GSGD180404006M.

18 http://www.unfccc.org.mk/content/Documents/VULNERABILITY/MACEDONIAN_Assessing_Viticulture_Vulnerability_.pdf

19 <https://ipard.gov.mk/wp-content/uploads/2021/02/Национална-стратегија-за-земјоделство-и-рурален-развој-2021-2027.pdf>

20 <https://investineastregion.mk/wp-content/uploads/2023/03/Извештај%20за%20состојбата%20со%20заштитените%20подрачја%20во%20сливот%20на%20реката%20Брегалница.pdf>

21 Kahane, R., Hodgkin, T., Jaenicke, H. et al. Agrobiodiversity for food security, health and income. Agron. Sustain. Dev. 33, 671–693 (2013). <https://doi.org/10.1007/s13593-013-0147-8>

The Macedonian population of the critically endangered Balkan lynx²² (*Lynx lynx balcanicus*) in the last few years has become symbol of the national wildlife and national biodiversity. Since the early 2000s this specie, from a cryptic and almost mythological creature, became national pride and symbol of the country. This work has been done by the NGO sector²³ with major financial, logistical, and political support from foreign, international organizations and funds²⁴. Most of the work has been taken by volunteers, independent researchers, NGOs, and the National Park Services. Due to the nature of the national park's organization in North Macedonia - this work cannot be considered as institutional support - and the parks are enjoying a form of administrative autonomy in their annual programs. Besides vocal and some form of written declaration there isn't any form of formal governmental support that will guide a system of monitoring, research, and protection of this endangered species. The public, due to the public campaign led by the NGOs, is well informed²⁵ about the existence, threats, and the needs of this wildcat, but this awareness does not translate into legislative and financial support by the government. Nation-wide support and protection cannot be achieved solely by citizen activism. The protection of the Balkan lynx can be seen as an excellent, politically neutral basis for cooperation among the countries of Western Balkan where this species exists.

THE POINTS OF FRICTION

In the last decade we can see very transparent points of friction between the biodiversity conservation and protection and the local and national economic development. In many cases, with few exceptions, the economic development or the interests of the private commercial sector overrule the need of environmental protection. This is best seen during the discussions and decision-making procedures on the development of the energy sector, forestry, and tourism. These sectors of the national economy are the points of collision between protecting the national natural resources, protecting the environment, preserving the landscape and the economic development.

The large-scale Governmental program²⁶ of supporting and financing small hydro plants installations throughout the high mountain regions of the country without taking in the consideration the negative impact that this system will have on the biodiversity is excellent example of misunderstanding the biodiversity and its ecosystem services *vis a vie* the value that these plants will bring to the national energy sector. After almost years of lobbying, explaining, protesting, and negotiating the NGO sector supported by foreign and domestic academic community partially stopped this devastating and un-

22 <https://redlist.moepp.gov.mk/balkan-lynx/>

23 <https://mes.org.mk/>

24 <https://doma.edu.mk/ekoucilnica/stranci-uporno-ni-plakaat-strategii-nie-uste-pouporno-ne-gi-sproveduvame/>

25 https://www.giz.de/en/downloads_els/ORFBDU_Macedonia-Assessment_ENG.pdf

26 <https://doma.edu.mk/pod-lupa/tajna-e-kolku-pari-im-se-isplakjaat-na-sopstvenicite-na-mali-hidrocentrali/>

reasonable initiative. This can be noted as an excellent example about the importance of the scientific and the environmental communication as a tool to communicate and resolve an environmental issue. These types of initiatives are not domestic and can be seen throughout the Western Balkan region with similar effects and ending.²⁷

The forestry sector of the country is considered as the most complicated, troublesome, and scattered with corruption and elevated level of criminality²⁸. Furthermore, the forests are subject to ill-planned legal logging as well as vast illegal logging. The illegal logging activities are present in almost every part of the country, and it's considered as a serious threat to the national forest. Historically, the forests in Macedonia are considered as nothing more than a source of income and resources without any sense of its ecosystem values and services that it provides. This tradition is met in the laws and legislative covering the forests as well in the everyday forest practices. The illegal logging is the main reason for the massive forest fires that have been happening every year in the last decade in the country²⁹. Officially, is considered that 90% of the national forest fires are human caused as a form of pyromania with the goal to illegally cut, log and destroy the most monetary valuable forests and tree species³⁰. With the lack of official response and dynamic action for stopping these illegal activities, the government is missing the opportunity to protect one of the most valuable natural resources in the 21st century in Europe - pristine and protected forests.

One of the most recommended economical branches that can be developed in a sustainable manner in North Macedonia is the tourism, especially one that is close to nature as well as active outdoor tourism³¹. This type of tourism can provide sufficient financial influx to develop the local communities, provide sustainable source of income and also open an opportunity to protect the environment. The main characteristic of the sustainable active tourism is that it is supporting the environment while providing opportunity for financial and social development. Unfortunately, this aspect of the national economy is still far behind the needed level. Almost every known and popular touristic areas and spots in the country are part of the national protected areas system, hence every form of touristic and urbanistic development must be within the guidelines and recommendation for environmental protection. This match between this sector and the environment is not that common in the country. Often the landscape and the ecosystems are neglected in the name of local touristic development. Examples of this behavior can be seen all along the coast of the UNESCO protected Ohrid region³² as well as the Shara National Park. Besides this, almost every popular natural area in the country is faced with tremendous urbanistic pressure lead by the unsustainable touristic practices.

27 Crnobrnja-Isailović Jelka, Jovanović Bogdan, Ilić Marija, Ćorović Jelena, Čubrić Tijana, Stojadinović Dragana, Ćosić Nada, Small Hydropower Plants' Proliferation Would Negatively Affect Local Herpetofauna, *Frontiers in Ecology and Evolution*, 9 2021, <https://www.frontiersin.org/articles/10.3389/fevo.2021.610325>

28 ДЕМИРИ, Мариглен Истоштени шуми [Електронски извор]: мапирање на организиранит криминал во форма на бесправна сеча на шуми / [автор Мариглен Демири]. Скопје: Центар за европски стратегии Евротинк, 2022

29 <https://emergency.copernicus.eu/mapping/list-of-components/EMSR529>

30 <https://doma.edu.mk/ekofilm/prirodni-katastrofi/>

31 <https://ekosvest.com.mk/wp-content/uploads/2021/04/Analiza-Alternativen-Turizam-2021.pdf>

32 <https://whc.unesco.org/en/soc/4130/>

But the need of the biodiversity is not limited to the wilderness.³³ The importance of the urban biodiversity is the most neglected aspect of the environmental conservation in the country. There is almost no available data on the biodiversity in the cities as well as the importance of this species in creating a better urban life. The amount of urban greenery and open public green spaces has been a sensitive topic among the local municipalities and local councils. There is absolute lack of understanding and lack of comprehending the value of the urban biodiversity and its role in protection of the life of the citizens in the cities and towns in the country. The largest cities in the country are facing tremendous air, soil, and water pollution. In some places the pollution with heavy metals and pollutants is so high that they are considered permanently polluted areas³⁴. The capital city of Skopje is listed on the lower scale on many international measured indexes of pollution, urban life quality, climate change and environmental catastrophes. As most of the citizens are living in the larger cities solving the urban environmental issues must be out of highest priority.

FUTURE PATHWAYS

The biodiversity conservation is complex and expensive process. The conservation work needs an interdisciplinary approach that takes into consideration the local and national context. Most of the biodiversity issues are on the verge of irreversibility - meaning only few incorrect steps in the procedure can lead to devastating results. That is why the diversity conservation must be a high priority for the country as well as for the region.

From international legislative aspect, North Macedonia is part of every major conservation initiative: international declarations, international initiatives, conservation networks and environmental platforms. In terms of international policies, North Macedonia is well covered and active. The main problem is the anaemic response on political and administrative level and the lack of capability to keep up with the requested activities and procedures. Although North Macedonia has signed almost every important international legislative not much has been done in the past decade to protect the national biodiversity and the environment. This is not taking in consideration the initiatives ran by NGOs and foreign organizations. Objectively, nature conservation is expensive procedure, but this cannot be used as an excuse for the lack of success.

Fallowing the ethos of the SDGs

The best universal guideline towards biodiversity conservation should be the United Nation Sustainable Development Goal 15³⁵. Sustainable Development Goal 15 (SDG 15) focuses on Life on Land, acknowledging the critical importance of terrestrial ecosystems and their role in sustaining life. At its core, SDG 15 aims to protect, restore, and promote the sustainable use of terrestrial ecosystems, halt deforestation, com-

33 Pedersen Zari, Maibritt. (2018). The importance of urban biodiversity – an ecosystem services approach. Biodiversity International Journal. 2. 10.15406/bij.2018.02.00087

34 https://www.moep.gov.mk/wp-content/uploads/2014/11/Annex_9_Special_Study_E__Industrial_Contaminated_Sites_.pdf

35 <https://shorturl.at/hBENP>

bat desertification, and halt biodiversity loss. Sustainable Development Goal 15 is intimately tied to the challenges and aspirations of North Macedonia. According to the Sustainable Development Report,³⁶ North Macedonia is faced with “major challenges that remain” in the context of protected terrestrial ecosystems, that are vital for the biodiversity. Furthermore, the citizens of North Macedonia are not aware about the SDGs, as shown by the survey³⁷ - 82% of the respondents do not have knowledge or know a little bit about the term SDG. This means that the country must follow the framework of the SDGs more strictly and with unrepresented political and social support. By comparing the regional and international “know how’s” and experience for completion of the SDGs goals, North Macedonia can create a chartbook or checkbox mapping about its development and progress.

Suggested initiatives

The biodiversity conservation its large problem to be tackled, but there are three starting points that should be considered: developing environmental literacy and building up the political will, financial support, and collaboration with the citizens.

Environmental literacy

It is impossible that the environmental awareness will spontaneously appear and self-establish in the society. This can be achieved only by using the environmental education as a stepping stone towards environmental literacy. This will than lead to environmental awareness. The level of the environmental education will level up with the political will to solve the environmental issues and with that the biodiverse issues. Creating an interdisciplinary environmental educational curriculum that will follow the formal education of the citizens can lead to more proven change in the population mindset. Environmentally educated citizens as voters in the democratic society will be the guiding point of the environmental policies.

Political support and collaboration with the citizens

Greater political will and support can achieve political pressure in order to ensure better financial opportunities to finance the conservation goals. The key to success of this form of policy building is open, transparent, and active communication with the citizens and stakeholders. The government is dependent on the research and development of the scientific community, it needs the support from the citizens, especially the local communities that are the dependent on the ecosystem services and the government also needs the active support of the public when is engaging in solving environmental issues that can be challenging for the society.

The lack of understanding about biodiversity as an important, critical, and existential aspect of, and for, the society can lead to detrimental development for the country. Biodiversity conservation must become part of the official government agenda that will remain permanent regardless of changes in government. This is the only thing that can guarantee safe, stabile, and productive future.

36 <https://dashboards.sdgindex.org/profiles/north-macedonia/indicators>

37 ASSESEMENT OF SDGs PUBLIC AWARENESS IN THE REPUBLIC OF NORTH MACEDONIA WITH WARD METHOD. (2022). Journal of Sustainable Development, [online] 12(28), pp.3-16.

PEACE, JUSTICE
AND STRONG
INSTITUTIONS



CLIMATE
ACTION



CRITICAL PERSPECTIVES ON CLIMATE ACTION IN THE REPUBLIC OF NORTH MACEDONIA

Julija Brsakoska-Bazerkoska, PhD¹

Ljupcho Stojkovski, PhD²

¹ Professor at the University Ss. Cyril and Methodius - Skopje, Iustinianus Primus Faculty of Law - Skopje

² Assistant Professor at the University Ss. Cyril and Methodius - Skopje, Iustinianus Primus Faculty of Law - Skopje

I. INTRODUCTION

“The world is on the brink of a climate catastrophe, and current actions and plans to address the crisis are insufficient. Without transformative action starting now and within the current decade to reduce greenhouse gas emissions deeply and rapidly in all sectors, the 1.5°C target will be at risk and with it the lives of more than 3 billion people.” This is how the UN Secretary-General assesses the current efforts of the international community to reach Sustainable Development Goal number 13 in his 2023 Report on the progress of reaching the Sustainable Development Goals (SDGs).¹ In 2015, the UN General Assembly unanimously adopted the *2030 Agenda for Sustainable Development*.² The Agenda has three dimensions: economic, social, and environmental, and contains the 17 SDGs that should be met by the end of 2030, with broad aim to end poverty, inequality and discrimination, guarantee health, justice and prosperity, and protect the planet, all the while ensuring that no one, person or country, is left behind in this process.³ One of these goals is SDG 13 – taking urgent action to combat climate change and its impacts.

Climate change⁴ causes severe impacts throughout the world, including the Western Balkans. In 2020, for instance, the European Commission observed that the Western Balkans is one of the regions in Europe that is most deeply affected by the impact of climate change.⁵ The extreme events that occurred in the region in the past decade⁶ contribute heavily to human health issues, the loss of species, water supply shortages and reduced agriculture production, as well as to the increase of extreme

1 UN Doc. A/78/80-E/2023/64, Progress towards the Sustainable Development Goals: towards a rescue plan for people and planet, Report of the Secretary-General (special edition), 27 April 2023, p.20.

2 UN Doc. A/RES/70/1, Transforming our world: the 2030 Agenda for Sustainable Development, 21 October 2015.

3 UN System Chief Executives Board for Coordination, Leaving No One Behind: Equality and Non-Discrimination at the Heart of Sustainable Development, UN, New York, 2017, available at https://unsceb.org/sites/default/files/imported_files/CEB%20equality%20framework-A4-web-rev3.pdf.

4 According to the UN Framework Convention on Climate Change, climate change means “means a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods”. UN Framework Convention on Climate Change (1992), Art. 1(2).

5 European Commission, Guidelines for the Implementation of the Green Agenda for the Western Balkans, COM (2020) 641 final, 6 October 2020.

6 According to Linda Van Gelder, in 2014 a historic flooding caused over €2 billion in damages and losses in Bosnia and Herzegovina, which equals nearly 15 % of the country's GDP. The floods caused over €1.5 billion in damages and losses in Serbia – 5 % of its GDP. Afterwards, during the summer of 2017 the region witnessed record temperatures that buckled train tracks, and also fuelled dozens of fires across the Balkans. The 2017 record temperatures caused drought in Serbia which led to a drop in agriculture output of nearly 10 percent. In Albania, €200 million were spent on energy imports amid a devastating drought. The summer of 2021, 2022 and 2023 subsequently brought the hottest weather the region has seen for 30 years, which contributed among other factors to numerous wildfires in Albania, Greece and Republic of North Macedonia, alongside with other countries in the Mediterranean region. Linda Van Gelder, Western Balkans: Directions for the Energy Sector, World Bank Opinion, June, 2018; Kate Abnett, Mediterranean has become a ‘wildfire hotspot’, EU scientist say, Euronews, 5 August 2021, available at: <https://www.euronews.com/2021/08/05/us-climate-change-europe-wildfires>; <https://www.euronews.com/2023/08/30/wildfire-in-northeastern-greece-is-the-biggest-the-eu-has-ever-recorded>.

events and migration. It has been estimated that if the trend of the rising temperatures is projected to continue, the temperature increases in the region are estimated to be between 1.7 – 4.0°C, and even exceeding 5.0°C by the end of the century.⁷ These projections are dependent on the global effort in reducing greenhouse gas emissions, but they raise great concerns in the region.

As part of the Western Balkan region, Republic of North Macedonia is heavily influenced by all of the above trends and challenges that the region is faced with and is suffering from the same troubles as its neighboring countries. Aside from the effects from climate change, the greenhouse gas emissions present many other challenges connected to environmental protection in the country. The issue of pollution is an important concern in terms of environmental health. Air pollution remains an important problem in many urban and industrial areas due to emissions from motor vehicles and industry, especially emissions from ageing mines and power and manufacturing plants,⁸ with the capital Skopje often being at the top of the most polluted cities in Europe and sometimes in the world.⁹ Not surprisingly, the most affected by this are the most vulnerable categories of people, such as children, elderly and people with chronic diseases, but also lower household incomes and people with poorer socio-economic conditions.¹⁰

Tackling climate change and its adverse impacts, however, is not an objective that can be reached without simultaneously taking care of the other sustainable development goals. The SDGs are “integrated and indivisible”,¹¹ and in light of this interconnectedness, SDG number 16 is of crucial importance. Underscoring that there is no sustainable development without peace and security, SDG16 highlights the importance of peace, justice and good governance for the realization of the other SDGs.¹² Thus, developing and maintaining effective, accountable and transparent national institutions, respect for human rights and the rule of law, or tackling corruption, is essential for sustainable development because it is up to the countries, via their governments and national institutions, to lead this global sustainability endeavor. In the context of tackling climate change, for instance, it is also up to national institutions to “integrate climate change measures into national policies, strategies and planning” and to improve education and raise awareness about climate change and the ways to

7 Regional Cooperation Council, Study on Climate Change in the Western Balkans, 6 June 2018. available at: <https://www.rcc.int/news/383/rcc-publishes-study-on-climate-change-in-the-western-balkans-alarming-increase-of-temperature-over-the-whole-territory>.

8 European Environment Agency, Environmental trends and perspectives in the Western Balkans: future production and consumption patterns, EEA Report 1/2010, available at: <https://www.eea.europa.eu/publications/western-balkans>.

9 Jessica Bateman, The young people fighting the worst smog in Europe, BBC 2 July 2020, available at: <https://www.bbc.com/future/article/20200701-skopje-north-macedonia-the-most-polluted-city-in-europe>; Euronews Albania, Skopje, the third most polluted city in the world, Euronews, 5 January 2023, available at <https://euronews.al/en/skopje-the-third-most-polluted-city-in-the-world/>.

10 Ministry of Environmental and Physical Planning, Vulnerable Groups (Households) Exposed to Climate Change Impacts and Air Pollution in Skopje: Additional Analysis of Household Heating Survey Data in Skopje, July, 2019, available at <https://api.klimatskipromeni.mk/data/rest/file/download/187afcf31c6ac461d3e93d58fcbc282e3dad8cefa6a357f27ee21926050879c0.pdf>

11 UN Doc. A/RES/70/1, Transforming our world: the 2030 Agenda for Sustainable Development, Preamble, p.1.

12 Ibid, par.35, p.9; SDG16, p.25,26.

reduce its impacts,¹³ Strong institutions,¹⁴ no corruption¹⁵ and rule of law and respect for human rights¹⁶ are essential for effective climate action.

This work will shed light on the path of North Macedonia in meeting SDGs 13 and 16, on the normative requirements under these SDGs, and their interlinkage in this case. This is especially pertinent, since in almost all of the indicators that measure the progress in meeting SDG 13 and SDG 16 (related to good governance), the Republic of North Macedonia has been either “stagnating” or “decreasing” in the last year.¹⁷ Thus, at the conclusion of this work, some recommendations to address some of the shortcomings will also be provided.

II. SDG 13 AND THE LEGAL AND INSTITUTIONAL FRAMEWORK FOR CLIMATE ACTION IN NORTH MACEDONIA

Action to tackle climate change and its adverse effects is indispensable for sustainable development. It is inevitably connected to various other objectives and aspects of sustainable development, like clean and sustainable energy, air and marine pollution, or water and food security, but climate action was given its own separate SDG because of the enormous significance of climate change for the planet.¹⁸ SDG 13 refers to the United Nations Framework Convention on Climate Change (UNFCCC) and the accompanying international environmental treaties and documents, as the “primary international, intergovernmental forum for negotiating the global response to climate change”.¹⁹ In this regard, a key importance – in addition to the UNFCCC which was adopted in 1992 – is placed on the 1997 Kyoto Protocol, which “established the first binding target for greenhouse gas (GHG) emissions”,²⁰ and on the 2015 Paris

13 Ibid, SDG 13.2.;13., p. 23.

14 United Nations Climate Change, Strong Institutions are Essential for Effective Climate Action, available at <https://unfccc.int/news/strong-institutions-are-essential-for-effective-climate-action>.

15 Jim Anderson, To tackle climate action, take on corruption, World Bank, 22 November 2021, available at <https://blogs.worldbank.org/climatechange/tackle-climate-change-take-corruption>.

16 Cinnamon Carlarne, Climate Change, Human Rights, and the Rule of Law, 25 UCLA J. Int'l L. & For. Aff. (2020), pp.11-40.

17 Sustainable Development Report 2023 – Republic of North Macedonia, available at: <https://dashboards.sdgindex.org/static/profiles/pdfs/SDR-2023-north-macedonia.pdf>.

18 Winfried Huck, Sustainable Development Goals: Article-by-Article Commentary, Nomos Verlagsgesellschaft, Baden Baden, 2022, p. 492.

19 UN Doc. A/RES/70/1, Transforming our world: the 2030 Agenda for Sustainable Development, p.8, p.23.

20 Winfried Huck, Sustainable Development Goals: Article-by-Article Commentary, Nomos Verlagsgesellschaft, Baden Baden, 2022, p. 491.

Agreement, which as of today has 196 parties and which requires the global temperature average to be kept well below 2°C and to pursue efforts to limit global warming to 1.5°C above pre-industrial levels. Moreover, there are many other international and regional soft or legally binding documents and requirements that complement the three main treaties in the fight against climate change and that are therefore part of the legal and institutional framework included in SDG13.²¹

Republic of North Macedonia has ratified the UNFCC, as well as the Kyoto Protocol and the Paris Agreement.²² The requirements that arise from these treaties are in line with the regional environmental commitments that country has made in its path towards EU membership, such as the European Climate Law²³, which needs to be implemented in the country in light of the EU enlargement process. The EU environment standards and climate action are indivisibly connected to the UN standards in the area – they derive from the UNFCC and the Paris Agreement and are further strengthened and developed. One example of such an enhanced standard is the EU’s “climate neutrality” policy, which aims for the EU to be carbon neutral by 2050 and have an economy with net-zero GHG emissions.²⁴ Climate neutrality is part of the EU’s bilateral relations and accession negotiations with the Republic of North Macedonia in order to already start the transformation of the environmental standards of the society accordingly.

North Macedonia is struggling to meet the international and EU standards that are in line with SDG13. One of the main issues in taking appropriate climate action in the country is the insufficient environmental regulation and the lack of implementation of that regulation. This is mainly because the Law on climate action is still not enacted. This Law is supposed to define a comprehensive legal framework for the country’s climate action, which so far is covered in only a couple of articles within the Law on Environment.²⁵ Furthermore, as the Long-term Climate Action Strategy and the Action Plan²⁶ are already adopted, the National Plan for Adaptation, which should provide a blueprint for climate change adaptation and mitigation of the country – or SDG 13.3. – is still not enacted. In addition to this, the legislation in other sectors that contribute to GHG emissions, such as industrial pollution and air pollution, is

21 For example: the Rio Declaration on Environment and Development (1992), the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (1998), the ETS Handbook for Climate Action (2015) or the European Green Deal, (2019), both by the European Commission.

22 Министерство за животна средина и простorno планирање, Правна, Стратешka и Институционална Рамка, available at: <https://api.klimatskipromeni.mk/article/249#/index/main>.

23 I. 243/1, Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999, 9 July 2021 (“European Climate Law”).

24 European Council, Council of the European Union, Climate Neutrality, available at: <https://www.consilium.europa.eu/en/topics/climate-neutrality/>.

25 Ministry for environment and spatial planning, Republic of North Macedonia, Law on environment, Official Gazette no.53/2005, 81/05, 24/07, 159/08, 83/09, 48/10, 124/10, 51/11, 123/12, 93/13, 187/13, 42/14, 44/15, 129/15, 192/15, 39/16, Article 187, 188.

26 These documents provide a roadmap for integrating climate action into the different sectors of the country that are affected by climate change. Ministry for environment and spatial planning, Republic of North Macedonia - available at: <https://api.klimatskipromeni.mk/data/rest/file/download/2ba0633b4385d2538862b16572bff16d13ad0895665ee2729d24e177022ace27.pdf>.

not in line with the EU standards²⁷ and further changes to the legislation are needed. Finally, although the National Plan for Climate and Energy, which links climate action with the field of energy and the energy sector where most GHG emissions come from, was enacted in 2022,²⁸ its implementation is lagging behind.²⁹

Another problem in the area of climate action in the country is the fact that the key national documents and policies are often incoherent with each other. For example, the goals for reducing GHG emissions until 2030 are set at 51% compared to those in 1990, and in this foreseen reduction, 66% of the emissions belong to the energy sector.³⁰ On the other hand, however, plans are made for the opening of new coal mines in Zhivojno, the thermal power plant Oslomej, which was supposed to be closed in 2021, is still operational, and the thermal power plant Negotino, which uses outdated technology, has been restarted.³¹ It is, therefore, no wonder that the country has noted no progress in SDG 13 in the last year on the “CO₂ emissions from fossil fuel combustion and cement production” indicator, and is regressing in the “CO₂ emissions embodied in imports” indicator.³²

III. SDG 16 AND ITS CONNECTION TO CLIMATE ACTION IN NORTH MACEDONIA

The fulfilment of the targets under SDG 13 heavily depends on meeting the targets of SDG 16. Recognized as a “leading orientation for all SDGs” and a “*conditio sine qua non*” for sustainable development,³³ SDG 16 is a broad objective that includes matters related to peace and violence, but also justice, human rights, and especially good governance. In the context of sustainable development and the fight against climate change, good governance encompasses:

27 European Commission, North Macedonia 2023 Report, 8 November 2023, available at: https://neighbourhood-enlargement.ec.europa.eu/system/files/2023-11/SWD_2023_693%20North%20Macedonia%20report.pdf.

28 Government of the Republic of North Macedonia, 31.05.2022, info available at: <https://vlada.mk/node/29011>.

29 Платформа 27, Извештај во сенка за Поглавје 27 за 2022 година, Фондација Отворено Општество, 2022, Република Северна Македонија, pp. 136-142.

30 Enhanced Nationally Determined Contribution, submission by the Republic of North Macedonia, April 2021, available at: <https://unfccc.int/sites/default/files/NDC/2022-06/Macedonian%20enhanced%20NDC%20%28002%29.pdf>.

31 Платформа 27, Извештај во сенка за Поглавје 27 за 2022 година, Фондација Отворено Општество, 2022, Република Северна Македонија, pp. 136-142.

32 Sustainable Development Report 2023 – Republic of North Macedonia, available at: <https://dashboards.sdgindex.org/static/profiles/pdfs/SDR-2023-north-macedonia.pdf>.

33 Winfried Huck, Sustainable Development Goals: Article-by-Article Commentary, Nomos Verlagsgesellschaft, 2022, p. 609.

“the transparent and accountable management of human, natural, economic and financial resources for the purposes of equitable and sustainable development. It entails clear decision-making procedures at the level of public authorities, transparent and accountable institutions, the primacy of law in the management and distribution of resources and capacity building for elaborating and implementing measures aiming in particular at preventing and combating corruption.”³⁴

All of this is reflected in SDG 16, which talks about, *inter alia*, promoting the rule of law and ensuring equal access to justice (16.3), reducing corruption and bribery (16.5), developing effective, accountable and transparent institutions (16.6), ensuring responsive, inclusive, participatory and representative decision-making (16.7), as well as public access to information, and the protection of fundamental freedoms (16.10).³⁵

The Republic of North Macedonia has had persistent issues with good governance and just and democratic institutions since its independence. Labelled as a “transitional or hybrid regime” during each of the last eight years,³⁶ the country is “partly free” in terms of the enjoyment of its citizens of their political rights and civil liberties,³⁷ has high corruption perception levels,³⁸ a stagnant and average overall adherence to the rule of law,³⁹ and a big majority of its population has very low levels of trust towards the judiciary and the public administration.⁴⁰ Practically the same conclusions can be drawn if one takes a look at the measurement of the good governance indicators for SDG 16 for 2023 for North Macedonia, where “corruption perception index” has decreased and “access to and affordability of justice”, “timeliness of administrative proceedings” and adequately compensated and lawful expropriations, are stagnating.⁴¹

The good governance issues that plague the country are also manifested in its fight to address climate change. The country is struggling to meet the requirements of the international treaties it has committed to as well as the environmental acquis of the

34 Cotonou Agreement between EU and ACP countries, 23 June 2000, Art. 9(3). <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A22000A1215%2801%29>.

35 See more about each of the good governance elements generally, or in the context of SDG 16, in Edith Brown Weiss, Ahila Sornarajah, Good Governance, Max Planck Encyclopedia on International Law, 2021, available at: <https://opil.ouplaw.com/display/10.1093/law:epil/9780199231690/law-9780199231690-e1413?rskey=SwUtPa&result=1&prd=OPIL>; and Winfried Huck, Sustainable Development Goals: Article-by-Article Commentary, Nomos Verlagsgesellschaft, 2022, pp.582-613.

36 Freedom House, Nations in transit 2023: North Macedonia, available at <https://freedomhouse.org/country/north-macedonia/nations-transit/2023>

37 Freedom House, Freedom in the world 2023: North Macedonia, available at <https://freedomhouse.org/country/north-macedonia/freedom-world/2023>

38 Transparency International, North Macedonia, country data, available at <https://www.transparency.org/en/countries/north-macedonia>

39 World Justice Project, North Macedonia, available at <https://worldjusticeproject.org/rule-of-law-index/country/2021/North%20Macedonia/>

40 Goce Kocovski, Martin Gramatikov, Paths to Justice in North Macedonia: Findings, conclusions and recommendations of the 2nd nationwide survey on the legal needs and paths to justice of the people living in North Macedonia in 2022, Council of Europe, 2023, North Macedonia, available at <https://rm.coe.int/path-to-justice-eng-2023/1680ab96f0>; <https://www.coe.int/en/web/skopje/-/recent-survey-on-the-legal-needs-reveals-the-path-to-justice-for-the-people-living-in-north-macedonia>

41 Only “press freedom index” is increasing and on track to reach this target of the SDG. See Sustainable Development Report 2023 – Republic of North Macedonia, available at: <https://dashboards.sdgindex.org/static/profiles/pdfs/SDR-2023-north-macedonia.pdf>.

European Union, mainly because it faces numerous challenges which are connected to their implementation, such as the administrative challenge of building institutional capacity, the high implementation costs and corruption, the environmental challenge of promoting a sustainable environment while fulfilling the acquis, the energy challenge of reducing the excessive consumption of environmentally threatening resources, and the political challenge of mobilizing support necessary to respond to these challenges.⁴² All of these issues arise in the backdrop of limited public participation and political tensions. Weak state institutions and a lack of institutional and administrative capacity for implementing and enforcing environmental and climate change legislation, also impede climate change action.⁴³ Moreover, the country lacks coordination and adequate communication between the different sectors that are affected by climate change.⁴⁴

IV. CONCLUSION AND RECOMMENDATIONS

The 17 SDGs were deliberately created time-bound in order to provoke a sense of urgency among states and other actors and to accelerate their implementation.⁴⁵ And there is no goal that is more urgent than SDG 13 and the question of climate action, since, as the *2030 Agenda* emphasizes, “we may be the last [generation] to have a chance of saving the planet”.⁴⁶ For this to be even possible, however, a stable society, rule of law, and well-functioning democratic institutions – or SDG 16 – are essential.

Republic of North Macedonia should do a much better job if it wants to meet SDGs 13 and 16 before 2030. Despite the goal of EU membership serving as a major incentive for undertaking (democratic and) environmental reforms, the country’s legislation and institutional infrastructure are still not aligned with the international treaties and EU regulations in the climate sector. Environmental protection and climate

42 More on this issue in: Cierco Gomes, T.M.R., ‘The European Union Accession and Climate Change Policies in the Western Balkan Countries’, in Sequeira, T. and Reis, L. (eds.), *Climate Change and Global Development Market, Global Players and Empirical Evidence* (Springer 2019), pp. 153-173.

43 These issues have been addressed in the existing literature: Cierco Gomes, T.M.R., ‘The European Union Accession and Climate Change Policies in the Western Balkan Countries’, in Sequeira, T. and Reis, L. (eds.), *Climate Change and Global Development Market, Global Players and Empirical Evidence* (Springer 2019), pp. 153-173; Borzel, T., Fagan, A., ‘Environmental governance in South East Europe/Western Balkans: Reassessing the transformative power of Europe’, (2015) *Environment and Planning C: Government and Policy*, volume 47, pp. 1–16; Brian, ‘Enforcing Member States Compliance with EU Environmental Law: A Critical Evaluation of the Use of Financial Penalties’, (2011) 23 *Journal of Environmental Law* 2011; Kramer, L., *EU Environmental Law* (Sweet and Maxwell, 2012).

44 Платформа 27, Извештај во сенка за Поглавје 27 за 2022 година, Фондација Отворено Општество, 2022, Република Северна Македонија, pp. 136-142; Државен Завод за Ревизија, Конечен извештај за извршена ревизија на успешност „Преземени мерки и политики од страна на РСМ/надлежни органи со цел ублажување на климатските промени”, Скопје, 2022, pp. 4-7, 50-52.

45 Alexandra R. Harrington, *International Law and Global Governance: Treaty Regimes and Sustainable Development Goals Implementation*, Routledge, New York, 2021, p.2

46 UN Doc. A/RES/70/1, *Transforming our world: the 2030 Agenda for Sustainable Development*, par.50, p.12.

change requirements need to be better integrated into policy-making and policy implementation in all the areas across the board concerned with climate action – environment, energy, economy, transport, agriculture, finance, health, or local government.⁴⁷ The country's institutions in the areas of innovation and education should also be part of the overall climate action in the country. Furthermore, since climate action poses many inter-sectoral problems, there is a strong need for (improved) communication among the relevant institutions in different areas through a clearly defined information system. Additionally, the Ministry of environment and spatial planning, as the starting point in the efforts to coordinate climate action, needs to be sufficiently equipped with relevant specialists in the area that can communicate with educated and qualified staff in all the other institutions that have competences in the climate area.⁴⁸ Finally, the country should also file more often the Voluntary National Review (VNR) of its SDGs pledges - which so far, in seven years, has done it only once, in 2020⁴⁹ – and use the preparations of the VNRs as an incentive to fasten and improve its fulfilment of the SDGs.

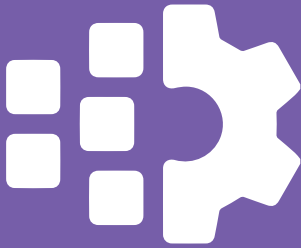
Failing to meet the SDG commitments on climate action will hurt the whole country. Yet, as it was mentioned above, climate change consequences and the pollution as a result of GHG emissions will particularly affect specific groups of people that are in dire social and economic position and are emblematic of vulnerability in times of climate crisis, such as the elderly, the chronically ill, women and children. Therefore, the adoption and implementation of the required laws and measures in the area of climate action must also strive not to leave anyone behind and to correct the injustice done to different vulnerable categories of people.

47 The preparation of the National Inventory on GHGs requires better coordination among different institutions and sectors – the horizontal coordination in the process of this policy implementation is on a very low level according to the Државен Завод за Ревизија, Конечен извештај за извршена ревизија на успешност „Преземени мерки и политики од страна на РСМ/надлежни органи со цел ублажување на климатските промени”, Скопје, 2022, pp. 50-52. Also, according to the Report, the municipalities have obligation to implement Energy efficiency programs, which in many cases are missing because of the lack of coordinated central and local policy implementation.

48 Платформа 27, Извештај во сенка за Поглавје 27 за 2022 година, Фондација Отворено Општество, 2022, Република Северна Македонија, pp. 136-142; Државен Завод за Ревизија, Конечен извештај за извршена ревизија на успешност „Преземени мерки и политики од страна на РСМ/надлежни органи со цел ублажување на климатските промени”, Скопје, 2022, pp. 4-7, 50-52.

49 UN High Level Political Forum on Sustainable Development, Countries who have presented their Voluntary National Reviews, available at https://hlpf.un.org/countries?f%5B0%5D=country_taxonomy_term_name%3ANorth%20Macedonia.

DIGITALISATION



ACCESS TO DIGITAL PUBLIC SERVICES: A PRIVILEGE OR A HUMAN RIGHT?

Pathways to improving access to digital public services
in North Macedonia

Tanja Paneva, MA¹

¹ PhD student in the joint doctoral degree program Governance and Economics in the Public Sector provided by the University of Ljubljana and the University of Rijeka.

INTRODUCTION

The process of digital transformation in the public sector is a mechanism of governments to better respond to the needs of citizens in a timely and efficient manner. The transfer of the government-citizens interaction in the digital domain made technology a resource of participation.¹ In such constellations, digital participation requires certain conditions for access to be met. The access benefits are manifested as opportunities people have to engage in economic life and to participate in political, social, and cultural life. On the other hand, unequal access to digital technologies causes unequal participation in society that further reinforces categorical inequalities.² Disparities in access especially affect marginalized and vulnerable groups as being more exposed to the influence of different socioeconomic factors that create barriers that prevent equal access to public services. Introducing digital public services based on the good governance principles of transparency, accountability and user-centricity is expected to accelerate sustainable and inclusive development.³ The process, therefore, involves users, citizens and businesses, on the one side, and public institutions and public servants in the role of service providers, on the other side.

Following global efforts and in response to practical demands, North Macedonia set the goal of providing quality public services through digitalization. North Macedonia is an upper middle-income, landlocked country in the Western Balkans that acquired the EU candidacy status in 2005. The total resident population according to the 2021 Census is 1.836.713 citizens.⁴ Elderly citizens above the age of 65 make up about 17% of the total population and this categorizes the country as “aged society”.⁵ The rural population share of the total population is 41%.⁶ In 2020, 451.900 citizens lived below the poverty line.⁷

In terms of basic digital indicators, in the first quarter of 2023, 88% of the households had access to the Internet.⁸ In 2021, 35% of people had at least basic digital

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- 1 Ragnedda, M., (2020). *Enhancing Digital Equity: Connecting the Digital Underclass*. (1st ed.). Palgrave Macmillan Cham; Wessels, B., (2013) *The reproduction and reconfiguration of inequality: differentiation and class, status and power in the dynamics of digital divides*.
 - 2 Van Dijk, Jan A.G.M.. (2005). *The Deepening Divide: Inequality in the Information Society*.
 - 3 Zakhoshyi, V., Jinxin Ma, Y.(2023) *Three ways digital transformation accelerates sustainable and inclusive development*. available at: <https://www.undp.org/blog/three-ways-digital-transformation-accelerates-sustainable-and-inclusive-development>
 - 4 State Statistical Office, 2021 census data, available at: <https://popis2021.stat.gov.mk/>
 - 5 Based on OECD methodology: if the share of people aged 65 years or more is between 15% and 20% of the total population it is qualified as “aged society”, available at: <https://www.oecd-ilibrary.org/sites/1ad1c42a-en/index.html?itemId=/content/component/1ad1c42a-en>
 - 6 World Bank Data, available at: <https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS?locations=MK>
 - 7 State Statistical Office, 2020 Laeken poverty indicators, available at: https://www.stat.gov.mk/pdf/2022/4.1.22.40_mk.pdf
 - 8 The data is available without reference to the type of connection (e.g. Internet speed and stability) State Statistical Office, 2023 Information Society indicators, available at: https://www.stat.gov.mk/OblastOpsto_en.aspx?id=27

skills and 28% used the Internet to interact with public authorities.^{9,10} The data is provided at aggregated level covering all population groups. Currently, the number of registered users at the National e-Services Portal is 112.062, which is 6.1% of the total population, and the number of submitted requests since the portal was launched in 2019 to date is 63.705.¹¹

In terms of the social and economic and demographic structure of the country, digitalization opens the opportunity of even development by providing conditions for services delivered to users by efficient public institutions and at lower costs. To add to this extent, digitalization is one of the central efforts in the public administration reform of North Macedonia. However, the extensive legal and policy framework seems to be lacking practical implementation. Accessibility for disadvantaged groups remains a challenge due to the conditions for access needed to participate in the digital environment. The scarcity of desegregated data for key digital indicators at a national level prevents further detailed analysis in the field. In the attempt to explore opportunities for digitalization as enabler of sustainable development, this essay follows the stages of access in digital terms and gives an overview of the digital indicators' performance of North Macedonia. Finally, the essay suggests a few pathways of enabling smooth digital transition while addressing the needs of both, users and service providers.

THE RIGHT TO EQUAL ACCESS AND THE UN SDGS

The right to equal access to public services is guaranteed with the Universal Declaration of Human Rights, Article 21, line 2, ensuring that everyone has the right of equal access to public services in their country.¹² The principles of equality and universality of access are integrated into the UN 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs).¹³ To further back the effectiveness of the process, achieving UN SDGs is guided by the principle Leave No One Behind (LNOB) making sure there is a steady progress for all population groups.¹⁴ Although directly related to reducing inequalities (SDG 10) and promotion of social inclusion (SDG 16) through providing universal and affordable access to ICTs (SDG 9) and making settlements safe, inclusive, resilient and sustainable (SDG 11), it could be

9 Data available at: https://ec.europa.eu/eurostat/databrowser/view/tepsr_sp410/default/table?lang=en

10 Data available at: https://ec.europa.eu/eurostat/databrowser/product/view/isoc_ciegi_ac

11 Own desktop research. National e-Services Portal, available at: <https://uslugi.gov.mk/>

12 UDHR 1948, available at: <https://www.un.org/en/about-us/universal-declaration-of-human-rights>

13 UN General Assembly, Transforming our world: the 2030 Agenda for Sustainable Development, 21 October 2015, A/RES/70/1, available at: <https://www.refworld.org/docid/57b6e3e44.html>

14 UN Committee for Development Policy, Official Records of the Economic and Social Council, 2018, Supplement No. 13 (E/2018/33) available at: https://sustainabledevelopment.un.org/content/documents/2754713_July_PM_2_Leaving_no_one_behind_Summary_from_UN_Committee_for_Development_Policy.pdf

stated that equal access to public services is the *sine qua non* for prosperity and further progress in all domains. In the same line, the EU sets equality and universality to be the fundamental principles of public services that must be available to all under the same conditions.¹⁵ The Digital Agenda for Europe lays out the commitment to inclusive growth, tackling inequalities and transforming the delivery of public services enabling the achievement of the 2030 Agenda and the SDGs.¹⁶

NATIONAL LEGAL AND POLICY CONTEXT

The initial steps in the development of the information society in North Macedonia date back to the early 2000s. More structured efforts were made between 2005 and 2015 with the adoption of a set of strategic policy documents¹⁷ in line with EU requirements for efficient and user-oriented public administration. The Public Administration Reform (PAR) Strategy 2018-2022 re-affirmed the goal of provision of digital environment with access to, and possibility for, using e-services.¹⁸ However, the State Audit Office Report noted that only 52% of the PAR planned activities were realized, due to, among other shortcomings, incomplete realization of envisaged activities and insufficient capacities in terms of human resources.¹⁹ Moreover, PAR monitoring reports of regional and international projects and initiatives note that accessibility for vulnerable groups remains an issue as digital channels are not easily accessible, service provision is not adapted to their needs and the staff delivering administrative services is not sufficiently trained on how to support them in the process.²⁰ Although recognized in legal documents and is set as a PAR Strategy objective, the principle of accessibility lacks the evidence of practical implementation.²¹ In addition to the policy framework, a set of legal acts was adopted in order to enable favorable setting for e-services delivery environment.²² The legal framework set the basis for launching the National e-Services Portal, creation of the Catalogue of Services and opening of the Single Points for Services.²³

15 EU Parliament working paper: Public service missions attributed to taking in the member states, Economic series W-21, 1997, available at: https://www.europarl.europa.eu/workingpapers/econ/w21/sum-2_en.html

16 Digital Agenda for Europe, available at: <https://www.europarl.europa.eu/factsheets/en/sheet/64/digital-agenda-for-europe>

17 Documents available at: <https://arhiva.mioa.gov.mk/?q=en/documents/strategies&page=1>

18 Ibid.

19 State Audit Office Report, 2023, available at: https://dzt.mk/sites/default/files/2023-03/176_RU_Reforma_javna_administracija_KOMPLET_2022.pdf

20 Karai, J., Mojsovski, A. National PAR Monitor Report North Macedonia, published by EPI, 2023, available at: https://weber-new.s3.us-west-2.amazonaws.com/wp-content/uploads/2018/11/16115218/National-Par-Monitor-Macedonia_Final_eng.pdf

21 See more in the SIGMA 2021 Monitoring Report, available at: <https://www.sigmaweb.org/publications/Monitoring-Report-2021-Republic-of-North-Macedonia.pdf>

22 Documents available at: <https://arhiva.mioa.gov.mk/?q=en/documents/legislation>

23 In 2023 the Ministry of Information Science and Administration announced that the Single Points of Services will be closed due to inefficiency, based on the findings of the State Audit Office Report. <https://mk.tv21.tv/infrastrukturata-na-poshta-ke-stane-edna-tochka-za-uslugi-na-333-lokatsii-vo-drzhavata/>

Future endeavors outlined in the Draft National ICT Strategy 2021-2025, are directed towards investments and modernization of infrastructure, advancing connectivity through 5G technology, digital skills training for users and public employees and establishing a centralized Digital Agency to design and deliver electronic public services.²⁴ The Draft National ICT Strategy 2023-2027 aims to reach the EU-27 performance average in the EU Digital Compass dimensions by 2027.^{25,26} At the moment, the performance of North Macedonia for various digital indicators significantly lags behind the EU average. Finally, the Draft PAR Strategy 2023-2030 reiterates the commitments for professional and digitalized public administration.²⁷ However, the partial implementation of the previous PAR 2018-2022 raises questions about the implementation schedule of the new envisaged activities.

ACCESS TO PUBLIC SERVICES IN DIGITAL TERMS AND GROUPS AT RISK OF DIGITAL EXCLUSION

There are different definitions of access to public services that describe its dimensions and quality features. In its traditional definition, access is defined as the degree of matching between the user and the service meaning the better users' needs are met, the better access is provided.²⁸ However, in digital terms the definition of access becomes more complex. The Van Dijk model discusses that digital access consists of four successive and accumulative types: 1) motivational access, 2) material access, 3) skills access including the number of digital skills required to work with digital technology and lastly, 4) usage – the purpose of the whole process of technology appropriation.²⁹ The different access stages mean that, first, one should have the motivation and the willingness to use digital public services; then to have the proper devices and digital infrastructure to be able to access services online; the next step requires an individual equipped with digital literacy skills being able to independently navigate at digital public services platforms; and finally to actually use the Internet for the purposes of economic, political and social participation. While the definition of access becomes more complex in its functional features and different stages in the digital realm, it still keeps its traditional normative quality – meeting users' needs still provides better access in digital terms.

24 Available at: <https://ener.gov.mk/Default.aspx?item=newdocumentdetails&detailisId=23>

25 Available at: <https://ener.gov.mk/Default.aspx?item=newdocumentdetails&detailisId=46>

26 Available at: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en

27 Available at: <https://ener.gov.mk/Default.aspx?item=newdocumentdetails&detailisId=47>

28 Saurman E. Improving access: modifying Penchansky and Thomas's Theory of Access. *J Health Serv Res Policy*. 2016 Jan;21(1):36-9.

29 Van Dijk, J. (2020). *The digital divide*. John Wiley & Sons.

The gap between people who have and do not have access to forms of information and communication technology, computers and the Internet, is known as the digital divide.³⁰ In contemporary terms, the issue of the digital divide goes beyond the material access to the digital skills related, second-level divide.³¹ Going a step further, the type of usage may cause the usage divide between citizens that use the Internet primarily for entertainment, commerce or leisure, and the ones that use the Internet for purposes of economic, social and political participation.³² To encourage usage of the Internet for the purposes of participation in social processes, it is important to take into account awareness, level of information, motivation and trust of users as important socio-cognitive elements.

Different personal and categorical resources, such as age, health status, education level, sex, gender, income, skills, type of settlement and access to digital tools and infrastructure may determine the type and level of participation in the digital domain.³³ The combination of different offline resources puts certain social and economic groups at higher risk of digital exclusion. The potential spillover of the existing offline inequalities in the online domain makes marginalized groups further marginalized by technology. Usually, early adopters of technology are young, well-educated and have higher income.³⁴ In that case, digital inclusion strategies would need to be focused on the elderly and groups with lower education and income levels. However, different contexts may have different groups to prioritize in their digital inclusion strategies. In addition, rural and remote regions are of particular concern due to challenges such as socioeconomic disadvantage, small dispersed communities and vast distances.³⁵ Mapping offline resources is a good first step to exploring enablers of equal digital access opportunities for different population groups.

OVERVIEW OF DIGITAL INDICATORS PERFORMANCE OF NORTH MACEDONIA

Existing measurement tools and indexes on a global and regional level help countries to assess their current stage of digital progress and to make plans for improvements when necessary. The UN E-Government Development Index (EGDI) incorporates the access characteristics in order to reflect how countries use information

30 Ibid

31 Hargittai, Eszter. (2001). Second-Level Digital Divide: Mapping Differences in People's Online Skills.

32 Deursen, Alexander J.A.M. & Van Dijk, Jan A.G.M.. (2014). The digital divide shifts to differences in usage. *New Media & Society*. 16. 507-526.

33 Mubarak, F., Suomi, R. and Kantola, S.-P. (2020), "Confirming the links between social and economic variables and digitalization worldwide: the unsettled debate on digital divide". *Journal of Information, Communication and Ethics in Society*, Vol. 18 No. 3, pp. 415-430.

34 Rogers, E.M. (2003) *Diffusion of Innovations*. Free Press, New York.

35 Saurman E., 2015.p.36

technologies to promote access and inclusion to its people.³⁶ In addition to EGDI, the UN E-Participation Index (EPI) has been developed to measure the citizen-government interaction and the involvement of citizens in the decision-making process.³⁷ The UN Leave No One Behind (LNOB) Index score tracks inequalities along four dimensions: poverty, services, gender, and income.³⁸ A higher score means that fewer population groups are being left behind. The table below shows the UN EGDI, UN EPI and UN LNOB scores for North Macedonia:

Table 1: Overview of UN EGDI, UN EPI and UN LNOB scores for North Macedonia³⁹

Index	Year	Score	Rank
UN EGDI	2020	0.7083	72/193
UN EGDI	2022	0.7000	80/193
UN EPI	2020	0.8333	38/193
UN EPI	2022	0.6932	43/193
LNOB	2022	57.81/100	32/34

The scores show that the performance of the country in 2022 declined by eight UN EGDI ranking positions and by five UN EPI ranking positions when compared to 2020. The UN EGDI score places North Macedonia near the bottom of performance of European countries, being ahead only of San Marino and Bosnia and Herzegovina.⁴⁰

The LNOB ranking is shown for the European context. The 2022 LNOB score for North Macedonia places the country at the 32nd position out of 34 countries, preceding only Bulgaria and Turkey. The scores indicate there should be ongoing continuous efforts in all digital transformation dimensions to enhance digital preparedness and effectively include people in the processes.

At European level, the EU Digital Economy and Society Index (DESI) follows Europe's overall digital performance.⁴¹ Based on the EU DESI methodology, the first WB DESI Report was developed under the Regional Cooperation Council (RCC) umbrella

36 The UN EGDI measures progress against three dimensions, provision of online services, telecommunication connectivity and human capacity. Available at: <https://publicadministration.un.org/egovkb/en-us/About/Overview/E-Government-Development-Index>

37 the UN EPI Framework consists of E-information, E-consultation and E-decision making available at: <https://publicadministration.un.org/egovkb/en-us/About/Overview/E-Participation-Index>

38 European Sustainability Report 2022, available at: https://sustainabledevelopment.un.org/content/documents/2754713_July_PM_2_Leaving_no_one_behind_Summary_from_UN_Committee_for_Development_Policy.pdf

39 Available at: <https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/170-North-Macedonia>

40 Available at: <https://publicadministration.un.org/egovkb/en-us/Data-Center>

41 Available at: <https://digital-strategy.ec.europa.eu/en/policies/desi>

to allow comparisons across DESI indicators.⁴² The indicator measurement areas correspond to the four dimensions of the EU 2030 Digital Compass related to skills, infrastructure, businesses and government.⁴³

Table 2: Overview of DESI scores for North Macedonia compared to EU average and WB average⁴⁴

Index	Year	Dimension	North Macedonia	WB average	EU average ⁴⁵
WB DESI	2022	Human Capital	7.9	8.4	11.4
WB DESI	2022	Connectivity	4.8	7.7	15.0
WB DESI	2022	Integration of Digital Technology	4.0	5.2	9.0
WB DESI	2022	Digital Public Services	8.1	8.0	16.8

Table 2 shows the performance of North Macedonia against the DESI dimensions along with the average scores for the WB region and the EU. The country performs below the regional and EU average in areas of skills, infrastructure and business; and it performs slightly above the regional average in the dimension of digital public services, but still far below the EU average standing at double level.

In addition, the State Statistical Office of North Macedonia provides data on ICT indicators for households, individuals and business entities.⁴⁶ The data available for households and individuals is mostly focused to the material access and the use of ICT in households, number of computer users, users of the Internet and type of usage – private purposes, e-commerce or e-government. The data per various indicators is formally listed to be desegregated by sex, age, education, type of settlement, type of household and employment status. However, despite the formal possibility, the breakdown data is either missing or it has not been updated. This makes it challenging to have the overview of the actual use of technology by different groups. There is also a separate section of ICT indicators by gender, but the only parameters available are computer users and Internet users. In absence of desegregated data, there are various national and regional programs and initiatives that follow the digital progress of North Macedonia and the countries in the WB region with a focus on specific social

42 WB DESI 2022, RCC <https://www.rcc.int/pubs/159/western-balkans-digital-economy-society-index-wb-desi-2022-report>

43 Available at: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en

44 WB DESI 2022, RCC <https://www.rcc.int/pubs/159/western-balkans-digital-economy-society-index-wb-desi-2022-report>

45 EU DESI data available at: <https://digital-strategy.ec.europa.eu/en/policies/desi>

46 Available at: https://makstat.stat.gov.mk/PXWeb/pxweb/mk/MakStat/MakStat__InfOpstestvo

and economic groups.⁴⁷ However, the absence of structured, official data that follow standardized methodology makes it harder to assess the state-of-art of accessibility for disadvantaged groups.

DISCUSSION POINTS AND RECOMMENDATIONS

The process of digitalization provides many opportunities that could advance the overall development of North Macedonia. However, in order to make sure that access to digital public services is a human right for all and not a privilege for some, several pathways to improvement are suggested.

1. Measurement tools

- Develop measurement instruments to identify and address needs of individuals and groups of various social and economic backgrounds;
- Improve quality assessment of the digital literacy skills levels.

Developing measurement instruments to track digital progress of groups at risk of digital exclusion could provide current data for precise mapping of the needs of different groups. The data could further serve for in-depth analysis and building strategies accordingly. As an example, the EU has developed the Rural Digital Index and the Women in Digital Scoreboard within DESI to ensure inclusive digital transformation.⁴⁸

In addition, besides the formal trainings and self-evaluations, quality assessment of the digital literacy skills can be performed using various tests in order to check how skills are used in obtaining, evaluating and using digital information in the decision-making process.⁴⁹

2. Advance accessibility: Targeted approach in strategy development

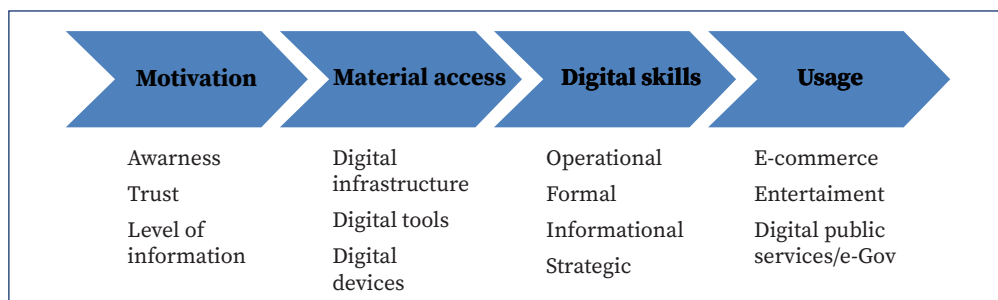
- Track digital progress of individuals and groups of different social and economic background across the different phases of digital access.

47 See more in the work of the ICEDA project, the WeBER initiative, SIGMA monitoring reports, the Balkan Barometer and other related projects and initiatives

48 EU Rural in Digital Index: https://rural-vision.europa.eu/action-plan/connected_en ; EU DESI, Women in Digital Scoreboard: <https://digital-strategy.ec.europa.eu/en/news/women-digital-scoreboard-2021>

49 Julien, H., (2019). Digital Literacy in Theory and Practice. 10.4018/978-1-5225-7659-4.ch003.

Figure 1: Adapted from the model of successive types of access to digital technologies.⁵⁰



Depending on their resources, different social and economic groups may be in a different stage of digital access. For some, the issue is the actual access, while for others skills or motivation. Therefore, the targeted approach would empower the users with resources based on their current position in the digital access stage. However, this should not be a one-off support, but it needs to be continuously provided for optimal use of technology. For example, the support should enable each element within a given access stage to reach its highest functional level – e.g. from 4G to 5G networks and better connectivity in line with technology developments; from formal to strategic digital skills; and from using the Internet for leisure and entertainment to usage for participation purposes.

3. Encourage usage for digital participation

- Promote and inform users on the availability and benefits of digital public services with emphasis on services that can be fully completed online;
- Take into account motivation and the socio-cognitive factors of digital participation;
- Design functional and reliable electronic platforms and services that guarantee safe transactions in order to enhance trust in public services and trust in technology.

The indicator of success of digital transformation projects is the actual usage of services. To encourage usage, service providers need to offer reliable and functional public services. In reference to the digital access stages, high levels of Internet connection do not guarantee usage for the purposes of economic or political digital participation. Usage in this case may depend on motivation, awareness or trust. Therefore, the more information and positive experience users have, the higher levels of use are achieved.

⁵⁰ Van Dijk, Jan A.G.M.. (2005). The Deepening Divide: Inequality in the Information Society. 10.4135/9781452229812; Van Dijk, Jan A.G.M..(2005). The Deepening Divide: Inequality in the Information Society. 10.4135/9781452229812.

4. Provide conditions for smooth digital transition for users and service providers
 - Offer services in hybrid format in order to allow users and service providers room for adaptation to digital public services ;
 - Training on ICT skills and user support;
 - Provide technical and material prerequisites in order to support interconnection of institutions (interoperability).

The process of introducing innovations should evolve at a pace that follows the layers of development in a given context. Digital innovations settle in after access to basic public services and infrastructure have been provided. Offering services in a hybrid format via a physical access point or a phone line along with ICT skills training could give users the space to adapt to new forms of service delivery. Technical and soft-skills training for public servants would enhance their capacities and add to the collective knowledge of the working organization. Having a reliable system support for the interconnection of institutions adds to the technical preparedness required for implementing functional digital public services.

Digitalization of public services in North Macedonia could be the momentum for reducing inequalities and promotion of social inclusion. Digital public services offer equal opportunities for groups that were previously access deprived due to different social and economic or demographic characteristics. Moreover, instead of being service recipients only, citizens can be actively involved in the co-creation of applications and digital tools based on their daily needs. This type of engagement could encourage a culture of innovations in the long-term. However, providing functional digital services and access conditions to all parties involved is the prerequisite of effective digitalization that results in empowered citizens and efficient and accountable public institutions as key constituents of sustainable development.



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