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Economic Growth and Environmental Sustainability: Lessons from Western Balkans

Dr. ETIS JORGJI[1]
Department of Economics, Faculty of Economy, University of Tirana, Albania
E-mail: etis.jorgji@unitir.edu.al
Mobile: ++ 355672325732
Prof. Assoc. Dr. DORIANA DERVISHI (MATRAKU)[2]
Department of Economics, Faculty of Economy, University of Tirana, Albania
E-mail: doriana.dervishi@unitir.edu.al
Mobile: ++ 355684018250

Abstract

The Western Balkans face stable economic growth, accompanied by significant environmental degradation. Issues include industrial pollution, resource over-exploitation, and ineffective regulations, resulting in strained ecosystems. This study analyzes literature and policies addressing the environmental impacts of industrialization and infrastructure development. As GDP levels have risen consistently, the evidence is that economic growth has typically been achieved in the expense of the environment's health, particularly in the form of short-term air pollution and degradation of the environment. Efforts are made towards promoting clean energy, but these efforts have moved slowly and piecemeal. The view is that for the Western Balkans to achieve sustainable development, additional investment in clean technologies, more comprehensive policy structures, and planned inclusion of environmental imperatives in economic planning are required. These steps are specifically crucial considering the path of regional integration into the European Union, where economic development with environmental protection will be instrumental in attaining inclusive and sustainable long-term development.

Keywords: economic growth, environmental sustainability, impacts, Western Balkans

INTRODUCTION

The countries of the Western Balkans have followed pro-growth economic strategies to promote socio-economic development during the last decades, but that rapid economic

[1] Dr. Etis Jorgji is a full-time lecturer at the Department of Economics, Faculty of Economy, University of Tirana since January 2003. Graduated in International Economics, Foreign Trade in Budapest, Hungary (1997), she completed her Master's studies in European Economic Studies, at the Faculty of Economics (2006), and received the degree of Doctor of Science in 2012 with the study on "Analysis of factors of internal migration in Albania". Author of articles published in Albania and abroad, participant in national and international scientific conferences. Part of the working group in the design of the program of the History of the World Economy, Department of Economics. Member of the organizing board of conferences organized by the Department of Economics, member of several boards of international scientific conferences abroad. Part of the evaluation jury of the Scientific Works Competition, organized with the support of the Albanian-American Fund (AADF). Associate Member of the International Society for Development and Sustainability (ISDS), Japan since August 2022. She also has been part of Erasmus program in Yildiz Technical University, Istanbul, Turkey. She has been part as visiting professor in University of Bamberg, Germany.

[2] Doriana Matraku is Prof. Assoc. Dr. at the Department of Economics, Faculty of Economy, University of Tirana. She completed her bachelor studies in Economics in Faculty of Economy University of Tirana, as well as the second and the third cycle of studies in FEUT. She is part of Economics Department as full-time academic staff from September 2000. She completed her PhD on May 2009 in the field of "Financial crises and early warning models". On December 2011 she received the academic title "Prof. Assoc." from University of Tirana. She is lecturer of Economics in the subjects of: Introduction to Economics, History of Economic Thought, Economics of Social Issues. During this long period, she has been part of different national and international conferences and is the author and co-author in various publications. Participants in national and international projects in the field of economics, education, higher education, environment, youth etc. She has participated in different training programs in the field of leadership from Harvard University, John Kennedy School of Government USA, CCL(Centre for Creative Leadership, Brussel), summer school in University of Radboud, Holland, Training school in Vienna, Austria; Madrid, Spain. She also has been part of Erasmus program in University of Granada, Spain. She has been part as visiting professor in University of Bamberg, Germany and University of Valencia, Spain.

expansion has increased pressures on natural capital stocks, biodiversity, water resources, and forest coverage, while also driving higher greenhouse gas emissions. Further research into the environmental consequences of growth in the Western Balkans is vital as policymakers aim to design and implement an environmentally sustainable development path that balances economic objectives with ecological balance (Vincent and Botetzagias 2015). In the linear economy model, the more goods are produced and consumed, the more pollution results from industrial production and the use and disposal of products. Air and water pollution generally increases with economic expansion. Economic growth often involves increased extraction and use of natural resources such as fossil fuels, minerals, timber, etc., and as a result overexploitation and depletion of resources damage ecosystems. Development associated with economic growth leads to land use changes because forests and wilderness areas can be cleared for housing, commercial property, agriculture, or resource extraction resulting in habitat loss. In general, rapid economic growth is historically strongly associated with increased environmental impacts. Sustainability efforts and the move towards a greener economy are still needed to combat the damage from industry and ever-increasing consumption. Economic prosperity and growth provide countries with income to potentially invest in development such as renewable energy, clean transportation, and waste reduction systems. Foreign investment has boosted economic activity in energy, manufacturing, and services. Although economic growth in the Western Balkans has raised income levels, it has also had detrimental effects on ecosystems. The execution of environmental policies consistent with the EU is still lacking. The paper argues the need for stronger environmental impact assessments, green investments, eco-taxes, and sustainable land use planning to mitigate the ecological consequences of future development in the region. The research helps address the knowledge gap about growth-environment linkages specific to the Western Balkans context, which has received limited empirical study. The findings can make a significant contribution to the scientific understanding of sustainability issues arising from the economic model of the region. Analyzing the correlations between economic factors and environmental indicators can guide policies that seek to mitigate ecological degradation as economies in the region continue to grow. Studies offer valuable insights for policymakers to develop comprehensive policies that promote economic growth and environmental sustainability, such as investing in clean energy, implementing stronger environmental regulations, and encouraging environmentally sound management practices (Mitić, Fedajev, and Kojić 2023). The findings may have practical implications for sustainable regional development. The findings would help highlight key environmental impact dimensions needed for policy interventions that support greener growth.

LITERATURE REVIEW

Ecological concerns about worsening climate change impacts, biodiversity loss, pollution, and resource depletion have been heightened in recent decades by economic growth fueled by rapid industrialization, urbanization, trade, infrastructure investment, and resource use (UNEP 2019). This has led to a great deal of scholarly research that attempts to describe both theoretically and empirically the relationships between the expansion of economic activity and production and the preservation or deterioration of the environment in a variety of ways. Examining this vast body of research on the relationship between growth and the environment is essential to guiding current policy discussions.

Many research theories and frameworks that examine the connections between models of economic growth and environmental changes have emerged over the past few decades. More significantly, Kuznets' theory that income inequality eventually declines with greater economic development forms the basis of the *Environmental Kuznets Curve* (EKC) hypothesis. The EKC describes a trajectory with a shape of inverted U whereby at first, pollution increases due to industrialization and growth; then following an income inflection point, pollution declines as countries tend to move to cleaner service economies. This is argued by Panayotou (1993) and further supported by Galeotti et al. (2006). In short, the EKC hypothesis posits an inverted U-shaped relationship between economic development and environmental degradation (Grossman and Krueger 1991). Initially, environmental damage increases in the early stages of economic growth due to further industrial expansion, the absence of regulations, and the downgrading of environmental issues. However, at a certain point, further economic development leads to environmental improvement as countries adopt cleaner technologies, strengthen policies, and increase environmental awareness (Dinda 2004). EKC implies that environmental degradation may be a temporary phenomenon that diminishes once a country reaches a sufficient level of economic progress and prioritizes the environment. Numerous empirical studies have analyzed how the main indicators of economic growth are related to different measures of environmental degradation. Grossman and Krueger (1991) pioneered cross-country analysis of the environment-income relationship, finding an inverted U-shaped curve that fit the data in many cases. This supported the Environmental Kuznets Curve (EKC) hypothesis of economic growth eventually self-correcting some pollution problems. Further influential studies such as Shafik (1994) and Selden and Song (1994) used expanded country samples and additional explanatory variables, finding evidence of EKC relationships for several local air and water pollutants. While the environmental Kuznets curve remains an influential conceptual paradigm, various debates and critiques challenge its assumptions and applicability across different countries and contexts. Developing countries highlight issues around turning points at relatively high-income levels that have not yet been reached and the limitations to 'progress' to clean economies without historical industrialization (Stern et al. 1996). Critics argue that the model does not apply universally with tipping points depending on contextual factors, while others have proposed extensions that integrate capital, trade, policy incentives, and technology adoption elements to complement the basic EKC. Other research has shown weaker support for the EKC theory (Stern 2004). Harbaugh et al. (2002) claim that technique and sample strongly influence the results. Panayotou (1993) emphasized the importance of policies, institutional quality, and the use of technology as mediators, criticizing the simple deterministic EKC modeling. The economic structure also matters - service-dominated economies tend to pollute less at similar income levels to industrial economies (Suri and Chapman 1998). There is weak and limited evidence that the EKC applies universally across pollutants and countries (Stern 2004). The level of income required to improve the environment can be very high, beyond the reality of developing countries (Dinda 2004). EKC also does not consider ecosystem boundaries, power imbalances, or spatial displacement of impacts (Stern et al. 1996). Overall, the EKC provides a useful but incomplete and contested overview of the growth-environment relationship in the development path of the Western Balkans.

Ecological Modernization Theory (EMT) argues that environmental problems can be addressed through technological innovation, economic restructuring, and social change. It argues that environmental degradation can be curbed through technological

progress, innovation in production systems, and transformations in institutions rather than limiting economic growth (Mol 2009). Appropriate government regulation, economic incentives for green technology, and environmentally conscious business practices can promote ecological sustainability along with profitability (Huber 2008). It offers an optimistic perspective that win-win solutions that balance environmental and economic priorities are feasible (Christoff 1996). It conceptually integrates environmental protection into discussions of modernization in contrast to treating them as opposing goals (York and Rosa, 2003). Criticized for techno-optimism and overestimating the potential of green technology while underestimating the scale of transformations required (Foster 2002) This approach reconciles economic growth and environmental protection objectives through technology-driven efficiency, innovation, and flexible domestic policies and involves businesses and markets as solutions through sustainable products. It offers a politically sustainable and business-friendly vision focused on innovation, but risks being overly optimistic about the potential to sufficiently green current economic paradigms.

The *Treadmill of Production Theory* argues that the global capitalist system drives an ever-increasing and ecologically harmful economic expansion as it promotes the continuous expansion of production and consumption without attention to environmental limits (Schnaiberg 1980). Economic, political, and social institutions are all oriented towards ever-increasing production, profit accumulation, and expanding GDP measures (Gould et al. 2004). This dynamic generates increased resource extraction and waste that degrade ecosystems (Schnaiberg and Gould 2000). It highlights the systemic drivers of environmental instability embedded in modern economies and governments (Buttel 2003). It claims that only transformative changes in these systems can curb their harmful environmental outcomes (Gould et al. 1996). It was criticized for understating the potential for reform within capitalist systems (Mol & Sonnenfeld, 2014), presenting a rigid and deterministic view without clear transition paths (Foster 2012).

Economic activity also produces considerable waste and pollution for the environment, and farming and urban development that are unsustainable will lead to erosion of soil - or the soil process. Economic growth that denigrates species also leads to habitat loss and over-consumption of natural resources, and it can place biodiversity at risk. Evidence suggests protectionist and protective environmental policies can limit adverse outcomes and the evidence shows rising incomes or population growth, is correlated with deforestation in some places as well. Stern (2004) indicates that the quality of institutions is essential in influencing the environmental impacts of economic growth. In the Western Balkans, inadequate environmental governance and irregular regulatory enforcement have hindered sustainable development (Cierco Gomes 2019). Furthermore, the area's dependence on fossil fuels and aging industrial infrastructure worsens pollution and the exhaustion of resources (Ignjatović, Filipović and Radovanović, 2024). Roca (2003) showed that sulfur dioxide and particulate matter emissions increased significantly as economic output increased in Spain over 26 years, with income eventually reducing some emissions. Naidoo and Adamowicz (2004) linked rising GDP per capita to greater threats to endangered bird and mammal species in developing countries as more land was converted to exploitative uses. Johnstone and Labonne (2004) used household data to link higher incomes with higher levels of municipal solid waste generation in OECD countries. Increased output from manufacturing sectors that rapidly increase to meet export demand or domestic consumption generally increases the levels of atmospheric emissions - sulfur dioxide,

nitrogen oxides, particulates, etc., which contribute to urban air pollution during industrialization. early (Grossman and Krueger, 1995). Meanwhile, growth-related transportation also worsens air quality, although this relationship may shift with new technologies over longer periods of time (Dinda et al. 2000). Major infrastructure development for sectors such as energy, forestry, and agriculture generates significant ecosystem disruption including deforestation, habitat fragmentation, biodiversity decline and localized issues such as soil erosion or waterway sedimentation (Al-Mulali et al. 2015). However, growth in service industries tends to bring relatively less ecological damage (Wang et al., 2012). Without proper regulations, firms externalize environmental costs that lead to excessive waste generation and harmful emissions. Ilić and Nikolić (2016) found that GDP growth in Serbia was associated with greater packaging waste generation per capita without associated recycling using a multivariate regression. Radusinovic (2017) qualitatively assessed ecosystem threats from hydropower, mining, and logging related to export sector growth aspirations in Bosnia, Albania, and other Western Balkan countries. Šergo et al. (2014) assessed the links between enterprise growth, infrastructure expansion, and threats to habitat loss in forest-protected areas in Croatia. Galev (2015) modeled the economic factors driving the increase in municipal waste and low recycling initiatives in many Western Balkan countries. Leitão (2010) examined indicators of economic growth and pollution during the period 1995-2005 in six transition economies including the Balkan countries, Bulgaria and Romania. The results showed a pattern consistent with the theory of the Environmental Kuznets Curve - air and water pollution increases in the early stages of development due to industrialization and urbanization, but moderates with higher incomes. Andreoni and Galmarini (2012) analyzed a dataset in 32 Central and Eastern European countries during the period 1990-2007. Using various econometric models, they found evidence that trade openness and intensity worsen total CO2 emissions, indicating potential effects for transition economies focused primarily on industrial exports. Vincent and Botetzagias (2015) discuss environmental and sustainability policy issues in the context of EU integration of the Western Balkans. The authors note that empirical research remains limited on the links between accelerated development and ecological outcomes in the region amid a growth model centered on resource extraction and industrial production for export. Empirical evidence confirms the links between drivers of economic expansion and various environmental degradation outcomes, but the magnitude and direction of impacts vary substantially based on socio-economic and policy dynamics specific to the country and local contexts over time. The Western Balkans should incorporate these worldwide insights into customized policy frameworks that tackle regional environmental and economic issues.

Economic Growth and Environment Nexus in Western Balkans

Macroeconomic stability, export-oriented industrialization, trade liberalization, and foreign investment have all contributed to the economic development that Western Balkan countries have experienced between 2000 and 2018 (Sanfey and Miltovic, 2018). However, resource extraction, industrial pollution, waste, greenhouse gas emissions, and biodiversity loss are some of the environmental problems brought by this growth (Baldwin et al. 2018). These countries adopted market economies when Yugoslavia broke, but their quick economic development defeated environmental security measures, causing deforestation, air and water pollution, and extinct of species (UNEP 2019). Nonetheless, the economic growth has not translated into effective environmental safeguarding and stabilization measures. Although environmental

effects might be anticipated following development projects, the magnitude and rapidity of recent economic expansion in the Western Balkans have distinctly influenced ecosystems, biodiversity, and natural resources. Limited oversight and informal development have exacerbated ecological damage. Although all Western Balkan countries have adopted environmental regulations modeled after the EU, enforcement remains weak and corruption is an obstacle (Börzel and Fagan, 2015). The pressure for quick returns on investment outweighs ecological considerations for both domestic and foreign firms. Environmental impact assessments are rare or superficial. Industrial production, mining, metallurgy, and hydropower construction have contributed to more emissions and discharge of untreated waste. The air quality, especially in cities such as Sarajevo and Belgrade, has fallen considerably. Various infrastructure projects, urban dispersion, and unstable forestry practices have destroyed or fragmented forests and sensitive ecosystems, along with the Adriatic coast and inland forests. Economic activity, combined with the effects of climate change, has increased pressure on limited water resources in most parts of the region, especially affecting agricultural productivity. Most Western Balkan countries greatly rely on coal and lignite for energy production. Renewable energy is still underdeveloped, although the capacity of solar and air is gradually increasing. Membership in the European Union may bring more funds and know-how to a green economy, but the effective implementation of environmental protection measures associated with economic modernization is uncertain in the field. The Western Balkans have pursued aggressive economic expansion since the fall of communism, aiming to stimulate the development of regional industry and infrastructure. However, between 2003 and 2013, the peak of growth in countries such as Serbia, Bosnia, and Herzegovina, and Montenegro coincided with over 250,000 hectares of forest loss as well as an increase in unrecycled plastic waste by nearly 230% (Jones and Paterson 2017). The boom in mining, metallurgy, and manufacturing has caused soil contamination with heavy metals in the land in the Western Balkans (Arias-Navarro 2024). Deforestation, pollution, and land degradation impacts accelerated as regulatory institutions tried to curb the growth-focused business sector (Lennox and Hollender, 2020). The acceleration of economic liberalization and open access to global markets outpaced the development of environmental oversight bodies in most of the Balkans (Trbojević, Jovanović and Đurđević 2024). Limits on emissions, deforestation practices, and waste disposal were often outdated or poorly enforced amid the regulatory turmoil. Regulatory agencies faced limited funding, legal ambiguity, and understaffing. For example, in Bosnia and Herzegovina, the state environment agency received only 0.3% of the government budget in 2017, severely limiting monitoring and enforcement capabilities (UNECE 2019). The combination of bureaucratic red tape, budget constraints, and outdated sustainability frameworks pose substantial challenges in building effective environmental protections. A recent UN environmental report on Southeast Europe found that areas with the highest GDP gains since 2000 also experienced disproportionate increases in levels of pollution, forest degradation, and other indicators of environmental cost (United Nations 2019). The expansion of coal power, unregulated dumping of waste from manufacturing, and desert cleared for infrastructure projects were all major drivers of environmental damage directly linked to economic growth activities across Western Balkan countries (United Nations 2019). The Balkan areas with the highest GDP growth had disproportionate pollution and increased biodiversity loss (United Nations 2019). Key drivers included coal power, manufacturing waste, and infrastructure. Coal provides over half of the region's electricity needs, making the Balkan countries among the most

coal-dependent countries in Europe. However, existing power plants mainly use lignite, which emits more SO2, and NOX than harder coal. Emissions are mainly generated from human activities, including energy consumption, transportation and heavy industry combustion. Households contribute substantially to air pollution as they rely on cheap, outdated, energy-inefficient appliances and outdated wood-burning devices for heating. 67% of households still use fuelwood or solid fuels, and out of five million households three million use stoves. The Western Balkan countries, except Albania, rely on coal for around 70% of their electricity production and have seven out of ten of the most polluting coal-fired plants in Europe. Furthermore, the increase in production from the opening of trade has increased the unregulated dumping of industrial waste and chemicals. Over 43% of Macedonia's soil shows the presence of heavy metals from mines and factories (Simmons 2019). Finally, the expansion of commercial construction for tourism and exports has fueled deforestation, with Albania and Bosnia losing around 60,000 hectares of forest since 2000 (FAO 2015). The rapid onset and rate of growth of the private sector in the absence of controls (Abalansa et al. 2021) brought severe ecological impacts from uncontrolled industrial waste disposal, emissions, and resource exploitation. The boom in the loosely regulated private sector brought severe ecological impacts. An analysis of Serbian environmental budgets found that they fell 25% from 2008 to 2018, while private sector sulfur dioxide emissions increased 12-fold, causing worsening air pollution directly linked to unmonitored industrial expansion (HEAL 2014). The unmanaged disposal of chemical by-products from imported factories has also produced over 600 sites of toxic waste polluting land and waterways throughout Bosnia and Herzegovina (World Bank 2021). Studies analyzing the Western Balkans region have found substantial differences between countries in terms of patterns of economic development and related environmental pressures over the past decades. For example, deforestation rates have been higher in Albania, Bosnia, and Kosovo due to illegal logging, infrastructure expansion, and post-war reconstruction, while Croatia and Serbia have shown forest growth until recently (Šegrt et al. 2019; Uvalić and Cvijanović, 2018). Air pollution levels such as PM2.5 are very elevated in highly industrialized areas such as the Skopje Valley in North Macedonia (Arsovski et al. 2018) and the Sarajevo Valley in Bosnia compared to the EU average, linked to coal power and manufacturing growth. (Broto 2013). The composition and intensity of pollution of economic outputs varies between countries based on natural resources, governance approaches, and legacies of past central planning (Panagopoulos et al. 2016). Further comparative analysis may reveal whether EU membership progress, FDI inflows or other factors exacerbate or mitigate environmental damage as countries develop at different rates. Evidence suggests that Kosovo has experienced significant loss of forests, biodiversity, and agricultural land degradation related to post-war reconstruction, infrastructure expansion, and unregulated construction boom (Caka and Caka 2022). Meanwhile, in Montenegro, the decade of uncontrolled tourism growth in coastal areas has created waste management problems and threats to marine ecosystems (Radujković et al. 2010). In Serbia, increased industrial capacity and dependence on fossil fuel energy have worsened air quality – SO2, NO2, and particulate emissions - in urban areas (Knez et al. 2022). Tax reductions, funding for renewable energy, and opportunities for green investments can foster transformation. Working together with the EU and international efforts will enhance sustained environmental and economic stability.

CONCLUSIONS

There is a complex, two-way relationship between environmental quality and economic development. Environmental decline can prevent development, while development often affects the environment negatively. Resources extraction and intensive industrialization have promoted rapid growth in Western Balkans, but excess of natural capital risks that reduce long-term growth capacity. The major model of economic development over the last two decades is mainly based on GDP expansion operated by factors such as industrialization, global trade, large-scale production, increasing use of resources, and rapid urbanization. The Western Balkans ought to utilize EU accession frameworks and international accords to embrace leading practices in sustainability. Future studies should investigate the socio-economic effects of green transition policies, evaluating their practicality and efficiency across various national settings in the region. By synchronizing economic advancement with environmental care, the Western Balkans can attain a more robust and sustainable growth path.

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Conflict of interest
The authors declare no conflicts of interest.

REFERENCES

1. Abalansa, S., B. El Mahrad, J. Icely, and A. Newton. 2021. "Electronic Waste, an Environmental Problem Exported to Developing Countries: The Good, the Bad and the Ugly." *Sustainability* 13 (9): 5302. https://doi.org/10.3390/su13095302.
2. Al-Mulali, U., B. Saboori, and I. Ozturk. 2015. "Investigating the Environmental Kuznets Curve Hypothesis in Vietnam." *Energy Policy* 76: 123–31.
3. Andreoni, V., and S. Galmarini. 2012. "European CO2 Emission Trends: A Decomposition Analysis for Water and Aviation Transport." *Energy* 45: 595–604.
4. Arasevic, S. 2016. "Causes and Consequences of Air Pollution in Macedonia." *Macedonian International Journal of Marketing* 2 (1): 59–63.
5. Arias-Navarro, C., D. Vidojević, P. Zdruli, F. Yunta Mezquita, A. Jones, and P. Wojda. 2024. *Soil Pollution in the Western Balkans*.
6. https://esdac.jrc.ec.europa.eu/public_path/shared_folder/doc_pub/EUR32028.pdf.
7. Arsovski, S., M. Kwiatkowski, A. Lewandowska, D. J. Peshevska, E. Sofeska, and M. Dymitrow. 2018. "Can Urban Environmental Problems Be Overcome? The Case of Skopje—the World's Most Polluted City."
8. Baldwin, E., F. Caracciolo, S. di Falco, and F. Adinolfi. 2018. "The Current State and Future of Agrobiodiversity in the Mediterranean Agricultural Systems." *Mediterranean Agricultural Sciences* 31 (2): 121–32.

9. Börzel, T., and A. Fagan. 2015. "Environmental Governance in South East Europe/Western Balkans: Reassessing the Transformative Power of Europe." *Environment and Planning C: Government and Policy* 33 (5): 885–900.
10. Broto, V. C. 2013. "Employment, Environmental Pollution, and Working-Class Life in Tuzla, Bosnia and Herzegovina." *Journal of Political Ecology* 20 (1): 1–13.
11. Buttel, F. H. 2003. "Environmental Sociology and the Explanation of Environmental Reform." *Organization & Environment* 16 (3): 306–44.
12. Caka, F., and N. Caka. 2022. "A Scientometric Analysis of Climate Change Research in Kosovo." *The International Journal of Climate Change: Impacts and Responses* 15 (1): 73.
13. Christoff, P. 1996. "Ecological Modernisation, Ecological Modernities." *Environmental Politics* 5 (3): 476–500.
14. Cierco Gomes, Tiago M. R. 2019. "The European Union Accession and Climate Change Policies in the Western Balkan Countries." In *Climate Change and Global Development: Market, Global Players and Empirical Evidence*, 153–73. https://ercst.org/wp-content/uploads/2021/03/20190509_Book_ClimateChangeAndGlobalDevelopm1.pdf#page=153.
15. Dinda, S. 2004. "Environmental Kuznets Curve Hypothesis: A Survey." *Ecological Economics* 49 (4): 431–55.
16. Dinda, S., D. Coondoo, and M. Pal. 2000. "Air Quality and Economic Growth: An Empirical Study." *Ecological Economics* 34 (3): 409–23.
17. FAO. 2015. *Analysis of the Forest Sector in Bosnia and Herzegovina.*
18. https://archive.europa.ba/wpcontent/uploads/2015/05/delegacijaEU_20150203092838 33eng.pdf.
19. Foster, J. B. 2002. *Ecology against Capitalism*. New York: NYU Press.
20. Foster, J. B. 2012. "The Planetary Rift and the New Human Exemptionalism: A Political-Economic Critique of Ecological Modernization Theory." *Organization & Environment* 25 (3): 211–37.
21. Galeotti, M., M. Manera, and A. Lanza. 2006. "On the Robustness of Robustness Checks of the Environmental Kuznets Curve Hypothesis." FEEM Working Paper No. 62.06.
22. Galev, T. 2015. "Status of Municipal Waste Management in Balkan Region: A Comparative Study of Selected Countries." In *Perspectives on Nature Conservation—Patterns, Pressures and Prospects*. IntechOpen.
23. Gould, K. A., D. N. Pellow, and A. Schnaiberg. 2004. "Interrogating the Treadmill of Production: Everything You Wanted to Know about the Treadmill but Were Afraid to Ask." *Organization & Environment* 17 (3): 296–316.
24. Gould, K. A., A. Schnaiberg, and A. S. Weinberg. 1996. *Local Environmental Struggles: Citizen Activism in the Treadmill of Production*. Cambridge: Cambridge University Press.
25. Grossman, G. M., and A. B. Krueger. 1995. "Economic Growth and the Environment." *The Quarterly Journal of Economics* 110 (2): 353–77.
26. Grossman, G. M., and A. B. Krueger. 1991. *Environmental Impacts of a North American Free Trade Agreement*. NBER Working Paper No. 3914.
27. Harbaugh, W., A. Levinson, and D. Wilson. 2002. "Reexamining the Empirical Evidence for an Environmental Kuznets Curve." *Review of Economics and Statistics* 84 (3): 541–51.
28. Health and Environment Alliance (HEAL). 2014. *Air Pollution and Health in Serbia*. https://www.env-health.org/IMG/pdf/heal_briefing_air_serbia_eng.pdf.
29. Huber, J. 2008. "Pioneer Countries and the Global Diffusion of Environmental Innovations: Theses from the Viewpoint of Ecological Modernization Theory." *Global Environmental Change* 18 (3): 360–67.
30. Ignjatović, J., S. Filipović, and M. Radovanović. 2024. "Challenges of the Green Transition for the Recovery of the Western Balkans." *Energy, Sustainability and Society* 14 (1): 2. https://link.springer.com/content/pdf/10.1186/s13705-023-00421-4.pdf.
31. Ilić, M., and M. Nikolić. 2016. "Drivers for Development of Circular Economy – A Case Study of Serbia." *Habitat International* 56: 191–200.
32. Intergovernmental Panel on Climate Change (IPCC). 2014. *Climate Change 2014: Mitigation of Climate Change. Working Group III Contribution to the Fifth Assessment Report of the IPCC*.
33. Johnstone, N., and J. Labonne. 2004. "Generation of Household Solid Waste in OECD Countries: An Empirical Analysis Using Macroeconomic Data." *Land Economics* 80 (4): 529–38.

34. Jones, Ch., and M. Paterson. 2017. "Local Constraints on Transnational Power: Capital, Territory and Climate Governance." *The Geographical Journal* 183 (4): 318–30.
35. Knez, S., S. Štrbac, and I. Podbregar. 2022. "Climate Change in the Western Balkans and EU Green Deal: Status, Mitigation and Challenges." *Energy, Sustainability and Society* 12 (1): 1–14.
36. Leitão, A. 2010. "Corruption and the Environmental Kuznets Curve: Empirical Evidence for Sulfur." *Ecological Economics* 69 (11): 2191–2201.
37. Lennox, E., and R. Hollender. 2020. *Alternatives to Growth-Centric Development: An ECI Teaching Module on Social and Economic Issues.* https://www.bu.edu/eci/files/2020/01/Alternatives-to-Growth_final.pdf.
38. Mitić, P., A. Fedajev, and M. Kojić. 2023. "Exploring the Economy–Environment Interactions in the Western Balkans: A Panel Data Analysis." *Economic Analysis: Journal of Emerging Economies.*
39. Mol, A. P., and D. A. Sonnenfeld. 2014. "Ecological Modernization Theory Revisited: Twenty-Five Years of Policy, Practice and Theoretical Reflections." In *Social Theories of the Environment*, 77–106. Routledge.
40. Mol, A. P. 2009. "Ecological Modernization and the Global Economy." *Global Environmental Politics* 2 (2): 92–115.
41. Montenegro, U., and M. A. Plan. 2007. *National Strategy of Sustainable Development of Montenegro.*
42. Naidoo, R., and W. L. Adamowicz. 2004. "Economic Prosperity and Ecosystem Demands: Using Relative Prices to Assess Improved Conservation Outcomes." In *The Environment in Economics and Development.* Edward Elgar Publishing.
43. Panagopoulos, T., J. A. G. Duque, and M. B. Dan. 2016. "Urban Planning with Respect to Environmental Quality and Human Well-Being." *Environmental Pollution* 208: 137–44.
44. Panayotou, T. 1993. *Empirical Tests and Policy Analysis of Environmental Degradation at Different Stages of Economic Development.* Geneva: International Labour Office.
45. Radujković, B. M., D. Šundić, P. M. Miljanić, and S. Didanović. 2010. "Water Supply, Wastewater Management and Sustainable Development of Montenegrin Coastal Area." MWWD & IEMES, Langkawi.
46. https://d1wqtxts1xzle7.cloudfront.net/46265136/Water_supply_waste_water_management_and_20160605-22328-j4q71b-libre.pdf?1465185370=&response-content-disposition.
47. Radusinović, S. 2017. "Nature Conservation in the Changing World: Challenges in the Balkans Biodiversity." In *The Proceedings of ICOEST'17* (Vol. 2018). Faculty of Sciences.
48. Roca, J. 2003. "Do Individual Preferences Explain the Environmental Kuznets Curve?" *Ecological Economics* 45 (1): 3–10.
49. Sanfey, P., and J. Milatovic. 2018. *The Western Balkans in Transition: Diagnosing the Constraints on the Path to a Sustainable Market Economy*. European Bank for Reconstruction and Development.
50. Schnaiberg, A., and K. A. Gould. 2000. *Environment and Society: The Enduring Conflict.* Blackburn Press.
51. Schnaiberg, A. 1980. *The Environment: From Surplus to Scarcity.* Oxford University Press.
52. Šegrt, V., P. Pllaha, M. Šango, and N. Kuveshnikov. 2019. "Forest Resources of the Western Balkan Region—Bosnia and Herzegovina." *Croatian Journal of Forest Engineering: Journal for Theory and Application of Forestry Engineering* 40 (2): 319–30.
53. Selden, T. M., and D. Song. 1994. "Environmental Quality and Development: Is There a Kuznets Curve for Air Pollution Emissions?" *Journal of Environmental Economics and Management* 27 (2): 147–62.
54. Šergo, Z., T. Poršinsky, and I. Grgić. 2014. "Private Forest Owners' Willingness to Supply Woody Biomass in Selected South-Eastern European Countries." *Biomass and Bioenergy* 71: 202–10.
55. Stern, D. I. 2004. "The Rise and Fall of the Environmental Kuznets Curve." *World Development* 32 (8): 1419–39.
56. Stern, D. I., M. S. Common, and E. B. Barbier. 1996. "Economic Growth and Environmental Degradation: A Critique of the Environmental Kuznets Curve." *World Development* 24 (8): 1151–60.

57. Suri, V., and D. Chapman. 1998. "Economic Growth, Trade and Energy: Implications for the Environmental Kuznets Curve." *Ecological Economics* 25 (2): 195–208.
58. Shafik, N. 1994. "Economic Development and Environmental Quality: An Econometric Analysis." *Oxford Economic Papers*: 757–73.
59. Trbojević, M., D. Jovanović, and D. Đurđević. 2024. "Security Policies and Sustainable Development in the Western Balkan Region Beyond 2022: Current Status, Challenges, and Prospects." *Energy, Sustainability and Society* 14 (1): 55. https://link.springer.com/content/pdf/10.1186/s13705-024-00486-9.pdf.
60. UNECE. 2019. *Evidence-Based Environmental Governance and Sustainable Environmental Policies in Support of the 2030 Agenda in South-East Europe: Bosnia and Herzegovina*. https://unece.org/sites/default/files/2021-09/UNDA%201819AE%20Needs%20Assessment%20Bosnia%20and%20Herzegovina.pdf.
61. UNEP. 2019. *Global Environment Outlook GEO-6: Healthy Planet, Healthy People*. Nairobi.
62. United Nations. 2019. *The Sustainable Development Goals Report 2019*. New York. https://unstats.un.org/sdgs/report/2019/The-Sustainable-Development-Goals-Report-2019.pdf.
63. Uvalić, M., and V. Cvijanović. 2018. *Towards a Sustainable Economic Growth and Development in the Western Balkans*. Analysis. Friedrich-Ebert-Stiftung, Regional Office for Croatia and Slovenia, Zagreb.
64. Vincent, E. C., and I. Botetzagias. 2015. "Western Balkans: Environmental Politics and Membership of the European Union." *Environmental Politics* 24 (4): 608–26.
65. Wang, Z., F. Yin, Y. Zhang, and X. Zhang. 2012. "An Empirical Research on the Influencing Factors of Regional CO2 Emissions: Evidence from Beijing City, China." *Applied Energy* 100: 277–84.
66. World Bank. 2021. *Climate Risk Country Profile: Bosnia and Herzegovina*.
67. https://climateknowledgeportal.worldbank.org/sites/default/files/2021-07/15914-WB_Bosnia%20Country%20Profile-WEB%20%281%29.pdf.
68. World Bank. 2012. *What a Waste: A Global Review of Solid Waste Management*.
69. York, R., and E. A. Rosa. 2003. "Key Challenges to Ecological Modernization Theory: Institutional Efficacy, Case Study Evidence, Units of Analysis, and the Pace of Eco-Efficiency." *Organization & Environment* 16 (3): 273–88.