

CONFLICT OF ENVIRONMENTAL AND ECONOMIC INTERESTS OF THE STATE: EXPERIENCE OF EASTERN EUROPEAN COUNTRIES

^aTAMARA IVANOVA, ^bOKSANA KULHANIK, ^cOKSANA MELNICHUK, ^dNATALIIA BORDIUG, ^eYULIIA MELNYCHUK

^aNational Aviation University, Kyiv, Ukraine, ^{b,c}Vinnytsia Institute of Trade and Economics of KNUTE, Vinnytsia, Ukraine, ^dPolissia National University, Zhytomyr, Ukraine, ^eNational University of Water and Environmental Engineering, Rivne, Ukraine
 email: ^aT.V.Ivanova@ukr.net, ^bkeletckaya@gmail.com, ^ckeletckaa@gmail.com, ^dnatali-21@ukr.net, ^ey.i.melnichuk@nuwm.edu.ua

Abstract: Global warming is a purposeful and logically proven solution for managing national economies. The central link of such management is the energy system, which is being reformed in terms of investment support and financing. It is in the energy sector that the conflict of the global energy crisis is manifested, being distinguished in all areas - from production to final consumption. The essence of the environmental component provides an evident elimination of global control. It has been proved that the global environmental crisis is not a consequence of human activity, but, it is a separate link in the mechanism of transferring national control to the priority of global governance. It has been indicated that when overcoming the environmental issue of global warming, control over the natural energy resources of the OPEC countries becomes an expected result.

Keywords: energy security, global governance, global warming, liberal fundamentalism.

1 Introduction

Current trends in improving energy efficiency are implemented through the introduction of energy efficiency policies, decarbonization, decentralization and digitalization. The purpose of such a policy lies in transiting all energy and solving global challenges, namely: the abandonment of fossil fuels and the expansion of using green energy sources. The goal outlined, according to the results of the World Economic Forum, should be achieved without disturbing the energy balance, in particular, not violating security of access to electricity, environmental sustainability and economic sustainability and economic growth. The overwhelming majority of scientists around the world believe that such changes in energy began after the signing of the Paris Climate Agreement in 2016, when 180 countries took upon themselves the responsibility to prevent the temperature on the planet from raising more than 1,5 degrees Celsius by 2050. Along with this, in 2020, the European Union has set an additional goal which lies in the fact that by 2050, EU countries should achieve zero emissions of carbon dioxide, the so-called "pure zero". Herewith, a significant proportion of carbon dioxide can be absorbed by plants and it will increase due to soil storage, increased reforestation and protection of peatlands, wetlands and marine environment.

The purpose of the research lies in analyzing the environmental and economic goals of the EU countries' economic activities and their contradictions.

The research objectives are as follows:

1. To reveal the specifics of the isolation and selection of environmental challenges of modern production as the basis of potential conflicts between national economies.

2. To analyze the national policy of the EU countries from the standpoint of energy efficiency and environmental friendliness based on the last anomalous seasons.

2 Literature review

Numerous studies have shown that there is no direct compromise between economic growth and environmental security (Stephen Polasky et al., 2019; Tuomas Ylä-Anttila et al., 2018; M. Grazia Pennino, 2018). The issues of increasing pollution, irrational use of rare natural resources and growing public awareness of the importance of ecology and its sustainability have influenced the emergence of political ecology (Jason Roberts, 2020; Thomas J. Bassett, Alex W. Peimer, 2015). And although modern governments, companies and individuals are increasingly aware of the fact that the use of technology and increasing economic capacity should not negatively affect the environment (Lael K Weis, 2018; George D. Gann, 2019; Nash Nick et al., 2019), however, economic practice notes the absence of significant environmental changes (lack of drinking water, food, access to electricity, Internet, etc.) (Andros et al., 2021). Furthermore, climate change, frequent extreme weather events, air pollution and rising sea levels, on the contrary, complicate business and economic activities (Watts et al., 2018; Francisca C. Garcia, 2018). The analysis of current investigations proves the existence of significant conflicts of the state's environmental and economic interests, especially in developing countries (Pan Jianwei, et al., 2016; Brian Czech, 2008; Stephen Polasky et al., 2019; Darko B. Vukovic et al., 2019).

3 Materials and research methods

The implementation of the research purpose assumes application of the methods as follows:

- systematization, generalization of scientific publications on the study of economic and environmental conflicts of the EU;
- the method of comparative analysis in order to ensure energy security of individual Eastern European countries;
- the system and logical analysis, the method of information synthesis.

4 Results

An active scientific discussion and outlining global environmental issues of the world was being formed over a period of time and had so-called benchmarks. These particular points ensured the priority of ecologization in modern social production. In Table 1, the principal milestones in the development of the ecological approach are represented, which has grown into a global problem of mankind and has formed the international environmental policy of the vast majority of the world countries. The major concern was formed, namely: the rapid increase in the gas content of the earth's atmosphere, which stimulates the tendency of an increase in the average temperature on the planet, leading to a change in the climatic component of our planet.

Table 1 – The process of considering and identifying global environmental issues

Year	Authority	Features and specifics of the global environmental issue
1972	Report of the Club of Rome "Limits of Growth"	The essence of the ecological problem was determined as a consequence of the influence of the biosphere's anthropogenic component; in the future it can develop into a state that puts human civilization on the brink of physical survival.
1972	Stockholm Conference	It identified 26 principles and 109 recommendations, which became the United Nations Environment Program (UNEP). Clark and Timberlake pointed out that prior to 1972 there were no more than 10 ministries of the environment, and within 10 years the number of ministries and secretaries of state increased to 110.
1988	Establishment of an intergovernmental group of experts on climate change	Scientifically defining human impact on climate change, assessing risks and developing a mitigation strategy.
1990	Environment and Energy Management Agency was established	Implementation of policy in the sphere of sustainable development, environmental protection and energy. Providing of organizations and territorial associations with consulting and examination services at the disposal of state-owned enterprises.

1992	Conference in Rio de Janeiro (Earth Summit or UNCED)	The concept of sustainable development was developed; it describes the process of evolution, which makes it possible to meet the current needs of citizens without affecting their future interests. A program of action and 2,500 recommendations were approved in relation to all possible spheres of human influence on the environment. It was approved by 178 heads of states. The summit also established the Rio Conference's plan for annual meetings under the UN Convention on Climate Change.
1990-2007	Kyoto agreement on greenhouse gas emissions	An international agreement that has established binding targets and deadlines for reducing greenhouse gas emissions in most countries, including industrialized ones. The treaty is based on the UN Framework Convention on Climate Change (UNFCCC); Member States have decided to establish a stricter protocol. The mandatory goal, provided by the Kyoto Protocol for different countries, lies maintaining the level of greenhouse gas emissions at the level of 8% to + 10% compared to 1990. The agreement provides certain flexibility for countries regarding the ways and means of achieving the objectives set in the Protocol (increasing the number of forests, financing projects).
2001	Agreement in Bonn and Marrakech	The outcome of the negotiations held during COP 6 in Bonn in July 2001 and COP7 in Marrakesh in November of the same year. It concerns, in particular, the obligations of advanced countries to provide assistance to developing countries. Signing of these agreements, which had determined the procedure for implementing the Kyoto Protocol, paved the way for its ratification and implementation.
2005	The entry into force of the Kyoto Protocol	55 countries, which accounted for an average of 55% of carbon emissions in 1990, ratified the protocol. Its entry into force meant a commitment for 30 industrialized countries to meet targets towards reducing or limiting greenhouse gas emissions. It also allowed for the formalization of the international carbon trading market and the establishment of the Clean Development Mechanism (CDM).
2009	Copenhagen Agreement	A three-page text bringing together international climate change strategies (reducing greenhouse gas emissions, limiting global warming by 2 °C, funding of 30 billion USD in 2010-2012).
2011	Agreement in Durban	It was aimed at the adoption of a universal agreement in 2015. They initiated the formulation of a new protocol, the adoption of which in 2015 was to lead to concrete results on greenhouse gas emissions and a reduction in global warming to 2 °C by 2020.
2014	COP 20 in Lima	It highlighted the necessity for additional efforts in order to maintain warming rates below 2 °C by 2100. It led to the editing of a preliminary document to the future COP21 agreement in Paris and the approval of 37 pages of text.
2016	Paris Conference	The signed agreement on climate, according to which when 180 countries took upon themselves the responsibility to prevent the temperature on the planet from rising by 2050 more than 1,5 °C.
2019	Conference in Brussels	It has outlined the additional goal that by 2050 the EU countries should achieve zero emissions of carbon dioxide, the so-called "pure zero". Moreover, a significant part of carbon dioxide can be absorbed through absorption by plants and it will be amplified by storing soil, increasing reforestation and protecting peatlands, wetlands and the marine environment.

Source: UN data (2021).

Thus, over the course of thirty years, European initiatives have formed a powerful environmental policy, which is enshrined at the international legislative level and the level of national legislation. It is quite intensively implemented in all spheres of social production and covers the geography of the globe.

As a result, environmentalists and public figures began to actively submit scientific predictions about the possibility of lowering the temperature on the Earth (see Fig. 1).

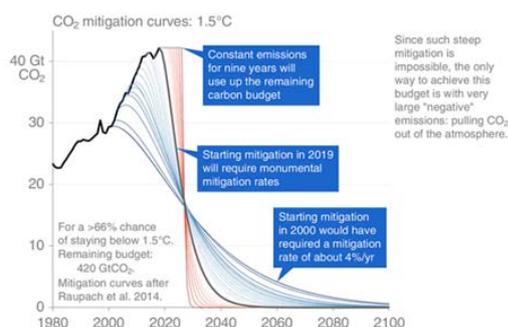


Figure 1 – Scientific substantiation of bringing the average annual temperature to the climatic norm

Source: CICERO (2021).

However, such a political course of the EU is not acceptable enough for all European countries. For instance, Poland did not agree to take the course in order to achieve a zero balance of carbon emissions by 2050. Hungary and the Czech Republic, on the other hand, have agreed to such an initiative only on condition that such an agreement will allow using nuclear power units in the electricity production.

Regarding the functioning of efficient energy supply of the EU countries, a number of measures have been taken, which have been manifested as energy packages. In 1988, the European Commission began implementing the concept of large-scale reforms of electricity and gas markets. The rationale for such

changes was to create a more integrated European energy market, which would lead to lower energy costs and cost restructuring and rational production, transmission and energy distribution. And this, in turn, will ensure the liberalization and unification of the European countries' national markets; it ultimately would create a unified liberalized electricity and gas market with a high level of competition.

However, the real action began only 10 years later, when the first electrical directive (Directive 96/92 / EC) and the first gas directive were adopted (Directive 98/30/EC). It is also specific that these directives had a nature of a limited experiment, which indicated that the planned system would become viable. Therefore, the second electric №2003/54 and gas №2003/55 directives (2003/54 / EC) were adopted in 2003, which developed and detailed the major provisions of the reform. In September 2009, measures were taken to reform the energy market (2009/72 / EC). It was based on Directives №2009/73 and №2009/72, which established common rules for gas and electricity internal market.

The really operating models of the market in England and Holland were taken as the basis for the future energy market in Europe. The specificity of these models was based on the fact that gas was extracted from the sea shelf. In these countries, a legal entity was created for each field for the extraction of fuel due to the fact that this provided low costs for the development of such deposits. At the same time, stock exchanges are highly developed in these countries; this over time has ensured the emergence of subsidiaries, which have become independent in the implementation of exchange shares. In fact, a situation arose when a large number of suppliers of natural resources were formed in these countries, which were connected with exchange trading. At the same time, they did not depend on each other, and the supply was made through the Central European gas hub in Baumgarten, Austria.

In 2010, the European Commission decided to transfer the activities of this hub to all EU countries. However, it was not

taken into account that there are 30 independent and autonomous suppliers in England, and in the Netherlands - 20. For Europe, this number of suppliers is minimally unacceptable due to geographical diversification. This actually means 1,5 suppliers per 1 country.

In addition, the EU guaranteedly had pipeline operating gas supplies from Norway through the state-owned company Equinor, Algeria - Sametrac, Azerbaijan Sokars and Russia - Gazprom. At the same time, Algerian supplies do not increase in volume, forasmuch as they are interested in supplies to Southeast Asia, where prices are much higher than in EU countries. Sametrac's share is 8% of the global LNG market. As for Equinor, in 2020, there has been a statement that during 2021 preventive repairs will be carried out at offshore production sites. Consequently, the total volume of gas production will decrease by 5%, and, therefore, an increase in supplies to Europe is not expected. Caspian gas through the Kashkanar pipeline has an annual capacity of 6 billion m³, with construction costs of 42 billion USD, which is four times more expensive and 4 times less in terms of pumping volume than Nord Stream-2. In 2021, it will be able to pump only 12 billion m³, of which 6 billion m³ will remain in Turkey, 6 billion m³ - in Albania, Greece and Italy. Against the background of the total capacity of European consumption of approximately 600 billion m³, this is critically insufficient.

Currently, the goal of forming a European gas market has been achieved. The price for it is detached from the pricing of oil, and payment is made in relation to oil in a ratio 1 to 1,5, although, the coefficient of 1 to 0,6 has been assumed. This is closely connected with the logistics components, namely: storage facilities, distribution networks, etc. Gas prices have pulled away from oil prices and they are forming a growing trend.

The reasons for rising gas prices in Europe are quite diverse. However, the basic one is the principle of liberal fundamentalism, which points to the denial of energy security and energy security. After all, the emergence of a shortage of natural gas in Europe's storage facilities was revealed in June 2021. At the same time, American LNG supplies were reoriented to Southeast Asia, and Gazprom fulfills its obligations under long-term contracts, which do not provide for an increase in gas supplies for pumping into underground gas storage facilities. Moreover, the European Energy Commission, namely the Commissariat for Energy, has not taken any decision yet towards reducing the critical situation with natural gas. In fact, the European Commissariat implements the policy of liberal fundamentalism (the market automatically regulates everything).

The second factor for rising gas prices is clearly climatic changes. Cold winters and very hot summers were in Europe. Consequently, this has led to an increase in the consumption of natural gas for heating and electricity for air conditioning.

The third factor is the insufficient elaboration of the third European energy package. In fact, the third energy package was not implemented in the national legislation of the EU countries; as a result, this was manifested by court decisions in 18 EU countries. In reality, this package and the gas directive were implemented thanks to court decisions after 2015.

The fourth factor is the insufficient number of European economists and politicians who could not defend the current model of long-term gas export, when early contracts were drawn for the supply and pumping of gas according to the take-and-pay scheme.

Thus, currently, the EU countries are faced with a situation in which the new model of the gas market is not cost-effective and leads to problems of gas shortages. This results in a decrease in the production volume for natural gas raw materials. The way out of this situation is to accuse Gazprom of not supplying natural gas. However, such conditions are not provided in the concluded contracts. For instance, in Poland in 2020, the contract for long-term supply and pumping of gas from Russia has expired. Nowadays, Poland is forced to hold regular auctions for capacity booking of various terms (year, six months, month, 3 months, even per day). However, the employers of Gazprom do not take part in such auctions. Penalties to suppliers are not

provided by contracts for non-attendance of the auctions. Although Poland has won a lawsuit against Gazprom in the amount of 3 million USD due to the lack of revision of gas prices tied to the market situation, it is currently impossible to bring Gazprom to justice.

Other countries have taken a different path. In particular, Romania has been reformatting its gas market. For instance, the ANRE decision has been made, stating that the maximum wholesale price for gas by 2022 should be at the level of 163 USD for 1 thousand m³. However, this decision does not correspond to reality, when gas futures on the European market amounted to more than 1000 USD per 1000 m³, and this leads to a complete loss of the country's national security.

Hungary has concluded a new long-term contract with Gazprom on October 1, 2021. According to it, the principal volume of supplies will pass through the Turkish stream, Serbia and Austria, and a small part will pass through the transition point Beregov (Ukraine) and Bangrad (Slovakia). According to the contract, the annual gas supply will be 3,5 billion m³ for a period of 15 years. The specified contract excludes transit capacity of gas pumping on the territory of Ukraine.

According to European requirements, in case a European company signs a contract for a long-term supply of gas with an annual volume exceeding 28% of the country's annual consumption, then the national regulator must be notified, which is obliged to submit an assessment for compliance with antitrust laws and energy security requirements. Consequently, the expressed disputes of Ukraine to the government of Hungary are legally groundless.

The contract with the Finnish Gazum and Gazprom for the supply of natural gas has been extended until 31.12.2031. Estonia owns new power plants, which make up the world's two largest shale thermal power plants - the Estonian Power Plant and the Baltic Power Plant. Along with this, at the expense of European funding, a separate unit was constructed using American technology that meets modern environmental requirements. Estonia resumes operation of thermal power plant units, despite penalties for harmful emissions into the environment. Herewith, the penalties are much lower than the purchase of gas for the operation of thermal power plants. In case the penalties are increased, Estonia will have to cut off the energy complex, which will cause a loss of 80% of electricity in the country.

Austria resolved the issue of energy security in 2015 by signing a long-term contract with Gazprom for a period of 40 years. At the same time, the supply of gas increased by 150 m³ (by 5%), which ensured the growth in the maximum gas withdrawal by 1,55 million m³ per day. Moreover, Gazprom, BASF, E.ON, OMV, Shell initiated and implemented the Nord Stream-2 gas pipeline project, with a capacity of 55 billion m³ of fuel per year.

Thus, the EU countries solve the problem of gas supply independently, mainly in two directions. Firstly, this means a complete transition to long-term supplies from Russia, which is reflected in the growing supplies of Russian gas; secondly, this means resumption of electricity production at the expense of its own suspended TPPs and CHPs operated on coal and shale fuel. Therefore, European countries have become hostages of the environmental and economic conflict over the transition to green energy. The political vision and reforms of the energy market have led to speculative trading in natural gas, resulting in the loss of energy security of both individual national economies and the EU economy as a whole.

In the situation outlined, only the owners of natural gas deposits receive economic benefits. After all, gas is a more environmentally friendly fuel compared to solid energy rocks (coal, peat, shale).

Strategic European energy market pointed to the non-viability of the principle of liberal fundamentalism. Against this background, the national economy forms energy security

exclusively on the approach of market regulation, which is not justified, forasmuch as it does not take into account global climatic changes, requiring prompt intervention in the process of pricing, supply, redistribution and transit, and in general, in reformatting the country's energy security.

Thus, the general tendency towards ecologization causes an increase in the contradictions of different levels from production to inter-national, forming the basis of conflicts. While, in general, the EU energy policy is forced to act in line with environmental norms and requirements, the national energy policy of individual countries, on the other hand, is focused on their own decision and mainly due to long-term contracts with Russia. Consequently, in this general direction of ecologization, natural gas remains a priority as the basic fuel resource of Europe.

After all, the long-term implementation of environmental protection measures has led to the recognition of the environmental issue as a purely global one. Therefore, it can be overcome only by limiting the use of traditional fuel resources, primarily coal. Herewith, the priority is given to the use of alternative energy of the sun and wind.

Such one-sided approach has formed a system of excluding heat generation from the EU energy system. As a result, this carries an economic conflict not only in the energy sector but in the entire chain of production and consumption. Due to the reason outlined, it is advisable to talk not about an economic conflict, but about a public-based one (see Fig. 2).

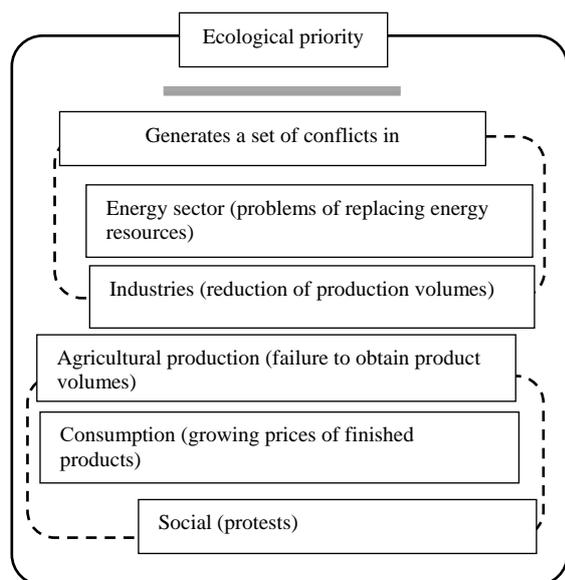


Figure 2 – Hierarchy of conflicts towards addressing the global environmental issues of global warming
Source: Developed by the authors.

Despite loud calls on combating global warming, real measures to fight against global warming are limited to banning traditional technologies and putting them under enhanced control regime. In terms of technology, alternative energy is not a solution to numerous environmental challenges. In fact, the disposal of alternative stations for this period is reduced to the disposal processes of selection of elements from aluminum and copper. Deeper recycling technologies are missed or are at the stage of their formation.

5 Discussion

Our research focuses on the environmental conflict concerning global environmental processes in Eastern Europe. However, environmental conflicts have been addressed in the scientific works of Martinez Allier and Martin O'Connor, who examined their limited access to natural energy benefits. The authors

decipher in detail the system of this conflict due to the price parities of the counterparties of trade relations.

The scientific papers (Agarwal, 2001; Zografos and Howarth, 2010) point to a different approach to broadening the understanding of environmental conflict through the political factor and introducing the term of "political ecology". In our studies, this thesis is defined as the political impact on the implementation of environmental dimensions and action programs on the scale of the European region, as well as the influence of the global political elite.

Taking into account scientific thought (Guha & Martinez Allier, 1997), the authors infer the level of environmental conflict within geographic space and social justice. This approach is crucial for national economies. Consequently, it is relevant for European countries, forasmuch as the development level of European countries is quite different, and geography determines the provision of natural energy resources.

6 Conclusion

Summing up, it should be pointed out that ecologization is an artificial and political measure of the representatives of the globalist elite, forasmuch as they highlight these issues through the vast majority of scientists and environmentalists. Due to the political pressure of national elites, these processes have become widespread; they are aimed primarily at reforming the energy sector of the modern economy. However, nature points out the erroneousness of this direction of solving environmental challenges due to local cold weather throughout the earth.

The economic reality of national economies is more pragmatic and focused on strengthening energy security. The example of the EU just shows the conflict of global ecology with the economic reality, which is directly related to the weather (geographical - climatic conditions). Measures of the European collective regulation and solution of the ecological problem of global warming in economic terms do not correspond to the requirements and globalists' plans, but lead to an aggravation with national governments. The latter are more consistent in their actions; they are tied to reality and solve energy security issues by increasing gas supplies from Russia on the terms of long-term cooperation.

In terms of theory, the liberal approach of a market economy is not justified in solving global problems. The market itself will never ensure environmental friendliness. Moreover, the system of supranational regulation (EU) neither takes into account the national interests of the economy, nor carries out operational energy regulation, creating a conflict of priorities for the development of national European economies within a unified economy.

The final resolution of such conflicts is possible, but only through the development and implementation of environmental technologies. However, these technologies are not evolving due to purely economic reasons. Investment processes are aimed at implementing projects towards increasing the capacity of alternative energy, but not to improving existing ones due to their environmental component.

In order to resolve all the conflicts outlined, it is necessary to develop the entire science, deeply understand physical processes and, based on this latest knowledge, to form fundamentally new pico (10^{-12}) technologies. Unfortunately, modern science is unable to form vital nanotechnologies for mass implementation.

Literature:

1. Andros, S., Akimov, O., Akimova, L., Chang, S., & Gupta, S. K. (2021). Scenario Analysis of the Expected Integral Economic Effect from an Innovative Project. *Marketing and Management of Innovations* 3, 237-251. <http://doi.org/10.21272/mmi.2021.3-20>.
2. Polasky, S., Kling, C. L., Levin, S. A., Carpenter, S. R., Daily, G. C., Ehrlich, P. R., Heal, G. M., & Lubchenco, J.

- (2019). Role of economics in analyzing the environment and sustainable development. *Proceedings of the National Academy of Sciences of the United States of America*, 116(12), 5233-5238. Available at: <https://doi.org/10.1073/pnas.1901616116>
3. Ylä-Anttila, T., Vesa, J., Eranti, V., Kukkonen, A., Lehtimäki, T., Lonkila, M., Luhtakallio, E. (2018). Up with ecology, down with economy? The consolidation of the idea of climate change mitigation in the global public sphere. *European Journal of Communication* Volume 33, Issue 6, 587-603. Available at: <https://doi.org/10.1177/0267323118790155>
4. Pennino, M.G., Rufener, MC., Thomé-Souza, M.J.F. et al. (2018) Searching for a compromise between biological and economic demands to protect vulnerable habitats. *Sci Rep* 8, 7791 (2018). Available at: <https://doi.org/10.1038/s41598-018-26130-z>
5. Jason Roberts (2020). Political ecology. Available at: <http://doi.org/10.29164/20polieco>
6. Thomas J. Bassett, Alex W. Peimer (2015). Political ecological perspectives on socioecological relations. *Dans Natures Sciences Sociétés* 2015/2 (Vol. 23), 157-165
7. Lael K Weis (2018). Environmental constitutionalism: Aspiration or transformation? *International Journal of Constitutional Law*, Volume 16, Issue 3, July 2018, Pages 836-870. Available at: <https://doi.org/10.1093/icon/moy063>
8. George D. Gann, Tein McDonald, Bethanie Walder, James Aronson, Cara R. Nelson, Justin Jonson, James G. Hallett, Cristina Eisenberg, Manuel R. Guariguata (2019). International principles and standards for the practice of ecological restoration. Second edition. Volume 27, Issue 1. Available at: <https://doi.org/10.1111/rec.13035>
9. Nick Nash, Stuart Capstick, Lorraine Whitmarsh, Indra Chaudhary and Rija Manandhar (2019). Perceptions of Local Environmental Issues and the Relevance of Climate Change in Nepal's Terai: Perspectives From Two Communities. Available at: <https://doi.org/10.3389/fsoc.2019.00060>
10. Francisca C. García, Elvire Bestion, Ruth Warfield, and Gabriel Yvon-Durocher (2018). Changes in temperature alter the relationship between biodiversity and ecosystem functioning. *PNAS*. 2018 115 (43) 10989-10994. Available at: <https://doi.org/10.1073/pnas.1805518115>
11. Watts, N., Amann, M., Ayeb-Karlsson, S., Belesova, K., Bouley, T., Boykoff, M., et al. (2018). The Lancet Countdown on health and climate change: from 25 years of inaction to a global transformation for public health. *Lancet* 391, 581-630. and China's Developm. Available at: [https://doi.org/10.1016/S0140-6736\(17\)32464-9](https://doi.org/10.1016/S0140-6736(17)32464-9)
12. Jianwei P., Zhiyi G. (2016) Conflicts Between Economic and Ecological Development in China's Pasturing Areas and Reasons for These Conflicts. In: Qu F., Sun R., Guo Z., Yu F. (eds) *Ecological Economics and Harmonious Society*. Research Series on the Chinese Dream and China's Development Path. Springer, Singapore. Available at: https://doi.org/10.1007/978-981-10-0461-2_11
13. BRIAN CZECH (2008). Prospects for Reconciling the Conflict between Economic Growth and Biodiversity Conservation with Technological Progress. *Conservation Biology* Volume 22, No. 6
14. CICERO (2021). Available at: <https://www.cicero.oslo.no/en/employee/56/robbie-andrew>
15. Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market in electricity. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31996L0092>
16. Directive 98/30/EC of the European Parliament and of the Council of 22 June 1998 concerning common rules for the internal market in natural gas. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A31998L0030>
17. Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in electricity and repealing Directive 96/92/EC - Statements made with regard to decommissioning and waste management activities Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32003L0054>
18. Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC (Text with EEA relevance) Available at: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A32009L0072>
19. Agarwal, B. (2001) Participatory Exclusions, Community Forest, and Gender: An Analysis for South Asia and Conceptual Framework. *World Development*, 29, 1623-1648.
20. Christos Zografos, Richard B. Howarth (2010). *Deliberative Ecological Economics for Sustainable Development*. 2010 Sustainability 2(11). DOI:10.3390/su2113399
21. <https://www.routledge.com/Varieties-of-Environmentalism-Essays-North-and-South/Guha-Alier/p/book/9781853833298>
22. Ramachandra Guha, Joan Martínez Alier (1997). *Varieties of Environmentalism Essays North and South* Published March 1, 1997 by Routledge, 256

Primary Paper Section: A**Secondary Paper Section: AE**