Sustainable Ends – Colonial Means? On Sustainability, Planning and Malintentions in Global Green Policies

Assistant professor Mgr. **Kristián ČECHMÁNEK**[1]
Professor JUDr. **Lucia PALŠOVÁ**[2]

Abstract

This paper embarks on a comprehensive exploration of the intricate and multifaceted dynamics underlying global policies aimed at mitigating climate change, particularly within the evolving landscape of emerging biofuel markets. While the imperative to combat climate change is undeniable, it is equally essential to recognize and address the potential unintended consequences that may arise. In an age characterized by disinformation and conspiracy theories, public resistance to policies deemed malicious or inhumane is particularly prevalent, especially in cases where outcomes entail land grabbing, deforestation, and human rights violations, notably within developing countries marked by heightened vulnerabilities. Leveraging established theoretical frameworks proposed by prominent scholars such as Bastiat, Popper, Taleb, Hayek, and Soros, this study aims to explore the practical ramifications of green policies, which often exceed their intended scope and result in unforeseen negative consequences. Concurrently, we endeavor to challenge potential conspiracy narratives surrounding the purported malevolent intentions of elites and allegations of neo-colonialism in the formulation of green policies, emphasizing the enduring relevance of the principles of self-awareness and radical fallibility within the realm of critical rationalism.

Keywords: *global green policies, climate change, biofuels, sustainability, radical fallibility, epistemic arrogance.*

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1. Introduction

Climate change stands as a paramount threat to human civilization. In the endeavor to combat climate change and attain carbon neutrality, the utilization of

[1] Kristián Čechmánek - Institute of Law and Sustainable Development, Faculty of European Studies and Regional Development, Slovak University of Agriculture in Nitra, Slovakia, kristian.cechmanek@uniag.sk, https://orcid.org/0009-0008-6723-2750.

[2] Lucia Palšová - Institute of Law and Sustainable Development, Faculty of European Studies and Regional Development, Slovak University of Agriculture in Nitra, Slovakia, lucia.palsova@uniag.sk, https://orcid.org/0000-0002-2130-4324.

biofuels emerges as a pivotal tool. Incorporating biofuels into energy matrices contributes to diversifying energy sources and mitigating CO2 emissions. Leading the charge in biofuel adoption is the European Union (EU), which has established stringent standards for energy mixtures through legislative frameworks. This regulatory framework exerts a profound influence on markets, compelling adaptation to new demands dictated by legal stipulations and emerging challenges. In the biofuels sector, market dynamics are heavily influenced by the need to cultivate large areas of biofuel crops. This mainly occurs in developing regions with favorable geography and lower production expenses. However, these efforts often lead to significant changes in land use, posing challenges to the rights of indigenous communities and, at times, contributing to deforestation.

While unintended effects and negative externalities may seem natural in the implementation of global policies, a portion of the population, or even the scientific community, may explain them through conspiracy narratives and nefarious intentions as a deliberate agenda. Hence, in our contribution, we have chosen to focus on one of the most significant global policies and utilize it both to illustrate the causal chain between policy planning, implementation, and unintended negative consequences, as well as to confront conspiratorial interpretations of consequences. Through this approach, we aim to address cognitive biases and popular misconceptions regarding intellectual overestimation and epistemic categories as epistemic optimism, epistemic arrogance, or radical fallibility.

To achieve this objective, our paper is structured into distinct sections. The initial segments, comprising the theoretical framework, delineate the issue of adverse outcomes stemming from global policies through an examination of the causal sequence encompassing policy formulation, regulation, implementation, and resultant effects. Subsequently, the practical segment of the paper elucidates conspiratorial interpretations of green policies, counteracted by insights drawn from cognitive and behavioral sciences, alongside prominent epistemic theorems. These insights serve to debunk prevalent fallacies perpetuated within conspiratorial discourse.

2. Need for global policies

Climate change presents a significant threat to the planet, impacting various aspects of life.[3] The severity of climate change is evident in the increasing frequency and intensity of extreme weather events, such as hurricanes,[4] droughts,[5] and floods.[6]

[3] Yingying Sun, and Ziqiang Han, "Climate Change Risk Perception in Taiwan: Correlation With Individual and Societal Factors," *International Journal of Environmental Research and Public Health* 15, no. 1 (January 2018): 1, https://doi.org/10.3390/ijerph15010091.

[4] Michael Mann, and Kerry Emanuel, "Atlantic Hurricane Trends Linked to Climate Change," *Eos, Transactions American Geophysical Union* 87, no. 24, (June 2006): 233, https://doi.org/10.1029/2006eo240001.

[5] Yadu Pokhrel et al., "Global Terrestrial Water Storage and Drought Severity Under Climate Change," *Nature Climate Change* 11, no. 3 (March 2021): 226-233, https://doi.org/10.1038/s41558-020-00972-w.

[6] Günter Blöschl et al., "Changing Climate Both Increases and Decreases European River Floods," *Nature*: 373, no. 7772, (August 2019): 108, https://doi.org/10.1038/s41586-019-1495-6.

These occurrences not only influence ecosystems and biodiversity but also engender risks to other dimensions of human existence, such as food security and nutrition.[7] The assessment of the magnitude of climate change varies across individuals and societies, thereby influencing the uptake of climate-friendly behaviors. Nonetheless, cognitive biases may engender tendencies toward either underestimation or overestimation of the immediacy and severity of climate change, thereby exerting consequential effects on decision-making processes and subsequent actions.[8] The mitigation of climate change necessitates a multidisciplinary approach that engages policymakers, scientists, and the general populace. Given its intricacies within a complex system, addressing the issue warrants a multi-paradigmatic and comprehensive approach. This underscores the rationale behind the international community's approach to conceptualizing the issue as a matter concerning humanity, prompting initiatives to tackle it on a global scale.

2.1. Sustainable development goals

As a result, the Sustainable Development Goals (SDGs) were adopted by the UN General Assembly in 2015 to address global challenges in a holistic manner.[9] The objectives encompass a spectrum of economic, social, and environmental aspirations across 17 SDGs, accentuating their interconnectedness and indivisibility. They expand upon the targets delineated by the Millennium Development Goals (MDGs) and broaden their purview to encompass concerns encompassing poverty alleviation, healthcare, urban settings, and sustainable development, applicable to both developing and developed nations.[10] The transition from the MDGs to the SDGs signifies a shift towards a more comprehensive and integrated approach to global development.[11] The 2030 Agenda for Sustainable Development, which underpins the SDGs, reaffirms the significance of human rights and international law in guiding sustainable development efforts.[12] The principle of sustainable development, firmly embedded within international, European Union (EU), national, and local legal frameworks, constitutes a fundamental concept that underlies the SDGs.[13] International law plays a crucial role in

[7] Maria C. Tirado et al., "Feasibility and Effectiveness Assessment of Multi-sectoral Climate Change Adaptation for Food Security and Nutrition," *Current Climate Change Reports* 8, no. 2 (March 2022): 35, https://doi.org/10.1007/s40641-022-00181-x.
[8] Jiaying Zhao, and Yu Luo, "A Framework to Address Cognitive Biases of Climate Change," *Neuron* 109, no. 22 (November 2021): 3548, https://doi.org/10.1016/j.neuron.2021.08.029.
[9] Måns Nilsson, David Griggs, and Martin Visbeck, "Policy: Map the Interactions Between Sustainable Development Goals," *Nature* 534, no. 7607 (June 2016): 320, https://doi.org/10.1038/534320a.
[10] David Griggs et al., "Sustainable Development Goals for People and Planet," *Nature* 495, no. 7441 (March 2013): 306, https://doi.org/10.1038/495305a.
[11] Jeffrey D. Sachs, "From Millennium Development Goals to Sustainable Development Goals," *The Lancet* 379, no. 9832 (June 2012): 2206, https://doi.org/10.1016/s0140-6736(12)60685-0.
[12] Zlatan Meškić et al., "Digitalization and Innovation in Achieving Sdgs – Impacts on Legislation and Practice," *Iop Conference Series Earth and Environmental Science* 1023, no. 1 (2022): 1, https://doi.org/10.1088/1755-1315/1026/1/012061.
[13] Adam Kozień, "The Principle of Sustainable Development as the Basis for Weighing the Public Interest and Individual Interest in the Scope of the Cultural Heritage Protection Law in the European Union," *Sustainability* 13, no. 7 (April 2021): 1, https://doi.org/10.3390/su13073985.

shaping the discourse around sustainable development, emphasizing the need for cooperation, integration, and legal frameworks to achieve the SDGs.[14] SDGs function as a guiding framework for nations to harmonize their policies, legislation, and practices with the overarching objective of fostering sustainable development and tackling urgent global challenges.[15] By integrating legal principles, environmental considerations, and international cooperation, the SDGs provide a comprehensive framework for advancing sustainable development on a global scale. Through the integration of legal principles, environmental considerations, and international cooperation, the SDGs furnish a comprehensive framework aimed at promoting sustainable development at a global level.

2.2. Promoting environmental sustainability through green fuel technologies

Prominent international endeavors, aligned with the global implementation of the SDGs, notably encompass initiatives aimed at substituting or mitigating the utilization of fossil fuels. Biofuels emerge as a potential solution in this regard. The incorporation of biofuels is widely acknowledged as pivotal in realizing sustainability objectives spanning diverse sectors encompassing energy, environment, and economy. Biofuels, sourced from organic matter such as plants and waste, present a cleaner substitute for conventional fossil fuels. Through the integration of biofuels into the energy matrix, nations stand to diminish greenhouse gas emissions, counteract climate change, and enhance energy resilience. The importance of biofuels in sustainability is underscored by their capacity to diminish reliance on finite fossil fuel reservoirs, foster rural advancement through biomass cultivation, and foster novel economic prospects within the bioenergy domain.[16] Government support through subsidies and incentives further stimulates the biofuels industry, fostering innovation and investment in sustainable energy solutions.[17] Biofuels also aid in sustainable development by diversifying energy sources, lowering carbon emissions, and facilitating a shift towards a more environmentally friendly and resilient energy system.[18]

Numerous legal frameworks exist to facilitate the integration of biofuels into global energy consumption practices. Among these, the European Union (EU) emerges as a prominent leader, articulating ambitious development goals aimed at mitigating environmental impact. European law serves as a notable exemplar within the global

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[14] Akiho Shibata, and Romain Chuffart, "Sustainability as an Integrative Principle: The Role of International Law in Arctic Resource Development," *Polar Record* 56, no. 37 (October 2020): 1, https://doi.org/10.1017/s0032247420000340.

[15] Luis Ospina-Forero et al., "Estimating Networks of Sustainable Development Goals," *SSRN Electronic Journal* 59, no. 5 (July 2022): 1, https://doi.org/10.2139/ssrn.3385362.

[16] Shir Reen Chia et al., "Analysis of Economic and Environmental Aspects of Microalgae Biorefinery for Biofuels Production: A Review," *Biotechnology Journal* 13, no. 6 (June 2018), https://doi.org/10.1002/biot.201700618.

[17] Ibid.

[18] İlhan Öztürk, "Utilizing Biofuels for Sustainable Development in the Panel of 17 Developed and Developing Countries,"*GCB Bioenergy* 8, no. 4 (June 2015): 826, https://doi.org/10.1111/gcbb.12287.

renewable energy policy landscape, particularly in the context of biofuel utilization. Of particular significance is the Renewable Energy Directive (RED II) 2018/2001/EU, adopted by the European Parliament and Council on December 11, 2018. This directive mandates a binding Union target share of renewable energy usage, set at a minimum of 32%, with provisions for periodic reassessment and potential adjustment based on economic and environmental factors, including cost efficiencies in energy generation, decarbonization strategies, and energy consumption patterns.[19] In June 2023, the Commission implemented new regulations governing the proportion of biofuels and biogas present in blended fuels, which are produced through the co-processing of bio-based and fossil-based materials, and are eligible for inclusion in the Renewable Energy Directive's target for renewable energy usage in transportation. The Delegated Regulation (EU/2023/1640) was officially promulgated in the Official Journal of the European Union on 18 August 2023, following a process involving public feedback, multiple consultations, and scrutiny from both the European Parliament and the Council.[20] An essential consideration in the execution of public policies lies in the realm of public sentiment. The collective willingness of the populace to adopt biofuel blends significantly influences the utilization of biofuels, as it is the public who ultimately decides whether to embrace a potentially more costly yet environmentally friendly fuel option. Zailani et al. have underscored the potential stumbling block posed by public acceptance in the implementation of such policies. Moreover, this challenge appears to represent merely one facet of the broader array of issues encountered by green policies aimed at promoting biofuels.[21]

3. Opportunity that has to be grabbed

The promotion of biofuels contributes to the emergence of new biofuel markets through various mechanisms. These include norm promotion by the EU,[22] stimulation of research and development and applications of certain materials,[23] policy-driven biofuel markets influenced by interventions in the EU,[24] and active government promotion of domestic biofuel production in countries.[25] Additionally, the

[19] Mehmet Efe Biresselioğlu et al., "Legal Provisions and Market Conditions for Energy Communities in Austria, Germany, Greece, Italy, Spain, and Turkey: A Comparative Assessment," *Sustainability* 13, no. 20 (October 2021): 6, 11212. https://doi.org/10.3390/su132011212.

[20] "Biofuels," Topics, European Commission, accessed March 12, 2024, https://energy.ec.europa.eu/topics/renewable-energy/bioenergy/biofuels_en.

[21] Suhaiza Zailani et al., "Applying the Theory of Consumption Values to Explain Drivers' Willingness to Pay for Biofuels," *Sustainability* 11, no. 3, (January 2019): 3-10, https://doi.org/10.3390/su11030668.

[22] Ian Manners, "Normative Power Europe: A Contradiction in Terms?," *JCMS: Journal of Common Market Studies* 40, no. 2, (December 2002): 236, https://doi.org/10.1111/1468-5965.00353.

[23] Y-H Percival Zhang, "Reviving the Carbohydrate Economy via Multi-product Lignocellulose Biorefineries," *Journal of Industrial Microbiology & Biotechnology* 35, no. 5, (January 2008): 367, https://doi.org/10.1007/s10295-007-0293-6.

[24] Fabio Gaetano Santeramo, Leonardo Di Gioia, and Emilia Lamonaca, "Price Responsiveness of Supply and Acreage in the Eu Vegetable Oil Markets: Policy Implications," *Land Use Policy* 101, (February 2021), https://doi.org/10.1016/j.landusepol.2020.105102.

[25] Sujung Heo, and Joon Weon Choi, "Potential and Environmental Impacts of Liquid Biofuel from

implementation of biofuel subsidies can lead to increased consumption and production of biofuels.[26] In the EU transport biofuels market, biodiesel holds a significant share, with bioethanol accounting for the remainder.[27] Regarding the expansion of the biofuels market, its trajectory is shaped not solely by burgeoning markets, but also by governmental incentives and regulations that have molded the decision-making processes of foreign investors and transnational corporations operating within Latin America.[28] Undoubtedly, the global biofuels markets have witnessed substantial growth, with projections indicating even more pronounced upward trends in the foreseeable future. This trajectory is attributed to the escalating recognition of biofuels as a viable means to mitigate the adverse effects of fossil fuels on climate change, as previously highlighted. According to Nguyen & Nguyen, biodiesel production increased by approximately 1852.2% between 2003 (719.32 million liters) and 2017 (13,323 million liters). However, it is important to note that the trends in biofuels processing and production slightly declined by roughly 2.56% from 13,673 million liters in 2014 to 13,323 million liters in 2017. This data suggests an increase in the green energy market by 2030.[29] For instance, as per the analysis conducted by Precedence Research, the global biofuels market was assessed to have a valuation of USD 123.98 billion in 2023, with projections indicating an escalation to approximately USD 243.37 billion by the year 2033. This growth trajectory is anticipated to be characterized by a compound annual growth rate (CAGR) of 7.02% during the forecast period spanning from 2024 to 2033.[30] To address the burgeoning demand for biofuels, it is imperative to assess the material requirements necessary to facilitate the provision of commodities essential for biofuel production. The feedstock necessitates adequate growing space for cultivation. Thus, in reaction to the demand instigated by the European Union and American markets, numerous bioenergy crop-oriented projects, encompassing oil-producing varieties or crops of lignocellulosic nature, have been launched, often in developing areas where land resources are abundant and climatic conditions are deemed conducive to their cultivation.[31] Did developing nations and indigenous peoples possess

Agricultural Residues in Thailand," *Sustainability* 11, no. 5, (February 2019): 2, https://doi.org/10.3390/su11051502.

[26] Korrakot Phomsoda et al., "Economic Impacts of Thailand's Biofuel Subsidy Reallocation Using a Dynamic Computable General Equilibrium (cge) Model," *Energies* 14, no. 8, (April 2021): 1, https://doi.org/10.3390/en14082272.

[27] Mirela Ivančić Šantek et al., "Lipid Production by Yeast Trichosporon Oleaginosus on the Enzymatic Hydrolysate of Alkaline Pretreated Corn Cobs for Biodiesel Production," Energy & Fuels 32, no. 12, (October 2018):12501, https://doi.org/10.1021/acs.energyfuels.8b02231.

[28] Silvia Saravia-Matus et al., "Investment Strategies in the Latin American Agri-business Sub-sectors of Agricultural Commodities, Biofuels and Meat Chains," *Journal of Agribusiness in Developing and Emerging Economies* 8, no. 2, (June 2018): 333, https://doi.org/10.1108/jadee-09-2014-0036.

[29] Thu Thuy Nguyen, and Van Chien Nguyen, "Financial Development and Renewables in Southeast Asian Countries—The Role of Organic Waste Materials," *Sustainability* 13, no. 16, (August 2021): 2, https://doi.org/10.3390/su13168748.

[30] "Biofuels Market Size, Share & Growth Analysis Report, By Fuel Type (Biodiesel and Ethanol), By Feedstock (Coarse Grain, Sugar Crop, Vegetable Oil, Jatropha, Molasses) - Global Industry Analysis, Trends, Revenue, Segment Forecasts, Regional Outlook 2024 - 2033," Biofuels Market, Precedence Research, accessed March 18, 2024, https://www.precedenceresearch.com/biofuels-market.

[31] Lynn Wright, "Worldwide Commercial Development of Bioenergy with a Focus on Energy Crop-based

adequate readiness for substantial capital inflows and land transactions associated with the cultivation of aforementioned crops? Furthermore, what adverse repercussions did global green biofuel policies entail? The answer is closely connected to the phenomenon of land grabbing.

3.1. At the cost of underdeveloped

Land grabbing denotes the extensive procurement of land for commercial or industrial objectives, encompassing activities such as agriculture, biofuel production, mining, logging, and tourism. Typically orchestrated by foreign investors, this phenomenon is characterized by limited interaction with local communities, resulting in inadequate compensation and a disregard for environmental sustainability, as well as equitable access to and management of natural resources.[32] The term "land grabbing" appears to serve merely as an universal descriptor for the widespread phenomenon of (trans)national commercial land transactions, primarily focused on the cultivation and exportation of food, animal feed, biofuels, timber, and minerals as Borras and Franco suggest.[33] Nevertheless, it represents a significant issue occurring not only in developing nations but also across the globe.[34] Land that was previously utilized is often reevaluated as either overused or underutilized, prompting its removal from the associated rural community and subsequent transfer to a new proprietor. This transition may result in the loss of access to ancestral communal land, which historically served functions beyond mere food production. This phenomenon of ancestral communal land becoming inaccessible due to land reappropriation is a recurring theme. Some scholars have characterized this disregard for pre-existing de facto land rights as a form of "neocolonialism," highlighting its political implications. Moreover, scholars have investigated this issue as a human rights concern, as the absence of legal protections for de facto land rights can potentially lead to land dispossession.[35] Furthermore, rural cultures typically encompass heterogeneous populations characterized by variations in social class, ethnicity, gender, and age. Such dynamics give rise to diverse social divisions within these communities. Consequently, when land agreements are implemented, they exert differential impacts on various social groups within the affected communities. These effects are non-uniform and exhibit considerable

Projects," *Biomass and Bioenergy* 30, no. 8-9, (August–September 2006): 707, https://doi.org/10.1016/j.biombioe.2005.08.008.

[32] "Indigenous Peoples' Rights to Land: The Threat of Land Grabbing," IWGIA - International Work Group for Indigenous Affairs, accessed March 19, 2024, https://www.iwgia.org/images/publications/0693_fact_sheet_land_grabbing-pr.pdf.

[33] Saturnino Borras, and Jennifer C. Franco, "Global Land Grabbing and Trajectories of Agrarian Change: A Preliminary Analysis," *Agrarian Change* 12, no. 1, (December 2011): 34, https://doi.org/10.1111/j.1471-0366.2011.00339.x.

[34] Dacinia Crina Petrescu, Tibor Hartel, and Ruxandra Malina Petrescu-Mag, "Global Land Grab: Toward a Country Typology for Future Land Negotiations," *Land Use Policy* 99, (August 2020), https://doi.org/10.1016/j.landusepol.2020.104960.

[35] Ramona Bunkus, and Insa Theesfeld, "Land Grabbing in Europe? Socio-Cultural Externalities of Large-Scale Land Acquisitions in East Germany, " *Land* 7, no. 3, (August 2018): 1, https://doi.org/10.3390/land7030098.

differentiation, leading to differential outcomes wherein certain groups may derive benefits while others may experience losses.[36] Land grabbing for biofuels has its specifics. In developing countries, it is a multifaceted issue that has attracted considerable attention in academic research. Various studies have investigated the implications of land grabbing for biofuel production.[37,38,39] They have raised concerns regarding labor relations, water grabbing, and indirect land-use changes leading to e.g. deforestation in Latin America that can counteract the carbon savings from biofuels. Various research has examined specific cases of land grabbing for biofuels in India, Romania, and Ghana, respectively, shedding light on the social, economic, and environmental impacts of these practices.[40,41,42] Furthermore there has been conducted a preliminary analysis of global land grabbing trajectories, emphasizing the importance of integrating land-based climate change mitigation efforts within a social justice framework.[43] These studies collectively underscore the complexities and challenges associated with land grabbing for biofuels in developing countries, emphasizing the necessity of sustainable and equitable land use practices in the biofuels industry.

3.2. Is sustainability sustainable?

Aside from the aforementioned, biofuels production has also been associated with deforestation in various regions, raising concerns about the environmental impacts of biofuel feedstock cultivation. Several studies have explored the link between biofuels expansion and deforestation, particularly in regions like the Amazon rainforest and

[36] Saturnino M. Borras Jr., and Jennifer C. Franco, "Global Land Grabbing and Political Reactions 'From Below'," *Third World Quarterly*, 34, no. 9, (November 2013): 1724, https://doi.org/10.1080/01436597.2013.843845.
[37] James Fairhead, Melissa Leach, and Ian Scoones, "Green Grabbing: A New Appropriation of Nature?," *Journal of Peasant Studies* 39, no. 2, (April 2012): 253, https://doi.org/10.1080/03066150.2012.671770.
[38] Maria Rulli, Cristina Antonio Saviori, and Paolo D'Odorico, "Global Land and Water Grabbing," *Proceedings of the National Academy of Sciences* 110, no. 3, (January 2013): 892, https://doi.org/10.1073/pnas.1213163110.
[39] David M. Lapola et al. "Indirect Land-use Changes Can Overcome Carbon Savings From Biofuels in Brazil," *Proceedings of the National Academy of Sciences* 107, no. 8, (February 2010): 3388, https://doi.org/10.1073/pnas.0907318107.
[40] Anika Trebbin, "Land Grabbing and Jatropha in India: An Analysis of 'Hyped' Discourse on the Subject," *Land* 10, no. 10, (October 2021): 2, https://doi.org/10.3390/land10101063.
[41] Vasile Burja, Attila Tamas-Szora, and Iulian Bogdan Dobra, "Land Concentration, Land Grabbing and Sustainable Development of Agriculture in Romania," *Sustainability* 12, no. 5, (March 2020): 1, https://doi.org/10.3390/su12052137.
[42] Gideon Kofi Agbley, "Land Grabbing and the Gendered Livelihood Experience of Smallholder Farmers in Northern Ghana: Through a Human Development and Capability Lens," *Ghana Journal of Development Studies* 16, no. 1, (May 2019):156, https://doi.org/10.4314/gjds.v16i1.8.
[43] Borras and Franco, "Global Land Grabbing and Trajectories," 35.

Brazil.[44,45,46] The expansion of biofuels production, especially from crops like oil palm and sugarcane, has been identified as a driver of deforestation in tropical countries, leading to serious carbon debt and biodiversity loss.[47,48] The indirect land-use changes associated with biofuels production can also result in significant deforestation, with long-term implications for ecosystem services and carbon storage.[49, 50] The potential carbon advantages associated with biofuels may be offset by indirect land-use changes, notably the expansion of rangelands into Amazonian forests. The collective impact of soybean biodiesel and sugarcane ethanol on the projected area of 121,970 km2 of indirect deforestation in terms of the mitigation of the carbon debt resulting from the substitution of these biofuels for fossil fuels would necessitate approximately 250 years to achieve.[51]

4. That which is seen, and that which is not seen

Thus far, our article has been structured to incorporate critical analysis and confrontation, aiming to convey the notion of deliberate enactment of green policies resulting in human rights infringements, deforestation, neo-colonialist, or unsustainable practices. While the factual basis for these assertions is not in question, it is the interpretation and articulation of these facts that merit consideration.

4.1. The league of privileged

In recent times, there has been a notable increase in conspiracy inclinations, that have not missed even scientific circles. This trend is not entirely unexpected, considering the long-standing issue of political bias within social science disciplines

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[44] Yadvinder Malhi et al., "Exploring the Likelihood and Mechanism of a Climate-change-induced Dieback of the Amazon Rainforest," *Proceedings of the National Academy of Sciences*, 106, no. 49, (December 2009): 20610, https://doi.org/10.1073/pnas.0804619106.

[45] Derya Keles et al., "Does the Expansion of Biofuels Encroach on the Forest?," *Journal of Forest Economics 33*, (December 2018):75, https://doi.org/10.1016/j.jfe.2018.11.001.

[46]Selma Lossau et al., "Brazil's Current and Future Land Balances: Is There Residual Land For Bioenergy Production?," *Biomass and Bioenergy* 81, (August 2015): 452-453, https://doi.org/10.1016/j.biombioe.2015.07.024.

[47] Marco Follador et al., "Brazil's Sugarcane Embitters the Eu-mercosur Trade Talks," *Scientific Reports* 11, no. 1, (July 2021): 1-2, https://doi.org/10.1038/s41598-021-93349-8.

[48]Alexandros Gasparatos, Per Stromberg, and Kazuhiko Takeuchi, "Sustainability Impacts of First-generation Biofuels," *Animal Frontiers* 3, no. 2, (April 2013): 20, https://doi.org/10.2527/af.2013-0011.

[49] Jonatan Pinkse and René Bohnsack, "Sustainable Product Innovation and Changing Consumer Behavior: Sustainability Affordances as Triggers of Adoption and Usage," *Business Strategy and the Environment* 30, no. 7, (April 2021): 3123, https://doi.org/10.1002/bse.2793.

[50] Douglas C. Morton et al., "Cropland Expansion Changes Deforestation Dynamics in the Southern Brazilian Amazon," *Proceedings of the National Academy of Sciences*, 103, no. 39, (September 2006): 14637, https://doi.org/10.1073/pnas.0606377103.

[51] David M. Lapola et al. "Indirect Land-use Changes Can Overcome Carbon Savings From Biofuels in Brazil," *Proceedings of the National Academy of Sciences* 107, no. 8, (February 2010): 3388, https://doi.org/10.1073/pnas.0907318107.

encompassing both right-wing and left-wing perspectives.[52] Additionally, there exists a tendency to attribute an inherent intentionality to the actions of individuals, organizations and even nonacting objects,[53] often linked to the heuristic of intuitively associating certain actions with malicious intent (personal / dispositional factors) rather than contextual factors (environmental influences).[54] There are several examples of the tendency – from the notion of Jewish supremacy[55] on one side or purposely lethal Covid 19 vaccination on the other.[56] There are although examples that are very fitting and appropriate to our topic covering e.g. epistemic arrogance that allegedly occurs in contexts with social inequality or unjust distributions of social power, which may influence decision-making in green policies,[57] or so called dogmatic close-mindedness, which can hinder open discourse and critical evaluation in policy-making processes related to environmental issues.[58] Green policies have the potential to serve as a pretext for more insidious agendas as primitive accumulation of land, as suggested by Özsu in an implicit manner.[59] If we discount conspiracy theories and malevolent intent as manifestations of cognitive biases, we would likely to conclude that the negative consequences associated with global green policies aimed at achieving carbon neutrality goals have not been intentionally orchestrated, although many of these consequences could have been mitigated. To gain a more comprehensive understanding of practical policy formulation, it is prudent to examine the contributions of scholars who have devoted their scientific careers to assessing the cognitive processes, behaviors, and motivations of individuals and organizations in planning and decision-making.

4.2. Blindspot of the prophets

Frederic Bastiat's work "That Which is Seen, and That Which is Not Seen" is a seminal piece in the field of economics that underscores the importance of understanding the unseen consequences of economic actions and policies. The central

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[52] Orly Eitan et al., „Is Research in Social Psychology Politically Biased? Systematic Empirical Tests and a Forecasting Survey to Address the Controversy," *Journal of Experimental Social Psychology* 79, (November 2018): 188-190, https://doi.org/10.1016/j.jesp.2018.06.004.

[53] Jean Piaget, *The Child's Conception of the World* (London: Routledge and Kegan Paul Ltd, 1929), 256-257.

[54] Lee Ross, "The Intuitive Psychologist And His Shortcomings: Distortions in the Attribution Process," *Advances in Experimental Social Psychology* 10, (1977): 184, https://doi.org/10.1016/S0065-2601(08)60357-3.

[55] Carl F. Graumann, "Conspiracy: history and social psychology—a synopsis," in *Changing Conceptions of Conspiracy*, eds. Carl F. Graumann and Serge Moscovic (New York: Springer, 1987), 245-251.

[56] Malik Sallam et al., "High Rates of Covid-19 Vaccine Hesitancy and its Association with Conspiracy Beliefs: A Study in Jordan and Kuwait Among Other Arab Countries," *Vaccines* 9, no. 1, (January 2021): 12, https://doi.org/10.3390/vaccines9010042.

[57] Nabina Liebow and Rachel Levit Ades, "'I Know What It's Like': Epistemic Arrogance, Disability, and Race," *Journal of the American Philosophical Association* 8, no. 3, (March 2022), https://doi.org/10.1017/apa.2021.27.

[58] Michael P. Lynch, "Arrogance, Truth and Public Discourse," *Episteme* 15, no. 3, (July 2018), https://doi.org/10.1017/epi.2018.23.

[59] Umut Özsu, "Grabbing land legally: A Marxist analysis," *Leiden Journal of International Law*, 32, no. 2, (February 2019): 233, https://doi.org/10.1017/S0922156519000025.

point of Bastiat's work is to highlight the notion of opportunity cost and the unintended consequences of economic decisions. He argues that while the immediate, visible effects of certain actions may seem beneficial, there are often unseen, indirect consequences that can outweigh the apparent benefits, even with no inherent bad intent.[60] Taleb even speaks about mistaking map for territory.[61] Bastiat´s notion is closely related to the phenomenon that is closely studied mainly by psychologists, economists, or philosophers and that is related to epistemic assumptions of human knowledge. It is evident that humans exhibit inherent limitations in organizing and predicting future events and their consequences. Psychological research conducted by Kahneman and Tversky has illuminated humans' propensity towards overly optimistic planning and forecasting. Their findings suggest that planning endeavors often align closely with idealized best-case scenarios, a phenomenon delineated in the influential work "Heuristics and Biases: The Psychology of Intuitive Judgment." Within this context, the concept of the planning fallacy is expounded upon, elucidating how individuals consistently overestimate their capabilities, a trait deemed resistant to correction.[62] Bastiat employs irony as a rhetorical device to caution against interventions into complex systems without due consideration for the secondary, tertiary, and subsequent consequences that invariably ensue, often resulting in unforeseen and predominantly adverse outcomes.[63] Additionally, an epistemic argument pertaining to the overestimation of human knowledge and intellectual capacities constitutes an integral aspect of Popper's epistemological framework. According to Popper, individuals, buoyed by the confidence instilled by the Enlightenment era, have harbored the misconception that attaining genuine knowledge or pure ideas is easily achievable merely through the pursuit of knowledge, symbolized by the metaphorical "apple of knowledge." Specifically, Popper alludes to the notion of "looking into the book of nature", also referred to as *veracitas naturae*, with a lucid mind. In contemporary discourse, the concept of epistemic arrogance (not in the context as was proposed by Liebow and Ades and Lynch) has emerged to encapsulate the behavioral inclination or disposition characterized by what Popper delineated as epistemic optimism. Taleb highlights the paradoxical nature of knowledge expansion, wherein increased confidence in one's understanding simultaneously engenders heightened levels of uncertainty, ignorance, and overconfidence.[64] Unlike Popper, Bastiat and Taleb were practician that tested hypothesis of epistemic ignorance in the practice of pure laissez faire market. However, it was Popper who came with the notion of radical fallibility that was introduced through a philosophical concept of radical

[60] Frédéric Bastiat, *Co je vidět a co není vidět a jiné práce* (Praha: Liberální institut, 1998), 99.
[61] Nassim Nicholas Taleb, Black Swan: The Impact of the Highly Improbable (New York: Random house, 2007), xxv.
[62] Roger Buehler, Dale Griffin, and Michael Ross, “Inside the Planning Fallacy: The Causes and Consequences of Optimistic Time Predictions,” in *Heuristics and Biases: The Psychology of Intuitive Judgment*, eds. Thomas Gilovich, Dale Griffin and Daniel Kahneman (Cambridge University Press, 2002), 250, https://doi.org/10.1017/CBO9780511808098.016.
[63] Frédéric Bastiat, *Co je vidět a co není vidět a jiné práce* (Praha: Liberální institut, 1998), 16.
[64] Nassim Nicholas Taleb, *Black Swan: The Impact of the Highly Improbable* (New York: Random house, 2007), 138-139.

fallibilism that emphasizes the idea that all knowledge is inherently uncertain and subject to revision.[65] In the context of transformative praxis, radical fallibilism plays a crucial role in acknowledging the imperfections and revisability of theoretical conceptions, categories, and classifications. Just like the theorems and proofs of mathematics, which are subject to refinement and correction, radical fallibilism suggests that theoretical frameworks in praxis are also transient and imperfect.[66] The concept of radical fallibility elaborated in more depth by George Soros, was actively applied within his investment practice as a fundamental principle.[67] Applying rigorous skepticism to each incremental step and meticulously scrutinizing both reasoning and anticipatory processes, as articulated by George Soros, served to minimize errors in decision-making and provided him with a competitive advantage not only over fellow investors but often over global institutions as governments and central banks. The conscious acknowledgment and retention of radical fallibility represents more than mere motivational rhetoric; rather, it constitutes a practice rooted in critical rationalism and epistemology dating back centuries, to the era of Socrates.[68] The rationale behind this practice has been elucidated by behavioral and cognitive sciences, which have provided empirical evidence indicating that individuals tend to exhibit a propensity to systematically overestimate their own capacities and intellectual faculties in the realms of planning and decision-making.[69] Similar occurrences can be observed within the realm of planning and executing green policies which unfortunately bring also negative consequences that are through optics of cognitive biases evaluated separately and in conspirative manner.

Conspiratorial conjectures can be construed as attributions of requisite intentionality notions that inherently seek to identify a specific agent or architect behind every outcome, including the adverse ramifications of green policies. Such a perspective was previously refuted by Hayek, who characterized this approach as constructivist rationalism, predicated on the erroneous premise that all societal institutions are products of deliberate human design.[70] The fundamental flaw inherent in this form of rationalism lies in its detachment from reality. Not only does this conception fail to accurately depict reality, but it also supplants it entirely with the illusion of exclusive conscious creation. Paradoxically, intentional rationalism proves to be irrational, as it succumbs to the fallacy of subjectivism. The deliberate exclusion of variables incongruent with the tenets of constructivism engenders a conspicuously artificial framework of thought, which ultimately diverges irreconcilably from

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[65] Fred Eidlin, "Karl Popper, 1902–1994: Radical Fallibilism, Political Theory, and Democracy," *Critical Review* 10, no. 1, (1996): 135-136, https://doi.org/10.1080/08913819608443413.

[66] Bal Chandra Luitel and Niroj Dahal, "Conceptualising Transformative Praxis," *Journal of Transformative Praxis* 1, no. 1, (June 2020): 3, https://doi.org/10.3126/jrtp.v1i1.31756.

[67] George Soros, *Open Society: Reforming Global Capitalism* (New York: PublicAffairs, 2000), 23-33.

[68] Donald R. Morrison, *The Cambridge Companion to Socrates*, (New York: Cambridge University Press, 2011), 207.

[69] Roger Buehler, Dale Griffin, and Michael Ross, “Inside the Planning Fallacy: The Causes and Consequences of Optimistic Time Predictions,” 250.

[70] Friedrich A. Hayek, *Law, Legislation and Liberty*: A New Statement of the Liberal Principles of Justice and Political Economy (New York: Routledge, 2013), 15.

engagement with reality.

While it is acknowledged that conspiratorial thinking is inherently flawed and tends to distort reality, it is imperative to underscore that this acknowledgment does not serve as an exoneration for the adverse outcomes of public policies. Particularly concerning are instances where these policies jeopardize fundamental rights or compromise environmental sustainability. In contrast, the impact of biofuels expansion on human rights, deforestation and land use change is a critical issue that requires comprehensive assessment and mitigation strategies to promote sustainable bioenergy production. However, it is essential to guard against the misuse of such critiques as ideological tools by individuals or groups with conspiratorial inclinations, as this could further exacerbate the challenges associated with the already intricate implementation of green policies.

5. Conclusion

In summary, the adverse effects observed in the implementation of global biofuel green policies appear to stem from inherent challenges in planning and execution, influenced by the cognitive and epistemic limitations inherent in human cognition. However, these effects are often misrepresented through conspiratorial narratives, attributing them to deliberate malevolence rather than inadvertent outcomes. Such interpretations may be driven by innate cognitive tendencies, exacerbating the difficulties faced in policy implementation. Consequently, these inclinations pose significant risks to the effective execution of mitigation measures. Nonetheless, it is imperative to adopt continuous monitoring and mitigation efforts to curtail negative repercussions, including human rights violations, changes in land use, and deforestation in developing regions. Addressing this multifaceted issue necessitates a comprehensive evaluation and the formulation of strategies aimed at fostering sustainable bioenergy production.

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