
RESEARCH ARTICLE

Criminal Consequences of Unsustainable Food Systems: Ethical Issues and Future Prospects

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ABSTRACT

A major worldwide issue, criminal aspects of unsustainable agricultural systems pose serious concerns to environmental stability, biodiversity, and food security. The necessity to address environmental harm from a legal and regulatory perspective is highlighted in this survey of the literature from a variety of disciplines that looks at the connections between criminal activity and unsustainable practices in the food business. The analysis delves into foundational works that stress the need for more study on the criminal elements of unsustainable food production, distribution, and consumption. By highlighting the importance of ecological justice and sustainability in regulatory responses, green cultural criminology provides a framework for understanding how environmental harms are criminalized or disregarded within legal systems. According to the study, food fraud is a major problem in the food industry since it uses dangerous or low-quality substances to trick customers. The accidental encouragement of biodiversity loss and ecological disturbance is further highlighted by the connection of illegal wildlife trading with the food business. Age-related environmental crimes such as pesticide abuse, water pollution, and land degradation are major contributors to global environmental deterioration. Context-specific research is essential to address regional issues, but few studies have examined the criminal consequences of unsustainable agriculture systems in Jordan. Increase food supply chain transparency, promote multidisciplinary collaboration, and strengthen regulatory frameworks and enforcement. Ecologically conscientious and secure food systems include fighting food sector corruption, promoting sustainable farming, and raising awareness. To promote environmental stewardship and resilience, it is crucial to identify and address the criminal components of unsustainable food systems. Promoting sustainability, protecting the environment, and guaranteeing global food security all need cooperation between academics, politicians, and stakeholders. Collective action is needed to pave the road toward greener and more secure communities, and establishing sustainable food systems is a crucial first step.

KEYWORDS

Criminal Aspects, Criminal Wildlife Trafficking, Agricultural Crimes, Regulatory Remedies, Ecological Justice.

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1. Introduction

Researchers, politicians, and practitioners have all begun to pay close attention to the worldwide problem of unsustainable food systems and their far-reaching repercussions on environmental degradation, food security, and sustainability. It is critical to address the intricate web of connections between criminal activity and unsustainable food business practices as the globe grapples with the growing effects of climate change. In order to construct a more ecologically conscious and resilient future, this qualitative study will investigate the criminal elements of unsustainable food systems.

Deforestation, soil degradation, greenhouse gas emissions, and water pollution are only some of the negative environmental impacts of unsustainable food systems that have been established by several studies (IPBES, 2019; Tilman & Clark, 2014). In addition to hindering progress toward sustainability goals, harmful behaviors like these also contribute considerably to global change (FAO, 2019; IPCC, 2018). However, there is a lack of discussion in the literature about the illegality of these behaviors and the consequences that follow.

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This study employs a multidisciplinary strategy, drawing connections between studies of the environment and those of the criminal justice system. Using qualitative research methodologies, we hope to learn about the viewpoints and experiences of farmers, manufacturers, retailers, government officials, and others who play important roles in the food system. We hope to learn more about their thoughts and opinions on the illegal acts that have contributed to the maintenance of unsustainable practices in the food business by conducting in-depth interviews and holding focus groups.

This study will be guided by a theoretical framework that integrates environmental law, criminological, and sustainable development ideas. Criminal activity, environmental degradation, and the broader social, economic, and ecological components of food systems may all be studied in greater depth with this combined set of data (Brisman, South, & Walters, 2014; Pink, 2017; White, 2008).

By illuminating the links between sustainability and crime in the food sector, the results of this study are expected to make major contributions to the disciplines of environmental research and criminal law. This study also aims to assist policymakers, law enforcement agencies, and other stakeholders in creating legal and policy measures that promote sustainable practices, decrease criminal activity and enhance food security and resilience.

2. Literature Review

In years there has been a rise, in the discussion about how unsustainable agricultural practices harm the environment. This section provides an overview of studies that link damage to criminal activities within the food industry. By examining existing literature, we can gain insights into the aspects of food systems and identify gaps in our understanding.

Numerous research studies have highlighted the impacts associated with poorly managed food systems, including production, distribution and consumption. It has been pointed out by Tilman and Clark (2014) that industrial agriculture plays a role in contributing to greenhouse gas emissions and resource depletion.

Agricultural expansion, deforestation, and habitat degradation are all highlighted as threats to biodiversity and ecosystems in the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES, 2019) study. The global climate, environmental stability, and Earth's general resilience are all greatly affected by these environmental effects.

Despite the abundant literature on environmental effects, the criminal implications of unsustainable food systems have received very little attention. Brisman, South, and Walters (2014) develop the idea of "green cultural criminology" to investigate how environmental problems are criminalized or neglected within legal systems, particularly those induced by industrial agriculture. Their findings shed insight into the significance of criminal conduct and regulatory responses to issues of ecological justice and sustainability.

Food fraud, or the intentional misrepresentation of food items, is a serious threat to the reliability and longevity of our food systems, and it is also a form of environmental crime. In Pink (2017), the author investigates how food fraud and other forms of environmental crime affect the food supply chain. When low-quality or dangerous substances are utilized, intentional adulteration of food items not only deceives customers but also can contribute to environmental impact.

Regulatory and Legal Obstacles White (2008) discusses the shortcomings of conventional criminology in addressing environmental harm and argues for a more all-encompassing approach that takes ecological justice into account. The persistence of unsustainable behaviors that lead to environmental degradation may be enabled by regulatory loopholes and insufficient enforcement measures.

Criminal Exploitation of Weaknesses in the Food System: To appreciate how susceptible food systems are to criminal activity, it is necessary to analyze their resilience. The resilience perspective examines the reactions of food systems to stresses. While resilient food systems are important, there is a lack of study into the risks posed by criminals. Such inquiries can reveal how bad actors take advantage of loopholes in food distribution networks to cause ecological damage.

Overfishing and IUU fishing both have negative effects on marine ecosystems and contribute to the depletion of marine resources. Hatanaka and Asche (2017) investigate the links between overfishing, illegal, unreported, and unregulated (IUU) fishing, and the function of criminal networks in promoting these activities. Such illegal actions have a negative effect on marine biodiversity, food security, and the promotion of sustainable fishing methods.

Criminal Misuse of Pesticides, Water Pollution, and Degradation of Farm Land Are All Studied by Lynch and Stretesky (2018) in their Study of Environmental Crime in the Agricultural Sector. The study draws attention to the social and environmental costs of farming methods that break the rules.

Food waste and food fraud are related problems with legal and ethical implications. Investigating food fraud as it relates to wasted food, Spink and Moyer (2011) found that fraudulent behaviors can amplify the environmental impact of food waste.

Abuse of Human Rights and the Environment in the Food sector The food sector has a bad reputation for its role in exploiting workers and polluting the environment. Some behaviors within the food business may constitute environmental and human rights violations, as shown in an analysis by Clapp and Fuchs (2009) of the connections between the global food system and human rights.

The Dangers of Agrochemicals to the Environment The widespread application of agrochemicals like pesticides and fertilizers has prompted worries about their potential for harming ecosystems. The possible criminality linked with the abuse and environmental harm caused by agrochemicals is discussed by Jasanoff (2014), who also analyzes the regulatory hurdles and gaps in addressing this issue.

Human Consumption and the Problem of Wildlife Trafficking The unlawful exchange and exploitation of wildlife for commercial gain is known as wildlife trafficking. This illegal commerce can be made easier by the food sector, especially exotic food markets. Cooper et al. (2020) investigate the impact of wildlife trafficking on biodiversity conservation, focusing on the role of the food industry.

As a result of weakening equitable distribution and misallocating resources, corruption in the food system can worsen food poverty. Hezri's (2011) research into corruption's role in maintaining unsustainable practices in the agricultural industry and its relation to poor governance and food insecurity is instructive.

Some studies may touch on relevant environmental and sustainability concerns in Jordan's food business, but none may specifically address the criminal implications of unsustainable food systems there. Consider the following, which may have a bearing on the long-term viability of Jordan's food supply:

Challenges and solutions to food insecurity in Jordan have been the subject of several academic research. Sustainability difficulties in the food system (e.g., Khlaifat et al., 2019; Abu Hammad & Mahadin, 2020) are typically at the center of these investigations into food access, availability, and cost.

Water shortage, soil deterioration, and pesticide usage are only a few of the potential environmental effects of Jordan's agricultural methods that might be explored in future studies. The sustainability of the food system may be affected by several variables (see, for example, Al-Zu'bi 2019; Haddad & Obeidat 2019).

Organic farming, water-efficient techniques, and renewable energy utilization are all examples of sustainable agricultural approaches that might be the subject of research in Jordan (see, for example, Al-Qudah & Al-Nimri, 2019; Al-Shareef & Al-Karablieh, 2020).

The issue of food waste and loss in Jordan's food supply chain, which has consequences for sustainability and resource conservation (e.g., Al-Jeelani, 2018; Al-Hassan et al., 2020), might be the subject of future research.

3. Methodology

The study takes a broad perspective. It combines legal analysis with environmental data, such as environmental reports and research publications. The legal analysis makes use of legal documents, legislation, and relevant legal literature. Content analysis and theme analysis are applied to the acquired data in order to probe the legal repercussions of unsustainable food systems. The study's methodology is mostly a judicial analysis that situates environmental considerations inside the law. Since there are no human subjects in this investigation, ethical questions are moot. This technique tries to bridge the gap between environmental research and criminal law to give insights and potential legal remedies for attaining a more environmentally conscious and sustainable food system.

3.1 Literature Review Analysis

According to the material analyzed, there is an immediate need to probe the criminal aspects of unsustainable food systems. While the negative effects of unsustainable behaviors on the environment have been studied extensively, the criminal implications have gotten less attention. This qualitative study intends to fill this knowledge gap by using a cross-disciplinary strategy that draws from the fields of environmental science and criminal justice. This research aims to help policymakers and stakeholders in the food system build efficient legal and policy solutions by analyzing the opinions and experiences of important stakeholders within the

food system. Such initiatives are crucial in the pursuit of a greener and more sustainable future as they encourage sustainable habits, reduce criminal activity, and build a more secure and resilient food supply.

The criminal implications of unsustainable food systems are investigated, offering a thorough survey of the available literature on the subject. It starts with a look at how industrial agriculture and other unsustainable food production methods affect the environment negatively by increasing carbon emissions, destroying forests, and displacing wildlife. This section explains why it's crucial to look into the criminal underpinnings of our food systems and what effect it might have on global warming, climatic stability, and long-term sustainability.

Next, "green cultural criminology," which focuses on the criminalization or supervision of environmental problems within legal systems, is explored in depth. This theoretical framework serves as a prism through which to examine the interrelationships between criminal activity and regulatory responses towards ecological justice and sustainability.

After that, we see how fraudulent methods in the food supply chain can cause environmental damage and mislead consumers in our literature analysis by examining the connections between food fraud and environmental crime. The debate [of-on](#) food fraud provides more evidence that illegal actions inside the food business need to be taken into account in order to comprehend sustainability concerns.

The assessment also includes research on environmental crimes committed in the agricultural sector, such as the illegal use of pesticides, the contamination of water supplies, and the destruction of farmland. As this section explains, understanding the larger criminal implications of unsustainable food systems requires an examination of criminal activity inside the agricultural setting.

This literature review also covers research on the link between wildlife trafficking and the food business, showing how the latter might unwittingly contribute to the illegal wildlife trade that threatens efforts to preserve biodiversity. The link between poaching and the food supply demonstrates how multiple forms of criminality are intertwined within the global food chain.

Corruption, which may lead to unsustainable practices in the food industry and ultimately have negative effects on food security and fair resource distribution, is also discussed in this paper.

The lack of dedicated research on the criminal implications of Jordan's unsustainable food system is highlighted as the assessment draws to a close. However, it does highlight the fact that studies on relevant themes, such as food security, environmental implications of agriculture, sustainable agricultural efforts, food waste, and food loss, have been conducted in Jordan. Challenges to long-term sustainability in Jordan's food business can be better understood in light of these discussions.

The notion of "green cultural criminology" highlights the criminalization or overlooking of environmental problems within legal systems, and this article discusses the relationship between the two. Criminal activity contributing to environmental degradation, such as that which occurs inside the food sector and promotes unsustainable practices, is emphasized here. By making this sort of conduct illegal, we can create greater legal deterrents and hold those responsible for environmental harm to account. It also highlights the importance of regulatory solutions that put ecological justice and sustainability first in the context of food systems.

Intentional deceit and misrepresentation of food items constitute food fraud throughout the food supply chain. When subpar or dangerous materials are utilized, the environment might suffer. Consumers are duped by food fraud, and the integrity and long-term viability of the food system as a whole are compromised. Public health, the ecological balance, and the conservation of resources are all at risk when criminal behavior occurs. Strong regulatory measures and law enforcement are needed to combat food theft and mitigate the damage it does to ecosystems.

The interaction of wildlife trafficking and the food sector brings to light the unwitting encouragement of illicit operations by food systems. Illegal wildlife trading may contribute to the loss of biodiversity and ecological disturbance as a result of the desire for unusual food products. The damage this illegal activity does to the ecosystem can be mitigated by increasing efforts to stop wildlife trafficking in the food business.

Agriculture-related environmental crimes include the illegal use of pesticides, the discharge of polluted water, and the destruction of agricultural land. The ecology, soil, and water quality are all harmed by these actions. Promoting sustainable agricultural practices and protecting environmental integrity requires an awareness of and response to the criminal aspects of environmental degradation in agriculture.

Corrupt practices in the food industry can worsen food poverty by undermining efforts to distribute resources fairly and efficiently. When natural resources are misappropriated or allocated for illegitimate purposes, the ecosystem may suffer as a result of corrupt actions. To ensure that resources are handled and allocated effectively to advance food security, and hence the food system's long-term viability, fighting corruption inside the food system is crucial.

There is a lack of studies that explicitly examine the criminal features of unsustainable food systems in Jordan, despite the fact that the literature analysis identifies pertinent studies on food security, agricultural impacts, sustainable efforts, and food waste in the country. The environmental damage, food fraud, and corruption that may lead to unsustainable practices can only be identified and addressed if we have a firm grasp on the criminal underbelly of Jordan's food business.

Finally, the criminal underbelly of unsustainable food systems includes a wide variety of actions that diminish biodiversity, hurt the environment, and cause hunger. Policymakers and stakeholders may strive toward constructing a more sustainable food system by criminalizing activities that lead to such damage, implementing effective regulatory responses, and tackling corruption. The illegal actions within the food sector and the promotion of ecologically responsible and sustainable practices may be combated with the use of research conducted in Jordan and other places.

4. Results and Discussion

The criminal implications of unsustainable food systems were made clear in the literature study, as was the critical necessity to do something about them. Criminal activity in the food business is discussed, along with its repercussions and possible solutions to reduce environmental damage and increase sustainability.

1. Harm to the environment and criminal responsibility: Unsustainable food systems exacerbate global change, endanger biodiversity, and degrade ecosystem health. While studies have thoroughly documented the environmental repercussions, the criminal components of these operations have gotten very little attention. To ensure that both individuals and businesses in the food sector are held accountable for their roles in perpetuating sustainability difficulties, it is essential that behaviors that contribute to environmental harm be criminalized. Regulatory solutions can promote ecological justice and highlight the relevance of sustainable activities by incorporating green cultural criminology into legal frameworks.

2. The criminal aspects of unsustainable food systems can only be tackled with strict regulatory measures and strict enforcement. Food fraud, illicit wildlife trafficking, and environmental crimes in the agriculture sector need concerted efforts from governments and international organizations to create and enforce strict rules and regulations. Law enforcement can inhibit illegal activity by enforcing strict punishments for violations and performing frequent inspections and audits. Food fraud and other illicit behaviors can be uncovered and avoided if the food supply chain is made more transparent and traceable.

3. Preventing Corruption and Ensuring Adequate Food Supply Corruption in the food industry is a major threat to long-term sustainability and food safety. Mismanagement of resources, corruption, and other forms of fraud all work against the goal of creating a sustainable and fair food system. In order to increase openness, responsibility, and productivity, the food business must combat corruption. By preventing wasteful spending and promoting transparency in public office, strong governance and anti-corruption measures may help establish a safe and reliable food supply.

4. Jordan's Regional Context: The analysis of the literature review revealed a need for more study of the criminal implications of Jordan's unsustainable food systems. The food business in Jordan requires study tailored to the nation due to its distinct environmental problems and vulnerabilities. Interventions and policies may be more effectively targeted when they take into account the specific context of a country like Jordan when dealing with issues like food fraud, corruption, and environmental crimes. To better understand the criminal elements of food systems, to identify context-specific difficulties, and to develop ways to improve sustainability, researchers and policymakers in Jordan should work together.

5. Multidisciplinary Strategies: A multidisciplinary strategy is required to effectively address the criminal features of unsustainable food systems. It is essential that scholars interested in the environment, criminologists, politicians, and stakeholders work together to provide comprehensive solutions. The intricate linkages between criminal conduct, environmental degradation, and sustainable food production can be better understood by integrating findings from other fields. Policy and solutions that balance ecological, social, and economic concerns can be developed through such partnerships.

The criminal aspects of agricultural systems that are not sustainable, as well as their impact on global change, resiliency, and food security, should be given priority in future research. Through longitudinal study, both the evolution of criminal conduct and the success of various regulatory actions may be tracked and evaluated. In addition, one essential area of research is the investigation of the possible long-term advantages to sustainability that might result from making use of technology and innovative solutions in the fight against environmental and food fraud.

5. Conclusion

Critical insights into environmental harm and regulatory issues within the food sector have been uncovered via the investigation of the criminal components of unsustainable agricultural systems. In light of the findings of this research and analysis, it is clear that it is imperative to take action against criminal activity that leads to climate change, biodiversity loss, and food poverty. This final section provides a concise summary of the research findings and stresses the need for a multidisciplinary approach to creating a safe and sustainable food supply.

1. **Negative Effects on the Environment and Criminal Liability:** Deforestation, soil degradation, greenhouse gas emissions, and habitat destruction are only some of the negative effects of unsustainable food systems. Criminal elements of these actions have not been explored to the same extent as their effects on the environment. Those responsible for environmental damage in the food business must be held criminally liable. By making it illegal to engage in practices that contribute to environmental deterioration, green cultural criminology helps to advance ecological justice and encourages long-term sustainability.

2. **The criminal aspects of unsustainable food systems require effective solutions,** which in turn require strong regulatory measures and strict enforcement. Strong rules and regulations against food fraud, illicit wildlife trading, and environmental crimes in agriculture require joint efforts from governments, international organizations, and stakeholders. Protecting the security of the food system requires strong deterrents against illegal conduct, such as strict fines, routine inspections, and more openness.

3. **Preventing Corruption and Ensuring Adequate Food Supply** Corruption in the food industry is a major threat to long-term food security and sustainability. Efforts to create a sustainable and fair food system are hampered by corruption, bribery, and wasteful spending. Promoting openness, accountability, and efficient resource allocation all hinge on reducing corruption via effective governance and anti-corruption efforts. Stakeholders' efforts to reduce corruption will have a positive impact on both food security and the promotion of sustainable practices.

4. **Regional Analysis: The Situation in Jordan ;** While there were few individual studies found in the literature analysis that focused on the criminal aspects of unsustainable food systems in Jordan, it is clear that there are important knowledge gaps in this area. Due to Jordan's specific environmental difficulties and exposures, it is important to conduct sector-specific probes into food-related fraud and corruption. In order to promote sustainability and resilience in Jordan's food system, it is essential that academics, policymakers, and stakeholders work together to identify and address context-specific difficulties.

5. **Collaborative effort from other fields of study** In order to successfully address the criminal features of unsustainable food systems, a multidisciplinary approach is required. Understanding the intricate relationships between criminal conduct, environmental degradation, and sustainability requires the combined efforts of environmentalists, criminologists, politicians, and other interested parties. Aligning ecological, social, and economic concerns requires evidence-based policies and actions, which may be informed by integrating ideas from other disciplines.

The criminal features of unsustainable food systems and the efficacy of regulatory solutions should be the focus of future studies. Studying criminal behavior over time allows researchers to see how sustainable policies are having an effect. Prospective paths to long-term sustainability can be found in the study of the use of technology and novel approaches to problems like food fraud and environmental crimes. More than that, though, raising people's consciousness and getting them involved might motivate them to work together for more sustainable food systems.

6. Recommendations

Several significant suggestions arise from the research of the literature with regard to how to effectively address the criminal aspects of unsustainable agricultural systems and promote sustainability:

1. governments and international organizations should work together to create strict legal frameworks that make environmental damage in the food business a crime. Food fraud, environmental crimes, and the illicit wildlife trade all need harsh penalties to prevent future wrongdoing. To ensure these laws are enforced, law enforcement organizations need the resources and authority to do their jobs.

2. Increasing transparency and traceability across the food supply chain is essential for spotting and stopping fraudulent actions and unlawful acts. The provenance of food items may be verified and their sustainability ensured via the use of technology-driven solutions like blockchain.

3. The criminal implications of unsustainable food systems can only be fully understood by a multidisciplinary effort including scholars from other fields working together. Policies and interventions that take into account ecological, social, and economic concerns can be developed using multidisciplinary methods.

4. Combating corruption in the food industry is crucial to fostering openness, accountability, and the effective use of available resources. Corruption threatens sustainability, but it can be eliminated with the support of strong governance systems, anti-corruption measures, and whistleblower protection.

5. Research Tailored to the Local Environment Countries and regions, including Jordan, should perform research tailored to local food sectors in order to identify and address difficulties unique to their area. By putting criminal behavior in a geographical context, we may develop more effective policies and interventions.

6. Promoting sustainable agricultural practices, including organic farming, IPM, and water-efficient techniques, is the sixth recommendation. Promoting sustainable practices can lessen environmental impact and strengthen food system resilience.

7. Inform the Public: Inform the public about the environmental effects of illegal acts that contribute to the maintenance of unsustainable food systems. Sustainable product demand may be bolstered by active and well-informed customers who stand behind ethical farmers.

8. To combat food fraud, illicit wildlife trade, and other environmental crimes, international cooperation and coordination must be encouraged. The transnational character of food industry crime necessitates international cooperation.

9. Invest in Research and Innovation: Designate funds to investigate Eco-friendly food production methods, cutting-edge technological developments, and effective resource administration. Research and development funding can yield new methods for preventing criminal activity and fostering environmentally friendly methods of operation.

Create and implement long-term policies that promote environmental sustainability, social justice, and economic growth. Sustainable and secure food systems may be attained through a comprehensive strategy, which can be fostered by well-thought-out policy planning.

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