

# Towards sustainable consumption: legal innovations for halving global food waste under SDG 12

Ashima JAIN\*<sup>I</sup>

Bhupinder SINGH\*\*<sup>II</sup>

Tarun Kumar KAUSHIK\*\*\*<sup>III</sup>

<sup>I</sup> Manipal University Jaipur <sup>ROR:::</sup>, Jaipur, Rajasthan, India

<sup>II</sup> Sharda University <sup>ROR:::</sup>, Greater Noida, Uttar Pradesh, India



## Abstract



Sustainable Development Goal 12 that addresses sustainable consumption and production can be viewed as one of the pillars that can be used in managing environmental degradation and climate crisis. This research aims to examine how well legal actions can enhance sustainable consumption and production, which is presented in Sustainable Development Goal (SDG) 12. Its purpose is to add to the worldwide agenda of preventing climate change, which is seen as the magnifier of threats, by evaluating the use of legal structures to push the world. There is also secondary data, literature and legal framework and current situation through news incorporated in the research to obtain a glimpse of the difficulty and achievements of green legal measures implementation. The findings of the research indicate that the countries or regions, which have legal rules of sustainable consumption and production, clearly and successfully established and implemented, show positive results. Declines in resource consumption, generation of waste and greenhouse gases also experienced. To sum up, this paper highlights the critical importance of the legal interventions to the realization of SDG 12 and, consequently, tackling the overall issue of climate change. The results highlight that the legal structures can be instrumental in influencing consumer behavior, corporate activities, and creating a sustainable culture. The research can add value to the current body of knowledge in the sense that it offers policy and practical recommendations to policy makers, corporate citizens and other stakeholders on how to put effective legal frameworks and strategies into place to ensure sustainable consumption and production. The research offers a platform on how further studies can be conducted to understand how green legal frameworks have changed and how it has influenced in the reduction of climate change.

**Keywords:** SDG 12; climate change; food waste; green future; legal measures.

---

\* Ph. D in Law from- Department of Law, University of Rajasthan, Jaipur, India. Assistant Professor, School of Law, Manipal University Jaipur. E-mail: [ashima.jain08@gmail.com](mailto:ashima.jain08@gmail.com).

 <https://jaipur.manipal.edu/foi/faculty-details.php?url=407/>.  <https://orcid.org/0000-0001-5365-2385>

\*\* Ph.D in Law from- Department of Law, Punjabi University Patiala, India. Professor in Sharda School of Law, Sharda University. E-mail: [talwandibss@gmail.com](mailto:talwandibss@gmail.com).  <https://www.sharda.ac.in/faculty/details/dr-bhupinder-singh>  <https://orcid.org/0009-0006-4779-2553>

\*\*\* Doctorate in Law (LL.D.) from Chaudhary Charan Singh University, Meerut, Uttar Pradesh, India. Assistant Professor (Faculty of Law) at Sharda University. E-mail: [tkaushik1982@gmail.com](mailto:tkaushik1982@gmail.com).

 <https://www.sharda.ac.in/faculty/details/tarunkaushik>.  <https://orcid.org/0000-0002-3279-8307>

Received on November 1, 2025 and approved for publication on April 20, 2026.



## Rumo ao consumo sustentável: inovações jurídicas para reduzir pela metade o desperdício alimentar global no âmbito do ODS 12

### Resumo

O Objetivo de Desenvolvimento Sustentável (ODS) 12, que aborda o consumo e a produção sustentáveis, pode ser considerado um dos pilares para a gestão da degradação ambiental e da crise climática. Esta pesquisa tem como objetivo examinar em que medida as ações jurídicas podem promover o consumo e a produção sustentáveis, conforme previsto no Objetivo de Desenvolvimento Sustentável (ODS) 12. Seu objetivo é contribuir para a agenda mundial de prevenção das mudanças climáticas, vistas como o amplificador das ameaças, por meio da avaliação do uso de estruturas jurídicas para impulsionar o mundo. A pesquisa também incorpora dados secundários, literatura, marco jurídico e a situação atual por meio de notícias, a fim de obter um panorama das dificuldades e conquistas na implementação de medidas jurídicas verdes. Os resultados da pesquisa indicam que os países ou regiões que possuem normas jurídicas de consumo e produção sustentáveis, claramente estabelecidas e implementadas com sucesso, apresentam resultados positivos. Também se observou uma redução no consumo de recursos, na geração de resíduos e de gases de efeito estufa. Em resumo, este artigo destaca a importância crítica das intervenções jurídicas para a concretização do ODS 12 e, conseqüentemente, para o enfrentamento da questão geral das mudanças climáticas. Os resultados destacam que as estruturas jurídicas podem ser fundamentais para influenciar o comportamento do consumidor, as atividades corporativas e a criação de uma cultura sustentável. A pesquisa pode agregar valor ao conjunto atual de conhecimentos, na medida em que oferece recomendações políticas e práticas a formuladores de políticas, cidadãos corporativos e outras partes interessadas sobre como implementar marcos jurídicos e estratégias eficazes para garantir o consumo e a produção sustentáveis. A pesquisa oferece uma plataforma sobre como estudos adicionais podem ser conduzidos para compreender como os marcos jurídicos verdes mudaram e como isso influenciou na redução das mudanças climáticas.

**Palavras-chave:** ODS 12; mudanças climáticas; desperdício de alimentos; futuro verde; medidas jurídicas.

## Hacia un consumo sostenible: innovaciones jurídicas para reducir a la mitad el desperdicio mundial de alimentos en el marco del ODS 12

### Resumen

El Objetivo de Desarrollo Sostenible (ODS) n.º 12, que aborda el consumo y la producción sostenibles, puede considerarse uno de los pilares sobre los que se puede basar la gestión de la degradación medioambiental y la crisis climática. Esta investigación tiene como objetivo examinar en qué medida las medidas legales pueden potenciar el consumo y la producción sostenibles, tal y como se recogen en el Objetivo de Desarrollo Sostenible (ODS) 12. Su propósito es contribuir a la agenda mundial de prevención del cambio climático, considerado como el amplificador de las amenazas, mediante la evaluación del uso de estructuras jurídicas para impulsar el mundo. La investigación también incorpora datos secundarios, bibliografía, el marco jurídico y la situación actual a través de noticias, con el fin de obtener una visión de las dificultades y los logros de la implementación de medidas jurídicas ecológicas. Los resultados de la investigación indican que los países o regiones que cuentan con normas jurídicas de consumo y producción sostenibles, claramente establecidas y aplicadas con éxito, muestran resultados positivos. También se ha observado una disminución del consumo de recursos, la generación de residuos y las emisiones de gases de efecto invernadero. En resumen, este artículo destaca la importancia fundamental de las intervenciones jurídicas para la consecución del ODS 12 y, en consecuencia, para abordar la cuestión general del cambio climático. Los resultados ponen de relieve que las estructuras jurídicas pueden ser fundamentales para influir en el comportamiento de los consumidores, las actividades empresariales y la creación de una cultura sostenible. La investigación puede aportar valor al conjunto de conocimientos actuales, en el sentido de que ofrece recomendaciones políticas y prácticas a los responsables políticos, las empresas y otras partes interesadas sobre cómo establecer marcos jurídicos y estrategias eficaces para garantizar el consumo y la producción sostenibles. La investigación ofrece una plataforma sobre cómo se pueden llevar a cabo estudios adicionales para comprender cómo han cambiado los marcos jurídicos ecológicos y cómo han influido en la mitigación del cambio climático.

**Palabras clave:** ODS 12; cambio climático; desperdicio de alimentos; futuro verde; medidas jurídicas.

## Vers une consommation durable : innovations juridiques visant à réduire de moitié le gaspillage alimentaire mondial dans le cadre de l'ODD 12

### Résumé

L'objectif de développement durable n° 12, qui porte sur la consommation et la production durables, peut être considéré comme l'un des piliers permettant de lutter contre la dégradation de l'environnement et la crise climatique. Cette étude vise à examiner dans quelle mesure les mesures juridiques peuvent favoriser la consommation et la production durables, telles qu'elles sont présentées dans l'objectif de développement durable (ODD) 12. Son objectif est de contribuer à l'agenda mondial de prévention du changement climatique, considéré comme un amplificateur de menaces, en évaluant l'utilisation des structures juridiques pour faire avancer les choses à l'échelle mondiale. La recherche intègre également des données secondaires, de la littérature, le cadre juridique et la situation actuelle telle que reflétée dans l'actualité, afin de donner un aperçu des difficultés et des avancées liées à la mise en œuvre des mesures juridiques écologiques. Les résultats de la recherche indiquent que les pays ou régions qui ont clairement établi et mis en œuvre avec succès des règles juridiques en matière de consommation et de production durables affichent des résultats positifs. On observe également une baisse de la consommation des ressources, de la production de déchets et des émissions de gaz à effet de serre. En résumé, cet article souligne l'importance cruciale des interventions juridiques pour la réalisation de l'ODD 12 et, par conséquent, pour la lutte contre le problème global du changement climatique. Les résultats soulignent que les structures juridiques peuvent jouer un rôle déterminant pour influencer le comportement des consommateurs, les activités des entreprises et la création d'une culture durable. Cette recherche peut apporter une valeur ajoutée à l'état actuel des connaissances en ce sens qu'elle offre des recommandations politiques et pratiques aux décideurs, aux entreprises citoyennes et aux autres parties prenantes sur la manière de mettre en place des cadres juridiques et des stratégies efficaces pour garantir une consommation et une production durables. Cette recherche offre une base pour mener des études complémentaires visant à comprendre comment les cadres juridiques verts ont évolué et comment ils ont contribué à la lutte contre le changement climatique.

**Mots-clés :** ODD 12 ; changement climatique ; gaspillage alimentaire ; avenir vert ; mesures juridiques.

## 迈向可持续消费：在可持续发展目标(SDG12)框架下，通过法律创新实现全球食物浪费减半

### 摘要

联合国可持续发展目标(Sustainable Development Goal - SDG12)旨在促进可持续消费和生产，被视为应对环境恶化和气候危机的重要政策指南。本文旨在探讨法律行动如何能够有效地促进 SDG12 所提出的可持续消费和生产。作者的目的是通过评估绿色法规 (Green Law) 在推动全球可持续发展方面的应用，为应对气候变化这一全球性威胁的议程做出贡献。本研究吸纳了二手数据、文献资料、法律框架以及新闻报道等，以便了解法律措施实施的难点和成果。研究结果表明，那些成功建立并实施可持续消费和生产的绿色法律的国家或地区，取得了积极的成果。资源消耗、废物产生和温室气体排放均有所下降。总而言之，作者强调了法律干预对于实现 SDG12 以及应对气候变化这一整体问题的关键作用。研究结果表明，法律结构能够有效影响消费者行为、企业活动，并有助于构建可持续文化。本文为政策制定者、企业、公民和其他利益相关者提供了政策和实践建议，以确保可持续的消费和生产。

**关键词：** 联合国可持续发展目标(SDG12); 气候变化; 消费; 食物浪费; 绿色未来; 法律措施

## Auf dem Weg zu nachhaltigem Konsum: Rechtliche Innovationen zur Halbierung der weltweiten Lebensmittelverschwendung im Rahmen von SDG 12

### Zusammenfassung

Das Ziel für nachhaltige Entwicklung Nr. 12, das sich mit nachhaltigem Konsum und nachhaltiger Produktion befasst, kann als eine der Säulen betrachtet werden, die zur Bewältigung von Umweltzerstörung und Klimakrise herangezogen werden können. Diese Studie zielt darauf ab zu untersuchen, inwieweit rechtliche Maßnahmen den nachhaltigen Konsum und die nachhaltige Produktion fördern können, wie sie im Ziel für nachhaltige Entwicklung (SDG) 12 dargelegt ist. Ihr Ziel ist es, einen Beitrag zur weltweiten Agenda zur Verhinderung des Klimawandels zu leisten, der als Verstärker von Bedrohungen angesehen wird, indem der Einsatz rechtlicher Strukturen zur Förderung globaler Veränderungen bewertet wird. Die Studie stützt sich zudem auf Sekundärdaten, Literatur, rechtliche Rahmenbedingungen sowie aktuelle Nachrichtenberichte, um einen Einblick in die Schwierigkeiten und Erfolge bei der Umsetzung grüner Rechtsmaßnahmen zu gewinnen. Die Ergebnisse der Untersuchung zeigen, dass Länder oder Regionen, in denen Rechtsvorschriften für nachhaltigen Konsum und nachhaltige Produktion klar und erfolgreich etabliert und umgesetzt wurden, positive Ergebnisse vorweisen können. Auch ein Rückgang des Ressourcenverbrauchs, der Abfallerzeugung und der Treibhausgasemissionen ist zu verzeichnen. Zusammenfassend unterstreicht diese Arbeit die entscheidende Bedeutung rechtlicher Maßnahmen für die Verwirklichung von SDG 12 und damit für die Bewältigung des Gesamtproblems des Klimawandels. Die Ergebnisse unterstreichen, dass rechtliche Rahmenbedingungen entscheidend dazu beitragen können, das Verbraucherverhalten und unternehmerische Aktivitäten zu beeinflussen sowie eine Kultur der Nachhaltigkeit zu schaffen. Die Studie kann den aktuellen Wissensstand insofern bereichern, als sie politischen Entscheidungsträgern, Unternehmen und anderen Interessengruppen politische und praktische Empfehlungen dazu gibt, wie wirksame rechtliche Rahmenbedingungen und Strategien zur Gewährleistung eines nachhaltigen Konsums und einer nachhaltigen Produktion umgesetzt werden können. Die Studie bietet eine Grundlage dafür, wie weitere Untersuchungen durchgeführt werden können, um zu verstehen, wie sich grüne Rechtsrahmen verändert haben und welchen Einfluss sie auf die Eindämmung des Klimawandels hatten.

**Schlüsselwörter:** SDG 12; Klimawandel; Lebensmittelverschwendung; grüne Zukunft; rechtliche Maßnahmen.

### Introduction

The global food waste is one such paradox of worldwide hunger and malnutrition problems, making the issues even greater in the context of environmental degradation and resource exhaustion. Sustainable Development Goal 12 (SDG 12) becomes a key pillar in the global quest to promote sustainable consumption and production tendencies. This study asserts that the transformative ability of legal frameworks is critical in driving the societies towards a green future specifically in the context of reduction of food waste. Through analyzing international and national legal tools, the study aims to decipher powerful approaches and systems that may be used to reach the ambitious goal of reducing global food wastes by half (Aguila, 2020).

The even more stark reality that some one-third of the food produced to feed humans all over the world is lost or decays every year, the immediacy of finding a solution to this problem is admittedly of utmost importance. Legal promulgation gives a systematic approach in addressing the multifaceted predicaments in food waste. It is in this context that the paper will examine and evaluate the legal frameworks that can infuse responsible consumption and production and will dive into the different processes through which the world can halve food waste by half. This paper recognizes that the process of green future

will necessitate radical transformation in how people create, incorporate and discard resources and it asserts that law can be offered as an influential tool which can be utilized to effect a radical shift in the paradigm. This study is in the broader context of sustainable development as it focuses on the reduction of food waste by halving it in the world by noting the complexity in the comprehension of the relationship among the environment, social business and corporate sustainability.

### **Wastage of food impact on environment and society in different parts of the world**

The world food waste crisis represents a paradoxical situation of concern between one-third to half of the food on planet Earth that is produced to be consumed by human beings is lost or wastage every year. This is a staggering number indicating not just the wastefulness of our food economies, but also the greater environmental and social repercussions of wastefulness. The primary reason behind this crisis is the combination of the numerous factors influencing the entire food supply chain. Environmentally speaking, the consequences of food waste are very severe. In cases that food is wasted, the amount of resources that were used in producing food (e.g. water, energy, and arable land) goes to waste. Also, when organic wastes are not properly decomposed in landfills, they also emit the greenhouse gas in escalating climate change. The excess use of resource in food production leads to deforestation, destruction of biodiversity and soil erosion, which, while very harmful to the environment, in the long run, is also very disastrous. It is, therefore, a major contributor of environmental degradation and a direct threat in as far as delicate balance of the ecosystems in the world is concerned.

Social implications of the world food waste disaster are also very potent. With a sizeable proportion of this planet having to juggle with hunger and malnourishment, as more and more edible food goes into the garbage, it is fueling a throbbingly ironic contempt. Food waste is an urgent local problem not to mention the surrounding environment, but it brings to the fore, the excessive disparities in resource allocation and access. Food waste has significant economic consequences impacting the farmers, businesses and the entire economy. The economic cost of food waste is in billions and this increases the acuity of the need to make a paradigm shift in the production, distribution and consumption of food.

The world food waste crisis is a complex problem which requires immediate intervention and creative ideas. Along with huge quantities of food wasted, the ecological and social consequences of the wasted food are the factors that give a sense of the urgency in the change in food systems that require a concerted effort. It demands the re-evaluation

of the consumption trends but a thorough approach that presupposes a complex of legal regulations, innovations and social awareness to curb the impacts of the same on the environment and social inequality besides creating a more sustainable future not just to the generations that will follow.

### **SDG 12 significance: responsible consumption- production pattern**

It dominates in the worldwide process of sustainable growth. At the outset, SDG 12 recognises the racing necessity to uncouple economic growth and environmental degradation through fostering sustainable, efficient and equitable patterns of consumption and production. In a world whereby issues of climate change, resource depletion and environmental pollution are being faced, SDG 12 becomes a shining light to countries that need to reevaluate and change their consumption and production processes. The aim, by focusing on responsible practices, aims to find a fine balance between satisfying the needs of the current generation and the capability of successive generations to satisfy their needs. By addressing its many targets, such as reducing waste production, increasing resource efficiency, and supporting sustainable operations in industries, SDG 12 represents a holistic practice towards achieving environmental stewardship and social responsibility.

### **Global legal framework to halve food wastage**

The components of the United Nations 2030 Agenda, Sustainable Development Goal 12, is Target 12.3, which seeks to halve per capita food waste, both at the retail and consumer level, by 2030 and decrease losses throughout the production and supply chains. A number of nations and provinces have implemented or are implementing laws in line with this target, with the waste reduction regulations, tax incentives, penalties, and donation laws. Although the legal environment is complex, all these initiatives underscore the necessity of a global, multilateral approach to resolving the complicated issue of food wastage worldwide (Cordova-Buiza *et al.*, 2022).

Although a unified legal framework addressing food wastage in the world does not exist that sets itself to limit and reduce this challenge, several initiatives, regulations, and international campaigns strive to combat this very urgent problem. Some of the major legal actions and initiatives taken or suggested in various jurisdictions are as follows:

1. Sustainable development goal 12 (SDG 12): SDG 12 is a 2030 Agenda to Sustainable Development effort by the United Nations comprising Target 12.3 related to food wastage. The target involves halving the per capita food waste at

retail and consumer levels around the world and decreasing food losses in production and supply chains by 2030. Although not a legal system, it is a commitment on the world level that most countries strive to make it an element of their domestic policies.

2. The Waste Framework Directive establishes a hierarchy of waste management, with a preference to avoid waste, re-use and recycle, as well as recovery of energy. Even more measures specific to food waste reduction have been proposed by the EU.
3. The Anti-Food Waste Law of France: In 2016, France has implemented a groundbreaking law that does not allow supermarkets to dispose of uneaten, yet edible food. Rather, they have to give it to charities and food banks. This legislation has been used globally as a guide to other nations, which have even thought of the same action.

These laws, sometimes as part of more general waste management and sustainability policies, underscore the vast range of solutions to the problem of global food wastage that countries and regions have implemented. These measures need to be implemented, enforced, and evaluated to be effective (De Neve; Sachs, 2020).

## Methodology

This article is about a pure doctrinal research with descriptive analytical approaches to exploring the paradigm of "Shifting Towards a Green Future via Legal Measures to Ameliorate SDG 12 (Responsible Consumption and Production): Halve Global Food Waste" adopts a multi-faceted and systematic approach. The paper commences with comprehensive literature review which discusses scholarly articles, reports and publications to get familiar with the present day legal frameworks across the world that seek to provide responsible consumption, production and food waste reduction. It will aim at adding personal contributions into the upper understanding of how the law can be used to promote the grand vision of halving the food waste in the world. Another aspect which is examined in the study is the study of legal loopholes and problems that might be faced in the effectiveness of enacting and enforcing food waste related legislation. Based on the results of the analysis, the approach leads to policy recommendations and proposals of the necessary reforms in the law. The following recommendations will aim to boost and deepen the legal framework towards achieving a more SDG 12 focus, especially in the ambition of moving half way to food waste in the world.

## Literature review

There is a vast investigation of the available literature, reports and publications that form intellectual background of study. Against the background of the Sustainable Development Goal 12 (SDG 12), with its initial in-depth contextualization of the relevance of responsible consumption and production trend, the review is implemented by providing the greater context of the concept of sustainability. Scientists have made efforts to unveil the ironical food waste crisis in the world by investigating the multi faceted nature of it, its permeating impact and the panic it has induced that made them despair of time and take action. The overview goes up to analyzing legal frameworks and policy initiatives at different levels such as international, national and regional levels that focus on curbing of food waste. It looks at the effectiveness of these legal actions and how they affect redesigning corporate behavior, consumer decisions and their effect on sustainable supply chain actions. Scholars have contributed to the complexity of the problems of legal interventions and consumer behavior too and sheds light on the influence of regulations on forming consciousness of individuals and the decisions on the food consumption field. The comparative analysis of the legal systems in various countries, regions and taking into view the lessons of the successful models with the view to the challenges and differences which may arise under different situations are also discussed in the literature review.

The available literature on the topic of the global problem of food waste shows a thorough analysis of the problem of its causes and effects, casting light on one of the most important issues in the context of sustainability. Researchers and academics have performed vast studies to unravel the convoluted mess of causes that led to food waste and to comprehend the extensive impacts on the environmental, economic and social levels.

## Framing of sustainable consumption and production in SDG 12

The prioritising of sustainable consumption and production patterns, SDG 12 recognises how these practices relate to the global activity in fighting climate change, conserving ecosystems and sustaining responsible resource management (Fatima; Ashraf; Zehraa, 2020).

What is important about this framing is its ability to transform in the future, as having an economically growing world without environmental degradation is a possibility in this framing. SDG 12 seeks to address the ecological footprint of human activities through resource efficiency and curbing waste to encourage the development of a circular economy that will reduce waste and lead to recycling and reuse. This is an effective way of conserving

the environment as well as being economical in the long run as it plays a role in increasing productivity and cutting down costs.

Green future lensing legal measures to enrich SDG 12 (responsible consumption and production)

The strategic application of legal measures with reference to the postulations of the Sustainable Development Goal 12 (SDG 12) can make it possible to create a green future characterized by sustainable consumption and production. Legislations are extremely crucial in determining and directing the behavior of businesses, industries, and individuals with the environment. SDG 12 devoted to the patterns of responsible consumption and production highlights the need to decouple the processes of environmental degradation and economic growth. Transformational change can be achieved through legal activity aimed at impacting sustainable practices in manufacturing processes, decreasing the number of wastes, and making consumption responsible.

Legal interventions to expand SDG 12 can be through the creation and implementation of legislation to encourage high-environmental practices, circular economy, and green technology adoption. These legal initiatives can include a spectrum of initiatives, starting with establishment of strict environmental rules to businesses and even promoting the creation and adoption of environmentally friendly goods and services in terms of incentives and pressures. Notably, legal systems could help steer businesses to the concept of the life-cycle approach when displaying the environmental effects of a product throughout its lifecycle (the creation to disposal).

Besides regulations in the industry, legal action may be taken to raise awareness and use of responsibility among consumers. This can involve labeling needs, education programs, and sustainable policies that can promote sustainable decisions. With the tools of SDG 12, it is possible to turn a green future not only into the need of the environment, but also into the legal and moral requirement. In addition, cross-border cooperation and information exchange is essential because the legal frameworks that ensure cross-border cooperation and information transparency can enhance the influence of sustainable consumption and production practices. The common standards can be created by international agreements and conventions, which will help create the disposition to be environmentally responsible on the global level.

Therefore, a multi-disciplinary approach is what is required to help us achieve a green future through legal action to enrich SDG 12. The legal framework must be dynamic as it should respond to the changing environmental issues and technology. Legal measures will

be very effective in guiding societies towards a more sustainable and resilient future, by including concepts of sustainability in laws and also by creating a culture of building sustainable cycles of consumption and production.

### **Guarantee sustainable consumption and production patterns**

It is a basic requirement to ensure sustainable consumption and production trends to deal with the intertwined issues of environmental degradation, resource depletion and social inequality. The imperative is encompassed in Sustainable Development Goal 12 (SDG 12) that addresses responsible production and consumption patterns. In its nature, this aim proposes the paradigm change in the production, distribution, and consumption of goods and services in societies. It highlights that economic growth should be decoupled with environmental degradation, and sees a day when the efficient use of resources combined with reduction in waste and the overall decrease in the ecological footprint is achieved. Sustainable consumption and production takes the combination of eco-friendly technologies, circular economies, and ethical businesses. It involves encouragement of product life cycle consciousness, where sourcing of raw materials to the disposal of remains or recycling. SDG 12 aims to promote a symbiotic relationship between the environment and human development by fostering a culture of responsibility both in the businesses and the consumers. The aim works toward creating a future in which prosperity is attained without undermining the well-being of the planet and its population through innovative policies, cooperative international engagement and the common goal of ensuring sustainable practices (Gupta; Nilsson, 2017).

### **Global food security: environmental sustainability and climatic change intertwining**

The challenges of climate change and the intense effects of environmental and environmental security intersect at the issues of global food security (Jacob-John *et al.*, 2021).

In solving such challenges, environmental sustainability should be the key element. Sustainable agriculture, including precision farming, agroecology, and organic farming not only would help to mitigate climate change but also enhance biodiversity, soil health, and water conservation. Also, natural ecosystems (forests and wet lands) should be preserved to preserve the equilibrium of the ecological processes that form the backbone of agriculture.

A combination and unified effort internationally is what is needed to mitigate climate change and realize food security globally. The goal of international agreements like the Paris Agreement is to reduce the global warming and ensure the effects of climate change are

minimal on agriculture. The creation of ADR crops and climatic intelligent technologies are also considered adaptive measures that are instrumental in establishing resilience in food systems.

Finally, global food security in the climate change scenario requires a comprehensive strategy incorporating environmental sustainability in agricultural activities, the adoption of new technology and an international collaboration. Understanding the interactional nature of these forces, we are able to strive to secure a food-secure future that builds on the natural limits of the planet and protects the livelihoods of people all over the world (Lemaire; Limbourg, 2019).

### **Role of legal interventions in reshaping consumer behavior, corporate practices and regulatory frameworks**

Legal interventions play a pivotal role in reshaping consumer behavior, corporate practices, and regulatory frameworks, contributing to the development of more sustainable and responsible systems.

1. **Influencing the Consumer Behavior:** The legal regulations including laws on labeling and consumer protection regulations can play a major role in influencing consumer choice decisions. Indicatively, the requirement to label all products to display environmental impacts or health effects can empower the consumer to make right choices to align their preferences to sustainability. Moreover, legal provisions can prevent the negative events like excessive consumption or wasteful activities by conducting punishment or imposing taxes.
2. **Leading Corporate Practices:** Legal interventions can play a very important role in guiding businesses on how to best coordinate their operations in accordance with sustainability objectives. The standards of environmental regulations, labor law and corporate governance stipulate the areas of responsible business behavior. Legal policies can encourage businesses to engage in endorsing the environmental friendly operations, ethical supplier chain organization and socially responsible policies. The threat of punishment due to non-observing the conditions or incentives in achieving sustainability goals develops a concrete effect on corporate decision-making.
3. **Sustainability Regulatory Frames:** There are legal interventions that establish the basis of extensive systems of regulations that are sustainability-oriented. They give the framework on which government bodies can formulate and implement laws that are effective in encouraging responsible consumption and production practices. These involve setting standards of emissions, waste disposal and

sustainability reporting. Governments can direct industries, through regulations, to practises that do not harm the environment, but promote social responsibility.

4. **Rewarding Innovation:** Government actions can generate incentives to innovation in consumer products as well as corporate strategies. Business can be stimulated to invest in sustainable technologies and practices through tax credits, grants and other financial incentives. This, in its turn, promotes the innovation in the field of renewable energy, economical manufacturing and the creation of an environment-friendly product.
5. **International Cooperation and Standards:** International Interventions through trade agreements and conventions help to bring common standards of sustainable practices across a border. International coordination such as in the Paris Agreement on climate change promotes international collaboration in dealing with environmental issues. International standards that are harmonized will make businesses subject to the same rules irrespective of where they are located.
6. **Consumer Protection and Rights:** Consumer rights are safeguarded by laws, and businesses are encouraged to operate in a morally acceptable way. These involve the laws which are against misleading advertising, product safety and protection of the privacy of the consumer data. Legal interventions help in creating trust between businesses and consumers by creating a fair and transparent market place.

Legal interventions are the effective means of crimping the behavior in various layers of society. Governments can control consumer preferences, corporate policies and can create regulatory frameworks that pressure and nurture sustainable behaviours by establishing favourable legal conditions. Legal interventions have to be an essential part of the process of reaching the equilibrium between economic development and environmental and social responsibility.

Combination of legal interventions with green future and extended sustainability programs

The vision of green future and the long-term work on sustainability should be accompanied by legal action, in particular, with the issue of food wastage. This will involve creation of collaboration between stakeholders, opening incentives to companies adopting sustainable strategies, and coming up with binding principles to reduce food wastes. There are also international agreements and treaties that may assist in concerting a concerted worldwide campaign on this issue. Lastly, legal considerations as part of the overall sustainability strategy are the focus of developing a green future where restorative

consumption is core to restorative production and the food production-consumption nexus aligns with a restorative relationship with the environment and social justice.

### **Difficulties and prospects of adopting legal measures**

This paper unveils a delicate terrain which is full of both challenges and road to prosperity. In terms of challenges issue, another crucial challenge is the implementation of the legal frameworks that exist. Variations in the application of laws among jurisdictions, under-funding and the inability to have solid monitoring mechanisms are challenges to enforcing the laws. Moreover, some industries or even the stakeholders may oppose the legal measures which will promote sustainability, thus, making it difficult to implement without any hiccups. Other problems can be concerns regarding harmonizing an approach, owing to the intricacy of international supply chains, and regional standards differences.

Amidst these challenges, the possibility to improve and be innovative arises. Laws are dynamic and thus may undergo a continual process of refinement, adaptation and strengthening. They can be assisted by the government, by business as well as civil society to bridge enforcement gaps and be more committed towards the goals of sustainability. Additionally, technological advances offer an opportunity of even higher monitoring, traceability, and transparency, which would be highly supportive to the successful work of law. Consumers also need their practices and demand to be sustainable and this need can also act as an impetus to industries engaging in voluntary initiatives to be environmentally responsible. To sum up, the review states that a coherent and dynamic approach towards legal regulation implementation is necessary. By facing challenges directly and exploiting the new facts that emerge, stakeholders can produce a favorable setting that enables the legal systems to work to promote responsible consumption, production, and sustainability, in line with the global agenda, including SDG 12.

### **Results**

Studies on the transition towards green future through legal means to mitigate SDG 12, namely responsible consumption and production to reduce World food waste by half, have borne fruit. The overall examination of the current legislations and how they correlate with sustainability objectives has offered insight on the success of laws in ensuring the reduction of food waste. The findings of the research indicate successful cases where a law can result in the reduction of food waste by a considerable amount at different stages of

supplies. The research by analyzing case studies and assessing the effect of certain interventions highlights the significance of clear policies, strict regulations, and innovative solutions to reach the ambitious goal of halving food waste in the world.

Moreover, the results indicate that legal interventions are embedded in more general sustainability actions and it is important to embrace an interdisciplinary approach. A good waste of food is not the only effect of effective legal interventions but it has been demonstrated to have a positive impact on resource efficiency that saves not only environmental state, but also social equity. The study has unveiled the best practices, which will help in sharing the knowledge they have and can act as a reference point to future growth in policy development (Rodiles, 2022).

Though the results can indicate improvement, they also highlight difficulties and gaps which still exist. The significance of the enforcement schemes, educational efforts towards consumers, and cross-sectoral cooperation turns out to be an area of concern that requires more attention. The study of green future transitioning via legal intervention in dealing with SDG 12 has, in sum, given not only a picture of the more successful approaches but also provided the background to the further work on turning our world food systems into a more sustainable and responsible one.

## **Conclusion**

The paper offers an integrated approach to explain how the relationships between interventions and sustainability objectives are a complex process. The discussion of current legislative frameworks, their effects on curbing food waste and how they comply with SDG 12 has helped unravel the complex dynamics on the responsible consumption and production. The findings highlight the importance of formulated and well implemented legal frameworks towards the realization of considerable food losses on the world. The case studies that are successful have indicated that regulatory interventions like strict label requirements, donor encouragement and fines on unreasonable waste can indeed bring about transformational changes in every part of the food supply chain. The study also emphasizes the relationship between SDG 12 and other sustainability agenda via legal efforts to mitigate food waste, noting that food waste is decreased through legal requirements, which also enhance ongoing sustainability objectives of economical efficacy and social equity. Naturally, the fact that responsible consumption and production practices are positively correlated with a greener future reveals the possibility of legal frameworks being change agents (Murthy; Ramakrishna, 2022).

The study provides opportunities to develop and conduct more research to improve interventions by law. The mentioned difficulties, including the lack of uniform implementation and opposition by some industries, offer the possibility of improvement by focusing on them. Intensifying cooperation between nations, setting uniform standards and using technological tools to further monitor and be more transparent are important points that should be considered. The long-term horizon is in the constant change and adaptation of legislation to suit the challenges of the world food system that constantly change. The research work must aim at harmonising and broadening the legal frameworks, learning through useful practices and closing the lapses in enforced. Also, the investigation of new technologies and work models that enhance sustainable activities in the industries and regions will be part and parcel of seeking the stunning goal of reducing food waste in the world by half in 2030. It also provides practical lessons to policy makers, businesses and stakeholders to collaborate in bettering our future towards a green world and a more responsible and sustainable global food system.

#### **Acknowledgement**

This research received no specific grant from any funding agency in the public, commercial, or not-for profit sectors.

#### **How to cite this article:**

##### **ABNT**

JAIN, Ashima; SINGH, Bhupinder; KAUSHIK, Tarun Kumar. Towards sustainable consumption: legal innovations for halving global food waste under SDG 12. *Passagens rev. int. hist. pol. e cult. jur.*, Niterói, v. 18, n. 2, p. 158-173, May.-Aug. 2026. <https://doi.org/10.15175/m2m2sg42>

##### **APA**

Jain, A., Singh, B., & Kaushik, T. K. (2026). Towards sustainable consumption: legal innovations for halving global food waste under SDG 12. *Passagens rev. int. hist. pol. e cult. jur.*, 18(2), 158-173. <https://doi.org/10.15175/m2m2sg42>

#### **Copyright:**

Copyright © 2026 Jain, A., Singh, B., & Kaushik, T. K. This is an open access article distributed under the Creative Commons Attribution License which permits unrestricted use, distribution, and reproduction in any medium, provided the original article is properly cited.

#### **Publisher responsible for the evaluation process:**

Gizlene Neder

## **References**

- AGUILA, Yann. A global pact for the environment: the logical outcome of 50 years of international environmental law. *Sustainability*, v. 12, n. 14, 5636, 2020. <https://doi.org/10.3390/su12145636>
- CORDOVA-BUIZA, Franklin *et al.* Strengthening collaborative food waste prevention in Peru: towards responsible consumption and production. *Sustainability*, v. 14, n. 3, 1050, 2022. <https://doi.org/10.3390/su14031050>

DE NEVE, Jan-Emmanuel; SACHS, Jeffrey D. The SDGs and human well-being: a global analysis of synergies, trade-offs, and regional differences. *Scientific reports*, v. 10, n. 1, 15113, 2020. <https://doi.org/10.1038/s41598-020-71916-9>

FATIMA, Noor; ASHRAF, Imran; ZEHRAA, Sania. Sustainable consumption and production: an analysis of implementation of Pakistan's policy framework of SDG-12. *Liberal Arts and Social Sciences International Journal (LASSIJ)*, v. 4, n. 1, 114-129, 2020. <https://doi.org/10.47264/idea.lassij/4.1.11>

GUPTA, Joyeeta; NILSSON, Måns. 12 toward a multi-level action framework for sustainable development goals. In *Governing through goals: Sustainable Development Goals as governance innovation*. Cambridge, MA: The MIT Press, 2017. p. 275-294. <https://www.jstor.org/stable/j.ctt1pwt5xr.17>

JACOB-JOHN, Jubin *et al.* Synergistic interactions of SDGs in food supply chains: a review of responsible consumption and production. *Sustainability*, v. 13, n. 16, 8809, 2021. <https://doi.org/10.3390/su13168809>

LEMAIRE, Anais; LIMBOURG, Sabine. How can food loss and waste management achieve sustainable development goals?. *Journal of cleaner production*, v. 234, p. 1221-1234, 2019. <https://doi.org/10.1016/j.jclepro.2019.06.226>

MURTHY, Venkatesha; RAMAKRISHNA, Seeram. A review on global E-waste management: urban mining towards a sustainable future and circular economy. *Sustainability*, v. 14, n. 2, 647, 2022. <https://doi.org/10.3390/su14020647>

RODILES, Alejandro. Infrastructural developmentalism and its many types of global law: a comparative look at the UN Sustainable Development Goals and China's Belt and Road Initiative. *London Review of International Law*, v. 10, n. 3, p. 367-390, 2022. <https://doi.org/10.1093/lril/lrac017>