



AGROECOLOGY: THE QUEST FOR SUSTAINABILITY AND ENVIRONMENTAL PRESERVATION IN AGRICULTURE IN THE LIGHT OF LAW

AGROECOLOGIA: A BUSCA PELA SUSTENTABILIDADE E PRESERVAÇÃO DO MEIO AMBIENTE NA AGRICULTURA A LUZ DO DIREITO

AGROECOLOGÍA: LA BÚSQUEDA DE LA SOSTENIBILIDAD Y PRESERVACIÓN DEL MEDIO AMBIENTE EN LA AGRICULTURA A LA LUZ DEL DERECHO

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ABSTRACT

This article revolves around the central theme of agroecology from a legal perspective. Agroecology is a concept that seeks to align agricultural production with environmental preservation. The objective is to discuss how this practice can contribute to sustainability in

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agriculture using more natural techniques that respect ecological balance. This work was conducted based on literature review and data analysis. In conclusion, we found that agroecology is an important tool for environmental preservation and conscious production, aiming to produce without harm, protect fauna, flora, water resources, promote local economy, and produce healthier foods, all of which are protected by regulations and laws.

Keywords: Agroecology. Environment. Sustainability. Legal Norms.

RESUMO

Este artigo tem como tema central a agroecologia a vista do direito, podemos trazer que agroecologia é um conceito que busca aliar a produção agrícola com preservação ambiental. O objetivo é discutir como essa prática pode contribuir para a sustentabilidade na agricultura, através da utilização de técnicas mais naturais, que respeitem o equilíbrio ecológico. Este trabalho foi realizado com base em pesquisa bibliográfica e análise de dados. Como conclusão, obtivemos que a agroecologia é uma importante ferramenta para preservação do meio ambiente e produção consciente, que busca produzir sem agredir, proteger a fauna, a flora, os recursos hídricos, além de promover a economia local e produzir alimentos mais saudáveis e isso é protegido por normas e leis.

Palavras-chave: Agroecologia. Meio Ambiente. Sustentabilidade. Normas Jurídicas.

RESUMEN

Este artículo tiene como tema central la agroecología desde la perspectiva legal. La agroecología es un concepto que busca conciliar la producción agrícola con la preservación ambiental. El objetivo es discutir cómo esta práctica puede contribuir a la sostenibilidad en la agricultura mediante el uso de técnicas más naturales que respeten el equilibrio ecológico. Este trabajo se realizó mediante una revisión bibliográfica y análisis de datos. Como conclusión, encontramos que la agroecología es una herramienta importante para la preservación del medio ambiente y la producción consciente, que busca producir sin agredir, proteger la fauna, la flora, los recursos hídricos, además de promover la economía local y producir alimentos más saludables, todo ello protegido por normativas y leyes.

Palabras clave: Agroecología. Medio Ambiente. Sostenibilidad. Normas Jurídicas.

INTRODUCTION

Agroecology emerges as a crucial practice in food production, gaining increasing relevance amid global concerns with sustainability and environmental preservation. From the perspective of Brazilian law, this approach assumes a fundamental role in building an agricultural model aligned with the constitutional principles of environmental protection and the promotion of public health. The harmonization between food production and environmental preservation thus becomes a legal and ethical imperative in the face of contemporary challenges.

Understanding the principles and objectives of agroecology through the lens of Brazilian law reveals a remarkable convergence: the appreciation of biodiversity, the preservation of natural resources, and their responsible use are all supported by the legal provisions governing environmental protection in the country. In this sense, agroecology not only aligns with existing regulations but also proposes a path for the effective implementation of these principles in agricultural practice.

The adoption of agroecology implies a paradigmatic shift, moving the focus from the maximization of agricultural output to the prioritization of environmental preservation. This change not only reflects an evolution in the understanding of environmental law but also positions agroecology as a means to achieve the constitutional goals of ecological balance.

The practice of agroecology goes beyond environmental benefits, extending to human health and local economies. The production of healthy food, free from pesticides and chemical additives, not only fulfills the legal principles of the right to adequate food but also strengthens food security and promotes income generation in rural communities.

Despite its undeniable benefits, the implementation of agroecology is intrinsically linked to the development and enforcement of specific public policies. An analysis of this interconnection—interwoven with the legal challenges and the resistance faced by farmers—reveals the need for a normative framework that supports and protects agroecological practices.

The relationship between agroecology and public policies is vital for its effective implementation. The promotion of measures that encourage and support the adoption of this approach must be grounded in the convergence of legal principles and the pursuit of a more sustainable and equitable agriculture.

In this context, the present article proposes a discussion on the importance of agroecology in food production, highlighting its legal foundations, its broad-ranging benefits, and the need for public policies aligned with constitutional principles. Through this analysis, the article aims to contribute to the understanding of agroecology as a practice that not only meets environmental and social demands but also finds legal support and guidance within the Brazilian legal framework.

1 ENVIRONMENTAL LAW AND ITS LEGAL FOUNDATIONS

The concern with environmental preservation in the face of rampant consumption and unsustainable practices in contemporary society is a matter of utmost importance. Today's society, marked by consumerism—where the possession of material goods often prevails over being—contributes significantly to the depletion of natural resources. This reality is evidenced by studies such as those of Sachs (2008), who highlights the unsustainability of the current economic model and

its environmental consequences. The author argues that the increase in production and consumption generates a range of negative impacts on the environment, including the depletion of natural resources and environmental degradation.

Neglect for the environment and the prioritization of individual interests, without considering the responsibility to preserve nature, have contributed to a scenario in which the environment is left vulnerable and defenseless. It is imperative to rethink human attitudes toward natural resources and adopt an ethical and responsible stance. As Leff (2001) asserts in his work *"Environmental Knowledge: sustainability, rationality, complexity, and power"*, it is crucial to recognize the interdependence between humans and nature, and that human survival depends on environmental preservation.

Article 225 of the Federal Constitution of Brazil is a foundational legal framework for environmental protection. This article guarantees everyone the right to an ecologically balanced environment, imposing duties on both the government and society to defend and preserve it. As Antunes (2012) observes in *"Environmental Law"*, this provision establishes a set of obligations aimed at preserving biodiversity and ensuring sustainability for future generations.

In this context, public policies, and legal instruments, such as the National Environmental Policy (PNMA), play a crucial role. Agroecology emerges as a sustainable alternative, promoting agricultural practices that respect the environment and biodiversity. Altieri (2002), in *"Agroecology: the productive dynamics of sustainable agriculture"*, emphasizes the importance of agroecology as a means to achieve sustainability in food production while minimizing negative environmental impacts.

2 PARADIGM SHIFT: PRIORITIZING ENVIRONMENTAL PRESERVATION

The urgency of a paradigm shift that prioritizes environmental preservation is a central theme on today's global agenda. As Sachs (2008) emphasizes, we face the challenge of re-evaluating the dominant values and practices in our societies, particularly concerning consumption and our relationship with natural resources. This transformation is crucial to ensuring the planet's sustainability and the well-being of future generations, guiding us toward a development model that values conservation and the sustainable use of natural resources.

Capra (2002) argues that a holistic and interconnected understanding of the world is essential in this new era. He maintains that environmental preservation should not be perceived as an obstacle to development, but rather as an integral and vital component of it. This concept of sustainability implies a shift in how we perceive and interact with our environment, adopting a systemic perspective that recognizes the interdependence among all forms of life.

One of the greatest challenges to this paradigm shift is consumerism. Leff (2001) highlights how the current economic model—based on excessive consumption—produces significant negative environmental impacts, such as the overexploitation of resources and pollution. To change this paradigm, a critical review of this model and the pursuit of more sustainable alternatives are essential.

Environmental education emerges as a fundamental pillar in this transformation. Guimarães (2004) underscores the importance of raising awareness and cultivating a sustainable mindset from early childhood. Environmental education is key to shaping conscious citizens committed to environmental preservation, who will become future leaders and responsible consumers.

Moreover, we face economic and social challenges in this transition. As Veiga (2005) points out, the shift to more sustainable practices may challenge an economic model rooted in non-renewable resources. However, this change is vital to ensuring the longevity of natural resources and the quality of life for the population. Technology and innovation also play a crucial role in promoting sustainability. Hawken, Lovins, and Lovins (1999) discuss how innovative and sustainable technological solutions can lead the way toward a greener future, encompassing everything from the adoption of renewable energies to sustainable and efficient agricultural practices.

In the political realm, governments and environmental legislation play a crucial role in driving this transformation. Antunes (2012) discusses the importance of strong environmental laws and regulations to ensure the protection of the environment and to promote sustainable practices. The creation of public policies that encourage green initiatives is indispensable for this transformation. In other words, the paradigm shift toward environmental preservation is a complex but essential journey. It requires collaboration across various sectors of society, including governments, businesses, communities, and individuals. Environmental preservation must be regarded as a shared responsibility and a common goal—crucial to securing a sustainable future for all.

3 EXPANDED BENEFITS: HUMAN HEALTH AND THE LOCAL ECONOMY

Environmental preservation, beyond its intrinsic ecological importance, has significant beneficial effects on human health and the strengthening of local economies. According to the World Health Organization in its report *"Environment and Public Health"* (WHO, 2016), maintaining a healthy environment is essential for preventing a wide range of diseases and for fostering the general well-being of the population. This link between a healthy environment and human health underscores the importance of environmental preservation, which transcends the ecological imperative and also establishes itself as a crucial public health issue.

In economic terms, environmental preservation has significant impacts on local economies. Jacobs (1995) points out that the transition to sustainable practices can open up new markets and economic sectors, thus boosting the local economy. This transition toward sustainability not only contributes to environmental protection but also to economic resilience and diversification, particularly in communities that depend on natural resources.

Environmental health, directly affected by environmental quality, is a growing concern. As Jackson (2012) discusses in *"Environmental Health: From Theory to Practice,"* exposure to polluted environments significantly increases the risk of various diseases, including respiratory, cardiovascular issues, and even cancer. Therefore, environmental preservation in both urban and rural areas can reduce these risks, contributing to a healthier population.

Edward B. Barbier (2010) highlights the importance of transitioning to sustainable practices in revitalizing local economies. This transition creates economic opportunities, especially in rural and developing communities, where the economy is closely tied to natural resources. Sustainable agriculture also plays a crucial role in local health and economy. As Jules Pretty (2008) states, sustainable agricultural practices not only conserve natural resources but also promote healthier, pesticide-free food, positively impacting public health and strengthening the local economy through organic and local markets.

Therefore, sustainable tourism exemplifies how environmental preservation can benefit the local economy. Mowforth (2015) discusses how areas with rich biodiversity and preserved ecosystems attract tourists, generating local income and jobs while encouraging environmental conservation. In sum, environmental preservation is more than an ecological responsibility; it is a strategic investment in public health and in the strengthening of the local economy. The interconnection between environment, health, and economy is a fundamental pillar of sustainable development, demonstrating that environmental preservation practices bring broad and positive benefits to society as a whole.

4 LEGAL CHALLENGES AND PUBLIC POLICIES

The transition to agroecological practices represents a multifaceted challenge that encompasses both legal issues and the need for effective public policy development. Altieri (2002) argues that agroecology offers a foundation for the development of sustainable agricultural systems but emphasizes the need for legislative reform to support such practices. In this regard, it is imperative that existing legislation be reviewed and adapted to promote and facilitate the adoption of agroecological methods, which are essential for environmental sustainability and food security

(Wezel et al., 2009). The inadequacy of the current legal framework—often favoring conventional agriculture to the detriment of agroecology—emerges as a significant obstacle.

In the realm of public policy, Pimentel et al. (2014) underscore the importance of developing measures that encourage agroecological research, facilitate market access for agroecological products, and provide technical assistance to farmers. This requires an integrated approach involving various sectors and levels of government, as well as active community participation. De Schutter (2008) highlights the need for public policies that foster education and awareness about the benefits of agroecology, both for environmental sustainability and for public health.

The reorientation of financial incentives and government subsidies—which have traditionally favored large-scale agriculture and the intensive use of chemical inputs—toward the support of agroecology presents a substantial political challenge (Rosset and Martinez-Torres, 2012). Resistance from established sectors and the need to ensure farmers' participation in decision-making processes are critical aspects for the effective implementation of agroecological policies.

Finally, international cooperation and the exchange of successful practices are essential to overcoming the legal and political challenges in promoting agroecology (Francis, 2003). The harmonization of regulations and the promotion of sustainable food systems on a global scale require a strong political commitment and an adaptive legal framework that incorporates agroecological principles.

This analysis highlights the complexity of the legal and public policy challenges associated with the advancement of agroecology. A continuous dialogue among the various stakeholders—including legislators, researchers, legal professionals, and civil society—is fundamental to developing effective strategies that support the transition toward more sustainable agricultural systems.

5 THE ROLE OF PUBLIC POLICIES IN THE IMPLEMENTATION OF AGROECOLOGY

The role of public policies in the implementation of agroecology is crucial for transforming food and agricultural systems toward sustainability. Public policies can provide the necessary support to overcome economic, technical, and social barriers faced by farmers who wish to adopt agroecological practices. According to Altieri and Nicholls (2012), effective public policies in agroecology should include financial incentives for farmers during the transition period, technical assistance for agroecological management of production systems, and support for the commercialization of agroecological products. This demonstrates the need for governmental

commitment to food security and environmental sustainability, aligning agricultural policies with the principles of agroecology.

Moreover, the implementation of public policies focused on education and research in agroecology is fundamental for building a solid knowledge base to support agroecological practice. According to Francis (2003), investment in research and development is essential to adapt agroecology to diverse local realities, promoting resilient and productive food systems. These policies should also encourage the creation of spaces for dialogue among farmers, scientists, and decision-makers, facilitating knowledge exchange and the co-creation of sustainable solutions.

The regulation and promotion of markets for agroecological products are also key aspects of public policies in agroecology. Simón et al. (2010) argue that the development of local and regional markets for agroecological products not only provides economic support to farmers but also promotes biodiversity and healthy eating habits among consumers. Public policies that establish certification standards for agroecological products and encourage the procurement of sustainable food by public institutions can significantly stimulate demand for these products.

Finally, the protection of natural resources and the promotion of biodiversity are essential components of public policies for the effective implementation of agroecology. De Schutter (2008) emphasizes that public policies should aim to conserve soil, water, and biodiversity, which are fundamental to the resilience of agricultural systems and the maintenance of ecosystem health. This entails policies that restrict harmful agricultural practices, such as excessive agrochemical use, and promote practices that restore ecosystems and improve soil fertility. The convergence of these public policies—focused both on direct support for farmers and on environmental conservation—is vital for establishing agroecology as a sustainable model of agricultural production.

6 CONCLUSION

The analysis conducted illustrates how agroecology, supported by an appropriate legal framework and effective public policies, can give effect to Brazilian constitutional principles of environmental protection and health promotion, aligning food production with sustainability and social equity.

It is worth highlighting that the transition to agroecology requires a paradigm shift in how agriculture is conceived, moving from a model focused on maximizing production to one that values environmental preservation, biodiversity, and the well-being of rural communities. This movement is not only an environmental necessity but also an opportunity to strengthen public health and local economies by producing healthy food and promoting food security.

Nevertheless, the implementation of agroecology faces legal challenges and depends on public policies that encourage its adoption. It is essential that such policies address not only technical and financial support for farmers but also education, research, and the development of markets for agroecological products. Furthermore, the protection of natural resources and the promotion of biodiversity must be central components of these policies, ensuring the long-term sustainability of agricultural systems.

Collaboration among various stakeholders—including the government, the scientific community, farmers, and civil society—is vital to overcoming these challenges. International cooperation can also play a key role by fostering the exchange of knowledge and successful practices in agroecology.

In conclusion, agroecology represents a viable and necessary path to achieving sustainability in agricultural production, aligned with the principles of environmental protection, public health, and social justice. The implementation of this approach depends on a collective commitment to reshaping agricultural practices, supported by a legal framework and public policies that promote and protect agroecology. Through this analysis, we aim to contribute to the understanding of agroecology not merely as an agricultural practice, but as a comprehensive strategy for sustainable development—one that is strongly grounded in Brazil's legal framework and broader social objectives.

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