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Sustainable management of forest resources and their development prospects in Azerbaijan

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As a country known for its rich vegetation and high biological diversity, Azerbaijan is taking significant steps in the protection and sustainable management of its forest resources. The article places special emphasis on the legal and organizational mechanisms related to these issues and examines the existing problems and challenges. Population growth, industrial expansion, illegal logging, and climate change are among the major factors posing serious threats to forest resources. Strengthening legal mechanisms, enhancing human resource capacity, and applying new technologies are crucial in addressing these problems. The article emphasizes the importance of implementing appropriate legal, economic, and technological measures related to forest management in order to ensure the country's environmental security and socio-economic development.

Keywords: *Forest resources, forest management, biodiversity, forest ecosystems, legal regulations, forest restoration*

INTRODUCTION

Forests are natural resources that play an indispensable role in maintaining ecosystem stability, ensuring biological diversity, and mitigating the effects of climate change. They hold significant functions not only ecologically but also socially and economically. Forests play a vital role in protecting soil from erosion, regulating water balance, carbon sequestration, and maintaining environmental health. In addition, forests hold significant strategic importance for employment, the socio-economic development of regions, and the sustainability of the agricultural sector.

Azerbaijan's plant resources are richer in species composition and biodiversity compared to those of other regions in the Caucasus. This richness is explained by the diversity of the region's natural-historical and physical-geographical conditions (Asgarov, 2016). The diversity of the flora not only adds aesthetic value to nature but also serves as a fundamental scientific basis for establishing sustainable environmental policies. Azerbaijan's steps in environmental management can be carried out more purposefully and effectively against the backdrop of this biodiversity. Measures related to the conservation and restoration of vegetation are considered one of the main directions in environmental management.

Forests, primarily concentrated in the mountainous and foothill zones of Azerbaijan, face risks such as industrialization, urbanization, intensive agricultural activities, landslides, illegal logging, overgrazing, and climate change. These factors lead to a decline in forest cover, a reduction in forest biodiversity, and the degradation of ecosystem services. In this context, the concept of sustainable forest resource management encompasses not only conservation but also the sustainable use of forest assets for socio-economic purposes and the preservation of their regeneration potential for future generations.

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The sustainable management mechanisms and future development prospects of Azerbaijan's forest resources require complex and interdisciplinary approaches. This study analyzes the legal, institutional, and technological aspects of sustainable forest resource management based on scientific literature and normative documents. The aim of the study is to assess the current state of forest resources in Azerbaijan, analyze management mechanisms, and develop recommendations for their sustainable development. For this purpose, the study analyzes the situation and proposes effective recommendations, taking into account environmental, legal, economic, and managerial aspects.

METHODOLOGY

The following methodological approaches were applied in the study:

1. Descriptive analysis – Statistical and normative data on the geographical distribution, area indicators, compositional features, and regional allocation of Azerbaijan's forest resources were summarized.
2. Compensatory assessment – The ecosystem services, social, and economic importance of forests were evaluated, and the relationship of these services with sustainable development was analyzed.
3. SWOT analysis – The strengths and weaknesses of the forestry sector, as well as existing opportunities and external threats, were analyzed in a structured manner.
4. Normative and legal analysis – The legal framework governing forest management at both national and international levels was studied, including the Forest Code of the Republic of Azerbaijan, relevant state programs, and strategic documents.
5. Comparative approach – Azerbaijan's forest policy and management model were compared with regional and international practices.
6. Expert assessments and field observations – Empirical observations were summarized based on the opinions and suggestions of local experts, as well as findings from field studies.

The data sources used in the research are as follows:

- The Forest Code of the Republic of Azerbaijan and other relevant legislative acts;
- Reports from the UN, FAO, UNEP, and other international organizations (especially the Paris Agreement, the Sustainable Development Goals, and the Convention on Biological Diversity);
- Presidential Decrees and State Programs of the Republic of Azerbaijan;
- Recent scientific articles, local and international studies, statistical databases, and academic sources.

RESULTS AND DISCUSSION

Environmental management encompasses complex processes, such as the more efficient and controlled use of natural resources, the reduction of pollution, and the preservation of ecosystem balance. This management model is closely linked to the principles of sustainable development, as sustainability is measured not only by economic growth but also by the preservation of ecological balance and the improvement of social well-being. In recent years, there has been significant progress in awareness of environmental issues around the world. All of this contributes to strengthening the trend of green technology development. A clear dynamic has emerged in this area, as both global leaders and the private sector have become more attentive to environmental concerns in recent years than they were previously. These changes play a solid foundational role in strengthening ecological compliance and ensuring sustainability (Barrows et al., 2020). In the context of legal environmental approaches, environmental education of society, raising awareness about the irreversible consequences of natural hazards, and creating a balance between individual needs and common values are considered essential conditions for ensuring sustainable development (Kipane and Vilks, 2022). In recent years, certain efforts have been made in our republic toward environmental protection and addressing ecological problems. In this regard, a legal framework has been

established in Azerbaijan to ensure sustainable development through the protection of the environment and the efficient use of natural resources. Since the Rio Conference, more than 20 national laws have been adopted concerning public health, environmental protection, ecological safety, and the efficient use of natural resources (Ismayilov et al., 2018).

Global climate change, water scarcity, and similar environmental crises are among the key issues of serious concern and discussion at the international level. Various conventions and agreements have been signed between international organizations and states to address these problems. International documents such as the United Nations (UN) Paris Agreement, the Convention on Biological Diversity, and the Sustainable Development Goals (SDGs) are aimed at shaping environmental policy. Studying the impact of climate change on the environment, combating land degradation and desertification, increasing forest cover, expanding specially protected natural areas, and implementing scientifically grounded measures to mitigate the effects of climate change using advanced practices are considered among the pressing issues (Kovach et al., 2024). As the climate crisis deepens, there is an increasing need for continuous innovation in climate law, strengthened enforcement mechanisms, and more sustainable approaches to climate governance. Addressing these challenges, legal frameworks can play a crucial role in mitigating the impacts of climate change and ensuring a sustainable future for all (Mustafa, 2024). Crises of the modern era, particularly ecological problems affecting nearly all aspects of life, bring to the forefront the issues of efficient use of natural resources, environmental protection, and the assurance of ecological security in the context of economic development. In this context, the establishment of optimal and comprehensive legal mechanisms covering all stages of natural resource use represents one of the main objectives of the environmental policy of the rule-of-law state, as well as a key target in addressing the global ecological crisis (Ruchkina and Merkushova, 2017).

Azerbaijan’s forest resources are of strategic importance not only from an ecological perspective but also in terms of socio-economic development. The steps taken to expand forest areas in 2020-2024, especially the reforestation measures carried out in the liberated territories, are the beginning of a new stage in the country's forest policy. The area covered by forests in the Republic of Azerbaijan is approximately 1.05 million hectares, which is equivalent to 12.2% of the total country's territory. Over the past five years, afforestation and sowing activities have been carried out on more than 5,400 hectares of land, with over 1,500 hectares covered in 2024 alone. Within the framework of the “Year of Solidarity for a Green World”, over 4 million tree seedlings were planted

The designation of 2025 as the “International Year of Forests and Food” by the United Nations highlights the strategic role of forests not only from an ecological perspective but also in terms of food security. Forests are also significant for their medicinal plants, wild fruits, and nut-producing plants. The role of nut-producing plants (such as walnuts, hazelnuts, almonds, pistachios, etc.) in food security and their export potential is increasing. The economic value of forest resources is not limited to timber alone. Ecosystem services, such as regulation of the water cycle, erosion control, carbon sequestration, and aesthetic-functional significance should also be taken into consideration. Assessing these services and integrating them into economic frameworks necessitates innovative strategies within forest policy.

The Forest Code of the Republic of Azerbaijan was adopted in 1997 and, although it covers a number of areas, has limitations in terms of reflecting modern challenges such as climate change, carbon trading, and ecosystem services. For this reason, it is necessary to update the Code. In the Republic of Azerbaijan, the regulation of relations in the field of forestry is governed not only by the Forest Code, but also by the Laws of the Republic of Azerbaijan “On Environmental Protection”, “On Specially Protected Natural Areas and Objects”, “On Phytosanitary Control”, and “On the Animal World”, as well as by the Land Code, the Water Code, and other normative legal acts.

Within the strategic framework of “Country of Clean Environment and Green Growth” of the

"Socio-Economic Development Strategy of the Republic of Azerbaijan for 2022-2026", approved by Presidential Decree No. 3378 dated July 22, 2022, it was set as a target to increase the share of forested areas across the country from 12 percent to 12.3 percent and to ensure the inventory of 65 percent of the forest fund.

The Republic of Azerbaijan has acceded to the United Nations Framework Convention on Climate Change ("UNFCCC") and its "Kyoto Protocol", the "United Nations Convention to Combat Desertification", the "Convention on Biological Diversity" and its "Cartagena Protocol", the "Convention on the Conservation of European Wildlife and Natural Habitats", the "International Plant Protection Convention", the "International Convention for the Protection of New Varieties of Plants", the "Paris Agreement on Climate Change", the UNESCO "Convention on Wetlands of International Importance Especially as Waterfowl Habitat", the "Vienna Convention for the Protection of the Ozone Layer", as well as other international agreements.

Technological advancements have also been observed. Digital tools, such as satellite monitoring, Geographic Information Systems (GIS), drone technology, and the electronic forest registry have begun to be applied in the monitoring of forest resources. These technologies provide opportunities for real-time control in forecasting forest fires, detecting illegal logging, and conserving biodiversity.

At the same time, it is important to involve local communities and NGOs in forest management. Public participation in these processes strengthens environmental awareness and ensures public control. The increase in eco-volunteering initiatives and the implementation of "green marathon" projects in Azerbaijan are positive in this regard.

During his leadership of Azerbaijan from 1969 to 1982, National Leader Heydar Aliyev was the initiator and organizer of major nature conservation efforts implemented across the republic. In those years, eight laws and 32 resolutions of the Council of Ministers of Azerbaijan were adopted concerning ecology, environmental protection, and the efficient use of natural resources. Heydar Aliyev pursued a targeted policy aimed at improving the ecological situation in Azerbaijan and ensuring the sustainable use of natural resources. As a result of his efforts, major initiatives were undertaken, including the creation of large water reservoirs, the establishment of extensive forest belts, and the protection and development of the country's flora and fauna. Notable examples include the establishment of the Shirvan (1969), Aghgol (1978), Ismayilli (1981), and Basitchay (1974) state nature reserves, along with several sanctuaries; the creation of large green zones in the Absheron region and Ganja; and the construction of major water treatment facilities and large reservoirs in various cities and districts (Karimov, 2018).

In general, the expansion of specially protected natural areas plays a crucial role in forest conservation. When examining the condition and trends of forests in protected areas, it is reported that 18% of the world's forest area, or more than 700 million hectares is located in national parks, nature reserves, and other officially designated protected areas. The highest proportion of forests in protected areas is observed in South America (31%), while the lowest is in Europe (5%) (FAO, 2020).

A significant part of the forests in Azerbaijan are located within specially protected natural areas. 237,525 hectares of these areas are covered with forests. Over the past 20 years, the total area of specially protected natural territories comprising 10 national parks, 10 state nature reserves, and 24 state nature sanctuaries has increased from 478,000 hectares (4.5%) to 893,000 hectares (10.3%) (Karimov, 2020). Specifically, the area of specially protected natural territories amounted to 478,000 hectares (4.5%) by 2003. Between 2003 and 2005, with the establishment of the national parks Aghgol, Shirvan, Zangazur, Hirkan, Altiagach, and Absheron, as well as the Gakh State Nature Sanctuary, this area increased to 655,000 hectares (7.6%). From 2006 to 2008, the creation of Shahdag and Goygol national parks, along with the Korchay and Mud Volcanoes State Nature Reserves on the Baku and Absheron peninsulas, expanded the area further to 815,000 hectares (9.5%). Finally, between 2012 and 2018, the establishment of Samur-Yalama and Gizilaghaj national parks increased the total area to 893,000

hectares (10.3%).

The work on the establishment of Bozdag-Acinohur National Park, covering 23,902 hectares and encompassing the Ganikh River valley and the Axar-Baxar mountain range, which are known for their significant and unique natural landscape diversity, as well as Ilisu National Park, covering 13,966 hectares and based on the Ilisu State Nature Reserve, is nearing completion. Following the establishment of the aforementioned national parks in 2025, the total area of specially protected natural territories will reach 913,000 hectares, accounting for 10.6% of the country's territory.

In 2023, the Hirkan Forests were included in the UNESCO World Heritage List, and efforts are currently underway to include the mud volcanoes in the same list. The activities of the Basitchay State Nature Reserve and the Dashalti State Nature Sanctuary, located in the liberated territories and covering a total area of 43,000 hectares, have been restored. Measures are being implemented to restore the biodiversity and natural monuments of the Garagol State Nature Reserve, as well as the Gubadli, Arazboyu, and Lachin State Nature Sanctuaries.

The main authority responsible for the management of forest resources is the Ministry of Ecology and Natural Resources of the Republic of Azerbaijan, established by Presidential Decree No. 485 dated May 23, 2001. The Forest Development Service, operating under the Ministry, carries out a range of functions related to the protection, restoration, and sustainable use of forests. The Ministry also oversees projects related to mapping forest areas, implementing control and monitoring systems, preventing illegal activities, and restoring forest lands.

In addition to their contributions to the economy and food security, forests are inherently vital to human health. More than 28,000 medicinal plant species have been recorded in the world's forest ecosystem (Willis, 2017). Many plants traditionally used in folk medicine since ancient times have grown in our forests. In the flora of Azerbaijan, 1,800 species of medicinal plants have been identified, accounting for 40% of the country's flora (Gasimov et al., 2006). The database on medicinal plants of Azerbaijan contains information on 1,547 plant species belonging to 178 families and 740 genera, classified according to 26 parameters (Mekhtiyeva, 2015).

The country's climate and soil conditions are highly suitable for establishing new forest orchards based on organic farming, where olive, walnut, and other trees can be cultivated. The creation of such forest orchards could be favorable for the production of food and industrially important products as well as for the generation of new employment opportunities (National Program on the Restoration and Expansion of Forests in the Republic of Azerbaijan, 2023). Our forests host 150 species of wild fruit plants. These plants produce thousands of tons of fruit, including common walnut, apple, pear, cornelian cherry, cherry plum, medlar, hazelnut, persimmon, hawthorns, chestnut, blackberry, and others. Of these, 30% are considered commercially exploitable products (Shukurov and Aliyev, 2017). In recent decades, the number of scientific studies highlighting a correlation between the consumption of nut-producing plants and a reduced risk of major chronic diseases has been increasing. It is well established that nut-producing plants are rich in antioxidants, minerals, and vitamins, making them particularly important for nutrition and health (Gonchalves et al., 2023). As noted by the EAT-Lancet Commission, by 2050, due to increased interest in healthy diets, the consumption of healthy foods will need to more than double, primarily through nut-producing plants and other fruits and vegetables (Willett et al., 2019). Although several critical issues in international law have been successfully resolved, in recent years, global ecological problems have been increasing, particularly the rise in temperature, deforestation, loss of biodiversity, ocean acidification, and destruction of habitats (Berebon, 2024).

Azerbaijan's natural and climatic conditions allow for the establishment of plantations of nut-producing plants on more than 100,000 hectares of erosion-affected mountain slopes (Safarov et al., 1986). The use of walnut, hazelnut, almond, chestnut, pistachio, and pecan in forests and forest belts in the Republic, as well as the expansion of their industrially significant plantations, holds particular importance in this regard.

The 29th session of the United Nations

Framework Convention on Climate Change held in Baku is considered one of the most successful conferences in the history of climate negotiations, both in terms of substantive outcomes and the significance and number of decisions achieved, comparable to the Paris and Kyoto COPs. Currently, less than 5% of global climate finance is allocated to forest conservation. For this reason, the necessity of establishing new financial sources for the protection of forest ecosystems and more effective management of existing financial resources has been emphasized (FAO and UNEP, 2020).

To preserve and further promote the historic legacy created by the Baku COP, concrete actions are planned across all sectors, including the forest sector. The application of modern technological tools for the sustainable management of forest ecosystems and the prevention of degradation processes occurring under the background of climate change should be particularly emphasized. Global experience shows that traditional control and monitoring methods are losing their effectiveness in the face of rapid and complex environmental changes of the modern era. In this regard, satellite imagery, geographic information systems (GIS), remote sensing, and artificial intelligence-based analytical tools have become indispensable for forest protection and monitoring. Thus, it is precisely through the application of satellite technologies that it is possible to detect forest fires earlier, monitor large forest areas in real time, and identify cases of illegal logging. GIS platforms provide powerful analytical capabilities for analyzing forest cover dynamics, planning biodiversity conservation measures, and optimizing the use of forest resources. In particular, the application of modern technologies in mountainous and inaccessible areas can greatly facilitate the physical inspection of forests and enhance safety.

RECOMMENDATIONS

Frequent extreme droughts and forest fires occurring worldwide cause unexpected changes in forest ecosystems. Economic loss forecasts related to climate change are also discouraging. By 2050, climate change is projected to cost the global economy 38 trillion dollars annually (Adil et al., 2025).

Recent scientific research based on climate change forecasts predicts that the habitats of some vulnerable rare and endemic plant species dependent on these changes will decrease in the future. To address the problem, it is recommended to apply integrative and proactive approaches in the management of specially protected areas (Sekiewicz et al., 2022; Sekiewicz et al., 2024; Ibadullayeva et al., 2024).

The strategic measures deemed appropriate for the sustainable management and development of Azerbaijan's forest resources can be summarized as follows:

1. **Improvement of the Legal Framework:** It is essential to update the Forest Code and related legislative acts in accordance with international climate commitments and the ecosystem approach. In particular, it is necessary to incorporate concepts such as carbon sequestration, biodiversity, and sustainable forest management into the legal framework.
2. **Widespread Application of Digital Technologies:** Real-time monitoring of forest resources should be ensured through satellite observations, Geographic Information Systems (GIS), drone surveillance systems, and an electronic forest registry.
3. **Participation of local communities and NGOs:** Active participation of local people, non-governmental organizations and volunteers in forest management should be encouraged, and public control and environmental awareness measures should be systematic.
4. **Development of nutty fruit plantations:** Planting walnuts, hazelnuts, almonds and other local nutty fruit species can strengthen agriculture-forestry integration, being both environmentally and economically efficient.
5. **International cooperation and exchange of experience:** Project cooperation with FAO, UNEP and other international organizations should be strengthened, and technological and management experience should be learned on a regional and global scale.

CONCLUSION

The sustainable management and development of forest resources in Azerbaijan holds strategic importance for the country's ecological security, economic stability, and compliance with international commitments. Forests play a key role in environmental protection, regulation of water resources, prevention of soil erosion, and preservation of biodiversity. In addition, considering the risks associated with specific activities, expanding coordination capacities, strengthening technical infrastructure, and intensifying public awareness efforts within existing management mechanisms can contribute to enhancing the efficiency of relevant institutions. Although current efforts such as the restoration of forest areas, improvement of legal mechanisms, application of digital technologies, and enhancement of public participation have yielded positive results, existing challenges require new steps and a comprehensive approach, involving joint cooperation among state institutions, society, scientists, and international partners.

In the context of climate change, the role of forests is becoming increasingly important, and the assessment, protection, and promotion of their ecosystem services should be among the key priorities. Azerbaijan's support for international initiatives and the adoption of national strategies demonstrate the country's potential to become a global actor in this field.

REFERENCES

National Program on the Restoration and Expansion of Forests in the Republic of Azerbaijan (2003) was approved by the Decree No. 1152 of the President of the Republic of Azerbaijan dated February 18, 2003. URL: https://faolex.fao.org/docs/pdf/aze183241.pdf (in Azerbaijani)

Asgarov A. (2016) Flora of Azerbaijan. Higher plants – Embryophyta. Baku: TEAS Press Publishing House, 444 p. (in Azerbaijani)

Ismayilov Ch., Abdullayev A., Gurbanova G., Huseynova Kh., Zeynalova E., Naghiyev F., Seyidzade M., Hasanov A. (2018) Capacity building for sustainable development: The Azerbaijani model. Baku: Science Development Foundation under the President of the Republic of Azerbaijan. 252 p. (in Azerbaijani)

Karimov V.N. (2018) Azerbaijan's environmental policy within the framework of sustainable development principles: priority areas and implemented projects. Man and the Biosphere (MaB, UNESCO). Proceedings of the Azerbaijan National Committee. Ecological civilization, sustainable development, environment, Issue 13: 45–63. (in Azerbaijani)

Karimov V.N. (2020) The role of specially protected natural areas in biodiversity conservation. Man and the Biosphere (MaB, UNESCO). Proceedings of the Azerbaijan National Committee. Ecological civilization, sustainable development, environment, Issue 15: 39–89. (in Azerbaijani)

Gasimov M., Gasimova T., Gadirova G. (2005) Medicinal plants of the 21st century. Baku: Elm, ABU, 432 p. (in Azerbaijani)

Safarov I.S., Khalilov M.Y., Huseynov Sh.G., Mammadova F.H. (1986) Establishment of industrially significant walnut plantations on eroded mountain slopes of Azerbaijan. Baku: Elm, 124 p. (in Azerbaijani)

Shukurov V.K., Aliyev I.A. (2017) Forestry (textbook for higher education institutions). Publishing House of Azerbaijan State Agricultural University. Ganja. 240 p. (in Azerbaijani)

Law of the Republic of Azerbaijan "On the Adoption of the Forest Code of the Republic of Azerbaijan" (1998) December 30, 1997, No. 424-IQ, Legislative Collection of the Republic of Azerbaijan, No. 3, Article 139. (in Azerbaijani)

Ibadullayeva S.D., Yusifov E.F., Karimov V.N. (2024) *Psephellus paucílobus* (Asteraceae) – a new species for the flora of Azerbaijan. Botanical Journal, **109(2):** 214–217 (in Russian)

Mehtieva N.P. (2015) Biodiversity of medicinal plants of the flora of Azerbaijan. Abstract of the doctoral dissertation in biological sciences. Baku, 44 p. (in Russian)

Ruchkina G.F., Merkushova O.V. (2017) Legal approaches to solving the problems of the modern ecological crisis. International Environmental Law, **4 (97):** 27–32 (in Russian)

Barrows C.W., Ramirez A.R., Sweet L.C., Morelli T.L., Millar CI., Frakes N., Rodgers J., Mahalovich M.F. (2020) Validating climate-change refugia: empirical bottom-up approaches to support management actions. *Frontiers in Ecology and the Environment*. **18:** 298–306; doi: 10.1002/fee.2205

Berebon C. (2024) Evolving trends and challenges in international environmental law: a case-based analysis. *International Journal of Environmental Pollution and Environmental Modelling*, **7 (2):** 96-106.

FAO and UNEP (2020) The State of the World's Forests 2020. Forests, biodiversity and people. Rome. p. 134; doi: 10.4060/ca8642en

Goncalves B., Pinto, T., Aires A., Morais M.C., Bacelar E., Anjos R., Ferreira-Cardoso J., Oliveira I., Vilela A., Cosme F. (2023) Composition of nuts and their potential health benefits – an overview. *Foods*, **12(942):** 1-19; doi: 10.3390/ foods12050942

Kipane A., Vilks A. (2022) Legal framework for environmental protection in the context of sustainable development. *European Journal of Sustainable Development*, **11(4):** 169-179; doi: 10.14207/ejsd.2022.v11n4p169.

Kovach D., Kullolli B., Djaparova S., Mikhnevych L., Myskovets I. (2024) Legal aspects of environmental sustainability and climate change: the role of international and national legislation. *Journal of Environmental Law & Policy*, **04 (02):** 149-179.

Mustafa F. (2024) Legal responses to climate change: a review of environmental law frameworks across jurisdictions. *Indian Journal of Law*, **2 (4):** 73-79.

Sekiewicz K., Danelia I., Farzaliyev V., Gholizadeh H., Iszkulo, G., Naqinezhad A., Ramezani E., Thomas P.A., Tomaszewski D., Walas Lu., Dering M. (2022) Past climatic refugia and landscape resistance explain spatial genetic structure in Oriental beech in the South Caucasus. *Ecology and Evolution*, **12:** E 9320, p. 1-19; doi: 10.1002/ece3.9320

S**ekiewicz K., Salva‐Catarineu M., Walas L., Romo A., Gholizadeh H., Naqinezhad A., Farzaliyev V., Mazur M., Boratynski A.** (2024) Consequence of habitat specificity: a rising risk of habitat loss for endemic and sub‐endemic woody species under climate change in the Hyrcanian ecoregion. *Regional Environmental Change*, **24:** 68; doi: 10.1007/s10113-024-02222-7.

Willett W., Rockstrom J., Loken B., Springmann M., Lang T., Vermeulen S., Garnett T. et al. (2019) Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. *Lancet*, **393 (10170):** 447–492.

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