

Alternative Proteine als Beitrag für eine zukunftssichere Ernährung weltweit

Alternative Proteins as a Contribution to Future-Proof Food Systems Worldwide

Harry Hoffmann, Sonja Segowski & Luise Lallinger

Quellen / Sources

- Ali, S., Ali, B., Ahmad, K., Zhang, L., & Jamal, Q. M. S. (2026). Sustainable proteins for future food systems: nutritional quality, environmental trade-offs, and consumer acceptance. *Front Nutr*, 13, 1913634. <https://doi.org/10.3389/fnut.2026.1913634>
- Almutairi, S. M. (2026). Sustainable nutrition systems with alternative proteins for low-impact food future. *Front Nutr*, 13, 1883773. <https://doi.org/10.3389/fnut.2026.1883773>
- Belay, M. A., Bogale, E. K., Haile, M. T., Bogale, S. K., Getachew, E., Andarge, G. A., Seid, K., Lakew, G., Yirsaw, A. N., Gebreegziabher, Z. A., Semagn, B. E., & Alemu, A. T. (2024). Double burden of malnutrition among households in Ethiopia: a systematic review and meta-analysis. *Front Public Health*, 12, 1417289. <https://doi.org/10.3389/fpubh.2024.1417289>
- Bennett, M. K. (1941). International Contrasts in Food Consumption. *Geographical Review*, 31(3). <https://doi.org/10.2307/210172>
- Breewood, H. (2026). *Entwicklung des Marktes für pflanzenbasierte Lebensmittel im deutschen Einzelhandel 2023-2025*.
- Bulah, B. M., van Mierlo, B., Beumer, K., Gerritsen, A. L., Negro, S. O., Hekkert, M. P., & Klerkx, L. (2024). Diversity and directionality: friends or foes in sustainability transitions? *Science and Public Policy*, 51(6), 1075-1092. <https://doi.org/10.1093/scipol/scae044>
- Drewnowski, A., & Hooker, K. (2025). The protein transition: what determines the animal-to-plant (A:P) protein ratios in global diets. *Front Nutr*, 12, 1518793. <https://doi.org/10.3389/fnut.2025.1518793>
- FAO. (2014). *The state of food and agriculture: Innovation in family farming*. <https://www.fao.org/4/i3437e/i3437e.pdf>
- FAO. (2019). *Water use in livestock production systems and supply chains*. <https://openknowledge.fao.org/server/api/core/bitstreams/22e23c47-5393-451e-b6aa-3f2c6fbc7cbe/content>
- Fetter, T. R. (2022). Energy transitions and technology change: “Leapfrogging” reconsidered. *Resource and Energy Economics*, 70. <https://doi.org/10.1016/j.reseneeco.2022.101327>
- Glenn, A. J., Wang, F., Tessier, A. J., Manson, J. E., Rimm, E. B., Mukamal, K. J., Sun, Q., Willett, W. C., Rexrode, K. M., Jenkins, D. J., & Hu, F. B. (2024). Dietary plant-to-animal protein ratio and risk of cardiovascular disease in 3 prospective cohorts. *Am J Clin Nutr*, 120(6), 1373-1386. <https://doi.org/10.1016/j.ajcnut.2024.09.006>
- Horton, P. (2017). We need radical change in how we produce and consume food. *Food Security*, 9(6), 1323-1327. <https://doi.org/10.1007/s12571-017-0740-9>
- Kabange, N. R., Kwon, Y., Lee, S.-M., Kang, J.-W., Cha, J.-K., Park, H., Dzorkpe, G. D., Shin, D., Oh, K.-W., & Lee, J.-H. (2023). Mitigating Greenhouse Gas Emissions from Crop Production and Management Practices, and Livestock: A Review. *Sustainability*, 15(22). <https://doi.org/10.3390/su152215889>
- Manufacturing Africa. (2025). *Opportunity for alternate protein in sub-Saharan Africa*. <https://manufacturingafrica.org/wp-content/uploads/2025/08/Opportunity-for-Alternate-Protein-in-sub-Saharan-Africa.pdf>
- Nontu, Y., Mdoda, L., Dumisa, B. M., & Ndwandwe, N. (2026). A systematic review of climate change implications towards livestock production and smallholder livelihoods in Sub-Saharan Africa. *International Journal of Agricultural Sustainability*, 24(1). <https://doi.org/10.1080/14735903.2026.2659510>
- OECD. (2025). *Africa's Urbanisation Dynamics 2025: Planning for Urban Expansion* (West African Studies, Issue).

- Omokpariola, D. O., Agbanu-Kumordzi, C., Samuel, T., Kiswii, L., Moses, G. S., & Adelegan, A. M. (2025). Climate change, crop yield, and food security in Sub-Saharan Africa. *Discover Sustainability*, 6(1). <https://doi.org/10.1007/s43621-025-01580-4>
- Rauw, W. M., Gómez Izquierdo, E., Torres, O., García Gil, M., de Miguel Beascochea, E., Rey Benayas, J. M., & Gomez-Raya, L. (2023). Future farming: protein production for livestock feed in the EU. *Sustainable Earth Reviews*, 6(1). <https://doi.org/10.1186/s42055-023-00052-9>
- Segowski, S. (2026). *Untersuchung der Eignung von Sesampresskuchen zur Herstellung von Proteintexturaten* Technischen Universität Berlin J. Berlin, Germany.
- Simon, W. J., Hijbeek, R., Frehner, A., Cardinaals, R., Talsma, E. F., & van Zanten, H. H. E. (2024). Circular food system approaches can support current European protein intake levels while reducing land use and greenhouse gas emissions. *Nat Food*, 5(5), 402-412. <https://doi.org/10.1038/s43016-024-00975-2>
- Verkuijl, C., Smit, J., Green, J. M. H., Nordquist, R. E., Sebo, J., Hayek, M. N., & Hötzel, M. J. (2024). Climate change, public health, and animal welfare: towards a One Health approach to reducing animal agriculture's climate footprint. *Frontiers in Animal Science*, 5. <https://doi.org/10.3389/fanim.2024.1281450>
- Yigezu, M., Oumer, A., Damtew, B., Birhanu, D., Getaye Workie, S., Hamza, A., Atle, A., & Kebede, N. (2024). The dual burden of malnutrition and its associated factors among mother-child pairs at the household level in Ethiopia: An urgent public health issue demanding sector-wide collaboration. *PLoS One*, 19(11), e0307175. <https://doi.org/10.1371/journal.pone.0307175>
- Zhou, L., Mu, Y., Zhang, J., Zheng, M., Chen, L., Zhang, Q., Zhou, J., Zhu, Z., Wang, S., Li, B., Hu, Z., Zhao, K., He, D., & Lei, F. (2026). Upgrading sesame cake-extracted oil via enzymatic glycerolysis: Production and characterization of diacylglycerol-enriched oil. *Food Chem X*, 38, 104239. <https://doi.org/10.1016/j.fochx.2026.104239>