Financing the Food Systems Transformation:

Leveraging Climate Finance for Equitable, Humane, and Agroecological Food Systems

A Discussion Paper by the DCJ Food and Agriculture Working Group

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Content

Introduction

Agrifood systems are the foundations of economies, cultures, and ecosystems around the world, directly employing almost 1/3 of the world's population, the majority of whom are smallholder women in Asia and Africa [1].

However, the current industrial, corporate-dominated agricultural system relies mainly on fossil fuels [2], contributing a third of global greenhouse gas emissions [3]. The sector is uniquely placed as a driver of emissions while also being extremely vulnerable to the climate crisis. Over the past 30 years, disasters have caused $3.8 trillion in crop, livestock, and livelihood losses, representing an annual average loss of $123 billion or 5% of global agricultural gross domestic product (GDP) [4].

Evidence from communities has already proven that agroecology and sustainable agriculture [5], including agroforestry, are real climate solutions that strengthen climate adaptation, cut emissions, support biodiversity, and restore degraded lands, making it a key strategy for delivering on multiple UN Conventions. Smallholders around the world are already reaping the benefits of agroecology and sustainable agriculture. In Asia, community seed houses, intercropping, and rainwater harvesting protected farms from climate shocks. In Africa, communities practiced agroecological land restoration, knowledge sharing, and early warning systems. In Latin America, agroforestry transformed degraded land into a lush forest, improved climate resilience, and generated income for Indigenous communities.

With only 2.5% of overall public climate financing allocated for agriculture, and even less, at 1.5%, funding sustainable agriculture [6], this report aims to make the case that increased provision of climate finance is fundamental to the just Transition away from the current industrial agriculture model towards equitable, humane, and agroecological food systems.

1. FAO. (2023, March 4). Almost half the world's population lives in households linked to Agrifood Systems. Newsroom. https://www.fao.org/newsroom/detail/almost-half-the-world-s-population-lives-in-households-linked-to-agrifood-systems/en
2. Woods J, Williams A, Hughes JK, Black M, Murphy R. Energy and the food system. Philos Trans R Soc Lond B Biol Sci. 2010 Sep 27;365(1554):2991-3006. doi: 10.1098/rstb.2010.0172. PMID: 20713398; PMCID: PMC2935130.
3. Crippa, M., Solazzo, E., Guizzardi, D. et al. Food systems are responsible for a third of global anthropogenic GHG emissions. Nat Food 2, 198–209 (2021). https://doi.org/10.1038/s43016-021-00225-9
4. FAO. 2023. The Impact of Disasters on Agriculture and Food Security 2023 – Avoiding and reducing losses through investment in resilience. Rome. https://doi.org/10.4060/cc7900en
5. European Coordination Via Campesina. (2022, March). Peasant Agroecology . Retrieved from https://www.eurovia.org/wp-content/uploads/2022/04/Agroecology_EN.pdf.
6. Global Alliance for the Future of Food. Public Climate Finance for Food Systems Transformation (2024 update). N.p.: Global Alliance for the Future of Food, 2024.

I. Climate Financing for Agroecology and Smallholders

A. Climate Finance under the UNFCCC

The Green Climate Fund (GCF), the Fund for Responding to Loss and Damage (FRLD), and the Adaptation Fund (AF) are key mechanisms under the UN Framework Convention on Climate Change (UNFCCC) designed to channel climate finance to key sectors in vulnerable countries, but all three funds remain severely underfunded.

The GCF is considered to be the world's largest dedicated climate financing instrument, but it stands at a meager portfolio of $16.7 billion [7], a far cry from the supposed $100 billion annual climate finance inflow expected from Global North countries. The FRLD, established most recently and designed to provide financial compensation for economic and non-economic losses and damages due to climate change, is still being set up and has only received $650 million in pledges [8].
The AF, the oldest of the funds, and designed to finance climate adaptation projects in developing countries, is the most underfunded, with only $988 million committed for climate change adaptation and resilience projects in its almost 20 years of existence [9].

The New Collective Quantified Goal (NCQG) was supposed to push for greater ambition and climate finance delivery, but the final decision adopted at COP29 devastatingly failed, setting a target of only $300 billion annually by 2035 to support developing nations in tackling climate change[10,11]. Even this target is unlikely to be met, with Global North countries having been slow to mobilise the pledged funds and projected to heavily rely on private sector investments rather than direct public financing. The United States of America (USA), the world's largest historical emitter[12], has also exited the Paris Agreement, skirting its responsibility to deliver climate finance.

7. UNFCCC. (2025, July 17). GCF Presentation on Agriculture and Food Security. https://unfccc.int/sites/default/files/resource/GCF_Presentation-Agriculture-and-Food-Security-17.06.25.pdf.
8. World Bank. 2025. Fund for responding to Loss and Damage (FRLD). Fund for responding to Loss and Damage.
9. Adaptation Fund. 2023. Adaptation Fund Poised to Further Adaptation Action as it Prepares to Launch 5-Year Plan, on Heels of IPCC Report - Adaptation Fund .
10. Ecco. 2025. What happened at COP29 - ECCO.
11. Carbon Brief. 2025. COP29: Key outcomes agreed at the UN climate talks in Baku - Carbon Brief
12. Civil Society Equity Review. 2023. Extraction Equity. https://www.equityreview.org/extraction-equity-2023.

The NCQG was a much-needed opportunity to reshape funding priorities so that smallholders, sustainable agriculture, and food system transformation receive the required financial support. But with that window come and gone, and with the pitiable state of climate finance delivery, disaster looms for the agriculture sector.

B. The Funding Gap in Agriculture

Despite the growing recognition of climate-induced disruptions in smallholder farming, critical funding gaps in food system transformation persist, and funding streams for agroecological transitions remain unclear. A just transition to agroecology and sustainable smallholder farming requires substantial investment, yet financing remains critically insufficient.

It has been estimated that at least $1.1 trillion annually is needed to align agrifood systems with a 1.5 °C climate pathway by 2030 [13]. However, actual climate finance flowing to agrifood systems remains drastically low at $28.5 billion per year, which accounts for less than 5% of global tracked climate finance [13]. Additionally, despite smallholders producing one-third of the world's food, they face an annual financing gap of at least $170 billion, limiting their ability to adopt climate-resilient practices.

C. Multilateral Development Banks and Debt

The majority of climate financing in agriculture, after direct investments, is channeled through multilateral development banks (MDBs), with allocations between mitigation and adaptation efforts. However, the allocation and form of these funds raise critical questions about whether climate finance is effectively supporting agroecological transitions and smallholders.

C1. MDB Allocation

While mitigation finance would be critical to transforming agricultural and energy practices to reduce emissions, MDBs ostensibly underfund mitigation in agriculture, allocating over 70% [14] of mitigation finance toward energy, transport, and infrastructure. Meanwhile, only 3% of mitigation finance is allocated to water supply and wastewater, and even lower, at 2.8% is dedicated to Agriculture, Forestry, Land Use & Fisheries [14].

13. CPI & FAO. 2025. The Triple Gap in Finance for Agrifood Systems. Revised. Rome. https://doi.org/10.4060/cd3611en.

14. World Bank. (2024) 2023 Joint Report of Multilateral Development Banks. MDB climate finance 2023 - Key figures.

C2. Debt vs. Grants: Has Climate Finance Benefited Smallholders?

MDBs and development banks primarily offer credit-based financing while smallholder farmers struggle with high repayment risks and limited loan accessibility. This reliance on debt financing creates long-term financial strain, making sustainable investment nearly impossible for vulnerable farmers.

Only 59% of sustainable food systems financing comes as grants, while 37% is debt-based. Given that the majority of smallholders live in countries with high public and private guaranteed (PPG) debt vulnerability, this highlights the urgent need for non-repayable support for smallholders [6]. Meanwhile, smallholders self-finance $368 billion per year just to survive, which demonstrates the massive funding gap that prevents them from leading agroecological transitions[14]. Smallholder farmers remain trapped in an unequal financing system where loans outweigh grants, thus restricting their access to vital resources and deepening debt cycles that hinder climate adaptation.

Smallholders play a critical role in agroecology and low-emission food production, yet they receive minimal investment, which leaves them vulnerable to climate impacts. The continued prioritisation of industrial infrastructure over agroecological solutions deepens existing inequities and limits smallholders' ability to lead climate-resilient food system transitions.

The continued neglect of agroecology and smallholders in climate finance leaves them vulnerable to worsening climate shocks and declining food security. If funding does not shift toward these frontline communities, the world will face intensifying hunger, environmental collapse, and deepened inequalities, thus further weakening our ability to combat climate change.

Without a radical shift in funding priorities, food insecurity will worsen, biodiversity loss will accelerate, and climate adaptation for smallholders will remain out of reach. To avoid a crisis, the majority of climate finance towards agriculture must immediately prioritise grants and redirect harmful subsidies toward agroecological transitions.

6. Global Alliance for the Future of Food. Public Climate Finance for Food Systems Transformation (2024 update). N.p.: Global Alliance for the Future of Food, 2024.
14. World Bank. (2024) 2023 Joint Report of Multilateral Development Banks. MDB climate finance 2023 - Key figures.

II. Redirecting Finance and Subsidies

A. Analysis of Harmful Subsidies and Financial Flow

Subsidies can take many forms, including direct payments to farmers, tax breaks, and financial support for infrastructure or technology improvements, and may sometimes act as a form of public investment [15]. Subsidies aim to stabilise food prices, secure supply, and protect farmers from market and weather risks. The Organisation for Economic Co-operation and Development (OECD) offers the most comprehensive global analysis of agricultural subsidies, using key indicators to assess their nature, level, impacts, including on the environment, across countries. The analysis highlights subsidy types and target groups but lacks comprehensive quantitative indicators on how subsidies promote equity and support smallholders across countries. The exact share of subsidies going to the agricultural sector is hard to determine, as total support data often has gaps or caveats. OECD analyses often fail to assess development impacts (e.g. pesticide exposure, land degradation effects on health, antimicrobial resistance) or environmental sustainability, and do not capture the systemic inequities created by subsidies [16,17].

A1. An analysis of current agriculture subsidies

Overall Magnitude and Trends

Agriculture receives the highest level of subsidies among all sectors[16]. Governments provided an average of $842 billion annually in support to agriculture between 2021 and 2023 [15] and if current trends persist, this figure could rise to nearly $1.8 trillion by 2030 [18]. A handful of large economies–China, the USA, India and the European Union (EU) representing 37%, 15%, 14% (> $550 billion) and 13% of the total respectively, account for nearly 80% of this total [15]. Overall, subsidies to six key economic sectors (agriculture, including crops and farmed animals; fossil fuels; forestry; infrastructure; fisheries and aquaculture; mineral mining) are between $1.7 trillion and US$3.5 trillion annually, representing approximately 1.6% to 3.3% of the global GDP in 2023 (based on an estimated GDP of US$105.4 trillion).

15. OECD Agricultural Policy Monitoring and Evaluation 2024: Innovation for Sustainable Productivity Growth. Paris 2024, doi:10.1787/74DA57ED-EN.

16. Reyes-García, V.; Villasante, S.; Benessaiah, K.; Pandit, R.; Agrawal, A.; Claudet, J.; Garibaldi, L.A.; Kabisa, M.; Pereira, L.; Zinngrebe, Y. The Costs of Subsidies and Externalities of Economic Activities Driving Nature Decline. Ambio 2025, doi:10.1007/s13280-025-02147-3.

17. IPES FOOD Towards a Common Food Policy for the EU - The Policy Reform and Realignment That Is Required to Build Sustainable Food Systems in Europe Available online: https://www.iddri.org/en/publications-and-events/report/towards-common-food-policy-eu?utm_source=chatgpt.com (accessed on 5 June 2025).

18. FAO, U. and U. A MULTI-BILLION-DOLLAR OPPORTUNITY Repurposing Agricultural Support to Transform Food Systems; Rome, 2021.

Key policy focus areas in farmed animals

Governments are beginning to align agricultural policies with global climate and biodiversity goals, as seen in commitments like the UNFCCC Conference of the Parties (COP28) and the Kunming-Montreal Global Biodiversity Framework (GBF) [15]. Yet, the bulk of subsidies still go to emission-intensive livestock or what we henceforth call "farmed animals" through direct support and indirectly via subsidies for feed crops [18–20]. Some policies directly target the transformation of animal farming, aiming to reduce environmental impact and enhance animal welfare. For instance, Belgium offers payments to pig farmers who reduce or close their operations, Switzerland increases support for lower-impact cow breeds, and Germany mandates a new label with information on different husbandry systems [15]. Costa Rica's Payments for Ecosystem Services (PES) program pays landowners for reforestation and conservation, leading to increased forest cover [21].

However, in major economies, studies show that these subsidies often lead to technical inefficiencies and are considered harmful [22]. Subsidies are harmful when they lead to negative impacts on the environment, health or socio-economic conditions, regardless of whether these effects were intended by design. These can include subsidies that contribute to the overuse of pesticides and fertilisers, overproduction, land grabbing, or emission increases [23].

The US Department of Agriculture (USDA) meat subsidies disproportionately benefit large agribusinesses, less than a third of all farms benefit from agricultural subsidies, distorting markets, undermining competition, and marginalising small, sustainable farms [20,24]. In Europe, farmers receive significant funding through eco-schemes and environmental payments. This skews support toward farmed animals, hindering a shift to more sustainable plant-based systems and lacking a long-term strategy for reducing emissions.

With farmed animals and feed production as major drivers of greenhouse gas emissions, habitat destruction, and biodiversity loss, current subsidy models are falling short of their environmental promises [25]. China's broader market interventions stabilise the farmed animals sector [15], but in doing so, create inefficiencies and mask environmental and social externalities [26]. Brazil's market-based model may appear less distortionary, yet without intentional support mechanisms (just 3.3% of producer revenue), it fails to steer the system toward smallholders or climate resilience [21]. This demonstrates a clear misalignment between public spending and public interest,

15. OECD Agricultural Policy Monitoring and Evaluation 2024: Innovation for Sustainable Productivity Growth. Paris 2024, doi:10.1787/74DA57ED-EN.
18. FAO, U. and U. A MULTI-BILLION-DOLLAR OPPORTUNITY Repurposing Agricultural Support to Transform Food Systems; Rome, 2021.
19. Kortleve, A.J.; Mogollón, J.M.; Harwatt, H.; Behrens, P. Over 80% of the European Union's Common Agricultural Policy Supports Emissions-Intensive Animal Products. Nature Food 2024 5:4 2024, 5, 288–292, doi:10.1038/s43016-024-00949-4.
20. Roseman Big Ag, Big Bucks: How USDA Subsidies Feed Market Inequality And Political Influence - Faunalytics Available online: https://faunalytics.org/usda-grant-analysis/ (accessed on 11 June 2025).
21. Ding, H.; Markandya, A.; Feltran-Barbieri, R.; Calmon, M.; Cervera, M.; Duraisami, M.; Singh, R.; Warman, J.; Anderson, W. Repurposing Agricultural Subsidies to Restore Degraded Farmland and Grow Rural Prosperity. World Resources Institute 2021, doi:10.46830/WRIRPT.20.00013.
22. Damania, R.; Balseca, E.; de Fontaubert, C.; Gill, J.; Kim, K.; Rentschler, J.; Russ, J.; Zaveri, E. Detox Development: Repurposing Environmentally Harmful Subsidies. Detox Development 2023, doi:10.1596/978-1-4648-1916-2.
23. Cox, A. Identifying and Tackling Environmentally Harmful Agricultural Subsidies in the WTO Note on Greenhouse Gas Emissions About TESS; 2025.
24. Hulagu, T.; Ikizler, D. US Cattle Farms, Externalities and Subsidies: A Computable Two-Sector Markov-Perfect Equilibrium Model. SSRN Electronic Journal 2021, doi:10.2139/SSRN.3980964.
25. Barbosa, M.W. Government Support Mechanisms for Sustainable Agriculture: A Systematic Literature Review and Future Research Agenda. Sustainability 2024, Vol. 16, Page 2185 2024, 16, 2185, doi:10.3390/SU16052185.
26. Amaglobeli, D.T.B.T.M. Agricultural Producer Subsidies: Navigating Challenges and Policy Considerations; Washington, 2024.

particularly in the context of the climate crisis.

A2. Subsidy flows - industrial agriculture vs. agroecology

The structure of subsidies is heavily biased towards industrial agriculture. Over 60% of the agricultural subsidies are tied to production, meaning they depend on the type or quantity of crops or products produced, creating perverse incentives for overproduction and intensive farming methods [16].

An analysis of OECD data reveals stark differences in how countries support their agricultural sectors. China leads with over $277 billion in producer support. High producer support often signals strong government support for farmers, but can distort markets. Investment in public goods like research and infrastructure is highest in China by volume, but proportionally strongest in Australia and New Zealand, where support focuses on long-term productivity. On the consumer side, India provides the most benefit to consumers, reflecting lower food prices. Total support (TSE), which includes all types of transfers, is also highest in China. While high TSE can reflect government commitment, excessively high or negative levels may point to market inefficiencies or policy disincentives for the sector.

These indicators, however, fail to capture the full picture, especially in low- and middle-income countries where support is delivered through underreported means like infrastructure, extension services, or in-kind aid [17]. In Latin America and the Caribbean, subsidies largely benefit industrial, export-oriented farming, limiting support for sustainable approaches like agroecology [27]. India spends over $22.6 billion annually on input subsidies for irrigation, fertilizers, and electricity, while Nigeria and Mexico also provide significant support for seeds and fertilizers targeting staple crops [21]. Globally, around 63% of fisheries subsidies, about $22.2 billion, go to practices that fuel overfishing [28].

These cases illustrate how much current subsidy systems heavily favor industrial farming by lowering costs for inputs (e.g. fertilizers, pesticides, feed), often encouraging overuse and environmental harm. In addition, market price supports give industrial producers an artificial advantage [24], making it harder for agroecological and smallholders, who rely less on subsidies and offer greater environmental benefits, to compete [29]. Public investment in agroecology remains minimal, making up just 1–1.5% of total agricultural and aid budgets [30].

16. Reyes-García, V.; Villasante, S.; Benessaiah, K.; Pandit, R.; Agrawal, A.; Claudet, J.; Garibaldi, L.A.; Kabisa, M.; Pereira, L.; Zinngrebe, Y. The Costs of Subsidies and Externalities of Economic Activities Driving Nature Decline. Ambio 2025, doi:10.1007/s13280-025-02147-3.
17. IPES FOOD Towards a Common Food Policy for the EU - The Policy Reform and Realignment That Is Required to Build Sustainable Food Systems in Europe Available online: https://www.iddri.org/en/publications-and-events/report/towards-common-food-policy-eu?utm_source=chatgpt.com (accessed on 5 June 2025).
21. Ding, H.; Markandya, A.; Feltran-Barbieri, R.; Calmon, M.; Cervera, M.; Duraisami, M.; Singh, R.; Warman, J.; Anderson, W. Repurposing Agricultural Subsidies to Restore Degraded Farmland and Grow Rural Prosperity. World Resources Institute 2021, doi:10.46830/WRIRPT.20.00013.
24. Hulagu, T.; Ikizler, D. US Cattle Farms, Externalities and Subsidies: A Computable Two-Sector Markov-Perfect Equilibrium Model. SSRN Electronic Journal 2021, doi:10.2139/SSRN.3980964.
27. Jean-Francois, L.C.; Eric, S.; Muriel, B.; Sandrine Freguin, G.; Jacques, M.; Paulo, N.; Maria Mercedes, P.; Luis, V. Public Policy Support for Agroecology in Latin America: Lessons and Perspectives 1. Global Journal of Ecology 2020, 129–138, doi:10.17352/GJE.000032.
28. Villasante, S.; Sumaila, R.; Da-Rocha, J.M.; Carvalho, N.; Skerritt, D.J.; Schuhbauer, A.; Cisneros-Montemayor, A.M.; Bennett, N.J.; Hanich, Q.; Prellezo, R. Strengthening European Union Fisheries by Removing Harmful Subsidies. Mar Policy 2022, 136, 104884, doi:10.1016/J.MARPOL.2021.104884.
29. van der Ploeg, J.D.; Barjolle, D.; Bruil, J.; Brunori, G.; Costa Madureira, L.M.; Dessein, J.; Drąg, Z.; Fink-Kessler, A.; Gasselin, P.; Gonzalez de Molina, M.; et al. The Economic Potential of Agroecology: Empirical Evidence from Europe. J Rural Stud 2019, 71, 46–61, doi:10.1016/J.JRURSTUD.2019.09.003.
30. HLPE Agroecological and Other Innovative Approaches for Sustainable Agriculture and Food Systems That Enhance Food Security and Nutrition. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome. 2019.

This underscores the need to redirect public support toward sustainable practices like agroecology. To create equitable, humane, and agroecological food systems, governments must shift subsidies away from harmful industrial practices and invest in inclusive alternatives like agroecology [21,31,32]. However, it is worth highlighting that there is no single, universally accepted definition of sustainable agriculture or agroecology; interpretations vary by country, institution, and actor, allowing the terms to be used strategically to reflect different priorities [27]. These divergences highlight the complexity of achieving global climate and biodiversity goals, as they involve not only scientific and technical challenges but also profound ethical, political, and economic considerations.

B. Reallocation to Sustainable Solutions

B1. What are equitable, humane, and agroecological agriculture systems

In an equitable, humane and agroecological food system, nutritious foods are accessible to all and supplied through agroecology production systems that promote human rights — particularly the rights of traditionally marginalised populations including women and girls, Indigenous populations, people of color and people with disabilities — and protect the environment and animals, while ensuring food sovereignty meets food security needs and guaranteeing that people working across the food system live in dignity and receive a liveable income[35].

Along with significantly decreasing consumption of animal products in high-consuming countries, remaining animal-sourced foods are produced on small and medium-sized diversified farms using high welfare standards, strong worker protections, and agroecological practices [35]. An equitable, humane, and agroecological food system is climate-resilient, locally and democratically-governed, while mitigating greenhouse gas emissions, biodiversity loss, and food insecurity [35].

B2. Why they need financial support

Governments' tangible commitment to supporting agroecological transformation often remains more rhetorical than practical [36]. Agroecology offers a viable and urgent pathway to build sustainable and resilient food systems, addressing multiple global challenges while providing broad benefits that conventional agriculture often fails to deliver [37,38], including social and food justice with enhanced biodiversity, greater climate resilience, and improved soil health [39].

21. Ding, H.; Markandya, A.; Feltran-Barbieri, R.; Calmon, M.; Cervera, M.; Duraisami, M.; Singh, R.; Warman, J.; Anderson, W. Repurposing Agricultural Subsidies to Restore Degraded Farmland and Grow Rural Prosperity. World Resources Institute 2021, doi:10.46830/WRIRPT.20.00013
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31. Harsha Vishnumolakala; Léa Faucheux; Jide Olutoke Landscape of Climate Finance for Agrifood Systems 2025 – CLIC Available online: https://climateshotinvestor.org/publications/landscape-of-climate-finance-for-agrifood-systems-2025 (accessed on 19 May 2025)
32. Prakash, A.; Alexander, S.; Augustinus, C.; Doss, C.; Ihalainen, M.J.; Kallio, E.; Monterroso, I.I.; Obaikol, E.; Scalise, E.; Stanley, V.; et al. REPURPOSING PERVERSE INCENTIVES FOR LAND RESTORATION. 2021
35. CBD and WAP The Just Transition from Industrial Animal Production to Equitable, Humane and Sustainable Food Systems 2024. 2024.
36. Derkimba, A. RECOGNITION OF AGROECOLOGY IN THE RIO CONVENTIONS: Potential for Scaling up Summary Report With the Support Of
37. Pereira, L.; Wynberg, R.; Reis, Y. Agroecology: The Future of Sustainable Farming? Environment 2018, 60, 4–17, doi:10.1080/00139157.2018.1472507/ASSET//CMS/ASSET/EC403718-0DB0-41DD-86CE-C8C2083320A6/00139157.2018.1472507.FP.PNG
38. Biovision Foundation for Ecological Development & IPES-Food. Money Flows: What Is Holding Back Investment in Agroecological Research for Africa? Biovision Foundation for Ecological Development & International Panel of Experts on Sustainable Food Systems; 2020
39. Ewert, F.; Baatz, R.; Finger, R. Agroecology for a Sustainable Agriculture and Food System: From Local Solutions to Large-Scale Adoption. Annu Rev Resour Economics 2023, 15, 351–381, doi:10.1146/ANNUREV-RESOURCE-102422-090105/CITE/REFWORKS

In addition, by fostering a comprehensive understanding of interactions within the food system, agroecology seeks to ensure that agricultural practices are not only productive and socially and environmentally sound but also uphold the welfare of farmed animals [40]. However, smallholders often lack the capital, knowledge, and infrastructure to compete with heavily subsidized industrial agriculture [41].

Redirecting financial resources is essential not only to correct market distortions but also to reward practices that deliver public goods [42]. Such policy shifts can catalyze the reallocation of public funds, incentivising transitions to farming systems that prioritise high welfare and agroecological practices.

An equitable, humane, and agroecological food system supports smallholders, Indigenous communities, and marginalised farmers, and promotes food sovereignty and rural development [35]. Without targeted investment, these systems cannot overcome structural barriers such as limited access to markets, credit, and infrastructure. Public funds and climate finance must be mobilised to de-risk the transition of food systems, build knowledge systems, and ensure a just transition for producers [43].

B3. Strategies for redirecting finance from "false solutions" in big agriculture and farmed animals sectors to equitable, humane, and agroecological practices - public and private finance

The OECD's report highlights the urgent need to redirect financial support away from environmentally harmful large-scale agriculture and farmed animals sectors [42]. This transition is pivotal for achieving sustainable food systems that are resilient, inclusive, and environmentally sound, as current subsidies often favor industrial agriculture and intensive farmed animal production with poor animal welfare and high emissions.

Reducing the overall production of farmed animals is most aligned with restoring carbon sinks [44], noting the importance of incentivising a shift away from farmed animal production where required, with climate finance mechanisms assisting animal farmers to convert their practices.

There is growing evidence that public subsidies should reward pasture-fed systems, given their contributions to welfare and environmental restoration [45]. However, this

35. CBD and WAP The Just Transition from Industrial Animal Production to Equitable, Humane and Sustainable Food Systems 2024. 2024.
40. FAO THE 10 ELEMENTS OF AGROECOLOGY GUIDING THE TRANSITION TO SUSTAINABLE FOOD AND AGRICULTURAL SYSTEMS. Rome 2018.
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44. Harwatt, H.; Hayek, M.N.; Behrens, P.; Ripple, W.J. OPTIONS FOR A PARIS-COMPLIANT farmed animals SECTOR Timeframes, Targets and Trajectories for farmed animals Sector Emissions from a Survey of Climate Scientists. 2024.
45. Norton, L.; Maskell, L.; McVittie, A.; Smith, L.; Wagner, M.; Waterton, C.; Watson, C. Learning from Innovative Practitioners: Evidence for the Sustainability and Resilience of Pasture Fed farmed animals Systems. Front Sustain Food Syst 2022, 6, 1012691, doi:10.3389/FSUFS.2022.1012691/BIBTEX.

support must be carefully designed to avoid driving unsustainable land-use expansion. Incentives should prioritise practices that enhance soil health, biodiversity, and carbon sequestration within existing agricultural land. More investment is needed in agroecological research, development, and innovation, which offers high returns but remains underfunded [15]. Results-based payments tied to animal welfare, ecological, and social outcomes can effectively drive change. Governments can play a role in funding infrastructure upgrades, veterinary care, and training to support farmers to transition [19].

Strengthening agricultural knowledge systems and extension services is crucial for disseminating sustainable practices. Investments should focus on training and advisory services, and the development of model farms and peer-to-peer learning to facilitate the adoption of agroecological methods amongst farmers.

The effectiveness of subsidies depends on their design, with direct payments to small-scale farmers proving more beneficial for sustainability. A balanced approach to subsidies, combining economic support with sustainability goals, enhances resilience in the farmed animals, fishing, and crop sectors. Continuous monitoring and evaluation are essential to ensure that subsidies align with long-term sustainability objectives and do not inadvertently encourage unsustainable practices or overproduction [46].

Reforming agricultural subsidies effectively requires phasing out harmful inputs and expansion incentives in favour of sustainable and humane community-led solutions, ensuring equitable support for smallholder farmers, and investing in data systems and peer learning.

Global examples illustrate this approach: Brazil's Bolsa Verde and Ethiopia's Productive Safety Net Programme show how targeted support can link poverty reduction with conservation; and platforms like Mexico's subsidy tracking and regional initiatives such as AFR100 and 20x20 help countries learn from one another. These strategies demonstrate that well-designed subsidies can advance sustainability, equity, and rural resilience [21].

15. OECD Agricultural Policy Monitoring and Evaluation 2024: Innovation for Sustainable Productivity Growth. Paris 2024, doi:10.1787/74DA57ED-EN.
19. Kortleve, A.J.; Mogollón, J.M.; Harwatt, H.; Behrens, P. Over 80% of the European Union's Common Agricultural Policy Supports Emissions-Intensive Animal Products. Nature Food 2024 5:4 2024, 5, 288–292, doi:10.1038/s43016-024-00949-4.
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B4 . What policymakers need to do, including through international cooperation

Redirecting public subsidies is not merely a matter of reallocating financial resources. It demands a systemic transformation that addresses the intertwined crises of climate change, biodiversity loss, inequality, and food security, justice and sovereignty. Current subsidy frameworks often distort markets, entrench harmful environmental practices, and concentrate power among dominant actors in the food system.

The UNFCCC should set an ambitious, time-bound target to phase out harmful subsidies, mirroring the commitment in the Kunming-Montreal Global Biodiversity Framework, where Target 18 calls for reducing harmful incentives by at least $500 billion annually while scaling up positive ones

True reform must move beyond technical adjustments. It must be anchored in transparency, accountability, and coherent policy frameworks that promote equitable, humane, and agroecological food systems.

By realigning incentives, governments can accelerate systemic transformation towards climate-resilient and socially just agriculture—one that builds in safeguards against harm, recognises trade-offs, and puts transparency and accountability at its core.

Such a framework should include the following elements:

- **Clear sustainability criteria aligned with biodiversity, climate targets, and sustainable development goals:** Subsidy eligibility should be linked to measurable outcomes, including emission reductions, improved animal welfare, soil health, biodiversity protection and social protection and liveable income for smallholder and Indigenous communities. Governments must agree on operational sustainability benchmarks that clearly guide subsidy reforms. These should be grounded in climate science, biodiversity protection and social justice to prevent greenwashing and ensure meaningful outcomes.

- **Transparency and public disclosure:** Countries must establish mechanisms to regularly report on the distribution, beneficiaries and impacts of agricultural subsidies. Data synthesis and mobilisation should inform policymaking and enable civil society oversight.

- **Coordinated, cross-sectoral policymaking:** Agriculture cannot be treated in isolation. Coherence is needed across trade, climate, health and development policies, including collaborative approaches across ministries to break policy silos.

- **Participatory and deliberative processes:** Reform must take account of differing values, interests and lived experiences. Engaging citizens, farmers and communities in structured deliberation—such as citizens' assemblies—can build consensus and public trust in transition pathways.

- **Capacity building and support for transition:** Farmers require access to training, technical assistance and finance to adopt humane, low-emission and agroecological practices. Financial support directed to knowledge systems, extension services and peer networks are essential.

- **Research and innovation:** Public and participatory research should focus on advancing agroecology, local and culturally appropriate plant-based proteins and Indigenous knowledge. This includes reshaping agricultural research and development priorities to align with sustainability goals. Open-access models and equitable licensing frameworks should be ensured, particularly for publicly funded research, to accelerate global uptake and innovation.

- **World Trade Organisation (WTO) Reform of multilateral rules and institutions:** WTO rules, alongside mandates of bodies such as the OECD, Food and Agriculture Organisation, UNFCCC and World Bank, must be systemically reformed to enable fair participation and the adoption of an accountability and transparency framework to protect policy from industry interference, and evolve to reflect the urgency of today's global challenges and align with biodiversity, climate targets, and sustainable development goals. Existing disciplines must be updated to enable the repurposing of subsidies towards sustainable outcomes while maintaining alignment to diverse national contexts.

III. Call to Action and Conclusion

With 2.5 billion people relying on agriculture for income and sustenance [47] and over 700 million hungry [48], we must collectively rise to meet this pivotal moment in history where we could collectively transform the global food system into a sustainable, resilient, and fair one for future generations.

We call for the scaled-up and immediate delivery of grants-based climate finance from the Global North to the Global South through the UNFCCC mechanisms, with no reliance on MDBs and the private sector, direct access for smallholders, especially women, and diverted funds towards agroecology and sustainable agriculture. We also call for the diversion of all harmful subsidies from all governments to support a just transition to equitable, humane, and agroecological food systems.

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Glossary

Agroecology refers to a way of life that supports life-enriching systems and opposes life-alienating systems. It works together with nature and not against it, cherishing synergies between living beings and prioritising traditional farmer knowledge and participatory, transgenerational, and experiential learning processes. Agroecological principles are based on solidarity, circular, and regional economies within ecological boundaries that are truly beneficial for communities. It prioritises the rights of small-scale food producers and forms a movement towards equality and social justice for all people worldwide.

Smallholders are small-scale farmers, pastoralists, forest keepers, fishers who manage areas varying from less than one hectare to 10 hectares (definition FAO)

Acronyms

AF	Adaptation Fund
AFR100	African Forest Landscape Restoration Initiative
CAP	Common Agricultural Policy
COP	Conference of the Parties - UNFCCC
CO_2	Carbon dioxide
EU	European Union
FLRD	Fund for Responding to Loss and Damage
GBF	Kunming-Montreal Global Biodiversity Framework
GCF	Green Climate Fund
GDP	Gross Domestic Product
IMF	International Monetary Fund
MDBs	Multilateral Development Banks
NCQG	New Collective Quantified Goal
OECD	Organisation for Economic Co-operation and Development
PES	Payments for Ecosystem Services
PPG	Public and Private Guaranteed
TSE	Total support
UNFCCC	UN Framework Convention on Climate Change
USA	United States of America
USDA	United States Department of Agriculture
WTO	World Trade Organisation
20x20	Initiative 20x20

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