ZERO WASTE ALLIANCE IRELAND

Towards Sustainable Resource Management

Submission by Zero Waste Alliance Ireland to the European Commission on Proposed Draft Amendments to Delegated Regulation (EU) 2019/1122 for Carbon Accounting in the EU Registry under Regulation (EU) 2018/841 for the Land Use, Land Use Change and Forestry (LULUCF) Sector

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EEB European Environmental Bureau and IEN Irish Environmental Network

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1. INTRODUCTION

1.1 Land Use in Europe

Europe is one of the most intensively used land areas worldwide, with the highest proportion of land used for agriculture, forests, and, to a lesser extent, urban areas and infrastructure. Land uses overall have remained relatively stable in the EU, except for artificial surfaces such as built-up areas and roads, which have increased in area by slightly more than 6% during the period 2000 to 2018.

The increasing amount of land-take, resulting from changes in agricultural, forest and other natural and semi-natural land taken for urban and other developments has put pressure on biodiversity, has resulted in landscape fragmentation, habitat loss and degradation, soil damage caused by sealing of the soil by impermeable surfaces (for example, concrete and tarmac), increased flood risk and creation of urban heat islands.

1.2 Land Use and Climate Change

Land use and climate change are deeply intertwined. Land use activities, like deforestation and agricultural practices, can release or absorb greenhouse gases, directly impacting global climate. Conversely, climate change can affect land ecosystems, altering land use patterns and increasing the risk of land degradation.

The use and management of land is crucial for addressing the global challenge of climate change, both because it functions as a carbon sink that we need to strengthen, and as a source of emissions that must be reduced. The EU 27's net land sink declined by 35% between 2010 and 2021. On 15 May this year, the Commission published a new report, analysing the status of the implementation of the Land Use, Land Use Change and Forestry (LULUCF) Regulation, and incorporating a guide to designing better land-use policies.[1] The report, as well as the EU-wide assessment of draft updated NECPs, found a gap of around -50 Mt CO_2 eq in reaching the 2030 target at EU level.[2]

> "*The draft updated NECPs are bringing us closer to meeting the EU's 2030 55% GHG emission reduction target. However, there is a clear need for extra efforts from Member States to complement EU actions with sufficient policies to close the remaining gap. Based on the information provided in the draft updated NECPs, net GHG emissions in 2030 are estimated to be 51% lower than in 1990, 4% percentage points short of the 55% target set in the Climate Law. When considering the whole Land Use, Land-Use Change, and Forestry (LULUCF) contribution above the limit of 225 Mt CO2-eq., the reductions would reach - 51.7%. The trajectory identified in the draft updated NECPs is expected to fall short of reaching climate neutrality in 2050".*[3]

It is clear that a much more effective land-use policy is needed in order to reach the calculated potential and the binding targets to reduce emissions, increase carbon removals, and ensure resilient and future-proof carbon sinks by appropriate and swift action, such as rewetting peatlands, increasing soil carbon and manage our forests more sustainably.[4]

If we undertake a more detailed examination of the interactions between land use and climate change we find that:

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1 https://climate.ec.europa.eu/news-your-voice/news/commission-publishes-new-guide-designing-better-land-use-policies-2024-05-15_en

2 EU wide assessment of the draft updated National Energy and Climate Plans – An important step towards the more ambitious 2030 energy and climate objectives under the European Green Deal and RePowerEU (2023). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Brussels, 18.12.2023 COM(2023) 796 final.

3 EU wide assessment of the draft updated National Energy and Climate Plans – Section 2.1.1 Decarbonisation, pages 4-5.

4 https://climate.ec.europa.eu/news-your-voice/news/commission-publishes-new-guide-designing-better-land-use-policies-2024-05-15_en

- Every type of land use has an effect on the Earth's climate, one way or another – either by acting as a source of greenhouse gas emissions or by absorbing and sequestering carbon dioxide from the atmosphere;

- Trees, plants and soil sequester carbon dioxide from the atmosphere, and this is accomplished through carbon-fixing bacteria in soils and through photosynthesis in plants;

- Clearing forests for agriculture, urbanisation, and other land uses releases large amounts of stored carbon dioxide into the atmosphere, contributing to climate change, climate uncertainty and global warming;

- Draining peatlands for agriculture or forestry, which has happened during the last 100 years on a significant scale in Ireland especially, and in a small number of other EU Member States, has resulted in these lands ceasing to sequester carbon, and becoming instead a source of carbon emissions;

- Agricultural practices, such as the use of fertilizers and livestock, can release methane and nitrous oxide, both of which are potent greenhouse gases;

- When land becomes degraded (e.g., for example as a consequence of intensive and inappropriate agriculture), soil carbon is released, further exacerbating the problem;

- Climate change can cause changes in plant distribution and growth, leading to shifts in vegetation patterns and potentially increasing the risk of wildfires;

- Climate change can exacerbate drought and flood events, impacting agricultural productivity and land use patterns;

- Changing climate effects can lead to the loss of biodiversity and threaten the resilience of terrestrial ecosystems;

- In some few areas, beneficial land use practices such as fire exclusion and reforestation, combined with increased precipitation (the result of climate change), can have a synergistic effect, reducing wildfire frequency in humid regions;

- Factors such as increased precipitation and carbon fertilisation, along with certain forestry practices (continuous cover forestry and the existence of young, dense tree stands), can have a positive impact on tree growth;

- Human activities and climate change can create conditions for invasive species to thrive, potentially damaging native ecosystems;
- Beneficial land use practices such as agroforestry, soil conservation, and reforestation can help mitigate climate change by absorbing greenhouse gases and improving soil health;
- Managing land to support resilient ecosystems can help them adapt to changing climate conditions and reduce the risk of land degradation; and,
- Ecologically appropriate land management, such as regenerative agriculture, can also mitigate the adverse effects of climate-damaging activities, such as pollution or overgrazing, and may help ecosystems to become more resilient to climate change.

1.3 Agriculture and Climate Change

Agriculture can have a positive and important role to play in climate change mitigation – the crops, hedgerows, and trees found on farmland sequester carbon from the atmosphere through photosynthesis, while properly managed soils and protection of grassland provide long term carbon storage.

However, agriculture also accounts for around 11% (378.43 $MtCO_2e$, in 2021) of total greenhouse gas emissions in the EU, coming behind the energy, transport, residential, and commercial sectors. This is despite the agricultural sector in the EU reducing its greenhouse gas emissions by 24% between 1990 and 2021.

Two types of greenhouse gas in particular are associated with agricultural practices:

- methane (CH_4) – from livestock digestion processes, manure management, and rice cultivation; and,
- nitrous oxide (N_2O) – from agricultural soils as a result of organic and mineral nitrogen fertilisation, and manure management.

Through the common agricultural policy (CAP), the European Commission aims to ensure that agriculture makes a strong contribution to the EU's climate policies. As part of the *European Green Deal,* the *Farm to Fork Strategy* provides a framework for making a transition towards a sustainable food system, in which farmers can continue to meet society's demands for food while also avoiding or mitigating further damage to the climate.

Beneficial and less harmful agricultural practices, such as:

- regenerative farming;
- organic farming;
- crop rotation and diversification;
- reduced tillage techniques;
- conservation of natural habitats on farms;
- promotion of continuous soil cover;
- tight regulation and control of chemical inputs;
- regular soil monitoring and assessment of soil condition;
- promotion of agroecology;
- funding of research and innovation projects designed to minimise the effects of agriculture on climate;
- education and support programmes;
- public awareness and outreach; and,
- the integration of soil health in other policy areas,

will contribute to reducing the adverse impacts of agriculture on climate.[5]

Other policies and factors which, if implemented, would change the relationship between agriculture and climate change, include the development at European level of an integrated land and water management framework which takes into account the way in which land is used and managed for environmentally sustainable agriculture and other purposes, how those land uses affect soil health, soil quality, water quality and both terrestrial and aquatic ecosystems; how soil type and soil characteristics dominate and affect actual and potential land uses; and how soil is affected (and most frequently altered, often irretrievably) by certain types of land uses.

According to the Food and Agriculture Organisation of the United Nations (FAO), the soils and ecosystems which provide the foundation for sustainable agriculture in productive landscapes are being widely degraded, their integrity disrupted at unprecedented rates, and the natural resource base of soils, water, land, and

[5] Observations and feedback by Zero Waste Alliance Ireland to the European Commission on the Proposed EU Directive on soil monitoring and resilience, including our observations on the relationship between soil, agriculture, food supply and food security, while maintaining biodiversity; and providing detailed advice on good farming practices which would not damage soil; 03 November 2023. https://www.zwai.ie/resources/2023/submission-on-the-proposed-eu-directive-on-soil-monitoring-and-resilience/

ecosystems upon which food production depends is under stress, degraded, or already significantly depleted.[6]

A paper published some five years ago provides the following comment on the need for an integrated land-use strategic framework which, we would argue, must also include protection, management and conservation of soil, land and water resources, together with a type of agriculture which is least damaging to the climate, and which has the possibility of becoming "carbon zero", i.e., neither a carbon emitter nor a remover of carbon from the atmosphere:

> *"Sustainable land management is at the heart of some of the most intractable challenges facing humanity in the 21st century. It is critical for tackling biodiversity loss, land degradation, climate change and the decline of ecosystem services. It underpins food production, livelihoods, dietary health, social equity, climate change adaptation, and many other outcomes. However, interdependencies, trade-offs, time lags, and non-linear responses make it difficult to predict the combined effects of land management decisions. Policy decisions also have to be made in the context of conflicting interests, values and power dynamics of those living on the land and those affected by the consequences of land use decisions. This makes designing and coordinating effective land management policies and programmes highly challenging. The difficulty is exacerbated by the scarcity of reliable data on the impacts of land management on the environment …"* [7]

A zero carbon agriculture policy and programme should include not only some or all of the beneficial agricultural practices listed above, but should also include sustainable management and protection of soil, and should be based on the principle of multifunctionality, to provide environmentally and socially sustainable management of a wide range of ecosystem services and goods, such as timber, agricultural crops, other types of human and animal foods, fibres and useful plant species, together with protection and enhancement of terrestrial biodiversity, water storage, nutrient cycling, regulation of water flows, mitigation of climate change effects, and protection of air quality and climate.

[6] Landscapes for Life – Approaches to Landscape Management for Sustainable Food and Agriculture. Food and Agriculture Organization of the United Nations, Rome, 2017.

[7] McGonigle D.F., Rota Nodari G., Phillips R.L., Aynekulu E., Estrada-Carmona N., Jones S.K., Koziell I., Luedeling E., Remans R., Shepherd K., Wiberg D., Whitney C., and Zhang W. (2020). A Knowledge Brokering Framework for Integrated Landscape Management. Front. Sustain. Food Syst. 4:13. doi: 10.3389/fsufs.2020.00013.

1.4 Forestry and Climate Change

Forests cover close to 40% of Europe's land area. Besides providing food, fibres and habitats for many species, they contribute to the annual net removals of greenhouse gas. Through its land use, land use change and forestry (LULUCF) activities, the EU currently removes a net total of 244 Mt CO_2e from the atmosphere every year, equivalent to 7% of the EU's annual greenhouse gas emissions. It is therefore expected that the LULUCF sector will play a crucial role in helping the EU achieve net zero emissions by 2050.

However, there is very little agreement or uniform approach among Member States about how forests should be managed, and for what purposes. In Sweden, a Christmas tree plantation is classified as a forest, whereas in Denmark, the Christmas tree plantation is considered a crop — an example that underscores the complexity of agricultural land-use classification across Europe.

Trees are natural carbon sinks and will absorb CO_2 from the atmosphere and store it while the tree is still in the ground, which can provide a valuable opportunity to offset some of the increases in anthropogenic CO_2 emissions and help to reduce the rate of global warming. The right trees planted in suitable land over time will continue to increase the carbon sink potential of the land, ultimately benefiting the climate.

A forest which is sustainably managed will successfully create a net sink of carbon;[8] however, to be considered a true carbon sink, the amounts of carbon dioxide which are sequestered must outweigh the amounts of carbon dioxide which are released or emitted from the forest to the atmosphere.

Forests which remain as forests are an important tool for climate change, but when forests are cut down and converted to other forms of land use, carbon is released, and the land loses its full potential to store carbon.[9] Carbon is stored in plant biomass, soil, deadwood and harvested wood products, however, harvested timber only stores approximately 50% of the carbon in wood products used in long-lived products.[10]

[8] Whitehead, David. (2011). Forests as carbon sinks – benefits and consequences. Tree Physiology 31, 893–902, doi:10.1093/treephys/tpr063

[9] Kreye, M. (2020). How Forests Store Carbon. PennState Extension, College of Agricultural Sciences, Pennsylvania State University, USA.

[10] DAFM. (2021). Ireland's State of Forest Knowledge Report. Department of Agriculture, Food & the Marine, Johnstown Castle Estate

Carbon sequestration and carbon release differ substantially in different forest types, based on numerous factors, such as climatic conditions and management practices; and there is an ongoing debate about what are the best management practices for optimal carbon sequestration.[11] An important consideration, and an objective, is to create a 'closed' forestry system, where all carbon is accounted for and conserved.

Continuous Cover Forestry (CCF) encourages long-standing forestry practices, with continuous stand coverage and minimal intervention to encourage natural regeneration. By keeping trees in the ground for longer, carbon is stored for longer periods of time and this type of forest management therefore encourages a long-term carbon sink.

According to Wilson et al (2020),[12] four guiding principles support best practice in CCF:

1. Adapting the forest to the constraints of the site;
2. Adopting a holistic approach which embraces soil, water, carbon, biodiversity and the trees;
3. Maintaining a permanent forest habitat (by avoiding clear-felling); and,
4. Developing the forest structure, so that timber harvesting and natural regeneration can take place simultaneously.

Both mineral and peat soils may enable higher rates of carbon sequestration in CCF managed sites than forests managed traditionally under regular thinning and clearing systems, especially if clear-felling is undertaken at the end of the commercial life of a forest, a practice which is detrimental to soil and climate. Old-growth forests, which generally contain larger trees with large canopies, shading the smaller saplings, have a more fixed and less dynamic carbon cycle. The result is that their net productivity is low, even though the larger, older trees are still taking up and capturing carbon dioxide. In such forests there are fewer new trees growing, and therefore the total additional carbon capture is generally lower.[13]

[11] Harmon, M. E. (2001). Carbon sequestration in forests: addressing the scale question. Journal of forestry, 99(4), 24-29

[12] Wilson, E.R., Short, I., Ní Dhubháin, Á. and Purser, P. (2018). 'Continuous cover forestry: the rise of transformational silviculture'. Forestry Journal, 288: 38-40.

[13] Kreye, M. (2020). How Forests Store Carbon. Penn State Extension, College of Agricultural Sciences, The Pennsylvania State University

As a general assessment, the highest CO_2 removal rates from planted forestry range from 4.5 to 40.7 tonnes of CO_2 ha^{-1} $year^{-1}$ during the first 20 years of growth. According to Bernal *et al*.[14], the CO_2 removal rate for conifers (excluding pine trees) in a temperate, humid climate is 11.6 tonnes of CO_2 ha^{-1} $year^{-1}$, with an uncertainty of 3.6 (Half CI95). Natural regeneration removal rates can be as high as 9.1–18.8 tonnes of CO_2 ha^{-1} $year^{-1}$ and shows that biomass growth is highest in the 20–60-year period after establishment, as opposed to the first 20 years following establishment. Carbon sequestration rates from natural regeneration are notably lower in Asia, Oceania, Europe and North America than in Central America, South America and Africa. Bernal *et al*.[15] predict that this is due to latitudinal driving forces.

Forestry activities since 1990 have been accountable for carbon sequestration, on the basis that they contribute to compliance with the Kyoto protocol. In Ireland, the average carbon sequestration for forestry stands (10–50-year-old stands) is estimated to be 4-8 tonnes C ha^{-1} yr^{-1}, which represents an annual sequestration of 1.56 to 2.39 Mt CO2 yr^{-1} for Irish forests in the period of 2008-2012.[16]

Long-lived wood products, such as those used to build timber-framed houses, may retain carbon for multiple generations, provided that they remain within the structure into which they were initially built.

Carbon mitigation also occurs when energy from the extracted biomass is used to substitute for fossil fuels, or when wood products are utilised as building materials, rather than energy-intensive alternatives such as immediate fuel for domestic or commercial purposes.

In comparison, using concrete as a building material typically creates abundant waste at the end of its lifecycle, and concrete production accounts for approximately 7% of global CO_2 emissions. The climate benefits of forestry are derived from the low fossil fuel energy required to grow and process wood for building; however this is dependent on a number of factors, including:

- Growth rate of the forest;

[14] Bernal, B., Murray, L.T. & Pearson, T.R.H. (2018). Global carbon dioxide removal rates from forest landscape restoration activities. Carbon Balance Manage 13, 22 https://doi.org/10.1186/s13021-018-0110-8

[15] Bernal, B., Murray, L.T. & Pearson, T.R.H. (2018). Global carbon dioxide removal rates from forest landscape restoration activities. Carbon Balance Manage 13, 22 https://doi.org/10.1186/s13021-018-0110-8

[16] Black, K. & Farrell, E. (2006). Carbon Sequestration and Irish Forest Ecosystems. COFORD, National Council for Forest Research and Development

- Types of trees and age of standing timber;
- Dynamics of the carbon fluxes (including the threat of natural disturbance);
- Time frame being considered; and,
- Carbon displacement factors used when wood products replace non-wood products.[17]

The rate of carbon sequestration in a forestry site depends on numerous factors. Forests are considered carbon 'sinks' when their sequestration rate exceeds the carbon losses from the forest. Factors include tree species present and the associated stocking rate, productivity (yield class), forest age, soil type, forest management activities and previous land use, to consider only a few. While CO_2 is absorbed from the atmosphere, CO_2 is also emitted to the atmosphere from forests as a result of natural processes, including tree respiration and detritus decomposition, as well as management practices such as harvesting.

2. ZERO WASTE ALLIANCE IRELAND (ZWAI)

At this point we consider that it is appropriate to mention briefly the background, aims, activities, policies and strategy of ZWAI, and to list some of our previous submissions to Irish Government departments and to the European Commission.

2.1 Origin and Early Activities of ZWAI

Zero Waste Alliance Ireland (ZWAI), established in 1999, and registered as an Irish company limited by guarantee in 2004, is a Non-Government Environmental Organisation (eNGO) and a charity registered in Ireland. ZWAI has prepared and submitted to the European Commission, the Irish Government and to Irish State Agencies many policy documents on waste management and waste elimination, and continues to lobby the Irish Government and the European Commission on using resources more sustainably, on promoting re-use, repair and recycling, and on development and implementation of the Circular Economy.

One of our basic guiding principles is that human societies must behave like natural ecosystems, living within the sustainable flow of energy from the sun and plants, producing no materials or objects which cannot be recycled back into the earth's systems, or reused or recycled into our technical systems, and should be

[17] Howard, C., Dymond, C.C., Griess, V.C. et al. (2021). Wood product carbon substitution benefits: a critical review of assumptions. Carbon Balance Manage 16, 9. https://doi.org/10.1186/s13021-021-00171-w

guided by economic systems and practices which are in harmony with personal and ecological values.

Our principal objectives are:

i) sharing information, ideas and contacts,

ii) finding and recommending environmentally sustainable and practical solutions for domestic, municipal, industrial and agricultural waste management, and for more efficient and ecologically appropriate uses of natural resources such as scarce minerals, water and soil;

iii) lobbying Government and local authorities to implement environmentally sustainable waste management practices, including clean production, elimination of toxic substances from products, re-use, repairing, recycling, segregation of discarded materials at source, and other environmentally and socially beneficial practices;

iv) lobbying Government to follow the best international practice and EU recommendations by introducing fiscal and economic measures designed to penalise the manufacturers of products which cannot be re-used, recycled or composted at the end of their useful lives, and to financially support companies making products which can be re-used, repaired, recycled or are made from recycled materials;

v) raising public awareness about the long-term damaging human and animal health and economic consequences of landfilling and destruction by mass burning or incineration of potentially recyclable or re-usable materials;

vi) investigating, raising public awareness and lobbying Irish Government departments and agencies about our country's failure to take adequate care of vulnerable and essential natural resources, including clean water and air, biodiversity, and soil;

vii) advocating changes in domestic and EU legislation to provide for more ecologically appropriate, environmentally sustainable and efficient uses of natural resources; and,

viii) maintaining contact and exchanging information with similar NGOs and national networks in the European Union and in other countries, and with international zero waste organisations.

2.2 Our Basic Principles

Human communities must behave like natural ones, living comfortably within the natural flow of energy from the sun and plants, producing no wastes which cannot be recycled back into the earth's systems, and guided by new economic values which are in harmony with personal and ecological values.

In nature, the waste products of every living organism serve as raw materials to be transformed by other living creatures, or benefit the planet in other ways. Instead of organising systems that efficiently dispose of or recycle our waste, we need to design systems of production that have little or no waste to begin with.

There are no technical barriers to achieving a "*zero waste society"*, only our habits, our greed as a society, and the current economic structures and policies which have led to the present multiple environmental, social and economic crises.

"*Zero Waste"* is a realistic whole-system approach to addressing the problem of society's unsustainable resource flows – it encompasses waste elimination at source through product design and producer responsibility, together with waste reduction strategies further down the supply chain, such as cleaner production, product repairing, dismantling, recycling, re-use and composting.

ZWAI strongly believes that Ireland and other Member States, and the EU as a whole, should have a policy of not sending to other countries our discarded materials for further treatment or recycling, particularly to developing countries where local populations are being exposed to dioxins and other very toxic POPs. Relying on other countries' infrastructure to achieve our "recycling" targets is not acceptable from a global ecological and societal perspective.

2.3 What We are Doing

Our principal objective is to ensure that government agencies, local authorities and other organisations will develop and implement environmentally sustainable resources and waste management policies, especially resource efficiency, waste reduction and elimination, the promotion of re-use, repair and recycling, and the development and implementation of the Circular Economy.

As an environmental NGO, and a not-for-profit company with charitable status since 2005, ZWAI also campaigns for the implementation of the **UN Sustainable Development Goals**, including (but not limited to) Goal 12, Responsible Consumption and Production; Goal 6, Clean Water and Sanitation (having particular regard to the need to avoid wasting water, and to wasting nutrients contained in our wastewater); and Goal 15, to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, to halt and reverse land degradation and to halt biodiversity loss.

In responding to many public consultations, members of ZWAI have made submissions and given presentations on:

- How Ireland, the European Union and the Irish food industry should address the problems of single-use plastic packaging and plastic waste (March & Nov. 2019);
- Transforming the construction industry so that it could become climate-neutral (instead of being a major emitter of greenhouse gases & toxicants);
- Observations on the general scheme of the Irish Government's Circular Economy Bill (October 2021);
- Several observations and submissions addressing the need for recovery and reuse of the phosphorus and nitrogen content of wastewater (2019 to 2023);
- Observations to the European Commission on a proposed revision of the EU Regulation on Shipments of Waste (January 2022);
- Feedback to the European Commission on a proposed Directive on Soil Health – Protecting, Sustainably Managing and Restoring EU Soils (March 2022);[18]
- Submission in response to a public consultation on the review of Ireland's security of energy supplies (October 2022);[19]
- Submission in response to a public consultation on Ireland's Fourth National Biodiversity Action Plan (November 2022);[20]
- Submission in response to a public consultation on Ireland's National Bioeconomy Action Plan 2023-2025 (January 2023);[21]
- Submission in response to a public consultation on Ireland's draft Waste Management Plan for a Circular Economy (July 2023);[22]

[18] https://www.zwai.ie/resources/2022/protecting-sustainably-managing-and-restoring-eu-soils/

[19] Submission to the Department of the Environment, Climate and Communications in Response to the Public Consultation on a Review of the Security of Energy Supply of Ireland's Electricity and Natural Gas Systems; https://www.zwai.ie/resources/2022/public-consultation-on-a-review-of-the-security-of-energy-supply-of-irelands-electricity-and-natural-gas-systems/

[20] https://www.zwai.ie/resources/2022/submission-to-the-department-of-housing-local-government-and-heritage-in-response-to-the-public-consultation-on-irelands-fourth-national-biodiversity-action-plan-nbap/

[21] https://www.zwai.ie/resources/2023/zwai-submission-on-irelands-national-bioeconomy-action-plan-2023-2025/

[22] Submission to the Regional Waste Management Planning Offices on the draft Waste Management Plan for a Circular Economy; ZWAI, 05 July 2023: https://www.zwai.ie/resources/2023/submission-on-the-draft-waste-management-plan-for-a-circular-economy/

- Submission in response to a public consultation on the problem of disposable vaping devices (July 2023);[23]
- Observations and recommendations on the rapidly increasing European and global problem of waste electronic & electric equipment (WEEE, Sept. 2023);[24]
- Observations to the European Commission on a Proposed EU Directive on Soil Monitoring and Resilience (November 2023);[25]
- Observations on the Irish Government's draft Green Public Procurement Strategy & Plan (November 2023);[26]
- Observations and feedback to the European Commission on the proposed revision of the EU Waste Framework Directive (November 2023);[27]
- Observations & feedback to the European Commission on revision of Directives 2000/53/EC & 2005/64/EC on End-of-Life Vehicles (December 2023);[28]
- Submission by ZWAI to the Department of the Environment, Climate and Communications in response to the Department's public consultation on proposed amendments to the Access to Information on the Environment (AIE) Regulations 2007-2018 (January 2024);[29]

[23] Submission to the Department of the Environment, Climate and Communications in Response to the Department's Public Consultation on Disposable Vaping Devices; ZWAI, 27 July 2023: https://www.zwai.ie/resources/2023/submission-to-the-decc-on-disposable-vapes-and-why-they-should-be-banned/

[24] Submission by ZWAI to the European Commission on Waste from Electrical and Electronic Equipment — Evaluating the EU Rules; ZWAI, 22 September 2023. https://www.zwai.ie/resources/2023/waste-from-electrical-and-electronic-equipment-weee-evaluating-eu-rules/

[25] Observations and Feedback to the European Commission on the Proposed EU Directive on Soil Monitoring and Resilience; ZWAI, 03 November 2023. https://www.zwai.ie/resources/2023/submission-on-the-proposed-eu-directive-on-soil-monitoring-and-resilience/

[26] https://www.zwai.ie/resources/2023/submission-to-the-decc-on-the-draft-green-public-procurement-strategy-and-action-plan/

[27] https://www.zwai.ie/resources/2023/observations-and-feedback-to-the-european-commission-on-the-proposed-revision-of-the-eu-waste-framework/

[28] https://www.zwai.ie/resources/2023/end-of-life-vehicles-observations-and-feedback-to-the-european-commission/

[29] https://www.zwai.ie/resources/2024/submission-to-the-decc-on-the-proposed-amendments-to-the-access-to-information-on-the-environment-aie-regulations-2007-2018/

- Response to the first Public Consultation by the Department of the Environment, Climate and Communications on Ireland's draft National Energy and Climate Plan (March 2024);[30]
- Submission by ZWAI to the European Commission in response to the Commission's public consultation on the evaluation of the Nitrates Directive (91 / 676 / EEC) on Protection of Waters against Pollution caused by Nitrates from Agricultural Sources (March 2024);[31]
- Response to the second Public Consultation by the Department of the Environment, Climate and Communications on Ireland's updated draft National Energy and Climate Plan (June 2024);[32]
- Submission by ZWAI to the European Commission in response to the Commission's public consultation on proposed ecodesign and ecolabelling requirements for computers (July 2024);[33]
- Submission by ZWAI and the Waterford Environmental Forum to the Department of Transport in response to the Department's Public Consultation: "*Moving Together – A Strategic Approach to Improving the Efficiency of the Transport System in Ireland"* (August 2024);[34]
- Submission by ZWAI to the Irish Department of Housing, Local Government and Heritage in response to the Department's Public Consultation on Draft Proposed Additional Measures for Ireland's Fifth Nitrates Action Programme (December 2024);[35]
- Submission by ZWAI to the European Commission in response to the Commission's public consultation on the European Union Ocean Pact, emphasising the importance of Europe's surrounding seas and the Atlantic ocean, and their fundamental in sustaining life on our planet (February 2025);[36] and,

[30] https://www.zwai.ie/resources/2024/submission-by-zwai-to-decc-on-irelands-national-energy-climate-plan-necp/

[31] https://www.zwai.ie/resources/2024/submission-by-zwai-to-the-eu-public-consultation-on-the-evaluation-of-the-nitrates-directive/

[32] https://www.zwai.ie/resources/2024/draft-update-of-irelands-national-energy-and-climateplan-necp-submission-by-zwai-to-decc/

[33] https://www.zwai.ie/resources/2024/ecodesign-and-ecolabelling-requirements-for-computers-zwai-submission-to-eu-commission-ecodesign-and-ecolabelling-requirements-for-computers/

[34] https://www.zwai.ie/resources/2024/moving-together-a-strategic-approach-to-improving-irelands-transport-system/

[35] https://www.zwai.ie/resources/2024/proposed-additional-measures-for-irelands-fifth-nitrates-action-programme-nap/

[36] https://www.zwai.ie/resources/2025/eu-oceans-pact-submission-by-zwai/

- Submission by ZWAI to the Department of the Environment, Climate and Communications, in response to a public consultation on Ireland's draft National Implementation Report 2025 to the Aarhus Convention Secretariat (April 2025).[37]

It will be clear that ZWAI is concerned with the very serious issues of discarded substances, materials, water and energy, whether from domestic, commercial or industrial sources, how these become "waste", and how such "waste" may be prevented by re-design along ecological principles. ZWAI is also very concerned about the effectiveness and appropriateness of Irish and EU policies, legislation, programmes and plans which are the prime determinants of how these "wastes" are managed, controlled and monitored for environmental and societal benefits.

In-depth examination and analysis of national policies have made us very aware of the many disconnections and conflicts between economic, environmental, land-use planning and social policies, frequently resulting in failure to implement necessary changes. While making the submissions listed above, we have welcomed many proposed policy changes; but at the same time we have also considered that it was very necessary to evaluate all proposals in the context of what is best for the environment and society.

ZWAI is represented on the Irish Government's Water Forum (An Fóram Uisce), is a member of the Irish Environmental Network and the Environmental Pillar, and is funded by the **Department of the Environment, Climate and Communications** through the **Irish Environmental Network**.

ZWAI is also a not-for-profit company limited by guarantee (Company registration number **394205**), and a registered charity (CRN number **20057244**). Membership has been growing in recent years, and is currently slightly more than 50 individuals, and the company's affairs and activities are supervised by a 6-person Board of Management (Directors), some of whom are regular contributors to submissions, or make presentations at conferences.

In 2019 ZWAI became a full member of the **European Environment Bureau** (EEB); and a member of the **Waste Working Group** of the EEB. Through the EEB, we contribute to the development of European Union policy on waste and the Circular Economy. In November 2021, the EEB established a **Task Force on the Built Environment**; ZWAI is a member of this group, and we contribute to continuing discussions on the sustainability of construction materials, buildings and on the built environment.

[37] https://www.zwai.ie/resources/2025/aarhus-convention-national-implementation-report-2025/

3. Our Observations on the Proposed Amendments to Delegated Regulation (EU) 2019/1122 for the Purpose of Improving Carbon Accounting in the European Union Registry under Regulation (EU) 2018/841 for the Land use, Land Use Change and Forestry (LULUCF) Sector

3.1 The Delegated Regulation (EU) 2019/1122

Delegated Regulation (EU) 2019/1122 and its recent draft amendments aim to operationalise carbon accounting under Regulation (EU) 2018/841 for the LULUCF sector. While these amendments propose useful structural changes, such as detailed registry accounts and new compliance periods, it is our submission that they fall short of addressing certain fundamental flaws around transparency, ecological integrity, and integration with broader environmental goals.

In this submission we will provide a critical analysis of the draft Delegated Regulation, and we will also advocate for a reformed Union Registry that both ensures robust climate accountability and actively supports the EU's zero waste ambitions.

A zero waste approach not only seeks to minimise emissions but also to design out waste, promote regenerative land use, and support long-term environmental resilience. Our submission exposes some missed opportunities in the current regulation, and highlights necessary reforms to align with circular economy goals.

3.2 Comparison Between the Existing Delegated Regulation (EU) 2019/1122 and the Proposed Amendments

While the proposed amendments represent a step forward compared to the previous regulation, they fall significantly short of what is required to ensure robust climate accountability. The provisions as drafted still allow considerable room for ambiguity, greenwashing, and the exploitation of accounting loopholes. Without stronger safeguards, there is a real risk that Member States and private sector business will appear to meet targets "on paper" without delivering real, verifiable emissions reduction.

The draft delegated regulation introduces a number of changes to the LULUCF accounting framework. While intended to enhance tracking and compliance, the

proposed changes contain significant gaps and create opportunities for inconsistent or non-transparent reporting. The following changes form the basis of this submission's critique and highlights areas of concern:

1. **Creation of Land Removal Units** (LRUs): New carbon accounting units for removals, allowing countries to trade and transfer surplus credits;

2. **Establishment of detailed registry accounts**: More granular tracking of emissions, removals, and credit transactions via central and Member State-level accounts;

3. **Expanded flexibility mechanisms**: Greater scope for countries to offset excess emissions using removals or credits from other sectors or Member States;

4. **Broadened scope of land categories**: Inclusion of more land types, particularly in the second compliance period (2026–2030), such as wetlands and other previously underreported areas.

5. **New compliance periods**: Introduction of two defined periods (2021–2025 and 2026–2030) with differing accounting rules and flexibilities.

3.3 Key Structural Gaps in the Current and Draft Regulation

3.3.1 Fragmented Compliance Periods and Inconsistent Methodologies

The division into two compliance periods (2021–2025 and 2026–2030) creates complexity and undermines continuity. By shifting accounting rules midstream, Member States may use this division to delay action and to exploit flexibilities in order to obscure their real climate performance.

ZWAI therefore recommends ensuring methodological consistency and restrict credit carry-over to only a small number of cases which can be shown to meet strict environmental criteria.

The decision to divide the LULUCF framework into two separate compliance periods, 2021–2025 and 2026–2030, each with distinct accounting rules and flexibilities, risks fragmenting climate accountability and allowing Member States to delay meaningful action. By creating separate regimes within a single regulatory timeline, the amendment effectively resets the baseline halfway through the decade, undermining continuity, comparability, and long-term transparency.

This structure introduces complexity without a clear environmental justification. It could encourage strategic deferral of action, with Member States postponing harder decisions to the second period, knowing that a new set of flexibilities and rules will apply. It also makes it harder for civil society and independent scientists to track whether real progress is being made, especially if methodologies shift midstream.

Furthermore, the differentiation in flexibilities between periods creates potential inconsistencies in how removals and emissions are treated, allowing for the manipulation of the system by shifting carbon accounting across periods instead of achieving real reductions.

Recommendations:

- Require consistency in accounting methodologies and rules across compliance periods to ensure transparency and comparability.
- Ensure that no credits or flexibilities are carried over unless they meet strict environmental integrity tests, which must be based on scientific evidence.

While the draft delegated regulation on LULUCF introduces mechanisms aimed at improving transparency, flexibility, and land categorisation, it ultimately falls short of delivering a framework that guarantees environmental credibility, scientific robustness, and long-term accountability. Without significant revision, the proposed amendments risk reinforcing a system in which emission reductions are overstated, ecological degradation is overlooked, and climate ambition is weakened.

The lack of strong safeguards, independent oversight, and ecological specificity undermines the reliability of reported removals and opens the door to greenwashing at both national and corporate levels. If the EU is serious about achieving climate neutrality by 2050, the LULUCF framework must be more than a carbon ledger, it must be a tool for real, measurable ecological restoration and emissions reduction. This means setting clear, consistent definitions; ensuring land use accounting reflects ecological realities; and placing robust limits on the use of offsets and flexible mechanisms.

3.3.2 Lack of Transparency and Risk of Double Counting Undermine the Integrity of LULUCF Accounting

While the establishment of Land Removal Units (LRUs) and the expansion of the Union Registry represent attempts to strengthen the EU's LULUCF tracking

infrastructure, the current draft regulation does not ensure transparency, scientific credibility, or environmental integrity.

The current system delegates emissions and removals quantification to Member States, often using non-standardised methods. This, combined with the absence of third-party verification and public access, jeopardises the credibility of reported data.

ZWAI recommends mandated independent verification, standardised methodologies, and public disclosure of LULUCF data.

3.3.2.1 Transparency & Verifiability of Emissions and Removals

The credibility of the carbon accounting system relies on the availability of real, measurable, and independently verified data. However, under the proposed system, most of the responsibility for quantifying emissions and removals is with Member States, and uses methods that may not be standardised or peer-reviewed. This introduces a high risk of inconsistent reporting, where outdated models or optimistic assumptions could inflate carbon removals or obscure emissions. In addition, there is no clear requirement for **public access to the underlying data or methodologies**, or for third-party verification. This lack of transparency severely undermines public trust in the system and reduces opportunities for civil society and scientific scrutiny.

We urge the Commission to:

- Require standardised, peer-reviewed methodologies for all LULUCF categories.
- Mandate the independent verification of data submitted by Member States.
- Ensure full public access to national inventories, calculation models, and assumptions via the Union Registry.

Without these safeguards, the accounting of LRUs risks becoming a paper exercise, separated from ecological reality.

3.3.2.2 Double Counting Between Public and Private sectors.

Another significant issue is the lack of measures intended to prevent the double-counting of carbon removals. Under the current draft, it is unclear whether a single removal such as a reforestation project could be claimed both by a Member State toward its national targets and by a private entity in the voluntary carbon

market. This opens a door for corporate greenwashing, where companies can purchase carbon credits without verifying if those removals have already been claimed by governments. This regulation currently lacks a clear framework to prevent this and in doing so, risks distorting climate progress at both the national and corporate levels.

We recommend:

- A clear, publicly accessible registry of all LULUCF activities and corresponding LRUs, including who is claiming each removal.
- That each carbon removal be assigned to a single accountable actor — either a Member State or a private entity, but not both.

Without serious improvements in these areas, the proposed amendments may serve more to legitimise weak climate ambition than to ensure the accuracy and fairness of the EU's climate accounting system. It is imperative that the final regulation closes these gaps to preserve the scientific and moral integrity of the LULUCF framework

3.3.3 Enhanced Flexibility Risks Enabling a "Credits Culture" and Undermining Real Emissions Reductions

The introduction of expanded flexibility mechanisms particularly the option to transfer surplus LRUs to offset emissions in other sectors, creates a permissive 'credits culture' within the LULUCF framework. While flexibility can be valuable in principle, the draft regulation fails to set adequate boundaries on how, when, and to what extent these mechanisms can be used. Without robust restrictions, there is a real risk that LRUs will be treated not as tools for genuine climate mitigation, but as a licence to pollute.

We therefore call on the Commission to:

- Limit the amount of offsets that can be used toward compliance, ensuring that reductions are primarily achieved through direct action, not trading.

If these guardrails are not implemented, the enhanced flexibility measures risk undermining the environmental integrity of the entire LULUCF framework. Offsetting is not a substitute for emissions reduction, and the regulation must be clear in reflecting that necessary safety feature.

3.3.4 Vague Land Classifications and Absence of an Ecological Context weakens the Carbon Accounting Framework

The addition of new land categories is a welcome development in the amended regulation, however the draft remains worryingly silent about how these categories are to be defined, designated, and verified. Vague or inconsistent definitions, particularly around what constitutes a forest, wetland, or grassland opens the door to creative accounting and loopholes. Crucially, the regulation fails to account for seasonal variability or the ecological condition of these land types, risking a narrow and misleading representation of their climate value.

This is particularly relevant in the Irish context, where significant ecological variation exists within land categories such as peatlands, forestry, and wetlands. Such variations can substantially alter the amount of carbon removals. The following examples (especially peatlands and wetlands) highlight the need for more nuanced and ecologically informed accounting approaches.

The regulation introduces new land categories without specifying ecological criteria. Vague definitions can lead to creative accounting and inaccurate assessments of carbon removals.

ZWAI recommends defined land categories ecologically and require condition-based reporting.

Current methods ignore the carbon release from clear-felling and fail to differentiate between forest types.

ZWAI recommends reflecting the temporal dynamics of carbon sequestration and differentiating between various forest compositions to ensure accurate, ecologically grounded accounting

Wetlands: Emissions from wetlands vary seasonally, yet current models are static.

ZWAI recommends integrating seasonal variability into LULUCF accounting.

3.3.4.1 Peatlands

In Ireland, peatlands cover approximately 20% of the country's land area and are among the country's most significant carbon stores. However, historical drainage and degradation have transformed many peatlands from carbon sinks into substantial sources of greenhouse gas emissions.

A study by UCD researchers demonstrated that rewetting degraded peatlands has been shown to restore peat-forming vegetation (*Sphagnum* spp.) and therefore reduce greenhouse gas emissions (Wilson, Müller and Renou-Wilson, 2013).[38] Further evidence by Renou-Wilson et al. (2011)[39] highlights the urgency for peatland restoration to reduce emissions and enhance carbon sequestration.

Peatlands: In Ireland, peatlands represent major carbon stores. Degraded peatlands are currently under-accounted for, despite their high emission potential.

Recommendations

- **Mandatory Inclusion in LULUCF Accounting:** Ensure that emissions from degraded peatlands are fully accounted for within the LULUCF framework.
- **Restoration Incentives:** Provide financial and policy incentives for the rewetting and restoration of degraded peatlands to reinstate their function as carbon sinks.

3.3.4.2 Forestry

The current LULUCF framework's approach to forestry accounting inadequately addresses the temporal dynamics of carbon sequestration and the difference in forest types and forest management practices. For example, clear-felling which is the most common harvesting practice in Ireland, involves the complete removal of trees from an area, leading to a sudden release of stored carbon.

The subsequent replanting or natural regeneration processes can take decades before the forest regains its former carbon sequestration capacity. During this interim period, the land may act as a net carbon source rather than a carbon sink. Moreover, it is essential that accounting methods clearly differentiate between forest types, as treating monoculture plantations and mixed-species or native forests equivalently in carbon calculations risks overlooking critical ecological and carbon storage differences.

[38] Wilson, D., Müller, C. and Renou-Wilson, F. (2013) Carbon emissions and removals from Irish peatlands: present trends and future mitigation measures, *Irish Geography*, 46(1), pp. 5-20. Available at: https://www.irishgeography.ie (Accessed: 1 May 2025).

[39] Renou-Wilson, F., Bolger, T., Bullock, C.H. and Convery, F. (2011) *BOGLAND - Sustainable Management of Peatlands in Ireland*, STRIVE Report No 75. Prepared for the Environmental Protection Agency. Available at: https://www.epa.ie (Accessed: 1 May 2025).

Recommendations

- **Incorporate Temporal Dynamics:** Adjust carbon accounting methods to reflect the time lag between deforestation and the maturation of replanted forests.
- **Differentiate Forest Types:** Recognize and account for the differences in carbon sequestration capacities between monoculture plantations and native forests.
- **Promote Sustainable Practices:** Encourage the adoption of Continuous Cover Forestry and other sustainable forest management practices through suitable and effective incentives.

3.3.4.3 Wetlands

Wetlands, including fens and bogs, are vital ecosystems that play a crucial role in carbon storage. However, their greenhouse gas emissions can vary seasonally, influenced by factors such as water table levels and temperature. Renou-Wilson *et al*. (2011) underscore the importance of considering these seasonal dynamics in emissions accounting, as neglecting them can lead to underestimation of actual emissions.

Recommendations

- **Inclusion in LULUCF Framework:** Ensure that the LULUCF accounting framework incorporates the temporal variability of wetland emissions to provide a more accurate representation of their impact.

In summary, designating land simply as “peatland,” “forest,” or “wetland” is not comprehensive enough. The ecological health of a land category must be a core part of how its carbon value is accounted for. The current draft regulation lacks the specificity and ecological nuance required to ensure accurate and meaningful accounting. Without clear, scientifically grounded definitions and distinctions, there is a serious risk that Member States may exploit these ambiguities to report carbon benefits that do not reflect actual climate or ecological gains.

3.3.5 Siloed Governance and Missed Policy Synergies

The Union Registry remains disconnected from key EU frameworks such as the Waste Framework Directive and the Circular Economy Action Plan, and is not integrated with the European Green Deal or the Farm to Fork Strategy, both

which provide a framework for making the very necessary transition towards a sustainable food system, of which agriculture is a significant portion.

In addition, as we have noted in section 1.2 above, a much more effective land-use policy is needed in order to reach CO_2 emission reduction targets, increase carbon removals, and to ensure resilient and future-proof carbon sinks by appropriate and swift action, such as rewetting peatlands, increasing soil carbon, and managing forests more sustainably and ensuring a transition to regenerative and restorative agricultural practices.

This fragmentation stifles systemic innovation in climate and waste policy.

ZWAI recommends integrated reporting across environmental instruments via shared metrics and joint governance mechanisms.

3.4 Missed Opportunities for Zero Waste Integration

3.4.1 Absence of Circular Economy Indicators in the Union Registry

The registry narrowly tracks emissions/removals without recognising land practices that reduce upstream waste, such as composting and regenerative agriculture.

ZWAI recommends establishing a zero Waste-Enhanced LRUs and integrate circularity metrics.

3.4.2 Disconnection from Waste Framework and Circular Economy Action Plan

Currently, data from circular economy initiatives are not linked to the Union Registry, preventing a full accounting of environmental benefits.

ZWAI recommends harmonising data systems and enable integrated reporting.

3.4.3 Lack of Incentives for Regenerative and Waste-Reducing Land Practices

The regulation focuses on compliance rather than innovation. Practices that support soil health and organic matter recycling go unrecognised.

ZWAI recommends creating performance-based incentives for circular land use measures.

4. SUMMARY OF OUR OBSERVATIONS

The current Delegated Regulation (EU) 2019/1122, intended to operationalise Regulation (EU) 2018/841 in tracking greenhouse gas emissions and removals in the LULUCF sector, remains overly focused on narrow carbon metrics. Although recent draft amendments introduce more granular account types and automated tracking mechanisms, they fall short in several critical areas that hinder the EU's broader zero waste agenda and circular economy ambitions. Key limitations include:

- **Fragmented Environmental Reporting:** The regulation does not integrate zero waste principles, missing opportunities to recognise and reward circular practices like organic waste diversion, composting, and regenerative land management. Member States are steered towards mere compliance without such integration rather than transformative, waste-minimising actions.

- **Siloed Governance Structures:** There remains an absence of meaningful cross-linkages between the Union Registry and other EU frameworks (e.g. the Waste Framework Directive and the Circular Economy Action Plan). This compartmentalisation limits a holistic assessment of environmental performance, stifles innovation in waste reduction, and perpetuates administrative fragmentation.

- **Inadequate Incentives for Circular Land Use:** The regulatory framework emphasises recording emissions and removals but neglects incentivising practices that prevent upstream waste generation. This omission is particularly glaring in the context of land use, where initiatives that enhance soil health or reduce the waste of organic materials could significantly boost carbon sequestration and advance a zero waste narrative.

- **Transparency and Accountability Shortfalls:** While improved real-time data reporting is proposed, the aggregated nature of current disclosures obscures critical information regarding waste reduction outcomes and circular practices. Member States' achievements in utilising regenerative measures remain under-represented, rendering it difficult for stakeholders to assess progress toward the EU's sustainability targets.

- **Methodological Narrowness:** The current framework adopts a strictly technical view of removals by focusing on predefined land categories and flexibilities. There is little room for innovation or adaptive

practices, such as valuing multi-functional land uses that contribute to both ecological restoration and waste prevention.

Our submission argues on environmental grounds for a fundamental redesign of the Union Registry's operational scope to include integrated environmental performance indicators, ultimately ensuring that the EU's climate and zero waste ambitions are mutually reinforcing. By realigning the regulatory framework to promote circularity, the EU can enhance both its climate mitigation efforts and its long-term environmental resilience.

4.1 Key Takeaways

- **Disjointed Policy Integration:** The Delegated Regulation lacks mechanisms to link carbon accounting with zero waste and circular economy objectives, thereby restricting holistic sustainability reporting.
- **Compliance Over Innovation:** Current incentives target mere compliance with emission targets rather than stimulating innovative, waste-reducing land practices.
- **Transparency Deficits:** Enhanced, disaggregated data on regenerative and waste-minimisation practices are required; the current system is overly aggregated.
- **Missed Synergies:** Opportunities to align with complementary EU policies—such as the Waste Framework Directive—are not exploited, resulting in a siloed approach to environmental governance.
- **Rigid Methodological Framework:** The narrowly defined metrics for removals ignore significant potential contributions from practices that bridge waste management and land regeneration.

4.2 Insights

4.2.1 Rethinking Land Use and Zero Waste

The current approach in the Delegated Regulation largely confines itself to recording carbon emissions and carbon removals through standardised land accounting categories. However, this narrow focus poses several issues:

- **Missed Environmental Co-benefits:** Regenerative practices such as composting, biodiverse agroforestry, and sustainable soil management

not only contribute to carbon sequestration but also play a crucial role in reducing waste. These practices, if incorporated into the accounting framework, could provide dual benefits: enhanced removals and waste diversion from landfill streams.

- **Economic and Operational Disconnect:** By not recognising the importance of zero waste strategies in land management, the regulation inadvertently discourages innovative approaches that could simultaneously advance environmental, social, and economic objectives.

- **Lack of Adaptive Flexibility:** The regulatory design does not allow Member States to develop flexible accounting mechanisms that reward resource efficiency improvements. Incorporating zero waste indicators would encourage states to innovate beyond traditional practices, leading to both reduced carbon emissions and waste.

4.2.2 Integration Challenges: Governance and Data Silos

In its current form, the Union Registry operates in isolation from other EU environmental instruments, which creates several challenges:

- **Fragmentation of Data and Efforts:** There is a significant disconnect between the Union Registry and broader waste/circular economy frameworks. For instance, while Member States report waste management metrics under separate directives, these crucial data points are not integrated into LULUCF reporting. This disconnect undermines the potential for synergy between climate policies and zero waste targets.

- **Inefficiencies in Policy Implementation:** The lack of interconnected reporting creates an administrative burden that results in redundancies and often, conflicting performance assessments. Better inter-departmental and inter-instrument coordination could reduce costs, improve accountability, and provide a more comprehensive environmental performance picture.

- **Undervaluation of Sustainability Transitions:** In a policy arena increasingly dominated by calls for systemic transformation, the existing Registry fails to capture the benefits of shifts toward circular land use practices. The absence of these metrics means that the environmental benefits of waste reduction strategies remain invisible in national and EU-level reports.

4.2.3 Enhancing Transparency and Accountability

Transparency is a cornerstone of effective environmental governance. The Union Registry's update proposals have improved real-time reporting and public accessibility; however, key shortcomings remain:

- **Need for Granular Data:** The proposed updates focus on transactional data — such as account balances and transaction details — but does not provide sufficient granularity on the environmental sources of removals. Including a breakdown of removals attributable to regenerative land practices and zero waste measures would enable better scrutiny and drive improved policy outcomes.

- **Insufficient Stakeholder Engagement:** The aggregated nature of data fails to enable community-level or non-governmental actor insights. Enhanced transparency mechanisms, such as interactive dashboards and stakeholder feedback loops, could foster a culture of accountability and inspire grassroots innovations in waste reduction.

- **Performance Monitoring Gaps:** Without clear, disaggregated indicators, it is challenging to track progress against the EU's dual objectives of climate neutrality and zero waste. A more nuanced reporting framework that captures co-benefits would allow policy-makers to identify gaps and target support more effectively.

4.2.4 Reconciling Technical Rigour with Environmental Innovation

The Delegated Regulation's technical focus, while necessary for regulatory consistency, risks excluding innovative, less quantifiable interventions from its ambit:

- **Static vs Dynamic Metrics:** The reliance on static land accounting categories and fixed flexibilities (e.g., LRUs, LUFAs, MFLFAs, AFAFs) does not lend itself to the evolving nature of circular practices. A more dynamic metric system—one that can capture emerging best practices in zero waste land use—would enhance policy relevance in a rapidly evolving environmental landscape.

- **Incorporating Multi-Dimensional Sustainability Indicators:** By broadening the scope of what constitutes 'removals,' the regulatory framework could include indicators such as reduced raw material usage,

improvements in soil health, and biodiversity gains—each of which are critical for a holistic understanding of environmental performance.

- **Challenge of Measuring Intangibles:** While technical metrics are easier to measure and regulate, they may not capture the full spectrum of benefits derived from circular practices. Methodologies that combine quantitative and qualitative assessments—possibly leveraging pilot projects and case studies—could bridge this gap.

5. RECOMMENDATIONS

Drawing from the critical insights above, the following recommendations are proposed to enhance the European Commission's draft Delegated Regulation (EU) 2019/1122 in line with zero waste imperatives:

5.1 Integrate the Circular Economy and Zero Waste Metrics into the Union Registry

- **Cross-Policy Data Harmonisation:** Develop a system that integrates data from the Waste Framework Directive and the Circular Economy Action Plan with LULUCF reporting. This could involve joint data exchange protocols that enable Member States to report waste diversion metrics alongside carbon removals.

- **Define New Unit Categories:** Establish a category of "Zero Waste-Enhanced Land Resource Units (LRUs)" where removals linked to regenerative practices (e.g. composting, organic waste reutilisation) are separately identified and credited.

5.2 Create Incentives for Innovative, Circular Land Use Practices

- **Performance-Based Flexibilities:** Redesign the flexibility mechanisms so that Member States which demonstrate significant improvements in waste diversion or soil regeneration receive enhanced flexibility allocations (e.g. bonus LRUs). This would provide a tangible incentive to adopt circular measures.

- **Pilot Programs and Demonstration Projects:** Establish pilot programs which test integrated land use and waste reduction measures. Successful models should be scaled up and integrated into the Union Registry as best practice case studies.

5.3 Enhance Transparency, Data Granularity, and Stakeholder Engagement

- **Develop Interactive Reporting Tools:** Upgrade the public interface of the Union Registry to display disaggregated data showing the contributions of various regenerative and circular measures. Dashboards that visualise both carbon and waste reduction outcomes can provide transparency and drive accountability.

- **Stakeholder Consultations:** Initiate regular multi-stakeholder consultations, including waste management experts, agricultural practitioners, and community groups, to refine reporting indicators and ensure that the framework remains responsive to evolving environmental practices.

5.4 Foster Integration Across EU Regulatory Frameworks

- **Policy Interlinkages:** Amend the Delegated Regulation to reference and align with other pertinent EU legislation, such as the Waste Framework Directive and Circular Economy Action Plan. An interlinked regulatory approach will help ensure consistency in reporting and incentivise synergistic interventions.

- **Unified Methodologies:** Develop common methodologies and standards for calculating removals that incorporate circular economy outcomes. This may involve collaboration with international bodies (e.g. the Intergovernmental Panel on Climate Change) to ensure that innovative approaches are both robust and internationally comparable.

5.5 Promote Adaptive and Dynamic Reporting Metrics

- **Review and Update Cycles:** Implement review cycles that allow the Union Registry's methodology to evolve. A formal mechanism should be established whereby new research findings and technological advancements in waste management and regenerative agriculture are regularly incorporated into the reporting frameworks.

- **Mixed-Method Approaches:** Encourage the use of mixed-method assessment techniques that combine quantitative data with qualitative performance reviews of circular initiatives. This helps capture the full spectrum of benefits that static metrics may overlook.

5.6 Strengthen Governance Mechanisms to Avoid Administrative Silos

- **Cross-Agency Coordination:** Establish a coordinating body tasked with harmonising the data flows across different environmental directives. This body could serve as a central point for ensuring that all relevant data—whether related to emissions, removals, or waste reduction—is coherently integrated.
- **Feedback Mechanisms:** Introduce mandatory reporting feedback loops that require Member States to clarify discrepancies between their waste management achievements and reported LULUCF outcomes. Such mechanisms would reinforce the accountability of national administrations in meeting broader EU targets.

6. SUMMARY OF OUR RECOMMENDATIONS FOR REFORM OF THE SYSTEM

6.1 Standardisation, Verification, and Public Access to Data

- Require peer-reviewed methodologies for all land categories.
- Mandate third-party verification.
- Provide open access to data, models, and assumptions.

6.2 Zero Waste-Enhanced Land Units and Circularity Metrics

- Introduce new unit types linked to regenerative practices.
- Develop indicators for waste diversion and organic matter recovery.

6.3 Incentivising Innovative Land Use Through Flexibility Rewards

- Allocate bonus flexibilities for demonstrable improvements in soil regeneration and waste reduction.
- Fund pilot programs that bridge waste prevention and land use.

6.4 Governance Harmonisation and Stakeholder Inclusion

- Align LULUCF with the Waste Framework and Circular Economy Action Plan.
- Establish a cross-agency coordination body.

- Conduct regular consultations with local communities and environmental practitioners.

6.5 Establishing Dynamic, Multi-Dimensional Reporting Frameworks

- Move beyond static metrics to include evolving practices.
- Combine quantitative reporting with qualitative reviews.
- Create interactive dashboards showing both carbon and circular performance.

6. CONCLUSION

The current and draft amended Regulations for the EU Union Registry represent technical progress but lack alignment with the EU's sustainability ethos. Integrating zero waste principles into the LULUCF framework is not a peripheral issue but a strategic imperative. A reformed Union Registry should reflect not just carbon figures, but the real ecological and social gains from regenerative, circular and ecologically sustainable land use. Only by bridging the gaps between carbon accounting, waste reduction, and ecological restoration can the EU credibly lead the way toward climate neutrality by 2050.

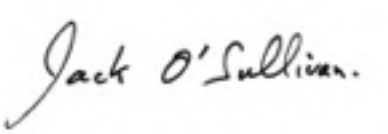
The review of the Delegated Regulation (EU) 2019/1122 reveals that, despite considerable technical detail and recent improvements in data management, significant gaps remain when viewed through a zero waste lens. By failing to capture the multi-dimensional contributions of circular land use and waste prevention strategies, the current framework limits the EU's capacity to drive systemic, transformative change. Realigning the Union Registry to incorporate robust, integrated metrics that reward zero waste practices is not merely a technical adjustment — it is a strategic imperative for achieving a resilient, sustainable future.

Adopting the recommended measures would:

- Enhance the accuracy and comprehensiveness of environmental data.
- Foster innovation by linking incentives to regenerative practices.
- Encourage inter-sectoral cooperation and harmonise environmental governance across EU policies.

In a context where climate change and resource depletion are pressing issues, the transformation of regulatory frameworks to support a zero waste economy is

essential. Implementing these recommendations would ensure that the Union Registry not only records compliance but also actively contributes to the EU's broader agenda of circularity and sustainable development.



Jack O'Sullivan

Zero Waste Alliance Ireland

05 May 2025

Zero Waste Alliance Ireland

This submission was researched and written by Nazia Husain (ZWAI member), Myrtille Coutin Fitzsimons (ZWAI social media assistant and researcher) and Jack O'Sullivan (ZWAI founder and Vice-chair); with additional research and final editing by Jack O'Sullivan. Thanks are due to Dalia Smelstoriūtė-O'Sullivan for assisting with formatting of the text and preparation of the contents pages.

About this initiative

Appendix I

Summary	The Union Registry ensures the accurate accounting of operations relating to land use, land use change and forestry. This initiative amends the Registry Union Regulation to lay down the rules for this accounting.
Topic	Climate action
Type of act	Delegated regulation
Expert group	E03590

Draft act

Feedback: Open

Feedback period

07 April 2025 - 05 May 2025 (midnight Brussels time)

The Commission would like to hear your views.

This draft act is open for feedback for **4 weeks**. Feedback will be taken into account for finalising this initiative. Feedback received will be published on this site and therefore must adhere to the feedback rules.

More about draft acts

Give feedback >

Draft delegated regulation - Ares(2025)2810591

Appendix II

Gmail

'Have your say' - Acknowledgement of receipt

European Commission - 'Have your say' <DO-NOT-REPLY@ec.europa.eu> 5 May 2025 at 22:53
To: jackosullivan2006@gmail.com

European Commission Have your say

Dear Sir or Madam,

Thank you for submitting your feedback on Have your say.

We acknowledge receipt of your feedback which may be used to improve the proposed legislation.

https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/14048-Land-use-land-use-change-and-forestry-amending-the-Registry-Union-Regulation/F3541071_en

To make corrections, you can unpublish your feedback and send a new one, if the feedback period is still open.

This is an automatic notification message. Please do not reply to it.

With kind regards,

European Commission
Secretariat-General