Submission by Good Energies Alliance Ireland

On Biodiversity Loss

From Citizens Assembly

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Background

Good Energies Alliance Ireland (GEAI) is an environmental NGO, founded in 2011, situated in County Leitrim in Northwest of Ireland, who aims to ensure the wellbeing of people and communities on the island of Ireland and elsewhere through the protection and sustainable development of our environment, natural resources and our communities.

Our main objectives are:

- To carry out the activity of promotion of environmental and climate protection and monitoring of energy production and use on the island of Ireland and its territorial waters and elsewhere and any other related activities.
- To establish, promote and operate programmes and services with a view to fostering the economic, personal, cultural, recreational, and social well-being of the communities of Ballinaglera and wider areas and develop Ballinaglera Community Hall as an environmental and community resource centre.

Some of the submissions in which GEAI already participated are the Design of a new Renewable Electricity Support Scheme (RESS) launched in September 2017; the Public consultation on the National Adaptation Framework on climate change on December 2017 to the Department of Communications, Climate Action and Environment; among others.

Soil Biodiversity Loss

Q1. What are your views on the international, European, national, regional and local dimensions to the biodiversity emergency:

According to the Article 17 Report to the European Commission on the implementation of the EU Habitats Directive, **species decline in Ireland** is as follows:

- 15% of species in Ireland have an "inadequate status" with another 15% identified as having a "bad status".
- Species are now in decline by 15% compared to a 10% decline between 2007 - 2013, showing a negative trend from 6 years previous.
- Approximately one third of the 98 wild bee species in Ireland are close to extinction while another 60% of birds, commonly occurring in Ireland, are now on the red or amber conservation lists.

In Ireland, 46% of habitats are in decline according to **t**he Status of EU Protected Habitats and Species in Ireland 2019 report.

- 85% percent of Ireland's habitats assessed are now under an "Unfavourable Conservation status" compared to 91% in the period 2007 - 2013, showing an improving trend.
- 46% of habitats are now recorded to be in decline according to The Status of EU Protected Habitats and Species in Ireland 2019 report.
- Only 2% of habitats are reported as currently improving (DCHG, 2019).

The recently published 6th National Report to the Convention on Biological Diversity, identifies that such outcomes are the result of **land use change alongside increasing levels of production** from the agriculture sector.

The National Biodiversity Data Centre reports that a **decline in wetlands, soil erosion, agriculture and forestry industries and poor hedgerow management** are among the reasons for such increasing levels of biodiversity loss.

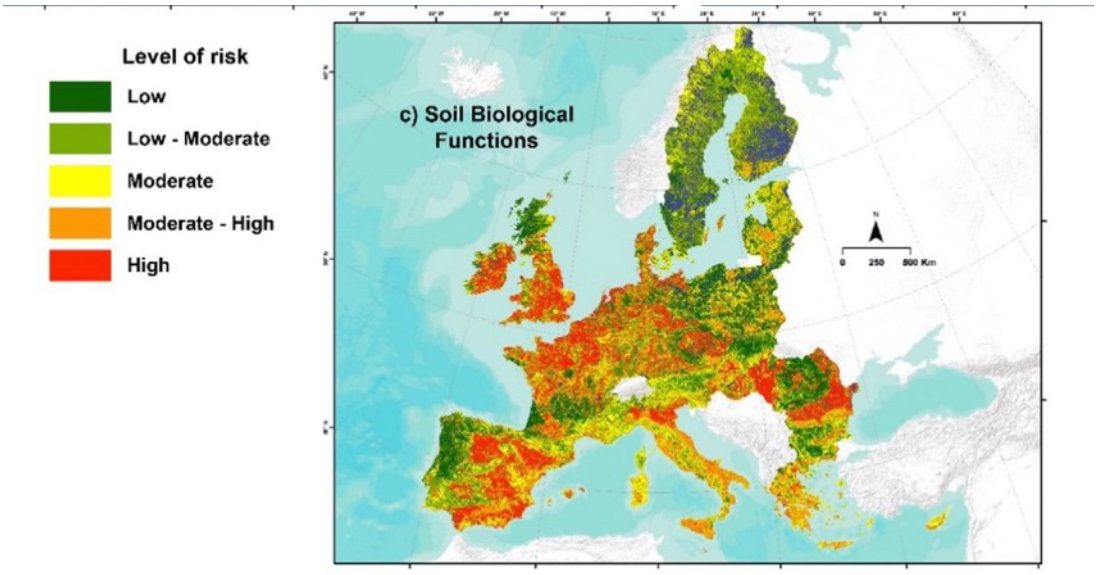

Figure 1 - Potential risk to soil biological degeneration in the 27 European Countries (Orgiazzi et al. 2016).

- **Our view:** These statistics are horrifying, and all Irish communities should be made more aware of the biodiversity emergency, its causes and actions that can be taken for remediation at different levels – national, regional, and local. The declaration of a biodiversity emergency in Ireland in 2019 has been the empty declaration with little impact on public awareness and few actions.

RECOMMENDATIONS:

1. *As a top priority, the EU Soil Directive to be implemented, underpinning the Irish Soil Mission.*
2. *At national level – public awareness and education programmes, greater priority given to measures to combat biodiversity decline, national actions – surveys, testing schemes, education programmes, conferences, etc.*
3. *At regional and local levels – surveys and testing at regional and local levels ranging from soil biological health to schools-based education programmes and community action plans.*

Q2. What are your views on the threats presented by biodiversity loss and the opportunities to reverse this loss:

In this submission we are focusing on soil biodiversity. This is the Cinderella of measures to support biodiversity while in essence being the foundation for all life on land. Losing soil biodiversity would have implications for food – 95% of all food for animals and humans is reliant on soil health and biodiversity.

In addition, with the loss of soil biodiversity comes loss of habitat. A dead soil cannot support life and without living soil we cannot have living plants. The consequence of this is the loss of life on land, the 15th Sustainable Development Goal.

RECOMMENDATIONS:

- We need to restore / regenerate our soils to becoming thriving habitats for all sorts of living organisms, from fungi and bacteria to arthropods and insects. This means a move towards agro-ecological management of land away from practices that destroy soil biodiversity and towards practices that restore and regenerate soil. Key shifts in practice includes lowering of reliance on fertilisers, return to traditional practices of crop rotation and non-intensive animal raising.

Q3. What are your views on the main drivers of biodiversity loss, their impacts and the opportunity of addressing these drivers:

Biodiversity is the diversity of living things – in our soils, our lands, our waters and our skies. Diversity is essential to everything – how we use and produce food, fibre and fuel off land. Where we use mono-culture approaches to any of these areas (grazing, forest plantations, etc,), we reduce the number of species that feed and find habitat in those spaces.

Soils underpin every healthy habitat on land. Every land species of flora and fauna lives on and through soils, depending on them for food and habitat. We need healthy, thriving soils which in turn create healthy and thriving plants, animals and people.

Soil food web and health

The soil food web refers to the multitude of life forms in the soil. They range from microscopic one-celled bacteria, algae, fungi, and protozoa, to larger nematodes, arthropods, earthworms, insects, plant roots, and small animals. These life forms help break down organic matter, aerate the soil, prey on unwanted pests, and make nutrients available to the plants. In one teaspoon of soil alone, there may be over 600 million bacterial cells.

Soil health looks at the health of this complex living system, what organisms and fungi are there, their diversity, and their ratios to each other**.** Biodiversity on land depends on biodiversity in soils. Soil fertility looks at the food in the soil to feed the biodiversity that lives in the soil web. The soil and the soil web feed the plants - allowing them to produce yields of nutrient-dense foods that are appropriate to the different species in our individual ecosystems, climates and cultures.

Main drivers of biodiversity loss and the impacts

- Our export-based model of dairy / beef / sheep is based on an overspecialisation of and reliance on grass (until recently monoculture), which is grown in a manner that harms or destroys our soil biodiversity.
- The compaction of land, reducing the amount of oxygen in the soil, caused by machinery use and ploughing and resulting in loss of some soil life-forms.

- Chemical fertilizers and pesticides damage many beneficial life forms in the soil, including soil bacteria that break down organic matter, killing them or causing them to go dormant (Salomon and Cavagnaro, 2022).
- With compacted soil and in the absence of certain soil bacteria which break down organic matter into plant nutrients, soil health is damaged. Plants must then rely on the chemical fertiliser as they cannot get their nutrients from the soil via the soil food web.
- Plants growing in these unhealthy soils are attacked by disease, pests and parasites, and the solution is to apply more fertilizers and pesticides, furthering the deadly spiral.
- Modern industrial farming practices which focus on economics and competition, efficiencies and technological innovations do not allow the soil to regenerate properly.
- There is a non-compliance of existing laws and directives, and Ireland is travelling in the opposite direction to the European trend (e.g., the Nitrates Directives. Ireland is one of only four Member states still applying for the derogation in chemical Nitrogen the amount of chemical Nitrogen continues to increase while in the other three member states, levels are decreasing).

RECOMMENDATIONS

1. Adopt the principles of Agroecology as the basis for good farming practice in Ireland, with an emphasis on restoring or regenerating soil heath and biodiversity in all our farms.
2. Instead of continuing with the model of chemical soil fertility, move towards understanding of and testing for soil health on all our farms, together with reduction in chemical fertiliser use. (Testing of soil health is the testing of biological activity in soil, especially bacteria to fungus ratio.)
3. Promote changes in land use and management practices that will restore or regenerate soil biodiversity.

Q4. In your view, what opportunities are there to develop greater policy coherence and strategic synergies between biodiversity policy and other policy priorities including, but not limited to, economic development, climate action, sustainable development, agriculture, and tourism?

The existing approach is to keep industrial agriculture as the dominant model and to run alternative models in separate schemes.

- **Forestry** is financed by the exchequer outside of agriculture and the CAP (Common Agricultural Policy).
- **Wetlands** (extremely valuable biodiversity habitats with important functions in climate mitigation and water security etc) will be located outside of agriculture.
- High nature value, results-based environmental schemes essential to restoring biodiversity (**Acres Cooperation**) are located, funded, and managed by consultants and academics outside of the DAFM (Department of Agriculture, Food and the Marine)/ Teagasc etc. The Department of

Agriculture and its groups (Teagasc, Bord Bia, Origin Green etc) will all continue to support the existing industrial model.

RECOMMENDATIONS

- We cannot continue to destroy soil health. We need to transition to agroecological farming practices, including agroecological experts in the development of policy and practices.
- We need a commitment to move away from industrial models of agriculture to agroecological models (including permaculture, organic, biological farming etc).
- At the very least, if the existing separate development between the existing model of industrial agriculture and environmental schemes is allowed to continue then the alternative agroecological stream will need its own research and innovation resources. It cannot be left outside of the spaces where biodiversity policy and other policy priorities including, but not limited to, economic development, climate action, sustainable development, agriculture, and tourism happen.

Q5. In your view, what opportunities are there to promote greater public understanding of, and support for, urgent action in response to the biodiversity emergency?

RECOMMENDATIONS

- Education. We need to take this story of industrial chemical agriculture versus agroecological regenerating soil for nutrient dense, chemical free food grown in healthy, biodiverse ecosystems to the public. It is time for the public to get a better understanding of the penalties they pay for the existing system in
    - lack of healthy and nutrient-rich foods
    - poor soil health and biodiversity
    - the price they pay for these outcomes.

We must ask them whether they want to continue paying for separate development instead of transitioning our primary agricultural model to one that serves the land, the people and the community.

- Transition from chemical fertilisers. With the current focus on the war in Ukraine and the shortage and high cost of chemical fertilisers for farmers, now would be the right time to transition away from chemical fertilisers and towards regenerating soils – breaking the addiction. Despite industry claims to the contrary, agroecological systems that do not use chemical fertilisers are resilient and productive.

Q5. In your view, what opportunities are there to improve the State's response to the challenge of biodiversity loss, how can that response best be resourced and implemented in a strategic and coordinated manner, and how progress can be measured?

We would like to put forward three main points:

1. **Education:** from national school to university, we need to be teaching students about the soil food web and its importance to all life on earth. Soil health and biology must be included in the curriculum to a greater extent than currently, together with ways to restore and regenerate it.
2. We need a commitment to move away from industrial models of agriculture to **agroecological models** (including permaculture, organic, biological farming etc).
3. **A Soil Regeneration Scheme:** We want to see a simple scheme developed for farmers and the general public that tests for soil health and teaches farmers to remediate with amendments and innovations.

Note: See Talamh Beo's Soil Biodiversity EIP and how to test for soil health and how to regenerate degraded or poor soils. Good Energies Alliance Ireland (GEAI) is a partner in the Talamh Beo Soil Biodiversity Literacy and Enhancement EIP. Bridgi Murphy, the Talamh Beo project manager, is a director of GEAI.

References

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