Financing the future for a sustainable tomorrow

Despite repeated warnings from the scientific community, the reality of climate change now unfolds before our eyes. The very operation of our economy has played a pivotal role in creating the climate crisis. Ironically, it is also the economy that has the potential to resolve this crisis.

By *Pierre Abadie*

The Intergovernmental Panel on Climate Change (IPCC) defines carbon neutrality as a balance between CO_2 emissions and CO_2 absorptions on a global scale. Emissions stem primarily from the utilisation of fossil energy to power our economy and, to a lesser extent, from deforestation. Carbon sinks are not futuristic technologies, they are the earth's natural systems, including soils (through plant photosynthesis) and oceans.

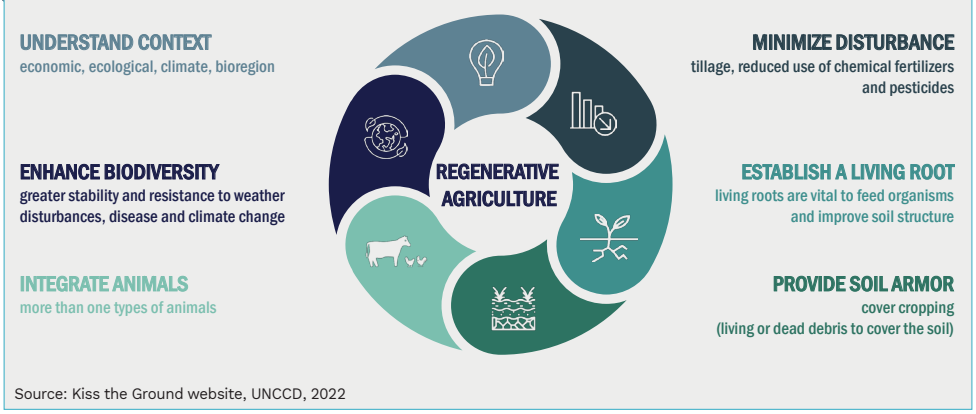
Currently, our global economy and agricultural activities emit approximately twice as much carbon into the atmosphere as these sinks can absorb. By 2050 we must sequester as much carbon as we emit to stabilise its concentration in the atmosphere and limit the overall rise in the planet's temperature. Therefore, merely 'offsetting' a company's carbon balance by purchasing 'carbon credits' is insufficient to achieve neutrality, unless it's accompanied by concrete emission reduction measures.[1]

The importance of soil and agriculture

The importance of natural carbon sinks cannot be overlooked, particularly the largest one: soil, and how we've managed it in agriculture. Since the 1950s, modern agriculture has significantly increased food production in Europe. This progress included the creation of fertilisers using nitrogen, phosphorus and potassium, the development of herbicides and pesticides to control insects and weeds, and the industrialisation of agriculture. However, these advancements came at a cost. The use of ploughs disrupted soil life, leading to a loss of fertility. Compensating for this loss required an increase in fertiliser use, which led to groundwater pollution. Furthermore, the consolidation of land and large monocultures, which optimised yields, necessitated the heavy use of pesticides.[2] The conversion of forests, wetlands, grasslands and other terrestrial ecosystems into agricultural land has led to a 60% decline (on average) in the global vertebrate population since 1970, contributing to mass extinction.[3]

Globally, the production of food generates more than a quarter of global greenhouse gas emissions.[4] The issue extends beyond emissions to include land use changes, deforestation, groundwater pollution and biodiversity loss. The way we produce and consume food significantly contributes to the loss of natural capital worldwide. We are

FIGURE 1: 6 KEY TENETS OF REGENERATIVE AGRICULTURE TO IMPROVE SOIL QUALITY AND CARBON SEQUESTRATION IN THE SOIL



Source: Kiss the Ground website, UNCCD, 2022

rapidly destroying nature, justifying it with the need for food security, higher productivity, cost control, and preservation of culinary habits.

Changing our food production chain

However, it is essential to recognise that nature is what enables us to produce our food. That makes the preservation of nature vital. Achieving this goal requires a systemic change in how our food production chain operates. This challenge relies, among others, on three immediately actionable levers that break the destructive cycle, help combat climate change, and alleviate global hunger.

The first lever involves changing our eating habits. For instance, it takes 5,200 square metres of arable land to feed a person with a meat-based diet (primarily for producing grains for cattle).[5] By opting for diets that are less meat-heavy and more plant-based, we can significantly reduce the arable land required for food production, ultimately feeding more people with the same amount of cultivated land.

The second lever involves reducing food waste. Approximately 40% of food produced is lost between the farm and the consumer, with half of it discarded by consumers. This accounts for about 500 million tonnes of food waste, which could meet the dietary needs of 1 billion people suffering from hunger.

The third lever is regenerative agriculture. By adopting agroecological practices that restore soil fertility and preserve biodiversity, pollinators, and natural helpers, it is possible to create agriculture that produces more with fewer resources, such as fewer pesticides, less fertiliser, less water and less energy. Efforts, like the '4 per 1000' international initiative, aim to demonstrate the crucial role of agricultural soils in offsetting greenhouse gas emissions. By increasing carbon stocks in the top 30 centimetres of soil by just 0.4% each year, we could offset all the greenhouse gas emissions produced by the planet in a single year.[6]

However, this approach requires a shift in production methods, prioritising agro-ecological and regenerative practices. Regenerative agriculture is not a new concept, but it is gaining momentum as a potential solution in our fight against climate change. It goes beyond sustainable farming practices to restore degraded soil biodiversity, sequester carbon, and enhance resilience and productivity. By implementing practices like cover cropping, planned grazing, composting, and reduced tilling, we can make significant strides in reducing our carbon footprint.[7]

Financing the future

To make large-scale regenerative agriculture a reality, the most critical driver of change will likely be the reallocation of significant public and private investments that currently support the conventional food production system. Notably, this involves creating partnerships between public entities that promote healthier diets, industrial actors that reorganise the production chain to reduce waste, and investors who redirect capital towards regenerative agriculture. By investing in the restoration of lands degraded by intensive food production, there is the potential for sustainable food production to become more affordable for all, potentially making it profitable for those who invest in it. In Europe alone, 65 million hectares could shift towards these practices, potentially sequestering 240 million tonnes of CO_2, or nearly 40% of France's total carbon footprint.

Remaining pragmatic, it's clear that we cannot deviate from a market economy, which has driven development and improved living standards for billions of people. However, impact finance changes our perception of progress, which for nearly a century has been measured primarily by economic growth. Decarbonisation, climate change adaptation, and regenerative agriculture represent potentially the most significant structural growth vectors for the next decades. ■

1 Intergovernmental Panel on Climate Change, Sixth Assessment Report (2021)
2 National Geographic Society, Environmental Impacts of Agricultural Modifications (2023)
3 John Rafferty, Biodiversity loss, Encyclopaedia Britannica (2023-11-13)
4 The World Bank, Climate-Smart Agriculture (Last Updated 2021)
5 République Français, Empreintes sol, énergie et carbone de l'alimentation (2020)
6 The International '4 per 1000' Initiative
7 Ecophytopic, Agriculture & Environment, Des pratiques clefs pour la préservation du climat, des sols et de l'air, et les économies d'énergie (pdf)

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SUMMARY

Carbon sinks are not futuristic technologies, they are the earth's natural systems, including soils and oceans.

Merely offsetting a company's carbon balance by purchasing carbon credits is insufficient to achieve carbon neutrality.

By implementing regenerative farming practices like cover cropping, planned grazing, composting, and reduced tilling, we can make significant strides in reducing our carbon footprint.

To make large-scale regenerative agriculture a reality, we need significant reallocation of public and private investments.

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