Carbon farming

A “new business model” ... for who?
The European Coordination Via Campesina is a European grassroots organization which currently brings together 31 national and regional organizations of farmers, farm workers and rural constituencies based in 21 European countries. Rooted in the right to Food Sovereignty, our main aim is to defend farmers’ and field workers’ rights and to promote diverse and sustainable family and peasant farming. These principles in turn, demand food and agricultural policies based on legitimacy, fairness, solidarity and sustainability. These are necessary to ensure food security, food safety, public health, and employment in rural areas, and to tackle the global food crisis and climate change. We call for a new and improved EU agricultural policy based on the above principles.

Table of acronyms:

- **CCS**: Carbon Capture and Storage
- **CO₂**: Carbon dioxide
- **ETS**: EU Emissions Trading Scheme
- **ARO**: “Avoid, reduce, offset”
- **ESR**: European Effort Sharing Regulation
- **GHG**: Greenhouse gas
- **MRV**: Monitoring, Reporting, and Verification
- **CAP**: Common Agricultural Policy
- **EU**: European Union
- **LULUCF**: Land Use, Land-Use Change and Forestry
- **REDD+**: Mechanism for reducing emissions from deforestation and forest degradation
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Of the many proposals in the European Green Deal of December 2019, the European institutions focus on “carbon farming”. It involves encouraging farmers and owners of land and forests to adopt practices that favour absorption of carbon dioxide in the soil and in biomass, to help limit climate warming. The ambition of doing something to tackle climate change is appropriate, but nonetheless the planned approach raises various questions, which this document aims to examine.

What led to carbon farming?

The origins of an economic approach to nature

The idea falls within the general framework from the UN Convention on Biological Diversity, signed at the Rio Earth Summit in 1992. This Convention endorses a paradigm shift in nature-protection policy, entrusting it to private actors, particularly large companies, through implementation of “market instruments”. It thus follows the recommendations of mainstream economic theory, according to which the market and price signals are the most effective social interaction mechanisms. This approach is based on a technical and financial vision of nature, viewed as “natural capital”, producing “ecosystem services”, a catalogue of discrete natural functions, such as regulation of water flows, pollination, or carbon sequestration, to which a price can be assigned. “Carbon markets” were historically the first of these “market instruments”, coming out of the Kyoto Protocol (1997). These mechanisms make it possible to cap global emissions of greenhouse gases (GHGs) while making the biggest polluters pay, and giving monetary rewards to the agents who act best. These mechanisms also stipulate the option of “offsetting” GHG emissions by funding projects to reduce emissions in countries in the South (the Clean Development Mechanism) and in the North (joint implementation). The projects in question are very varied, ranging from transfer of less “dirty” technologies to planting forests.

The logic of offsetting

The principle of offsetting originated in a doctrine that appeared in the 1970s, the “hierarchy of mitigation”. According to this hierarchy, economic agents should first do all they can to avoid destroying nature. If this is not possible, they work to reduce the scale of destruction. Finally, if damage is done to the environment, this should be offset by restoring damaged areas elsewhere. This is known as the doctrine of “avoid, reduce, offset”, or ARO. The ARO three-pronged approach was not used much initially (except for in the United States for protection of wetlands), but the principle of offsetting went on to become central in policies to combat climatic warming and erosion of biodiversity. Thus European climate objectives are now expressed in “net emissions” (the Green Deal aims to achieve a 55% drop in net emissions compared to 1990 by 2030, and carbon neutrality by 2050). To put it another way, if real emissions do not drop enough, it is still possible to offset them by taking carbon out of the atmosphere, by planting trees, for example, or by adopting certain farming practices.

The principle of offsetting in farming practices in the European Union

A communication from the European Commission on 15th December 2021 states the possible means for removing carbon in this way. Entitled Sustainable Carbon Cycles, and containing a section on carbon farming, it distinguishes technological means, such as carbon capture and storage (CCS), and “nature-based solutions”, which involve extending natural “carbon sinks”, thus concerning the field of land use. It announces that “carbon credits” will be granted to owners and/or managers of land where practices will enable an increase in carbon sequestration by soils and biomass. These beneficiaries could then sell these credits on the carbon markets, providing them with an additional revenue stream. Before going into a more detailed analysis of the proposals from the European Commission, it is necessary to give a recap of how carbon markets work.

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There is no international carbon market, but rather a large number of different markets, which are more or less linked, in an architecture that is too complex to explain in this article. Generalising slightly, there are two main types.

Firstly, so-called compliance markets include companies that are legally obliged to cover their GHG emissions by purchasing carbon credits for an equivalent amount. The European market, founded in 2005, is the largest, with around 11,000 firms participating in it. This is the EU Emissions Trading Scheme (ETS). Every year, the authorities set a total amount of $CO_2$ emissions that must not be exceeded, and then distribute the corresponding emission rights. Companies that are involved in emission-reduction strategies do not use all their allowances: they sell the unused allowances on the market, earning money. On the other hand, companies that pollute more than they are entitled to have to buy supplementary quotas on the market. The allowances are cancelled out by the corresponding emissions.

Secondly, there are offset markets working on the principle that industrialised and developing countries can fund emission-reduction projects in countries in the South, where offsetting is cheaper, in exchange for credits enabling them to offset their GHG emissions. The host countries benefit from investments and technology transfers. The companies and/or countries running projects benefit from additional income from the sale of credits, some of which are sold on the European market (ETS) and others on voluntary carbon markets. The first and largest is the Clean Development Mechanism, which emerged from the Kyoto Protocol; this mechanism is now being overhauled following the Paris Agreements in 2015.

The goal of “net zero”

Article 6.4 of the Paris Climate Agreement establishes the principle of international offsetting, stipulating that it is possible for parties to the United Nations Framework Convention on Climate Change (i.e. states) to achieve their nationally determined contributions by using mitigation results elsewhere. Its content has just been fine-tuned at the COP 26 in Glasgow in November 2021. The objective of carbon neutrality, also known as “net zero”, adopted by governments stimulates the growth of carbon markets. Thus, according to McKinsey, compliance markets recorded a trading volume of 250 billion dollars in 2020. The voluntary markets are more limited (300 million dollars in 2020), but the anticipated demand for offsetting is expected to grow.

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credits is increasing with the climate commitments of companies and states. Of the 2,000 largest listed companies, 20% aim to reach zero net emissions by 2050, including Total Energies, Thales, La Poste, and nearly 300 airlines. Aircraft continue to fly, but Air France will plant trees... There is an important point to note here: **offsetting creates “natural assets”, namely certificates representing tonnes of CO2 avoided or “removed” from the atmosphere. By creating this type of assets, it plays a significant role in the financialisation of nature, which means that discrete natural “goals” are represented by intangible assets that have a lot in common with financial assets.**

How has the European carbon market performed?

Europe has recorded significant reductions in emissions, of around 30% compared to 1990 levels. **However, these reductions are cancelled if you take into account imported emissions.** Furthermore, it is not clear how the ETS market has performed in these reductions. In particular, after starting at €30 per tonne of CO2, the price then stagnated at around €5 per tonne between 2013 and 2018. These price levels clearly no longer offer an incentive. This is due to the European policy of mass free allocation of carbon allowances, causing supply to be structurally greater than demand. Since 2018, the price has recovered, for two main reasons. Europe has restricted its policy of free allocation and implemented mechanisms to regulate prices in the market. The ambitious aim for reductions that has been announced (55% less net emissions in 2030 compared to 1990 levels) increases anticipation of an increase in demand. In autumn 2021, the price per tonne reached €60. **Furthermore, internationally, carbon prices vary from €1 per tonne to more than €100, depending on the markets. These prices are therefore very volatile, historically and geographically.**

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* Also see the creation of the Taskforce on Scaling Voluntary Carbon Markets. The companies and organisations that participate are always the same large environmental NGOs like The Nature Conservancy or the IUCN, multinational companies like Blackrock, Coca-Cola, Bunge, Deloitte… in total around 250 organisations, see [https://www.iif.com/Portals/1/Files/TSVCM_NewGovernanceBody.pdf](https://www.iif.com/Portals/1/Files/TSVCM_NewGovernanceBody.pdf), p. 19.

* The “Fit for 55” package in the Green Deal
The proposals from the European Union for development of carbon farming

The three key tools for European climate policy are the carbon market (the ETS mentioned above), the Effort Sharing Regulation (ESR), and the regulation on Land Use Land Use Change and Forestry Regulation (LULUCF).

The ETS covers around 40% of GHG emissions, with the sectors of fossil fuels, the steel industry, cement, and other big emitters. The ESR deals with the other sectors of industry and agriculture. The LULUCF sector, as the name indicates, covers all emissions and withdrawals in the sector of land, dealing only with carbon. Methane (livestock farming) and nitrous oxide (fertiliser) emitted by farming are not covered by the ESR.

These three instruments are currently being changed to adapt them to the new objective of the Green Deal. The land sector absorbs CO₂ as soils and biomass sequester carbon. The idea is to increase this capacity for sequestration from -225 MtCO₂ eq (million tonnes of carbon dioxide equivalent) to -310MtCO₂ eq in 2030, of which 42Mt is for carbon farming, to reach carbon neutrality of land and farming (including livestock farming and fertilisers) by 2035*.

European use of carbon sequestration in soil

This involves favouring virtuous farming and forestry practices by creating monetary instruments to provide incentives. The Commission thus proposes creating a “new business model for land managers”, to provide additional revenues for those who improve their practices.

Two main types of instrument are planned. Arrangements based on actions, on one hand, reward actions carried out by managers and owners of land ex ante. On the other hand, instruments based on results only pay farmers and foresters if the quantities of carbon sequestrated have indeed increased, so ex post. This second solution implies a whole set of technical apparatus to measure biomass and carbon in soils.

In its communication of 15 December 2021, the European Commission takes up the main points of a technical report that it commissioned from the COWI consulting group, which favours results-based mechanisms, confirming its preference for a commodified vision of nature protection⁷. Indeed, only results can lead to issuing of carbon credits that can be traded on the market: adoption of practices that are remunerated ex ante makes it impossible to know how much carbon will actually be stored in carbon “sinks”. There is already ex ante payment for these practices in Europe, particularly through payments under the second pillar of the Common Agricultural Policy (CAP), to which will be added the eco-schemes stipulated in the new CAP. In the documents accompanying the communication, the Commission says that the CAP will not be able to fund these initiatives in the long term. It therefore plans to go further and mobilise private funding to develop projects to enable an increase in CO₂ sequestration in soil and biomass, hence the selection of results-based instruments. Some of these projects already exist and the report by COWI takes inspiration from these to design the institutional arrangements of tomorrow.

In the documents accompanying the communication, the Commission says that the CAP will not be able to fund these initiatives in the long term. It therefore plans to go further and mobilise private funding to develop projects to enable an increase in CO₂ sequestration in soil and biomass, hence the selection of results-based instruments.

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* Proposal for change to the LULUCF Regulation 2018/841 on 14 July 2021, SWD (2021) 609 final. It should be noted that member states can, under certain conditions, use carbon credits obtained in the LULUCF sector to meet emission-reduction requirements for sectors coming under the ESR, now set to -40% for 2030 in relation to 2005 levels. The focus remains on offsetting.

The authors of the report identify five main types of virtuous practices in this area:

- Peatland restoration and rewetting (draining these areas caused 5% of total GHG emissions in the European Union in 2017).
- Developing agroforestry (trees that grow absorb carbon).
- Maintaining and enhancing soil organic carbon in mineral soils (via non-tillage practices, intercropping etc.).
- Livestock farm carbon audit (livestock farming causes 80% of GHG emissions from European agriculture. This audit can be improved by rearing breeds that produce less methane, by using feed additives, by improving manure management etc.).
- Managing soil organic carbon on grasslands (to reduce the area of arable land and fallow land and increase areas of grassland).

They maintain that the main advantages of these measures are the following. Firstly it allows more flexibility for “land managers” in their choice of practices, as only the results count. This promotes “adaptability, innovation, and a spirit of enterprise”. Then this makes it possible to attract private buyers of carbon credits: more funds will be available to fund the expansion of carbon sinks. Furthermore, this is more effective, as the aim is to remove CO2 from the atmosphere, and not an induced effect of certain practices. This has an educational role for farmers.

However, the authors of the report recognise that there may be potential problems.

What lies behind a catalogue of “good practices”

If the Commission wanted to announce a “business model”, it certainly does not offer a stable or viable revenue. There is a lot of uncertainty for farmers. Not only can they not be sure of the quantity of CO2 that they will actually be able to sequester, but also carbon prices are very volatile, so they cannot see how much they will earn in the future. To limit this uncertainty, COWI proposes a hybrid system with an initial payment based on actions, with the rest paid at the end of the project on the basis of the actual results. It also recommends providing remuneration for the connected biodiversity benefits, to make the projects more attractive to farmers and foresters.

While standardisation is necessary to attract buyers of carbon credits and develop markets, it is very difficult to standardise the items that are traded. It is very complicated to evaluate the additionality, that is to say to establish if the mechanism really causes an increase in carbon sequestration. It depends partly on a reference scenario which is more or less arbitrary, and also on measurement of carbon sequestration in soils and biomass. These quantities vary greatly from one type of soil to another, and from one type of biomass to another.

Furthermore, the CO2 emitted into the atmosphere remains there for several hundred years (it has a half-life of 120 years). To really offset these emissions, it would be necessary to be sure that the carbon in question remains sequestered for the same period of time. However, that is impossible: the projects are only designed for five to ten years. The fact that these schemes are not permanent is a sufficiently significant problem to throw the viability of such mechanisms into doubt. Nothing can guarantee that the farming practices will remain the same later. The lands can also be sold on. Finally, with climate change, extreme events are bound to become more frequent and they could affect the integrity of lands. A plantation of trees to offset emissions by Microsoft, Nestlé or Total could easily go up.

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* Ibid., p. 21.
* A recent example of the volatility of these prices is the crash in carbon prices in the ETS due to the war in Ukraine in February 2022. Cf. https://www.theguardian.com/environment/2022/mar/02/eu-carbon-permit-prices-crash-after-russian-invasion-of-ukraine?CMP=Share_AndroidApp_Other
in smoke, increasing net emissions not reducing them. Furthermore, regarding rewetting of peatlands, the quantity of CO₂ will be positive, but it will cause emissions of methane due to the decomposition of organic material in the water. What will the resulting net emissions of GHGs be? This is also very difficult to evaluate.

**Another problem is “carbon leakage”,** which occurs when an agent implements virtuous practices in one place but moves its non-virtuous activities somewhere else. To avoid this, it would be necessary to monitor and precisely account for all the activities of farmers and foresters.

Ultimately, **the mechanisms planned are very complex**, and they require a high level of expertise, so they are very costly. It is also necessary to take into account the price of new technology for these sequestration calculations and the cost of maintenance. All this makes these protocols inaccessible and directly threatens the autonomy of peasants.

**However, the main problem is still land grabbing and the reduction of arable land.** Indeed, on one hand it is a question of rewetting peatlands that were once cultivated, and transforming arable land into grassland, meaning less land is used for farming. **On the other hand, when you can increase the value of land just by owning it, financial appetites are whetted.** For fifteen years now we have witnessed a veritable land rush by large companies and institutional investors. The disastrous experience of REDD+, which provoked massive expropriation and violation of the rights of indigenous people and small peasants without slowing deforestation in the least, should therefore alert us. The Common Agricultural Policy and its subsidies per hectare have a similar effect, favouring concentration of land and purchases by large operators. The effects of this concentration are well-known: gaining access to land is difficult for peasants, whose practices are more virtuous than those of industrial farms; the countryside becomes deserted; it is impossible for young people to enter the sector; extensive pollution; loss of food sovereignty etc. By paying (large-scale) farmers to sequester CO₂, carbon farming risks strengthening this trend.

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Juan Pablo Sarmiento Barletti and Anne M. Larson, “Rights abuse allegations in the context of REDD+: readiness and implementation”, CIFOR Info Brief, no. 190, 2017. REDD+ (Reduce Emissions, Deforestation and forest Degradation), is a United Nations mechanism similar to what has been proposed here, as it pays the owners of forest via tradable credits, for the sequestered carbon.
The planned mechanisms are overly complicated

Carbon farming projects are generally run by public-private partnerships, with one or more companies getting together with a territorial authority or a state, and a group of farmers and/or foresters. The project is implemented at the level of a territory, so it has a strong local dimension.

It must set up a governance structure to choose the eligible farms, the practices to promote, the consultants and experts suitable to monitor the project, the funding plan, and, above all, at the heart of the mechanism, it should develop a “monitoring, reporting and verification” (MRV) system to guarantee the real quantity of carbon sequestered and any linked benefits (in terms of soil erosion, biodiversity etc.). The idea is that to be able to sell carbon credits on the voluntary markets, these credits should correspond to real absorption of CO₂, which is duly certified.

The main stages of project creation are the following:

1) Feasibility study (is there a real opportunity to remove carbon from the atmosphere on a certain area of land?);

2) Identify sources of funding (for example the CAP for preliminary payments and carbon credits for the rest);

3) Identify objectives (reduction of emissions and/or increase in carbon sinks, linked objectives);

4) Establish reference scenarios to be able to measure the additionality of the project and the permanence of the carbon sequestration;

5) Select the eligible farmers; Choose the indicators for results in terms of tonnes of carbon equivalent, following the recommendations of the IPCC;

6) Develop an MRV system;

7) Establish payments to farmers;

8) Evaluate the entire mechanism.

Each of these stages requires a large amount of data and opinions from experts and consultants, as well as discussions with stakeholders in the mechanism.

This means that creating this type of project is a long process, generally taking several years, which is very costly. The most delicate part is choosing an MRV system: it is necessary initially to define the relevant indicators, which differ depending on the case in question. Direct measurements of carbon cannot be taken plot by plot, as this would be too expensive. Indirect indicators or models are generally used. For example, the water level in the peatlands, the diameter of trees at chest height for evaluation of biomass, the type of vegetation making up the grasslands, and up to 150 indicators in the carbon footprint of a livestock farm for the most sophisticated models. Independent consultants come to take the measurements in the farms, or farmers can take them themselves, assisted by advisors. In all cases, the models should be calibrated and tested for each farm.
The farmers and/or foresters then need to declare these measurements. IT systems are implemented to do this. The idea is that they should be compatible with the CAP declaration forms and over time, these forms should include the data relating to carbon sequestration and the linked biodiversity benefits. In theory, farms too small to receive CAP payments would also be excluded from these mechanisms. As small farms are generally the ones that have the most beneficial environmental footprints, this raises the question of how they will be supported to maintain their existing capacity for greenhouse gas sequestration... which does not need any additional financial investment. We should recall that 77% of European farms cover less than ten hectares\textsuperscript{11}. Many do not receive subsidies because of their small size. The mechanism planned only concerns large farms.

**The economic cost of certification**

Finally, the data should be verified by independent auditors, particularly if carbon credits are to be issued. The European Commission has promised a standardised certification system by 2023, but there are already various labels. One of the best-known ones is the Gold Standard. For a certification allowing access to the large voluntary carbon markets or to compliance markets like the ETS, it costs around €130,000 for project set-up and the first two years, then €40,000 every five years\textsuperscript{12}. And this does not include the payments to all the experts and consultants involved in the different stages of project implementation. While all the texts insist on the profitability of this type of mechanism, the full costs amount to hundreds of thousands of euros. Even with carbon at €100 per tonne, it is doubtful that they would one day be profitable. The idea is then to reduce the costs for measurement and MRV, i.e. to accept a greater margin of uncertainty regarding the quantities of carbon sequestrated. However, the more lax that the measurements and monitoring become, the harder it will be to sell credits...

**Data grabbing**

Another fundamental question is the data that is necessary to make these dangerous systems function. There is a lot of data coming from various sources: the farmers and foresters themselves; institutions like those of the CAP, which already gather a lot of data; and the EU satellite systems, Copernicus and Galileo. These are used for measurements on the ground. All this data feeds software for analysis and calculation of impact and carbon footprint. Project participants will have to feed the IT systems very regularly with data that will probably become increasingly detailed and precise (“for increased effectiveness”). The accounting using satellite data will be verified, and the EU is developing various research projects in the Horizon Europe programme to make these data collection and analysis systems more sophisticated. The smallest actions of the farmers will be noted and monitored, and they will be obliged to be connected. What will be left of their autonomy, which has already suffered severely? And what about their private lives? Indeed, nothing is said about the ownership of this data on the precise organisation of farms, work rhythms, and production choices. The dangers of surveillance capitalism, well analysed by Shoshana Zuboff, thus threaten farmers, even those who have not chosen digital farming\textsuperscript{13}.

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\textsuperscript{11} Eurostat 2020.
\textsuperscript{12} COWI et al., op. cit., p. 50.
A systemic approach is possible, and necessary

The proposal of carbon farming is part of a broader trend towards use of market instruments to protect nature. This movement started in 1992 with the Convention on Biological Diversity, and it has since only deepened. In this case, it is a question of putting a price on the function of “carbon sequestration” by soils and biomass, and possible on the connected benefits, i.e. other ecosystem services. All the mechanisms that already exist, like REDD+, are extremely complex, mainly enriching the consultants and experts of all types, and so far they have not proven their effectiveness. Despite carbon markets, global emissions continue to increase, and despite REDD+, deforestation is expanding. Furthermore, and this is another major problem, the possibility of increasing the value of land through the “services” that offer increases the demand for land for non-food uses. For example, ENI bought eight million hectares in different African countries to plant trees there. This process of land grabbing has been gaining pace as offsetting develops. Thus, at the same time as the large transnational companies and states ease their conscience by stating the objective of “carbon neutrality”, small-scale peasant farmers and indigenous people are being expropriated and uprooted, with no means of subsistence.

This means there is an urgent need to get away from the logic of offsetting, to reduce actual emissions, and to promote the agrarian systems of small-scale peasant farming and agroecology. Indeed, all these complicated and costly mechanisms are unnecessary to see that agroecological systems are good for nature and the human beings who live in those environments14. They do not need much capital, they employ a lot of people, they use very little pesticide or none at all, they produce a broad variety of healthy foods, they consume less water... in short, they are better than industrial agriculture in many respects. Furthermore, using only a quarter of the cultivated land in the world, they produce nearly three quarters of the food consumed15.

Rather than looking for artificial and separate means to resolve the problems posed by industrial agriculture, why not simply promote agroecology? We are referring here to real peasant agroecology, which does not just consider the ecological aspects of food but also the social, cultural, economic and political aspects. All this requires a multifaceted and holistic approach to agrarian systems as a whole, and cannot be summarised in a catalogue of practices.

Why look for a “new business model” for farmers to provide them with additional income through “carbon farming” rather than allow them to have fair and dignified income, and to be paid through prices that are reasonable (or at least above the cost of production) rather than through subsidies that only encourage larger farms and practices that are destructive of the environment and health? Why not make sure that most of the value produced goes to peasants rather than to input producers, intermediaries, processors, and distributors? Why not promote short circuits that are rooted in territories? It is absurd. By maintaining grants per hectare, favouring large-scale farmers, when there could have been grants in proportion to the number of farm workers on each farm, for example, the new CAP has missed an opportunity to promote a healthy and resilient agrarian system that respects nature and human beings.

If the European Commission thinks carbon farming is a miraculous solution for climate change, it is our duty to point out the structural limits and the great danger that it represents for society in terms of food sovereignty and inaction in the face of climate change. It is time to start a real transition to peasant agroecology.

14 Among other sources, see the work of Olivier de Schutter, former UN Rapporteur on the right to food.