

**EU CAP REFORM 2013**

**CAP POLICY BRIEF**

**Mitigating GHG emissions and promoting sustainable agriculture**

**What is the problem?**

Ever since the signing of the UN Framework Convention on Climate Change (UNFCCC) in 1992, the EU has taken on a leading role in the global effort to combat climate change. In the context of historical responsibility, the EU has cherished the principle that developed countries should take the lead in mitigating greenhouse gas emissions (GHG). So far, focus has been on reducing emissions from the energy, transport and industry sectors. However, emissions from European agriculture are significant and their relative importance is expected to increase. UNCTAD expects that under a business as usual scenario, global agricultural GHG emissions are likely to grow by 40-60 percent till 2030 when a decline of at least 30-40 percent is required.[[1]](#footnote-1)

Today, agriculture accounts for about 10 percent of total EU emissions of GHG. Seen in a broader perspective, however, emissions related to agriculture are larger: emissions from fertilizer, pesticides and animal feed production and fossil energy use in farming machinery, equipment and buildings are not included in the “agricultural sector emissions”; and this iseven not yet taking into account the emissions from processing, packing, transporting and retail created by the industrial food system.

In contrast to other sectors, no ambitious emission reduction targets are foreseen in the agricultural sector. Current expectations for future emission reductions in the EU 27 are almost nil with respect to today (about -1 percent by 2020).[[2]](#footnote-2) The EU Roadmap 2050 aims at total emission reductions of 80 percent by 2050 but foresees no dramatic change in agricultural emissions. With expected declining emission from other sectors, agriculture is projected to be the single most emitting sector in 2050, accounting for about a third of total EU emissions.

The CAP is the most important policy framework with strong influence on land use management across the EU. It has therefore a large potential to influence the scale to which European agriculture delivers public goods like contributing to climate change mitigation. However, climate change mitigation is not yet a specific target under the CAP and implementation of measures to support mitigation and the choice of adequate policy instruments remains at the discretion of the EU member states.

Reducing GHG emissions from agriculture is an important objective. Agricultural practices and models promoted in the EU impact on agriculture in other parts of the world by way of demand side, trade flows, research policies and technology transfer. Therefore, it is a part of the international responsibility of the CAP to drive a transition towards a sustainable and thus ‘climate-smart’ agriculture. A clear international link is the substantial amount of feed for animals in Europe imported from other countries. For example, soy bean production in Brazil is responsible for GHG emissions not only by way of direct production but also by direct or indirect land use changes. Any solution proposing GHG emissions cuts in Europe while simply ’outsourcing’ GHG-intense production to other countries must be discarded.

Evidently, mitigation of GHG emission is only one aspect of a sustainable agriculture and should be an integral part of a broader transformation of agriculture and the food system, from unsustainable practices of monocropping to systems of reproductive ecological capacity and multifunctionality of agriculture. There is a real risk that measures proposed to cut GHG emissions are used to perpetuate unsustainable intensification practices. Therefore, climate change mitigation must be an integral part and parcel of good ecosystems practice. Climate-smart agriculture is not per se sustainable. Only measures that reduce GHG emissions *and* increase soil fertility can contribute to reproducing ecosystem functioning and efficiency and be considered a win-win situation.

**The current situation**

EU agriculture is responsible for 540 million tonnes of CO2-eq in GHG emissions, the majority of which is nitrous oxide emissions from fertilized soils and methane emissions from enteric fermentation in ruminants and manure management. The largest emitters are France (104.6 million tonnes), Germany (57.4), Spain (56.6), United Kingdom (54.1) and Italy (45.9). These five largest emitters of agricultural GHG account for 60 percent of the EU total of the agricultural sector.

Over the last two decades (1990-2008), agricultural sector emissions in the EU-27 fell by about 20 percent, mainly due to a reduction in the livestock numbers (by 25 percent), more efficient fertilizer application (a decrease of 25 percent in fertiliser use) and due to improved manure management. These reductions were partly due to CAP reforms, e.g. the shift from production based support to area payments or the rule for set-aside land in force until 2009, but other policies such as the Nitrates Directive were equally important.[[3]](#footnote-3)

After the last decades of CAP reforms, environment-related issues such as resource depletion, biodiversity and climate change have been increasingly considered. Since 2005, direct payments are subjected to fulfilment of compulsory requirements, the so-called cross compliance requirements. Those are based on 19 standards, referring to environmental, public, animal and plant health, and animal welfare aspects. Though none of those criteria is directly linked to climate change mitigation. In addition, member states shall ensure that agricultural land is “maintained in good agricultural and environmental condition”[[4]](#footnote-4) These standards aim at reducing soil erosion, maintaining soil organic matter and soil structure, and avoiding deterioration of habitats. Due to the focus on soil organic matter, these standards are of climate relevance. In spite of recent reforms[[5]](#footnote-5) climate change mitigation is not directly mentioned, only referred to as measures that are beneficial to the climate and the environment under the current pillar one measures of CAP. In the 2010 Communication 2010 on post-2013 CAP towards 2020, the Commission lists climate change and environmental challenges as one of three key challenges in agriculture,

The situation is somewhat better for rural development under pillar two where several measures have a clear mitigation benefit, although not aimed at mitigation in the first place. The farm modernisation support (Axis 1) can improve the efficiency of energy use, fertilizer application and manure management. Axis 1 also allows supporting renewable biomass energy and in particular local biogas production.[[6]](#footnote-6) Using residue from processing or manure management in a biogas plant can make sense under certain circumstances. Therefore, the debate about biogas plants has to be further elaborated and more research needs to be done to clarify the role biogas plants can play to complement other sustainable forms of energy.

Under Axis 2, payments for improved soil management and fertiliser application are available, thus increasing soil carbon sequestration and reducing nitrous oxide emissions from soils. Providing training and advisory services for climate friendly agricultural practices is another option for improvement. Attention is needed because only organic fertilizer has positive effects on carbon sequestration while chemically produced fertilizer has none. Researchers suspect that an one-sided increase in soil carbon will releasing additional nitrous oxide.. The concept of managing closed nutrient cycles should be introduced because it increases soil carbon as this helps to build up humus and increases resilience of the soil altogether.

Several of these measures are part of the 2007-13 national Rural Development Plans. But climate change mitigation is not a specific target under the post 2013 CAP reform and implementation of measures to support mitigation and the choice of adequate policy instruments remains at the discretion of EU member states.

Payments for the provision of public goods, such as biodiversity, water quality, water availability, soil functionality, air quality, resilience to flooding and fire and climate change mitigation are an important aspect of the CAP. They are provided under pillar two (Axis 2), agro-environmental measures, which in 2009 received 4.7 billion Euro. This may have slowed down environmental degradation, but current levels of spending on environmental public goods are insufficient to meet EU targets and societal demands.

Many farming systems and practices have considerable potential for climate change mitigation services. Most important are those practices that increase soil organic matter such as use of organic fertilizers, reduced tillage, optimized crop rotations, increased use of leguminous and all those practices that reduce soil nitrous oxide emissions and external nitrogen inputs.

Methane reduction in the livestock sector can primarily be achieved by improved manure management and a reduction in the number of animals. Increasing proteins in the daily animal diet is considered an option for methane reduction but protein feed imports have heavy ecological and climate change footprint and feeding protein comes at high cost to animal health Grazers are made to eat grass and roughage material and stomach bacteria digest the roughage and turn it into protein. During this process all four stomachs are in use and that is when methane is produced. Taking a shortcut and feeding ruminants with concentrated protein means that protein end up directly in the last fourth stomach. The three other remain idle developing bad bacteria which makes the grazer sick.

The European Climate Change Programme (ECCP) is the most important climate change policy in the EU. The mitigation potential of agriculture and soil carbon sequestration has been assessed by ECCP working groups but no specific climate policies for agriculture were derived from that.

A draft EU directive on soil was introduced in 2006 by the European Commission but has since then blocked by individual member states. At the beginning of 2012, the Commission has published a report on the state of EU soil which declares that 40 percent of EU soil... XXXX Unless such a directive is adopted and explicitly addresses and supports the mitigation potential of soil carbon sequestration, agriculture has not yet become part of the EU’s climate policy.

The European Parliament Resolution on CAP towards 2020 from 23 June 2011 (2011/2051 (INI)) “believes that a agriculture is well placed to make a major contribution to tackling climate change” (Art 3) and that “the agricultural sector has a crucial role to play in the fight against climate change, in particular by reducing its own greenhouse gas emissions” (Para H). In response, the legislative CAP reform proposal by the Commission introduces “agricultural practices that are beneficial for the climate and the environment.” [[7]](#footnote-7)

Cross compliance is defined[[8]](#footnote-8) by the Council regulation in 2003 making crop rotation a mandatory requirement under Good Agricultural and Environmental Conditions, ‘where applicable’. Later on, GAEC rules were changed and the Council Regulation[[9]](#footnote-9) in 2009 made crop rotation voluntary under GAEC. And in the CAP towards 2020, the reference in GAEC to crop rotation has disappeared leaving only the measure to forbid burning of arable stubble in order to maintain soil organic matter. .However, it is highly important to keep the reference to crop rotation as part of the GAEC and to ensure that crop diversification element in the greening component is upgraded in order to effectively deliver on climate change mitigation.

**Our proposal**

Although climate mitigation plays an increasingly important role in the CAP discussions, a clear vision for climate change mitigation in agriculture is needed. Significant mitigation potential of agriculture can only be achieved if the CAP adopts a clear strategy making low-input systems more productive and efficient and high input systems less harmful and less problematic. This requires an explicit and clear strategy which abandons the continuation of modified business as usual (doing more with less) and put a stop to attempts of green washing (technological innovation and green inputs, institutional change).

Clear and ambitious targets for sustainability and GHG mitigationshould be set in terms of increased soil carbon levels, closed nutrient cycles, increased cultivation of leguminous crops, increased crop rotation, less monocultureand decreased concentration of large animal units with insufficient linkage to the available agricultural land. CAP funds should be used to stimulate farmers to achieve these targets, as payments for public good provision and/or as part of cross compliance criteria.

Mitigating GHG emissions should be introduced in the cross compliance criteria. Climate change mitigation is a part of the international responsibility of CAP and as such cannot be considered simply a national or even only Union-wide interest. Keeping incentives for such measures in the second pillar means they will continue to be optional and partly financed at the national level.

It has been suggested that agriculture should be included in the EU Emissions Trading Scheme (ETS). However, there are considerable uncertainties regarding measurement and verification of mitigation in agriculture. For example, will soya produced in Brazil and used in Europe to feed its livestock sector count as European or as Brazilian agricultural GHG emissions? The definition of system boundaries at national and global level will make a huge difference in any trading scheme . Also, the ETS may disincentives emission reduction in other sectors.[[10]](#footnote-10) Agricultural policies rather than carbon markets must be used as policy instruments to promote mitigation in agriculture, because this is how and where broader sustainability aspects of agriculture can be taken into account.

**Recommendations**

**Increasing soil carbon**

Support and promote measures that increase humus content and prevent soil erosion like tillage practices. Substantial parts of agricultural land are still prone to erosion because of slope exposition or poor soil aggregation (e.g. sandy texture) and need to be managed adequately.

**Closing nutrient cycles**

Develop fertiliser strategies at national level which aim at prioritising manure fertilizer types. Make use of organic manures at least for basic fertilization before applying mineral fertiliser and include this measure under cross compliance. Develop the recycling of organic refuse from households (kitchen refuse, green waste from gardens, lawns, etc.) at EU-wide level.

**Improve crop rotation**

Keep crop rotation as a part of the GAEC and upgrade crop diversification elements in the CAP greening components to effectively deliver on climate change mitigation. Crop rotation should consist of a minimum of three and even better four crops and include leguminous.

**Increase the cultivation of legumes**

Re-incentivise leguminous crop production in Europe. Include nitrogen-fixing legumes as an integral part of European agriculture. Reverse the trend of maize cropping which has displaced legumes in central European agriculture and lead to soil carbon losses. Provide incentives under CAP to increase growing grain legumes in Europe which will also influence land use in North and South America where soybean monocultures exert negative impacts on greenhouse gas balances.

**Reduce the emissions from the livestock sector**

Assess measures which look at emissions from the livestock sector at the global level. Take account of emissions related to imported concentrate protein feed and consumer behaviour. Emphasise the positive role of grasslands as a carbon sink. Prevent adverse effects on animal welfare from feed additives. Evaluate the relatively lower emissions from concentrate feed from other than roughage and compare this with higher emissions from concentrate feed production, deforestation or conversion of land in the South.

Limit the number of animals per hectare of agricultural land as done in the EU regulation[[11]](#footnote-11) on organic agriculture. Avoid concentration of large animal units in the Central Eastern Europe (East and North Germany, Romania and Poland) where investors establish poultry, pig and other animal factories with insufficient available agricultural land leading to excess of nitrogen of animal excrements at farm surroundings.[[12]](#footnote-12)

**Agri-environmental programmes/organic**

Promote and provide financial support to organic farming which has many climate-related and environmental benefits. Agro-ecological and organic farming are systems approaches which comply with many sustainability criteria as well as the principle of closed nutrition cycle. Dedicate a substantial part of budgets at European and national level for research and development of sustainable agro-ecological farming systems, which offers great potential for low-external inputs requirements, in particular in developing countries.

Many agri-environmental programmes like organic farming are co-funded programmes under pillar two; which makes funding dependent and subject to Member State budget means and priority setting.

**The broader context**

Focus on reducing waste in all parts of the food system and on influencing consumer behaviour as additional measures to farmer support. Reducing meat and animal protein products is a very effective mitigation measure and corresponds to reduction of livestock numbers. Revisit regulations that define non-tradable goods on the basis of shape, size or texture rather than on food safety. This is rather urgent considering that over 40 percent of EU food is wasted which presents a substantial amount of agricultural inputs and use of cultivated land that could be economised.

**More research is needed**

Invest in more research to better understand the complex system of soil, soil carbon, GHG emissions and the agricultural system as such better. Only a good farm practice with an appropriate system boundary can contribute significantly to cut GHG emissions from agriculture while at the same time maintaining our European cultural heritage and landscape as well as food production.

1. Hoffman, U. UNCTAD Secretariat, Presentation at FIBL, 14.12.2011 [↑](#footnote-ref-1)
2. Expected reductions for the EU 15 by 2020 are 4 percent. [↑](#footnote-ref-2)
3. See European Commission (2009a) White Paper : Adapting to climate change: towards a European framework for action [↑](#footnote-ref-3)
4. These are listed in the SMR - Statutory Management requirements and the GAEC- Good Agricultural and Environmental Conditions. See <http://marswiki.jrc.ec.europa.eu/wikicap/index.php/Cross_Compliance>; [↑](#footnote-ref-4)
5. Such as the abolishment of support for livestock on a per head basis, thus reducing incentives to increase and maintain high livestock numbers, or a decoupling of direct payments from specific production under the “Health Check”. [↑](#footnote-ref-5)
6. Biogas production is highly controversial. For example, in Germany the massive support for biogas has led to the so called maize deserts and some biogas plants have a negative energy balance. While using residue from processing or manure management in a biogas plant makes energetically more sense. Again, crop rotation may be the magic word. [↑](#footnote-ref-6)
7. See EC CAP Regulation on Direct Payments, Chapter 2, Article 29 -32 [↑](#footnote-ref-7)
8. See Council regulation (EC) No 1782/2003 of 29 September 2003 [↑](#footnote-ref-8)
9. Council Regulation 73/2009 of 19 January 2009 [↑](#footnote-ref-9)
10. Linking agriculture to carbon markets is a highly controversial issue in the global context; negotiations about how to include agriculture in the UNFCCC have only just started. As mentioned above it remains questionable if this is the right way forward, especially for smallholder farmers in the South. [↑](#footnote-ref-10)
11. EC Regulation No 889/2008. [↑](#footnote-ref-11)
12. See [www.holisticmanagement.org](http://www.holisticmanagement.org) or approaches like of virtual economics by IIED [↑](#footnote-ref-12)