



EU CAP REFORM 2013 CAP LOBBY BRIEF 7

7 Mitigating GHG emissions and promoting sustainable agriculture ¹

This paper forms part of a series of seven briefings on the reform process of the Common Agricultural Policy of the EU looking at (1) International responsibility of CAP, (2) Trade Defence Measures, (3) Preventing dumping, (4) EU imports of animal feed, (5) Standards, (6) Indexation of direct payments and (7) Mitigating GHG emission and promoting sustainable agriculture. It aims to address issues of concern that to date have not received sufficient attention in the CAP debates and the decision-making fora. It is intended to influence the policy and position of the EU on CAP towards 2020 and to inform the public debate on the external impact of the CAP and on what is at stake for developing countries.

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.²

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”; nor are the emissions from processing, packing, transporting and retail created by the industrial food system, taken into account.³

In contrast to other sectors, no ambitious emission reduction targets are foreseen in the EU agricultural sector. Current expectations for future emission reductions in the EU-27 are almost nil with respect to today (about 1

¹ The Policy Brief is based on a case study on EU in Muller, A, Jawtus, J. and Gattinger, A (2011). Mitigating Greenhouse Gases in Agriculture. A challenge and opportunity for agricultural policies. If not otherwise indicated, this case study is the source of information.

² Hoffman, Ulrich, UNCTAD Secretariat, Presentation at FIBL, 14.12.2011.

³ According to the 2000 Stern Review about 35% of greenhouse gas emissions globally came from non-energy emissions: 14% were nitrous oxide and methane from agriculture, 18% from land use change mainly from deforestation for agricultural purposes in countries such as Brazil and Argentina, exporting animal feed to the EU.

percent by 2020).⁴ 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 EU Common Agricultural Policy 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 European agriculture is an important objective that should be seen as a part of the international responsibility of CAP. In addition, agricultural practices and models promoted in the EU have an impact on agriculture in other parts of the world, and thereby also on agricultural GHG emissions in other regions. The substantial amount of feed for animals in Europe imported from other countries is an important example. Soybean 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-intensive production to other countries must be discarded. Another way by which European agriculture influences agriculture in other regions is through the research agenda. Therefore, it is a part of the international responsibility of the CAP to drive a transition towards a sustainable and thus 'climate-smart' agriculture.

Obviously, mitigation of GHG emissions 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 of good ecosystems practice. Climate-smart agriculture is not per se sustainable. Only measures that reduce GHG emissions *and* promote sustainable soil and water management 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.⁵

Environment-related issues such as resource depletion, biodiversity and climate change have received increasing attention during the past decade of CAP reform. Since 2005, direct payments are subject to the fulfilment of compulsory requirements, the so-called cross compliance requirements based on environmental, public, animal and plant health, and animal welfare aspects. However, none of those criteria are directly linked to climate

⁴ Expected reductions for the EU 15 by 2020 are 4 percent.

⁵ See European Commission (2009a) White Paper: Adapting to climate change: towards a European framework for action

change mitigation. In addition, member states have to ensure that agricultural land is maintained in line with the Good Agricultural and Environmental Condition (GAEC).⁶ 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 the CAP Health Check from 2008,⁷ climate change mitigation was not directly mentioned; there was reference only in relation to measures that are beneficial to the climate and the environment under the current pillar 1 measures of CAP.

Cross compliance is defined by the Council regulation in 2003⁸ which makes crop rotation a mandatory requirement under Good Agricultural and Environmental Conditions (GAEC), ‘where applicable’. Later on, GAEC rules were changed and the Council Regulation in 2009 made crop rotation voluntary under GAEC.⁹ However, it is highly important to keep the reference to crop rotation as part of the GAEC and to ensure that the crop diversification element is upgraded in order to effectively deliver on climate change mitigation.

The situation in CAP 2007-2013 is somewhat better for rural development under pillar 2 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 support for renewable biomass energy and in particular local biogas production.¹⁰

Under Axis 2, payments for improved soil management and fertiliser application are available, that potentially may lead to increased soil carbon sequestration and reduced nitrous oxide emissions from soils. Several of these measures are part of the 2007-13 national Rural Development Plans. 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 2007-2013. They are provided under pillar 2 (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. The 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 plants and other practices that reduce soil nitrous oxide emissions and external nitrogen inputs.

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 these findings have not been used to mainstream climate resilience into the Common Agriculture Policy.

A draft EU directive on soil was introduced in 2006 by the European Commission but has been blocked by individual member states since then. On 13 February 2012, the Commission published a report on the state of EU soil which demonstrates that EU soil degradation is increasing when it comes to soil sealing, desertification, salinisation, soil erosion, landslides, loss of biodiversity and soil contamination.¹¹ Unless a directive on soil is adopted and explicitly addresses and supports the mitigation potential of soil carbon sequestration, the EU’s agriculture policy cannot be considered yet to have integrated climate change concerns.

⁶ 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;

⁷ 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”.

⁸ See Council regulation (EC) No 1782/2003 of 29 September 2003

⁹ Council Regulation 73/2009 of 19 January 2009

¹⁰ Biogas production is highly controversial in certain contexts. 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 is of great importance.

¹¹ See COM (2012) 467 final at http://ec.europa.eu/environment/soil/pdf/COM%282012%2946_EN.pdf (point 3.2. p ff)

In the Commission Communication from 2010 on post-2013 CAP towards 2020, the Commission lists climate change and environmental challenges as one of three key challenges in agriculture.

The European Parliament Resolution on CAP towards 2020 from 23 June 2011 believes that “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).¹²

The legislative CAP reform proposal by the Commission from October 2011 makes the overall environmental performance of the CAP a key element and introduces “agricultural practices that are beneficial for the climate and the environment” as a requirement for all farmers.¹³ These measures go beyond existing cross-compliance and include three new greening components of crop diversification, maintenance of permanent pastures and ecological focus areas (EFA). Only farmers that implement these greening components qualify for receiving 100 percent of direct payments under pillar 1. Otherwise, 30 percent of the annual national ceiling will be removed. However, if greening components were truly mandatory then farmers would not receive the basic income payment (of 70 percent) unless they comply with all the greening measures.

Current discussions to strengthen the greening component in the CAP Reform 2013 suggest making greening components fully mandatory for any pillar 1 payments or/and to expand greening measures, for example from crop diversification to crop rotation. Others want to maintain and provide more flexibility to pillar 1 suggesting a menu approach, raising of GAEC standards and enhancing cross compliance, or introducing flexibility at farm level by way of a ‘green by definition’ approach. Pursuing greening in pillar 2 however means that greening depends on increased budget allocations and the discretion of EU member states. A pillar 2 approach is also unlikely to ensure that the whole of the territory is covered and may mean that those areas worst hit by environmental degradation may suffer further.

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 an explicit and clear strategy which abandons the continuation of business as usual (using a modified BAU approach of doing more with less) and puts a stop to attempts to green wash the agricultural sector (more technological innovation and green inputs).

Clear and ambitious targets for sustainability and GHG mitigation should be set in terms of increased soil carbon levels, closed nutrient cycles, increased cultivation of leguminous crops, increased crop rotation, less monoculture and 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 goods provision and/or as part of cross compliance criteria.

Mitigating GHG emissions should be introduced in the cross compliance criteria of pillar 1. 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 pillar 2 means they will continue to be optional and partly financed at the national level.

¹² EP Resolution on CAP towards 2020 from 23 June 2011 (2011/2051 (INI))

¹³ See EC CAP Regulation on Direct Payments, Chapter 2, Article 29 -32

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 soil carbon.¹⁴ 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.¹⁵

Specific 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 exposure 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 and other organic 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.

Promote eco-intensification

Use lime systematically to improve neutrality of soil (non-acid and none alkaline pH level) for a more efficient use of the existing levels of phosphate in the soil and tackle and prevent pollution in rivers and seas. Reverse the trend of disproportionate overuse of nitrogen to other macro nutrients. Build up soil organic matter (Soil Land Management Technologies) and soil and water conservation (SWC) technologies.

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 plants, including trees.

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 led to soil carbon losses. Provide incentives under CAP to increase growing grain legumes in crop rotations in Europe which will also influence land use in North and South America where soybean monocultures are leading to huge greenhouse gas emissions.

Reduce the emissions from the livestock sector

Decrease the demand for meat, through reduced meat consumption, which is the most effective way to cut GHG emissions. Improve manure management and reduce the number of animals to contribute to methane reduction in the livestock sector. Put animals back from the factory to the farm. Keep grazers on grass and roughage material, which prevents adverse effects on animal welfare from feed additives, and can contribute to maintaining marsh

¹⁴ 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. See also the EAA submission to UNFCCC on 5 March 2010 on Subsidiary Body for Scientific and Technical Advice.

¹⁵ Another reason for caution is the question of systems boundaries. 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 inclusion of agriculture in ETS may disincentivise emission reduction in other sectors.

land and prevent spontaneous reforestation. If managed properly, grasslands can contain high soil carbon levels, helping to stock carbon in the soils.

Assess emissions from the livestock sector at the global level and take account of emissions related to imported concentrate protein feed. 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 in the EU regulation on organic agriculture.¹⁶ Avoid concentrations of large animal units, such as those in Central and Eastern Europe where investors establish poultry, pig and other animal factories with insufficient available agricultural land, leading to an excess of nitrogen from animal excrements in the farm surroundings.¹⁷

Agri-environmental programmes

Promote and provide financial support to organic farming which has many climate-related and environmental benefits. Agro-ecological systems, including organic farming, are 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. This 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 2; member states therefore need to prioritise this in their budgets and policy priorities, in order to increase funding for these programmes.

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 consumption of meat and animal protein products is a very effective mitigation measure and corresponds to reduction of livestock numbers. Revisit regulations to define non-tradable goods on the basis of food safety rather than shape, size or texture. This is rather urgent considering that over 40 percent of EU food is wasted and 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. Only sustainable farming practices can contribute to significant cuts in GHG emissions from agriculture while at the same time maintaining our European cultural heritage and landscape, as well as food production.

¹⁶ EC Regulation No 889/2008.

¹⁷ See www.holisticmanagement.org or approaches like of virtual economics by IIED