Session SBI51 (2019)

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A compiliation of questions to - and
answers by Greece, exported 1 December 2019,
by the UNFCCC secretariat

Question by Thailand at Monday, 30 September 2019

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 30 September

Title: Mitigation actions and their effects

on page 190, Greece reported harvested wood products will be the main contributor of GHG emission in 2020-2040, could Greece elaborate more on how Greece project the emission in this sector?

Answer by Greece, Friday, 22 November 2019

On page 190, Greece reported that the HWP pool is projected to represent a source of emissions during the period 2020-2040. As stated on the same page, as well as on page 189, given that no county specific policies and information about future harvested wood products (HWP) from domestic forests were available, that could be used in the projections of CO2 emissions/removals from these pools, the associated projections of emissions/were based on the trend observed from 2000 onwards. In particular linear regression has been used using net emissions from 2000 onwards

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Question by Thailand at Monday, 30 September 2019

Category: All emissions and removals related to its quantified economy-wide emission reduction target

Type: Before 30 September

Title: National GHG inventories

On page 69 of Greece's BR, table 3.1b shows the trend of GHG emissions from 1990-2015. The GHG removals from LULUCF sector have significantly decreased (from -3,375.80 $ktCO_2$ to -1,865 $ktCO_2$ and -443.69 $ktCO_2$ in 2012, 2013 and 2014 respectively), however it was increased again in 2015 (-3,140.44 $ktCO_2$). Could Greece please elaborate more details about this fluctuation?

Answer by Greece, Friday, 22 November 2019

As it is depicted in table 3.1b, the sink capacity of the LULUCF sector significantly decreased in these specific years, namely 2013, 2014. The main reason for this decrease in net removals is the cropland category. In these years, net removals from cropland and in particular in cropland remaining cropland category, in the living biomass pool have decreased substantially compared to previous years and the cropland category acted as a net source of emissions. It is also noted, that from the fifteen types of perennial crops taken

into account in estimating carbon stock changes in the living biomass in cropland remaining cropland, vines, olive trees, citrus, apple, peach, dried figs, almond, walnut, other nuts are those contributing the most in this trend in these years.

Question by New Zealand at Monday, 30 September 2019

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 30 September

Title: EU Common Agricultural Policy

Greece, in its NC7, details the introduction of the EU Common Agricultural Policy in 2015, a system of direct payments to farmers subject to meeting certain environmental/sustainable requirements. Can Greece describe the success domestically of the EU Common Agricultural Policy to date?

Answer by Greece, Thursday, 28 November 2019

The present day CAP contains both a climate action objective, a number of measures (both compulsory and voluntary for farmers and Member States) which are intended to secure climate benefits (Pillar I – direct payments to farmers), and a requirement for a minimum proportion of funding to be spent on environment and climate measures (Pillar II – rural development policy). These arrangements have developed over time. In Greece, the Implementation of the current Common Agricultural Policy (CAP) regulations started in 2015 (with 2014 being a transitional year).

Pillar I – direct payments to farmers

The direct support arrangements mark a shift from ‘decoupling’ to ‘targeting’. The system, based on decoupling agricultural aid from production and providing generic income support that was introduced in 2003, has been replaced by one in which each component is linked to specific objectives. Single farm payments have been replaced by a system of multi-purpose payments, with seven components:

1. a ‘basic payment’ per hectare, the level of which is to be harmonised according to national or regional economic or administrative criteria and subject to an ‘internal’ convergence process;

2. a ‘greening’ component, as additional support to offset the cost of providing environmental public goods that are not remunerated by the market;

3. an additional payment for young farmers;

4. a ‘redistributive payment’ whereby farmers may be granted additional support for the first hectares of farmland;

5. additional income support in areas with natural constraints;

6. coupled support for production, granted in respect of certain areas or types of farming for economic and/or social reasons;

7. a voluntary simplified system for 'small farmers'.

Member States must use 30% of their national direct-payment allocations to fund the greening component. The rationale for greening of CAP direct payments was to further encourage environmentally sustainable and climate beneficial agricultural practices over the majority of the farmed countryside, where direct payments are applied. The greening component in Greece is regulated by MD 104/7056 GG 147 / 22-1-2015. In order to receive the greening part of the direct payments, the following agricultural practices with direct climate impact should be followed:

Table 1

Agricultural practices	Objective	Effect on mitigation
Crop diversification	Mainly intended to improve soil quality	The measure causes different crops to be grown than would otherwise have been the case. If this leads to longer rotations, increased soil organic matter may result. The introduction of legumes in place of crops which require mineral N is likely to reduce nitrification and emissions of N2O
Maintaining existing permanent grassland	Maintaining carbon stocks/reducing losses	Restricts farmers' ability to convert permanent grassland. If this results in such grassland not being ploughed at all then release of soil CO2 is avoided and on grasslands which are sinks it enables sequestration to continue.
Maintaining an 'ecological focus area' of at least 5% of the arable area of the holding on farms with more than 15 hectares of arable land (e.g. fallow land; afforested areas and landscape elements; Nitrogen-fixing crops).	To safeguard and improve biodiversity on farms	Change of soil carbon stock and biomass above ground via sequestration, as well as reducing the loss of soil organic carbon through erosion. Nitrogen-fixing crops reduce the mineral N requirement of the following crop.

In addition, cross-compliance requirements apply to all components of direct payments covering both statutory management requirements (SMR) as laid down in EU directives and regulations and Good Agricultural and Environmental Conditions (GAEC) as specified by each Member State. The GAEC requirements in Greece are specified in MD 1791/74062/2-7-2015 and the climate-related ones are summarised in the next table.

Table 2

Agricultural practices	Objective	Effect on mitigation

Measures for the proper use of synthetic and organic fertilizers	Protect groundwater from pollution	Reductions in N application are likely to reduce direct and indirect emissions of N2O. Reduced pollution of groundwater reduces risk of damage to wetland carbon sinks
Measures for protection of soil carbon and Retention of landscape features)	Maintain and enhance soil carbon	Reduction in loss of soil carbon through erosion at sites particularly vulnerable to erosion; Protection of biomass landscape features is likely to help conserve/enhance soil carbon stock as well as protecting the landscape feature itself. Protection of these and non-biomass landscape features (e.g. walls) may reduce the loss of soil carbon through erosion; Avoided CO2 emissions from burning
Maintaining existing permanent grassland	Maintain ratio of permanent grasslands to the total of agricultural area	Restricts farmers' ability to convert permanent grassland.

Further, as an indirect effect, the disengagement of subsidies from the agricultural production has enhanced the reduction of agricultural production and livestock population.

However, the effect of the greening component of direct payments and the climate-related component of cross-compliance requirements cannot easily be correlated since their impact is going to be identified in the medium and long term period. On the other hand, an integrated control mechanism has been established for the monitoring of the implementation of the requirements for the direct payments, including their green part and the environmental and climate related part of the cross-compliance. The control mechanism acts as a safeguard of the maintaining and application of climate friendly practices by farmers

The mitigation effect of Pillar I measures, which is related to carbon storage and sequestration, has not been estimated and was not reported in the NC7 / BR3. On the other hand, the mitigation effect that is related to the application of "good practises" in fertilizers' use and disengagement of subsidies from the agricultural production was reported in the NC7/BR3. The estimation of the effect is based on expert judgement and conclusions extracted by the comparison of the evolution of GVA of agriculture and the decreasing trend of GHG emissions and associated activity data.

Pillar II – rural development plans

Support for rural development policy (Pillar II) is co-financed by the EAFRD and national or regional budgets. The EAFRD defines six EU level priorities of which every RDP must address at least four and also cross-cutting objectives of innovation, environment and climate mitigation and adaptation. Priority 5, which has 5 Focus Areas, explicitly addresses resource efficiency and the transition towards a low carbon and resilient economy:

- 5A Increasing efficiency in water use by agriculture
- 5B Increasing efficiency in energy use in agriculture and food processing

- 5C Facilitating the supply and use of renewable sources of energy, of by-products, wastes and residues and of other non-food raw material, for the purposes of the bio-economy

- 5D Reducing greenhouse gas and ammonia emissions from agriculture

- 5E Fostering carbon conservation and sequestration in agriculture and forestry

The Greek RDP contains measures that fall under all 5 focus areas. 5A is related mainly to adaptation measures to Climate Change (e.g. measures related to water savings); 5B and 5C are related to energy efficiency and investments in RES. Their mitigation effect and progress is reported aggregately under the energy sector in the NC7/BR3. 5D includes measures that reduce CH4, N2O and NH3 emissions from agriculture sector, namely organic farming, measures to reduce or rationalize fertilizer application, measures in livestock management to reduce emissions. 5E refers to carbon conservation and sequestration measures in agriculture and forestry.

Apart from the above-mentioned measures, the RDP includes a number of measures, such as knowledge transfer and information actions; and advisory farm management and relief services, which is expected to contribute to the diffusion of practices beneficial to climate mitigation and adaptation.

The progress of the implementation of the RDP climate-related components is monitored by a group of outcome indicators (Table 3).

Table 3

Focus area	Code of indicator	Title of indicator	Target for 2023
5	R12/14	% of irrigated land switching to more efficient irrigation systems	4.97 %
5	T15	Total investments in energy saving and efficiency	27.722.264 €
5C	T16	Total investments in renewable energy production	74.763.524 €
5D	R16/17	Livestock units (LU) [1] concerned by investments in livestock management in view of reducing GHG and/or ammonia emissions	180 LU
5D	R17/18	Agricultural land under management contracts targeting reduction of GHG and/or ammonia emissions	133.965 Ha
5E	R20/19	Agricultural and forest land under management contracts to foster carbon sequestration/conservation	46.766 Ha

For the implementation till 2018, the indicators of Table 3 for the focus areas 5A and 5E are 4.49% and 16.280 Ha respectively.

The mitigation effect of Pillar II measures (RDP), which is related to carbon storage and sequestration (focus area 5E), has not been estimated and was not reported in the NC7 / BR3. On the other hand, the mitigation effect that is related to organic farming and management of land targeting GHG reduction was reported in the NC7/BR3. The estimation

of the effect of organic farming is analogous to the annual increment of the land under organic farming. In addition, the effect of measures to keep agricultural land under management contracts targeting reduction of GHG emissions is based on expert judgement and conclusions extracted by the comparison of GVA evolution of agriculture and the decreasing trend of GHG emissions and associated activity data.

The next table presents the impact of CAP in GHG emissions reduction in ktCO2eq for 2015 (ex-post) and 2020-2035 (ex-ante estimation). The effect is estimated as described above (Pillar I and II). The mitigation effect of actions targeting carbon storage and sequestration and energy efficiency and RES is not included, as explained above.

Table 4, Impact of CAP in GHG emissions reduction (ktCO2eq)

Action / Year	2015	2020	2025	2030	2035
Reduction in Fertilizers use (N_2O)	100	120	150	200	230
Organic farming (N_2O)	160	220	300	350	410
Reduction of the rate of intensity of agricultural land use and improvement of management of animal waste. (CH4, N2O)	300	375	550	750	1000
Total	**560**	**715**	**1000**	**1300**	**1640**

[1] The **livestock unit**, abbreviated as **LSU** (or sometimes as **LU**), is a reference unit which facilitates the aggregation of livestock from various species and age as per convention, via the use of specific coefficients established initially on the basis of the nutritional or feed requirement of each type of animal (see table below for an overview of the most commonly used coefficients).

Question by New Zealand at Monday, 30 September 2019

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 30 September

Title: Diesel passenger vehicles

In its NC7, Greece describes how it ended its previous prohibition of diesel passenger vehicles from 2011. Can Greece elaborate on its rationale behind this decision?

Answer by Greece, Friday, 22 November 2019

In the previous decades, diesel vehicles were known as extremely polluting due to their

nitrogen oxides and particulates emissions. For this reason, Greece had prohibited the circulation of diesel vehicles in the two major cities of the country, namely Athens, the capital, and Thessaloniki. However, with the progress of antipollution technology, diesel vehicles have considerably reduced their emissions and thus the issue of allowing diesel vehicles in the urban areas of Athens and Thessaloniki was put on the table. Towards that, a study has been carried out to demonstrate whether diesel vehicles would affect negatively air quality in the two cities. The results of the study showed that the replacement of old petrol vehicles with new diesel ones would contribute to lower air pollutant emissions and thus to air quality improvement and decreases of limit levels exceedances. The study of alternative scenarios with EURO IV and beyond diesel cars as well as old car replacement incentives, concluded that significant decreases of air pollutants levels would be expected including benzene and ozone levels. More explicitly, except PM10 emissions which were expected to slightly decrease (1%), emission decreases of the order of 30% would occur for NOx, NMVOC, CO and C6H6 and 10% decrease for CO2.

Following that, Greece adopted legislation to allow diesel vehicles Euro 5, Euro 6 or newer to circulate in the greater urban areas of Athens and Thessaloniki (Law 4030/2011).

Question by Canada at Friday, 27 September 2019

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 30 September

Title: Shifts in global circumstances towards achieving mitigation targets

In the context of broader EU efforts to move towards clean energy and carbon neutrality, and with regards to the energy sector, what shifts could make the global conditions or circumstances more favourable to the achievement of Greece's mitigation targets?

Answer by Greece, Thursday, 28 November 2019

Greece has reported in the NC7/BR3 that it is on track to meet its share of the EU short and medium term targets for years 2020 and 2030. As it is reported in the NC7/BR3, Greece will meet this target on the basis of the domestic policies and measures.

The 2015 Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC) sets the goal to contain the rise in average global temperatures to well below 2°C above pre-industrial levels and to pursue efforts to limit it to 1.5°C. According to the current scientific understanding on how to limit global warming to a temperature rise of well below 2°C and 1.5°C, we (i.e. world) need to achieve greenhouse gas emissions reductions between -80% by 2050 (compared to 1990) up to net zero greenhouse emissions by 2050.

The Paris Agreement goals and the transition to a low-emissions, climate-resilient world

cannot be achieved with public finance alone. The private sector has a critical role to play and especially the financial institutions. In a global context, a shift of the finance flows to climate friendly investments is needed.

Mitigation policies and measures in the Energy sector play a significant role, given that GHG emissions from this sector prevail in most of the Parties (i.e. the share of the GHG emissions from energy sector in 2017 in Greece was 74%). For the transition to a climate neutral energy sector, a large-scale of global effort on the deployment of low/zero carbon technologies is needed which is related both to advances in technology and efficiency of low/zero carbon technologies, but also reduction of their cost. This low/zero carbon transition requires:

- Investments in research and innovation effort. This means that investments are needed in fundamental research (better understanding, new concepts), applied research (bringing concepts from the lab to building prototypes), industrial innovation and deployment (continuously improving technologies and their usage) and socio-economic research and social innovation needed to engage citizens and consumers in the transition to a climate neutral economy.

- Investment for the production of low/zero carbon technologies to achieve economies of scale and reduce production costs.

- Establishment of schemes and mechanisms by all Parties that are designed according to the “polluter pays principle”, discourage the use of fossil fuels and energy inefficient processes, and promote the investment in low/zero carbon technologies.

- Private sector and especially multinational companies needs to integrate climate change and deployment of low/zero carbon technologies in their business strategy and plans.

The advances in technology, which are needed for the further deployment of low / zero carbon technologies, are summarized in the next table per category of the energy sector.

Table 1

Category of Energy sector	Mitigation actions	Advances in technology aiming to
Power sector	Decarbonisation of the power generation by the deployment of renewable energy	• reduce the cost and increase the efficiency of existed RES technologies; • use other less exploited sources of renewable energy, such as tidal and wave energy; • store power and produce carbon-free fuels; • improve electricity grids; • reduce the cost and increase the efficiency of CCS and BECCS technologies.
Industry	Switching to low and zero carbon energy sources and improve	• renewables-based electrification, sustainable biomass, synthetic fuels or hydrogen;

	energy efficiency	• improve resource efficiency by improving re-use and recycling through circular economy approaches; • improve energy-efficiency; to reduce the cost and increase the efficiency of CCS and BECCS technologies; • reuse CO2 e.g. using carbon dioxide as a feedstock is a more profitable and environmentally cleaner production process than using conventional hydrocarbons.
Transport	Achieving deep emissions reductions	• improve overall vehicle efficiency, low- and zero emission vehicles and infrastructure; • switch to alternative and net-zero carbon fuels for transport; • increase the efficiency of the transport system – by making the most of digital technologies.
Buildings		• improve the efficient of products and appliances, • moderate energy demand by the deployment of “smart” buildings/appliances management systems • switch from fossil fuels to renewable heating {electricity, district heating (produced from renewable sources), renewable gas and solar thermal}.

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