Meeting 12.03.19

Atendees: M. Porquet, M.T. Pay, V. N. dos Santos, M. Guevara, O. Jorba, M. Olid, C. Tena | Room: 1C

* Presentation on source apportionment of agricultural emissions

- We should try to emphasize the importance of studying the agricultural sector in general. We have some health evidences that agriculture is the main source of premature death in Europe and in the European Commission has set emissions reductions for NH3 till 2029. However, Bauer et al. (2016) have suggested that agricultural emissions are likely to have an insignificant effect on PM2.5 concentrations in the future (year 2100) due to the hypothetical reduction of NOx/SOx from combustion. More strong arguments are still need to justify the importance of researching on agriculture trade in EU.

- We agreed that it might interesting and doable to investigate the impacts of agriculture emissions (production) and agriculture exports (consumption) in EU countries if we find the complementary data needed: Information on the total production of livestock and crops including description of livestock population by specie (number of bovines, pigs, etc.) as well as crop types, for each EU country. The total quantities exported intra and extra EU will also be needed.

We have identified the EUROSTAT: statistical Office of the European Union as a potential source of data on international trade and production of agricultural goods in EU. The database is maintained by the European Commission and has been previously used in air quality studies in EU (e.g: Giannakis et al., 2019).

-We agreed that it would also be important to include **indirect emissions from agriculture** (transport of livestock, emissions caused by feeding, etc.) accounting for the entire lifecycle of the agriculture product. However, as this option would require a significant amount of extra information that might not be available, we have agreed to start from the production of livestock and decide later on how to proceed from there.

- From the methodological point of view, the emission group has available a raster that account the number of animals with a 10km resolution. If we are able to find the animal composition by country, we could estimate the livestock emissions based on a bottom-up approach doing a match with the emissions information they have found for Spain.

-If the complementary data is successfully obtained, the study will focus on how agricultural emissions in a country (e.g: Spain) is affecting other EU countries in terms of transboundary pollution (I.e: pollution transported to neighbor countries). Also the impacts of agricultural emissions in the producer country (e.g: Spain) that can be attributed to consumption of another country (e.g: France consumption of Spanish agricultural products). The country to country impacts will be evaluated in terms of health effects and possibly health costs.

**Actions**:

* + To search for the information on the composition of agricultural livestock production (pigs, bovines, sheeps, goats, etc.) which is available in EUROSTAT for each EU country.
  + To search for the information on crops which is available in EUROSTAT for each EU country.
  + To estimate Intra-EU and Extra EU export fractions and evaluate if contribution of intra EU exports is a significant part of the total. If so, this would justify the country to country analysis.
  + To evaluate the possibility of taking into account the effects of crop production on agricultural impacts.