

58 – Economic Instruments for Phosphorus Governance - How Taxes and Cap-and-Trade Systems Achieve a Sustainable Phosphorus Management

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Agriculture is facing various environmental, economic and social challenges which both in detail and as a whole make a transformation of agriculture towards more sustainability necessary. COVID-19 does not change this challenge. In fact, the pandemic further increases the need for a resilient agricultural sector that can feed the world even in times of global crises.

The focus of the presentation is on a detail question of agriculture, which is linked to various other resource and environmental problems: phosphorus (P), a vital but limited resource for plants, animals and humans.

The presentation starts with a short introduction on the key aspects of sustainable P management. Based on that, the relevant legal acts for P management at European level are briefly introduced. It is shown that existing legislation fails to achieve sustainable P management due to structural governance problems like enforcement deficits as well as rebound and shifting effects. To tackle these typical obstacles of command-and-control law, economic instruments are proposed.

Subsequently, economic instruments are subjected to an impact analysis for a broad range of possible instruments regulating various P-related parameters: (1) P fertilizers, P additives, P surpluses and P losses or (2) the input and output factors of animal husbandry or (3) more comprehensive parameters such as greenhouse gases, fossil fuels, and land use. The most promising instruments are picked out.

The analysis shows that two comprehensive economic instruments are able not only to tackle key sustainability challenges, i.e. limiting climate warming according to Article 2(1) Paris Agreement and halting biodiversity loss according to the Aichi Targets of the Convention on Biological Diversity, but also various P-related problems such as P hotspots due to high livestock densities. Those instruments are a cap-and-trade system for fossil fuels with a broad sectoral and geographical scope in combination with a significant reduction of livestock numbers by a statutory livestock-to-land ratio – at best supplemented by a cap-and-trade system for livestock products.

Towards the end of the presentation, the necessity of further instruments, whether economic or regulatory, is discussed, especially with regard to Europe's import dependency from phosphate rock (often contaminated by Cadmium and Uranium). Last but not least, a realignment of the EU Common Agricultural Policy is recommended.

Biographical note

Beatrice Garske (PhD, MSc, LL.M.) is a member of the Research Unit Sustainability and Climate Policy since 2012 and a research assistant in the collaborative research project InnoSoilPhos (Innovative Solutions to Sustainable Soil Phosphorus Management) at the University of Rostock within the framework of Leibniz Science Campus Phosphorus Research Rostock. She mainly works on the governance of phosphorus, soil and land use as well as agricultural policy. Her special focus is on economic instruments and integrated solutions for interlinked environmental problems. She is also familiar with governance research on other sustainability issues, such as climate change or plastics. For details see http://www.sustainability-justice-climate.eu/en/mit_garske.html and <https://www.innosoilphos.de/default.aspx>.