

## **NP turnover studies on European and on Danube basin levels**

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According to Webster's Dictionary, the description of "Union" is: "A uniting into a coherent and harmonious whole". This paper deals with the question whether the plant nutrition practice within the EU 27 countries fits to this description of "Union", or not. The answer to this question is distressing. Instead of a trend towards equalization in surface NP balances and soil NP status in the EU27 countries, a further and accelerated polarization has happened in the last 15 to 20 years resulting in severe environmental threats in some of the former EU15 countries, especially in Belgium and the Netherlands, and causing severe agronomic, social, and rural development problems in most of the new EU 12 countries. The Nitrates Directive seems to be ineffective in stopping the disadvantageous trends and converting them into the right direction.

In the opinion of the authors, there is a need for a paradigm shift in the EU agro-environmental protection legislation. As a summary, according to the opinion of the authors, only through a major restructuring the livestock distribution in the EU, and only through a major restructuring of the export-import policy of agricultural goods, and the price policy of the agricultural goods within the EU, the aims of the various directives, strategies, and policies, and the new SPS system can and will be fulfilled.

Another study was conducted on the Danube River Basin level to estimate the contribution of the various factors (Population, Industry, Agriculture, Background) to surface water NP loads. This research was done in the frames of the Integrated Danube Research Program, funded by PHARE. Due to the introduction of untreated sewage directly into surface waters, the NP load contributed by population waste was especially high in Central Europe in the early 90s. The steps taken by the EU to protect surface waters have thus led to a dramatic reduction in point-source pollution caused by the NP contained in sewage. The same strict regulations should be inaugurated in the Western European countries and NUTS-2 regions with the highest livestock densities in order to diminish excessive diffuse NP loads into surface and subsurface waters effectively.