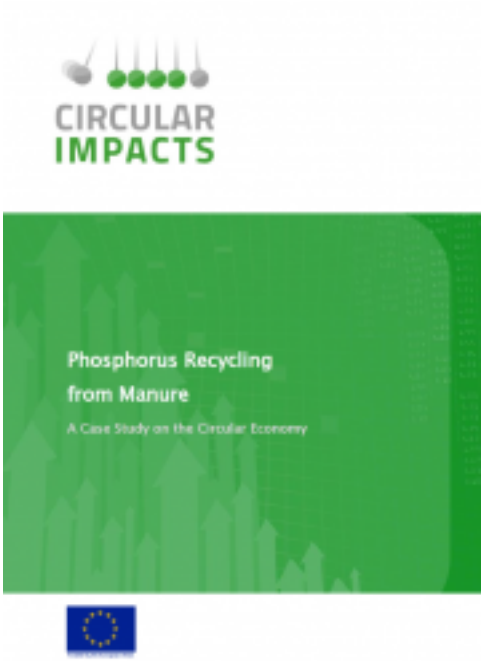
Phosphorus Recycling from Manure - A Case Study on the Circular Economy **[1]**



[2]

Workpackage:

WP4 Case studies

In this case study paper, phosphorus recycling from manure is discussed, with a special focus on the recycling process developed by the BioEcoSIM consortium. We analysed phosphorus flows globally, at a European level and on a national level, with a focus on the Netherlands. In the Netherlands, as in some other regions in Western Europe, there is excess supply of manure due to intensive livestock production. The oversupply, combined with legislation, generates a negative manure price. This negative manure price creates the business case for BioEcoSIM and other manure processing techniques. The BioEcoSIM technique processes manure into phosphorus and nitrogen fertilizer as well as an organic soil improver or biochar. By extracting from manure the useful components, transport costs are reduced. Furthermore, greenhouse gas emissions and particulate matter formation are decreased. However, since manure is already almost completely recycled on arable and pasture land, the effect on phosphorus flows is limited. The EU phosphorus flows show that the main losses of phosphorus in the food sector are through sewage sludge, other waste water and food waste, and not through manure. Nonetheless, losses of phosphate from manure do have a high environmental impact, since it causes eutrophication. This paper shows also what the macroeconomic consequences of phosphorus recycling from manure will be.

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