Revision of the Fertilisers Regulation 2003/2003

This briefing is one of a series of 'Implementation Appraisals', produced by the European Parliamentary Research Service (EPRS), on the operation of existing EU legislation in practice. Each such briefing focuses on a specific EU law which is, or will shortly be, subject to an amending proposal from the European Commission, intended to update the current text. 'Implementation Appraisals' aim to provide a succinct overview of material publicly available on the implementation, application and effectiveness of an EU law to date – drawing on available input from, inter alia, the EU institutions and advisory committees, national parliaments, and relevant external consultation and outreach exercises. They are provided to assist parliamentary committees in their consideration of the new Commission proposal, once tabled.

1. Background

Regulation 2003/2003 relating to fertilisers\(^5\) establishes and harmonises the conditions that fertilisers (i.e. products used in agriculture to provide nutrients for plants)\(^6\) should meet to be placed on the market with

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\(^1\) Note that in September 2013 another Roadmap proposing a Regulation relating to fertilisers, liming materials, soil improvers, growing media and plant bio-stimulants and repealing Regulation (EC) No 2003/2003 was published.

\(^2\) See also Euractiv (April 2011) announcing a proposal for December 2012 and the 2013 Roadmap mentioned above.

\(^3\) The final text was not available at the time of writing this briefing.

\(^4\) For further information, see also the press release.

the title/mention ‘EC fertiliser’, as well as their labelling and packaging modalities. More precisely, to bear
the title ‘EC fertiliser’, products should respect the following requirements: 1) having no adverse effects on
the environment and on the health of humans, plants and animals under normal conditions of use; 2) being
effective; and 3) being accompanied by relevant sampling and analysis methods. The latter are outlined in
type-approval procedures established by the European Commission through comitology. Fertilisers which
successfully go through this process are listed in Annex I of Regulation 2003/2003 and can freely circulate
within the EU Internal Market as an ‘EC fertiliser’.

As explained in the Commission Roadmap announcing a possible revision of the Regulation, although the
Regulation per se covers various types of organic and inorganic fertilising material, current ‘EC fertilisers’ are
essentially conventional and inorganic mineral fertilisers sourced from primary raw materials, some of
which require energy and CO₂-intensive production processes, as explained in Box 1. Producers wishing to
market any other type of fertilising material not featuring in the Annexes to the Regulation as ‘EC fertilisers’
have to obtain a new type approval. Conversely, fertilisers placed on the market in one of the Member States according
to the requirements of national legislation are known as ‘national fertilisers’ and fall outside the remit of Regulation 2003/2003. These can circulate in the Internal Market, subject to the provisions of Regulation 764/2008 on mutual
recognition. The Commission Roadmap estimates that nearly half of the fertilisers currently on the EU market are not covered by the scope of the Fertiliser Regulation. This situation fosters intra-EU fragmentation, as national requirements for marketing a sizeable portion of existing fertilising materials are established at the national level and differ from country to country. In addition, the present situation

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**Box 1: The three major macronutrients for plants**

- **Nitrogen (N):** is essential for plant growth, as it is a major component of chlorophyll. In its chemical form, nitrogen is normally generated from ammonia through an energy-intensive process.
- **Phosphorus (P):** contributes to plant growth and maturity (e.g. through photosynthesis). Phosphorus is generally extracted from phosphate rock and is a finite resource. EU reserves are limited (to Finland), and EU demand is mostly met through imports. Phosphorus is considered a strategic resource thanks to the geopolitical instability of some of its main suppliers and an expected increase in global demand in the coming decades.
- **Potassium (K):** plays a central role in plant photosynthesis by e.g. regulating CO₂ uptake. It is normally mined from potassium chloride. Supply is concentrated in a limited number of countries: Canada, Belarus, and Russia. However as there are some European mines (e.g. Germany and the UK), the EU is less import-dependent than in the case of phosphorus.

Commonly known as N-P-K, these three macronutrients (or primary nutrients) are currently available in both organic and chemical form, but it has been estimated that inorganic fertilisers cover nearly half of the supply of nutrients in European agriculture, the other sources being livestock manure (49%), and municipal and industrial waste (2%). Recent trends in the use of nitrogen and phosphorus-based fertilisers in the EU are illustrated in Figure 1. Usage in the EU15 has decreased in recent years, while consumption in the Member States that joined since 2004 (EU13) is increasing. Regardless of these trends, the question of EU self-sufficiency remains central and is addressed, among others, by the Circular Economy Strategy.

*Phosphorus is included in the list of critical raw materials for the EU. See also the Commission’s Consultative Communication on the sustainable use of phosphorus.

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6 Art. 2 (a) of the Regulation defines fertiliser as a ‘material, the main function of which is to provide nutrients for plants’. Fertilisers can be further distinguished as: mineral fertilisers, i.e. those in which the declared nutrients are in are in the form of minerals obtained by extraction or by physical and/or chemical industrial processes, and organic fertilisers, i.e. ‘carbonated material of plant or animal origin added to soil in situ and that provides nutrients to plants’. For an overview of the history and evolution of fertilisers, see e.g. Van Dijk Management Consultants, Arcadia International and BiPRO GmbH Study on options to fully harmonise the EU legislation on fertilising materials - Annex I to the Final Report, January 2012.

7 One of the oft-mentioned reasons for the ‘missed opportunity’ of harmonising organic fertilisers under Regulation 2003/2003 was the BSE crisis of the 1990s. The crisis raised several concerns on the safety of using organic waste as a raw material in fertilisers and made reaching an agreement on the appropriate tests and type-approval procedures for such fertilisers particularly complex.

8 ‘National fertilisers’ include e.g. organic and organo-mineral fertilisers.

9 Regulation 764/2008 on national technical regulations and free movement of goods in non-harmonised areas. On this point see e.g. the external evaluation of Regulation 2003/2003, p. 1.
appears increasingly contradictory to the policy goals outlined by the European Commission in its Circular Economy Package. Indeed, the Regulation has a tendency to hamper innovation, particularly as regards more environmentally-sustainable alternatives, such as fertilisers sourced from organic or secondary (i.e. recycled) raw materials. 

10 Even new inorganic fertilisers are negatively affected by the existing system, as type-approval is time-consuming and out of phase with current innovation cycles, estimated to be of about one to two years. 11

Figure 1 – use of nitrogen and phosphorus-based fertilisers in the EU

![Graph showing use of inorganic fertilisers - Nitrogen](image)

![Graph showing use of inorganic fertilisers - Phosphorus](image)

Finally, it is worth mentioning that the Regulation currently in force does not include limits to the content of heavy metals 12 and other contaminants (e.g. pathogens, physical impurities). The potential environmental and health consequences of the absence of such limits are now better understood and have been raised at EU level and by national authorities in some Member States.

Box 2: Existing derogations from the Fertilisers Regulation

A critical issue in the context of the implementation of the Regulation concerns the cadmium content of phosphate fertilisers. As the soil composition and the climatic conditions vary between Member States, the same fertiliser may lead to ‘unacceptable levels of cadmium being washed out of the soil into waterways unless the cadmium content of fertiliser is restricted 13 – in some areas, but not in others. It is thus possible to obtain derogations from the Regulation and introduce stricter limits based on national legislation whenever risks to health or the environment warrant such as exception. At the moment Austria, Sweden and Finland benefit from such derogation and can prohibit fertilisers with cadmium content per phosphorous content above certain limits from their markets. 14 These exceptions apply until harmonised measures on cadmium in fertilisers are adopted at the EU level. 15 On 17 March 2016, the European Commission issued a proposal that introduces, among others, limits on the cadmium content of phosphate fertilisers: it proposes a gradual reduction of the maximum level of metal impurity from 60 mg Cd/kg P₂O₅ to 40 mg Cd/kg after three years, to 20 mg Cd/kg after 12 years. 16

10 Because of their variable composition, it is more complex to agree on the characteristics and type-approval procedures for organic or recycled products.

11 For further details, see the external evaluation, p. 26. The approval procedure is outlined in Art. 31 of the Regulation and further specified in the non-binding Guide to the compilation of a technical file on application to designate a fertiliser as ‘EC fertiliser’ issued by the European Commission in cooperation with national experts. The external evaluation found that the approval period for a new fertiliser, in accordance with the requirements of Annex I of the Regulation, can take on average four to five years. For the introduction of new categories of additives, the process can extend to seven years. This timeframe is due to the complexity of the approval procedure, but also to the fact that a new product cannot be placed on the market without a prior modification of Annex I, which can also be lengthy. Hence, the evaluation concludes that this has a deterrent effect on innovation; however, as explained below, this negative effect needs to be put into context by examining, among others, the overall number of patents in the sector and by comparing e.g. the approval procedures in the pharmaceutical industry. For further details, see Section 2.

12 Some of the studies surveyed in this briefing, and Eurostat, also use data from Fertilisers Europe to cover additional elements, including forecasts of future consumption, as published in Fertilizer Forecast 2014-2024.

13 Namely arsenic, cadmium, chromium, lead, mercury and nickel. The Regulation includes limits for copper: point 1.6 of Annex III establishes that ‘the copper content shall not be higher than 10 mg/kg’.


15 These exceptions are adopted through Commission Decisions: for Austria Commission Decision 2006/349/EC, for Finland Commission Decision 2006/348/EC, and for Sweden Commission Decision 2006/347/EC. Note that the three countries already applied cadmium limits in phosphate fertilisers before they joined the EU and were allowed to retain them upon accession.

16 On this point, see also New conclusions regarding future trends of cadmium accumulation in EU arable soils, Opinion of the Scientific Committee on Health and Environmental Risks (SCHER) of 27 November 2015.

17 See Agra Facts 21-16 for further details on the proposal.
The primary responsibility for implementing and enforcing the Fertilisers Regulation rests with the Member States. At EU level, the main activities are the inclusion of new fertiliser types and their accompanying specifications in Annex I of the Regulation, and the development of European standards on sampling and analytical methods. In this context, the Fertilisers Working Group plays a prominent role.

2. EU-level reports, evaluations and studies

**Evaluation of Regulation (EC) 2003/2003 relating to Fertilisers, November 2010**

An external evaluation of the Fertilisers Regulation was undertaken between June and November 2010 with two main aims: compiling and assessing information on the impact, implementation and enforcement of the Regulation to identify remaining challenges and areas for improvement; and assessing the interaction between the Fertilisers Regulation and the Mutual Recognition Regulation, particularly impacts on intra-community trade. The Mutual Recognition Regulation ensures that fertilisers falling outside the scope of Regulation 2003/2003 (i.e. all types of non-EC fertilisers) which are lawfully marketed in one Member State can be sold in another. However, rather than operating as a complement to Regulation 2003/2003 as initially intended, mutual recognition appears to have created some additional challenges for operators in the sector.

The external evaluation draws on desk research and 46 interviews with relevant actors in ten Member States, including national authorities, industry associations and companies.

In terms of **relevance**, the evaluation concluded that the Fertilisers Regulation met the objective of promoting the development of a harmonised Internal Market and, as confirmed by stakeholders interviewed for the study, addressed several of the problems and inconsistencies existing before its adoption, by adding clarity and consistency. The coverage of the Regulation was identified as a pending issue, given that a sizeable portion of the fertilisers market still falls outside its remit. Some Member State representatives expressed doubts about the environmental protection and public safety provisions of the Regulation, because of the absence of limits to the content of heavy metals.

As regards **effectiveness**, the evaluation indicates that the Regulation has removed trade barriers to the circulation of EC fertilisers (with some minor problems remaining in the newest Member States) and simplified the situation for importers from third countries. However, other potential benefits of the Regulation, such as increased competition within the EU, more intra-EU trade in fertilisers, and lower prices, were not observable in the market. One possible explanation put forward in the evaluation is the fact that the Regulation replaced instruments which already existed; therefore the main result was simplification, while the 'Internal Market effect' might have already occurred prior to 2003. Also in terms of effectiveness, the greatest weakness attributed to the Regulation was its partial coverage of the EU market for fertilising materials. The evaluation reported an **uneven balance between EC fertilisers and other fertilisers** across the EU, with EC fertilisers constituting 80-100% of the total volume of mineral fertilisers sold each year in countries like Germany, Ireland and Italy, while the same share in e.g. Denmark and Sweden barely reached 5% of the market. The evaluation also investigated the reasons leading manufacturers to market their products as national fertilisers rather than as EC fertilisers. Feedback varied, with some respondents citing the benefits of greater flexibility and consumer trust in national brands as a reason for preferring national fertilisers, while others (mostly major fertiliser manufacturers) claimed that national labels are essentially used to produce lower-quality products. As regards the effectiveness in meeting public safety objectives and environmental protection, the evaluation findings were more mitigated, with industry and national authorities holding opposing views. The former was of the opinion that the Regulation provides for necessary levels of protection and flexibility, while national authorities

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18 On the repartition of competences between the EU and the national level, see also the external evaluation, pp. 7-8.
19 See also the non-binding guidance documents on the use of the Mutual Recognition Regulation for national fertilisers.
20 Namely, the Czech Republic, Denmark, France, Germany, Italy, Ireland, Poland, Romania, Spain and Sweden, which together represented about 75% of the overall EU fertilisers consumption in 2008 (see p. 13 of the evaluation). Annex B of the evaluation contains detailed country fiches for these ten Member States.
21 Ibid., p. 20. As regards prices in particular, other factors could have been equally important in driving observed trends, including the demand for agricultural crops and the cost of energy.
22 See p. 21 of the evaluation for a complete picture.
considered the absence of limits on heavy metals in mineral fertilisers as particularly problematic.\textsuperscript{23} However, current limits on ammonium nitrate (fertilisers containing ammonia present a risk of explosion),\textsuperscript{24} were considered too strict by several respondents, although this view was not unanimously shared. Finally, the Regulation's \textit{impact on innovation} was identified as the 'second weakest point' in terms of effectiveness,\textsuperscript{25} because of the deterrent effect of complex and lengthy procedures in introducing new fertilisers onto the market.\textsuperscript{26}

\textbf{Efficiency} appeared to be one of the strong points of the Regulation: the level of national resources committed to implementation and enforcement were found to be relatively small but generally adequate to meet the intended objectives. Some respondents even reported cost-savings stemming from the use of common and harmonised requirements, although no monetisation could be provided. The evaluation also explored \textit{utility}. The conclusions under this heading mirror those on the Regulation's effectiveness in terms of harmonisation and completion of the Internal Market. As regards \textbf{sustainability}, Regulation 2003/2003 was broadly seen as a good starting point by stakeholders, provided that a revised version enlarges the scope of the Regulation and addresses the question of limits for various types of raw materials and other substances. The \textbf{EU added value} of the Regulation was confirmed by the evaluation, as the benefits brought about by the Regulation could not have materialised with Member States acting separately.

On \textit{interaction with the Mutual Recognition Regulation}, the evaluation found low levels of usage of mutual recognition by companies in the sector (reportedly only 5-10 products were sold each year on the basis of mutual recognition).\textsuperscript{27} Concerns were also expressed on the potential consequences for the environment and public safety of marketing non-EC fertilisers under mutual recognition, if countries with 'more relaxed regulation' routinely become the entry point to the EU Internal Market. Interestingly, it also emerged that the complementary role that mutual recognition was intended to play for non-mineral fertilisers (currently falling outside the scope of Regulation 2003/2003) was also used to bypass the relatively lengthy procedures to obtain the 'EC Fertilisers' title. In other words, some mineral fertiliser manufacturers decided to use the mutual recognition system to market their products across the EU rather than waiting for the completion of an approval procedure to be included in Annex I of the Fertilisers Regulation (i.e. the traditional route for this type of products).

The evaluation concluded with a set of recommendations in view of the forthcoming review of the Regulation. These are summarised in Box 3 below.

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\textbf{Box 3: Main conclusions and recommendations of the external evaluation}\textsuperscript{28} \\
1. European Commission to push for inclusion of provisions on maximum levels of heavy metals in Regulation 2003/2003. \\
2. European Commission should aim to reduce the period required to add a new type of fertiliser to Annex I of the Regulation.\textsuperscript{29} \\
3. Develop a new section in Regulation 2003/2003 defining a list of permitted additives and the mineral fertilisers with which they can be used, in order to mitigate observed negative impacts on innovation. \\
4. Clarify the application of the Mutual Recognition Regulation and issue a guidance document on 'common rules of practice'. \\
5. Extend the scope of Regulation 2003/2003 to 'all categories of fertilisers and liming material' so as to remove trade barriers and address concerns related to the current application of mutual recognition.\textsuperscript{30} \\
6. Promote the adoption of a separate legislation for 'non-fertiliser products such as growing media and peat ... Unless this appears to lead to unnecessary delays, it could also be part of the extended Fertilisers Regulation'. \\
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\textsuperscript{23} Some respondents even stated that the Regulation resulted in weaker levels of environmental and safety protection than previous legislation. \textit{Ibid.}, p. 24.
\textsuperscript{24} The Regulation establishes that 'high nitrogen content ammonium nitrate fertiliser placed on the market has passed the test of resistance to detonation described in sections 2, 3 (method 1, point 3) and 4 of Annex III of this Regulation'.
\textsuperscript{25} \textit{Ibid.}, p. 25.
\textsuperscript{26} Note that the evaluators stressed that this conclusion should be put into context: the fertilisers industry is rather mature and the number of patents in this sector is much lower than that of e.g. the chemical industry.
\textsuperscript{27} Some companies interviewed for the evaluation held rather negative views on the subject and went as far as to claim that the Mutual Recognition Regulation brought confusion to the market and could potentially hamper harmonisation efforts.
\textsuperscript{28} Own elaboration on \textit{Ibid.}, pages 39-41.
\textsuperscript{29} Concrete suggestions on this point included: providing additional guidance and examples for applications and creating a technical committee with experts covering all the necessary disciplines for the examination of a file to make recommendations to the Fertilisers Working Group. The latter would then take a decision on the approval of the application.
\textsuperscript{30} The evaluation noted that the extension should be flexible enough to allow for a gradual inclusion of various categories. A revised Regulation 'should set basic rules applying to all categories and include different sections laying down the specific rules applicable to each category ... Delays and differences in one category should not affect progress in the remaining categories'. \textit{Ibid.}, p. 40.
Study on options to fully harmonise the EU legislation on fertilising materials including technical feasibility, environmental, economic and social impacts, January 2012

This second and more technical study complements the external evaluation described above and aimed at: collecting information on specific national legal frameworks and standards on fertilising materials; exploring the interaction and possible synergies between Regulation 2003/2003 and other relevant EU acts (e.g. the REACH Regulation 1907/2006 and the Landfill Directive 99/31), establishing 'essential safety and agronomic efficacy' requirements for all types of fertilising materials and developing and assessing possible policy options to revise the Fertilisers Regulation. As a starting point for this external impact assessment, the Commission listed the following as specific objectives of future harmonisation efforts under the Fertilisers Regulation: a) harmonise legislation for all fertilising materials, thus potentially enlarging the scope of the Regulation to include organic fertilisers, growing media, soil improvers and bio-stimulants; b) guarantee the safety of fertilising materials; c) ensure their agronomic efficacy and d) reduce administrative burdens. Seven policy options were explored: 1) the baseline scenario (i.e. maintaining the status quo); 2) repealing Regulation 2003/2003. This option would leave placing fertilisers on the market to national legislation, in combination with mutual recognition under Regulation 764/2008 and other relevant/applicable legal acts; 3) adding a voluntary system to the current situation, whereby fertiliser manufacturers, importers and distributors establish quality procedures and standards for fertilising materials. Member States would retain the power of legislating if needed; 4) including a detailed description of all technical aspects of each authorised type designation as an Annex to the Regulation and introducing maximum limit values for contaminants and specific requirements for additives; 5) developing an updatable list of permitted ingredients and additives as an Annex to the Regulation, including limit values for contaminants. Option 6 suggested following what is known as the 'new approach', whereby essential requirements on human/animal safety, environmental protection, agronomic efficacy, etc., are set in the Regulation, with further details being developed through European standards (EN). These

31 The result of this part of the analysis is presented in a dedicated database in Annex 6 to the study (note that the hyperlink leads to all annexes but not to the database itself). Among others, the study found that national rules on fertilisers existed in 22 out of the 23 Member States that responded to the survey (Malta was the exception and only uses Regulation 2003/2003). National categorisations of fertilising materials differed across countries: some Member States reported around 15 categories of fertilisers in their national legislation while others had three. The study also identified some limited cases where placing of fertilising materials on the market is not regulated at the national level (see Ibid., p. 14).
32 See section 2.3.3 of the study for more details. Note that the study also covers fertiliser legislation in selected third countries (e.g. the United States, South Africa, Japan).
33 Defined in the study as 'a measure of use efficiency and effectiveness of the product. Increase in yield/nutrient applied or any other measurement showing the agronomic advantage of a given product'. Ibid., Glossary section.
34 This is an important aspect for a revision of the Fertilisers Regulation and pertains to the question of how to organise the safety/risk assessment and the assessment of agronomic efficacy in the legislative act (Ibid., p. 12). The study recalled that the current version of the Regulation establishes the conditions under which a given fertiliser can be included in Annex I, but does not provide any indication of how the assessment leading to such an inclusion should be performed. In particular the term 'safety requirement' is not defined in EU legislation. The approaches proposed by the consultants to establish the safety requirements of fertilising materials and to determine agronomic efficacy are outlined in Sections 2.3.5 and of 2.3.6 respectively.
35 The impact assessment summarises the overall problem of the Fertilisers Regulation as follows: 'Currently, differentiated regulation of fertilisers and fertilising materials across Member States creates market fragmentation at EU level... which generates administrative burden for industry and competent authorities, and might constitute an obstacle to innovation'. Hence the impact assessment aims at answering the following question: 'What approach/policy option should be applied to sufficiently harmonise EU legislation on fertilising materials and reduce administrative burdens while meeting the objective of placing on the market safe and efficient materials/products?' Ibid., p. 76.
36 For further details see Ibid. p. 81-83.
37 Note that the first six policy options were identified by the European Commission, while the seventh option was suggested by the external consultants and draws on the findings of a stakeholder consultation undertaken for the study, among others. According to the website Your Voice in Europe, the consultation closed in May 2011. For a comparative and detailed overview of the policy options, see Ibid., pp. 87-92. A summary assessment of the expected impacts of each option can be found at p. 149. A detailed qualitative assessment of the options is provided in Annex 11 and quantitative information on the cost assessment is provided in Annex 12.
38 Option 5 further specifies that a risk assessment procedure should be applied to 'new fertilising materials ingredients' and further details should be developed through EN standards.
39 Players on the market are expected to conform to those essential requirements and conformity assessment would be carried out by notified bodies.
essential requirements cannot be modified without the agreement of the co-legislators. Finally, option 7 suggested applying different policy options to different types of fertilising materials. A framework directive would link the various legal instruments and define the different categories of fertilising materials. In line with the EU approach to impact assessment, the study examined the economic, social and environmental impacts of the different policy options. It also assessed their cost-effectiveness and concluded that options 4, 5 and 6 performed better than the others in terms of effectiveness, with options 5 and 6 being slightly preferable in terms of flexibility and their possible impact on innovation. In terms of expected costs, these two options were found to be equivalent; however the distribution of costs differed: option 5 appeared cheaper for industry while option 6 was expected to be less costly for Member States. The impact assessment did not identify a preferred policy option and left the final choice to political decision-making and further consultation.

**Competitiveness proofing – fertilising materials, January 2013**

In view of the expected revision of the Fertilisers Regulation, the European Commission asked for an additional analysis on the competitiveness impacts of extending the scope of Regulation 2003/2003 to all types of fertilising materials and of introducing other revisions to the Regulation. In particular, the consultants were asked to provide ex ante empirical evidence on the competitiveness implications for industry and farmers of four possible policy options. Where needed, they were also required to suggest corrective or mitigating measures. The analysis is mainly qualitative and due to resources constraints, it covers three (and thus not all) types of fertilising materials, namely inorganic fertilisers (NPK fertilisers), animal manure used as organic fertilisers, and compost as organic soil improver and/or fertiliser. In terms of representativeness, this selection covered nearly 90% of the market value of all commercialised fertilising materials and includes producers of various sizes, ranging from multinational enterprises to small and medium-sized enterprises. For inorganic fertilisers the expected impact of all policy options was deemed to be small, as these products have been regulated for several decades; potential positive effects could be expected on innovation and on cost competitiveness for new types of inorganic fertilisers.

Negative impacts on the sale of this type of product stemming from a potential harmonisation of other fertilising materials were found to be negligible. In the case of animal manure, significant competitiveness impacts were deemed possible for specialised and intensive livestock farming. However the study could not draw firm conclusions on the cost competitiveness impacts without additional clarity on the final content of the legislative text. Various other considerations were included in the study and led the consultants to conclude that for this specific product, option 6 appears the least uncertain in terms of regulatory approach. The real magnitude of impacts would however depend on the scope of the required product testing. Finally, for compost, significant impacts were expected, mainly for enterprises that do not have,
or possess a very simplified, quality and safety assurance system. Indeed, given that several aspects of revised Regulation 2003/2003 are already covered in the national laws of various Member States or through other quality requirements such as those of e.g. the European Compost Network, it appeared that the overall adaptation costs might be lower for compost. In addition, Option 6 was expected to have positive impacts on innovation. In terms of international competitiveness, no significant changes were expected for inorganic or organic fertilisers. More tangible impacts could be expected for compost, particularly as the sector is essentially composed of SMEs. The study also explored potential indirect impacts, in particular on the farming sector (Section 3.8). The effects of the different policy options varied depending on the type of farming activity, as the share of expenditure for fertilising materials in total farming costs is higher for e.g. field crops (11.6% EU average for 2007-2009) than for e.g. granivores such as pigs and poultry (1.1% EU average for 2007-2009). Yet, the overall impact of harmonisation on farmer cost-competitiveness was deemed to be limited; some negative impacts (because of a cost increase) could however derive from the introduction of upper limits for heavy metals in inorganic fertilisers for some type of farms. The introduction of upper limits could also affect international competitiveness (again because of an increased price of inputs) of e.g. EU crop farmers. Impacts on innovation were expected to be neutral or negligible.

A Legal Framework for Plant Biostimulants and Agronomic Fertiliser Additives in the EU, January 2014

This fourth and final study was required by the European Commission to further explore the technical and regulatory implications of extending the scope of the Fertilisers Regulation to other fertilising materials, in particular plant bio-stimulants and agronomic fertiliser additives. To do so, the study investigated how the marketing of these two types of products is currently regulated in selected Member States (Belgium, Denmark, France, Germany, Hungary, Italy, and Spain), and in third countries (the United States, Canada, South Africa, and Brazil), to draw useful lessons and assess whether some of these approaches could be transposed at the EU level. The study also analysed the business environment for bio-stimulants and fertiliser additives. It concluded by setting out a possible regulatory framework that could be adopted in conjunction with the revision of Regulation 2003/2003. A thorough analysis of the proposed framework, its steps and corresponding data requirement, falls outside the scope of this briefing. It is worth noting however that the proposed regulatory approach built on an extensive analysis of relevant existing pieces of EU legislation/regulatory frameworks (e.g., REACH, the Biocidal Products Regulation 528/2012, and Regulation 1223/2009 on cosmetic products) to explore synergies and complementarities.

3. European Parliament activities

European Parliament resolution of 9 July 2015 on resource efficiency: moving towards a Circular Economy

The Resolution recalled the environmental damage and economic risks stemming from an excessive use of resources. A move towards the Circular Economy, as envisaged by the European Commission through e.g. design and innovation in several policy areas, is thus very welcome, but should be complemented by legislative measures to accelerate the pace towards a more sustainable use of resources. In this respect, the Resolution touched on various elements that would need to be put in place: the adoption of a set of harmonised indicators on resource-efficiency to be made legally binding as of 2018, the introduction of

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49 See Section 3.7 of the study and p. 61 for a comparative summary of expected competitiveness impacts.
50 Organic fertilisers are generally consumed close to where they are produced. On this point see also Annex 8 on trade in processed manure.
51 For the complete set of data, see Appendix 6.
52 Ibid. p. 63. Note that the executive summary of the study also mentioned the possibility that pork and poultry farmers may go out of business if 'the cost of manure surpluses rises steeply above a threshold', Ibid. p. 14.
53 Defined in the study as 'material which contains substance(s) and/or microorganisms whose function ... is to stimulate the natural processes to benefit nutrient uptake, nutrient efficiency, tolerance to abiotic stress and/or crop quality, independently of its nutrient content'. Agronomic fertiliser additives are described as 'any substance added to a fertiliser, soil improver or growing medium to improve the agronomic efficacy of the final product of modifying the environmental fate of the nutrients released by the fertilisers'. Ibid. p. 7.
54 The results of this analysis are presented in Section 2.4 of the Study.
specific resource efficiency targets to be taken into account in e.g. impact assessments; specific initiatives in the areas of product policy and eco-design, among others; waste legislation; sustainable buildings, and public procurement. The European Parliament also urged the Commission (point 64) 'to develop a policy framework on nutrients in order to enhance recycling, foster innovation, improve market conditions and mainstream their sustainable use in EU legislation on fertilisers, food, water and waste'.


In reacting to the Commission Green Paper on the management of bio-waste in the European Union, the European Parliament recalled the fragmentation of the rules relating to the management of bio-waste and its negative impact on the achievement of policy objectives in this area. The Resolution also touched upon the issue of setting criteria for the production and use of bio-waste, and upon the contribution of bio-waste to reaching EU targets on renewable energy by 2020, among others. As regards fertilisers, the Parliament noted the role of treated bio-waste in conserving organic matter and complete nutrient cycles, especially the phosphate cycle. Indeed, bio-waste (recital 2) is a valuable source of high-quality compost and can be used to 'combat soil degradation in Europe, maintaining soil productivity, reducing the use of chemical fertilisers in agriculture, and especially of those based on phosphorus, and boosting the soil’s water retention capacity'. In this context, the Parliament stressed 'the role of Member States in ensuring the use of quality compost on agricultural land'.

**Members’ questions**

**Written question by Andreas Mölzer (NI, Austria), 26 February 2013**

In reference to a report by the Austrian Association for Consumer Information (VKI) indicating that high levels of uranium (i.e. between 82 and 387.5 mg of uranium per kg of phosphate) were found in eight out of 18 fertilisers tested, the MEP recalled that Austria sets no limit values for uranium in fertilisers, in contrast to e.g. Germany (limit value of 50 mg of uranium per kg of phosphate). Hence, the MEP wanted to know if other Member States had introduced mandatory labelling; if any specific efforts to introduce uniform mandatory labelling at EU level were ongoing; and whether there were plans to impose an upper limit to uranium in fertilisers at EU level, and if so what this limit would be.

**Answer given by Antonio Tajani on behalf of the Commission, April 2013**

The Commission explained that its services were aware of the issue of uranium in phosphate fertilisers and that the team in charge of Regulation 2003/2003 was following scientific and expert debates on this question. At the time of the request, the Commission was unaware of the existence of any labelling requirements on uranium in phosphate fertilisers in the Member States. The Commission also confirmed that the need to set upper limits was being assessed in the context of a forthcoming revision of the Fertilisers Regulation. It noted that for uranium, as well as for other contaminants, regional differences in e.g. soil and water across the EU might make regional specific measures more effective than upper limits or mandatory labelling. Finally, the Commission recalled its ongoing work on the sustainable use of phosphorus and expressed its support for the reuse of phosphorus from organic sources, which would also contribute to a decrease in the input of new uranium stemming from the use of mineral phosphate fertilisers in the EU environment.

**Written question by Jan Huitema (ALDE, Netherlands), 31 March 2015**

Mineral concentrates obtained by processing manure are not permitted in the EU, neither under the Nitrates Directive 91/676 nor under the Fertilisers Regulation, as this type of fertiliser does ‘not meet the technical product specifications set out in the Regulation’. Hence, the MEP asked whether the Commission intended to allow ‘the use of mineral concentrates under the Nitrates Directive, so that they

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55 On this issue see also Petition 0410/2012 on uranium in artificial fertilisers received by the Parliament’s Committee on Petitions.
56 For a more detailed analysis of the interaction between the Fertilisers Directive and the Nitrates Directive, see the Study on options to fully harmonise the EU legislation on fertilising materials including technical feasibility, environmental, economic and social impacts, pp. 52-54.
do not come under livestock fertiliser’ and as a consequence incorporate mineral fertilisers into Regulation 2003/2003. In this context the MEP also stressed that the production and use of mineral concentrates would contribute positively to the Circular Economy strategy and to reducing the use of fossil fuels and phosphate imports. The MEP asked whether the Commission shared this view, and also inquired whether the Commission agreed that innovation in the manure processing process would allow the use of mineral concentrates on a larger scale, but that the current Fertilisers Regulation hampers development. The Regulation could ultimately hinder future innovations and process enhancements.

**Answer given by Karmenu Vella on behalf of the Commission, May 2015**

The European Commission clarified that the Nitrates Directive does not limit the use of processed manure per se or as a substitute of chemical fertilisers in areas not affected by water pollution. Limits exist in what are known as Nitrate Vulnerable Zones (NVZ) to prevent the further degradation of already polluted waters. In these cases, processed manure is affected by such limitations as its agronomic behaviour is not entirely comparable to that of chemical fertilisers as far as environmental protection is concerned. In addition, such limits may foster innovation in manure processing. The Commission agreed that manure processing and nutrient recycling play an important role for the Circular Economy; however recent scientific evidence and field trials provided by the Netherlands indicate that mineral concentrate is not yet entirely comparable 'in terms of efficiency and environmental performance' to mineral fertilisers. It was also confirmed that the Commission is in the process of revising Regulation 2003/2003 and examining a possible extension of the Regulation to mineral concentrates: the latter 'might be considered as organic fertilisers, depending on the level of nutrients and residual organic matter content.'

**Written question by Bart Staes (Green/ALE, Belgium), 18 May 2015**

In view of the revision of Regulation 2003/2003 for which a proposal was expected by the end of 2015, the MEP wanted to know: 1) when the Commission was planning to share its proposal with the European Parliament; 2) whether the forthcoming proposal would end the distinction between 'EC fertilisers' and 'national fertilisers'; 3) whether a separate category for 'bio-stimulants' would be envisaged and 4) if silicon would feature in the list of essential nutrients.

**Answer given by Elżbieta Bienkowska on behalf of the Commission, August 2015**

The Commission confirmed that a proposal was under preparation in the framework of the ongoing work on the Circular Economy, and that the issues raised by the Honourable Member were also being assessed.

**Written question by Ramon Tremosa i Balcells (ALDE, Spain), 9 September 2015**

Replacing mineral fertilisers with organic ones is in line with the concept of bio-economy and a more sustainable use of resources. In this context the MEP wanted to know, inter alia, what the Commission was doing to foster the replacement of mineral fertilisers with organic ones and whether it was planning to promote technological developments that would support the new trend towards organic fertilisers.

**Answer given by Elżbieta Bienkowska on behalf of the Commission, December 2015**

The Commission was not only aware of the resource-efficient alternative offered by organic fertilisers but was also actively supporting research and innovation in this area through the Horizon 2020 Programme. Further assessments of the potential for supplementing mineral fertilisers with bio-based ones were also undertaken in the context of the Circular Economy Package. The Commission also recalled that inorganic fertilisers already benefit from 'harmonised rules for placing on the EU market'. The possibility of extending the scope of Regulation 2003/2003 to organic fertilisers was being examined and, thanks to the economies of scale achievable within the Single Market, it could potentially accelerate innovation and investment in the production of organic fertilisers. Such an extension of the scope of Regulation 2003/2003 would also create a level playing field between organic and inorganic fertilisers.

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57 The maximum amount of nitrogen from livestock manure is 170 kg/ha/year or other amounts pursuant to Annex III.2(b) of the Directive.

58 The remainder of the question focused on the Nitrates Directive, which falls outside the scope of this briefing.
4. European Commission Stakeholder Consultations

In parallel with stakeholder consultations linked to the studies described in Section 2 above, the European Commission engaged with the Member States and various stakeholders since 2012 through four ad hoc Working Groups (WGs). More recently, some questions pertaining to fertilisers were also included in the public consultation on the Circular Economy held between May and August 2015. In particular, section 5.1 of the consultation can be connected to the revision of Regulation 2003/2003, as it focuses on bio-nutrients and on raw materials and the 'main obstacles to the development of markets for secondary raw materials in the EU'. The relevance of a selection of obstacles in the case of bio-nutrients is summarised in the table below. For purely comparative purposes the highest and the lowest scores obtained for each question are also included in the table.

<table>
<thead>
<tr>
<th>Obstacle to the development of markets for secondary raw materials in the EU</th>
<th>Obstacle is relevant for bio-nutrients</th>
<th>Highest scores on obstacle relevance</th>
<th>Lowest scores on obstacle relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of EU-wide quality standards for recycled materials</td>
<td>16%</td>
<td>28% (all materials)</td>
<td>2% (glass)</td>
</tr>
<tr>
<td>Poor quality of recycled materials</td>
<td>18%</td>
<td>23% (plastics)</td>
<td>3% (glass)</td>
</tr>
<tr>
<td>Lack of information/misinformation on quality of recycled materials</td>
<td>14%</td>
<td>29% (all materials)</td>
<td>2% (glass)</td>
</tr>
<tr>
<td>Poor availability of waste/material to be recycled</td>
<td>6%</td>
<td>19% (critical raw materials)</td>
<td>2% (paper and glass)</td>
</tr>
<tr>
<td>Poor reliability of supply of recycled materials</td>
<td>4%</td>
<td>21% (all materials)</td>
<td>2% (paper and glass)</td>
</tr>
<tr>
<td>Low demand for recycled material</td>
<td>11%</td>
<td>22% (all materials)</td>
<td>2% (glass, metals, paper)</td>
</tr>
<tr>
<td>Cost differential between primary and secondary raw materials</td>
<td>11%</td>
<td>26% (all materials), 17% (plastics)</td>
<td>3% (glass, metals, paper, wood/biomass)</td>
</tr>
<tr>
<td>Organisational cost of switching from primary to secondary raw materials in industrial processes</td>
<td>4%</td>
<td>21% (all materials); 8% (plastics)</td>
<td>1% (glass)</td>
</tr>
<tr>
<td>Regulatory obstacles at national/regional/local level</td>
<td>13%</td>
<td>25% (all materials); 9% (wood/biomass)</td>
<td>2% (glass, paper)</td>
</tr>
<tr>
<td>Regulatory obstacles at EU level</td>
<td>12%</td>
<td>25% (all materials); 8% (wood/biomass)</td>
<td>1% (paper)</td>
</tr>
<tr>
<td>Insufficient cooperation and exchange of information along the value chain</td>
<td>12%</td>
<td>36% (all materials); 11% (plastics)</td>
<td>2% (glass)</td>
</tr>
</tbody>
</table>

Source: Author’s elaboration on consultation results

In Section 5.3 the consultation also asked which secondary raw materials should be targeted first to improve the status quo. A share of nearly 30% of respondents indicated bio-nutrients for fertiliser use as a priority, and this group is second only to rare earth metals and precious elements (32%) and plastics (33%). Finally, in section 6.1 bio-nutrients were indicated as a priority sector for specific EU action on the Circular Economy by 16% of respondents (the highest priority was attributed to ‘demolition and buildings’ at 22% followed by ‘food and drinks’ at 20% and ‘electronic waste’ at 18%).

59 Namely: WG1 on the overall structure of the future proposal; WG2 on nutrient content, product composition and agronomic efficacy; WG3 on contaminants, hygiene and other risks; and WG4 on labelling, enforcement and control. The Commission page for the Fertilisers Working Group (E01320 set up as an informal expert group) is accessible here. On the WGs and the preparatory work for the revision of the Regulation, see e.g. a presentation from the Hungarian National Food Chain Safety Office.

In terms of possible answers, respondents could indicate that a given obstacle was ‘significant for all materials’ of one of the following categories: bio-nutrients; construction aggregates; critical raw materials; glass; metals, paper, plastic, wood/biomass. Percentages are rounded in the table. Note that the percentage of ‘no answer’ ranged between 43% and 62% for the various questions; this should be taken into consideration when comparing the various figures in the table.

50 In its Opinion of January 2014 on the Commission Consultative Communication on the sustainable use of phosphorus, the EESC recalled that many global suppliers of phosphate rock are politically vulnerable
countries and that the EU 'is not self-sufficient and has lost jobs as the production of finished products (fertilisers and phosphorus-based chemicals) has moved to the supplying countries'. One possible answer to this challenge would be to increase the EU's self-sufficiency. The EESC noted that reducing demand is also important by e.g. removing phosphorus from detergents and by ensuring its more efficient use in fertilisers. This would be coherent with the primary objectives of EU policies on phosphorus: self-sufficiency and the mitigation of the effects of over-use (e.g. eutrophication). The EESC also recalled the problem of cadmium and its negative effects both in terms of damage to health and the environment, as well as in terms of EU farmers' competitiveness, because of decadmiation costs. The Committee therefore considered the 'determination of safe levels for all contaminants' as critical, and encouraged the Commission to undertake the necessary risk assessments and make appropriate recommendations where necessary on decadmiation technologies, their costs and applicability. The safe recycling of phosphorus-rich materials 'currently regarded as wastes' was also encouraged. The EESC also called for targeted research and innovation efforts across the board, and indicated that 'local solutions encompassing manure, processed or otherwise, and synthetic fertilisers look the most likely to succeed' (3.9.2). Finally it called for a re-evaluation of critical legislation on fertilisers, to ensure overall coherence with the current situation and EU policy objectives. In this context the central role of 'proper and proportionate implementation at the national and local level' was also stressed.

6. Conclusions

While Regulation 2003/2003 has clearly contributed to the removal of trade barriers for EC fertilisers and is generally cost-efficient, its effectiveness in terms of health and environmental protection appears mixed. Recent analyses indicate that one of its central weaknesses lies in the fact that it is mainly being used for conventional inorganic mineral fertilisers. As a result, nearly half of the fertilisers currently on the EU market are not covered by the Regulation, with negative impacts on the use of potentially more environmentally-friendly alternatives and on innovation. In addition, the Regulation does not include limits to the content of heavy metals such as cadmium and other contaminants. It is thus fair to conclude that, in its present form, Regulation 2003/2003 does not entirely reflect the current fertilising materials market situation and is not fully aligned with EU policy goals. A revision of the Regulation was already planned during the previous Commission term and has now been linked to the Circular Economy Strategy. A proposal for a Regulation to foster the use of organic and waste-based fertilisers, addressing some of the shortcomings of the existing Regulation and introducing limits for certain contaminants was published by the European Commission on 17 March 2016.\(^2\)

7. Other sources of reference

Agra Facts No. 21-16, issue of 18 March 2016.
Eurostat, Agri-environmental indicator – mineral fertiliser consumption, data from March 2012.
Joint Research Centre, NPK: Will there be enough plant nutrients to feed a world of 9 billion in 2050?, Foresight and Horizon Scanning Series, 2012.
P-Rex, Phosphorus recycling now! – Building on full-scale practical experiences to tap the potential in European municipal wastewater, Policy Brief, March 2015.

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\(^2\) For further details, see the parallel EPRS Legislation in Progress briefing on fertilising products.