

## Case study on „Glyphosate“

### Case study introduction

Glyphosate is used as active substance in herbicides (weedkillers) to control unwanted plants and has been on the market since the 1970s. Because glyphosate is effective on a very broad range of weeds and not only kills the part of the plant above the surface, but also the plant tissues below the ground level, it quickly became a widely used pesticide in agriculture and landscaping, but also in private households.

This case study examines the complexities and controversies surrounding the application of the precautionary principle in the approval of the active substance glyphosate in the European Union. It focusses on the renewal of the approval of glyphosate as an active substance in pesticides in the EU, which took place between 2012 and 2017.

### Relevance to the precautionary principle

The precautionary principle shapes the approval procedure and regulation of pesticides as such. However, as in the risk assessment of glyphosate on EU level no risk was determined, no precautionary measure in the form of a ban was taken. This is contested by various stakeholders.

### Potential impact

At the time of its introduction, glyphosate was deemed relatively safe to use and even to have environmental benefits, as it reduces the need for tillage, which has bad effects on the soil and releases CO<sub>2</sub>. However, scientific studies and reports of NGOs increasingly questioned the safety of glyphosate and glyphosate-based herbicides, raising concerns about risks to human health and the environment. In 2012, the International Agency for Research on Cancer (IARC) published a scientific monograph which presented



grounds for concern of carcinogenic potential of glyphosate, while the European Food Safety Authority, the European Chemicals Agency, as well as other regulatory bodies around the world did not classify glyphosate as carcinogenic. Furthermore, concerns arose whether glyphosate might act as an endocrine disruptor. Recently, the question is raised, if glyphosate poses unacceptable risks to habitats and biodiversity in farmlands and aquatic ecosystems, because it is non-selective and potentially harmful for a range of non-target organisms.

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### Key uncertainties

In the last decade, concerns have been raised with regard to glyphosate and its risks to human health,

*The politicisation of the glyphosate renewal procedure has to be seen in the context of the larger debate surrounding the future of EU agriculture and the use of pesticides. In this regard, the application of the precautionary principle has led to increased political pressure, which is highly likely to result in some form of innovation in this area in the long run.*

such as carcinogenicity and endocrine disruption, as well as risks to the environment, regarding specific species as well as whole ecosystems. However, these risks are subject to scientific uncertainty even decades after its invention. This is caused by uncertainty through absence of

systematic monitoring of glyphosate use and exposure. Moreover, the case clearly illustrates that scientific uncertainty can also exist and persist in the case of an intensely studied chemical substance, with over 1,000 studies performed and continuous scientific interest lead-



ing to an ever increasing number of studies. In the case of glyphosate, the scientific uncertainty is mostly fueled by normative and interpretative ambiguity: **the reliability of industry studies is questioned and regulatory authorities apply a weight of evidence approach that leads to academic studies being of limited significance to the risk assessment performed.** This leads to opposing findings concerning the highly contested carcinogenicity of glyphosate.

### Further information

#### Maastricht University

[www.maastrichtuniversity.nl/s.roettger-wirtz](http://www.maastrichtuniversity.nl/s.roettger-wirtz)

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For the **references** used for the case study, please look into the full report available at:

[www.recipes-project.eu/results/case-study-6-glyphosate](http://www.recipes-project.eu/results/case-study-6-glyphosate)

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