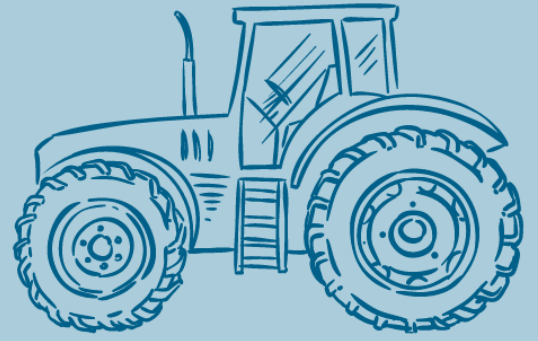
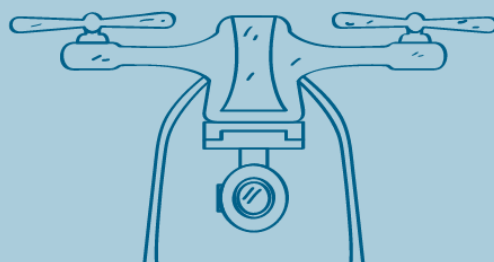


Summary report

# **LEVERAGING A TRANSITION**



# **TOWARDS MORE SUSTAINABLE FIELD CROP SYSTEMS**





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*Farm Europe is a multi-cultural think tank founded in 2014 that aims to stimulate thinking about the EU's rural economies. The think tank, focuses on agriculture and food policies, particularly the Common Agricultural Policy (CAP), but also food standards, the food chain, environment, energy and trade issues.*

## Summary Report

To address climate and environmental issues, the EU offers to establish a “Green Deal” for the European Union, with proposed measures targeting various economic sectors, including agriculture. To achieve climate neutrality by 2050, the Commission would like agriculture to be carbon neutral by 2035 and then compensate some of the emissions from other sectors.

In this context, the Farm 2 Fork and Biodiversity strategies encourage to reduce pesticide use by 50% and fertilizer use by 20% by 2030. They suggest that 25% of agricultural land should be farmed organically and that high-diversity landscape elements should cover 10% of agricultural land.

However, the strategies, as proposed by the Commission, would lead to an average drop in yields of 5%, a drop in European agricultural production of 10 to 15% depending on the sector, a reduction in exports of 20%, a drastic increase in imports and a drop in agricultural income of 8 to 16% (depending on the impact studies carried out). The study made by the Commission's research department (JRC) also confirms these results, even with the hypotheses of artificially limiting imports and 60% of farms using precision farming in 2030. The latter hypothesis suggests massive investments to be made by sectors that would see their revenues shrink. The estimated environmental benefits are in total between held and nil at the cost of a socially and financially onerous decrease. Such consequences could be dramatic for the European agricultural sector, which employs more than 9.2 million people and occupies 38% of European territory. Field crop production is all the more exposed as it occupies more than two thirds of European arable land.

Not only would they jeopardize the ability of farmers to meet the needs of European population and contribute to the stability of world food markets, but they would also have a significant impact on the financial stability of farms, the associated sectors and the rural areas where they are located.

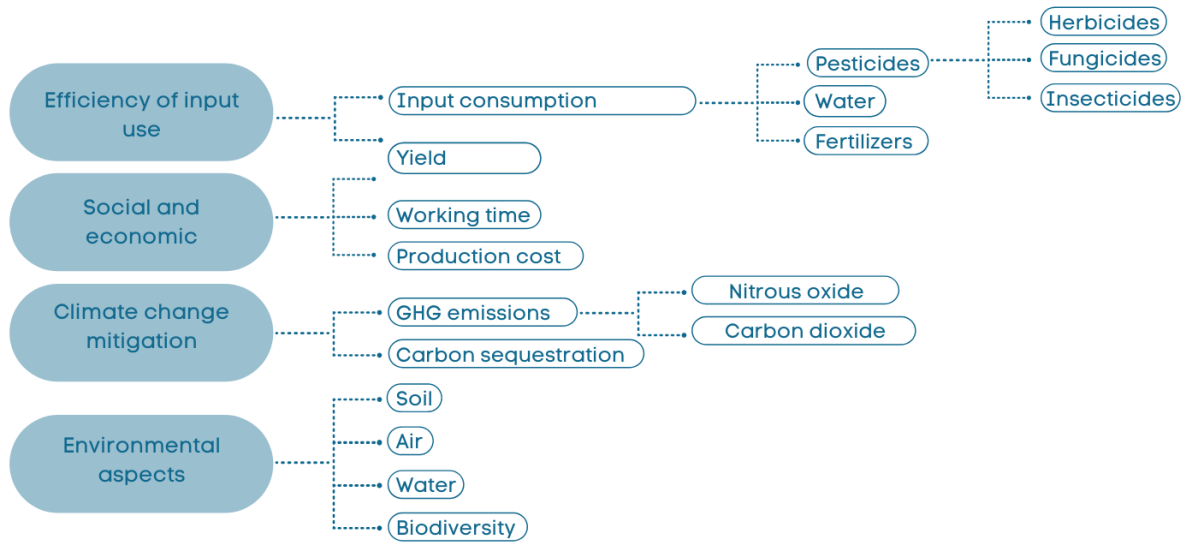
An agricultural sector restructuration that would reduce the number of farms and cause land abandon due to political decisions is not an option.

These observations suggest the **need to define another path to meet the principles of the European Green Deal and a responsible and effective ecological transition of the agricultural sectors.**

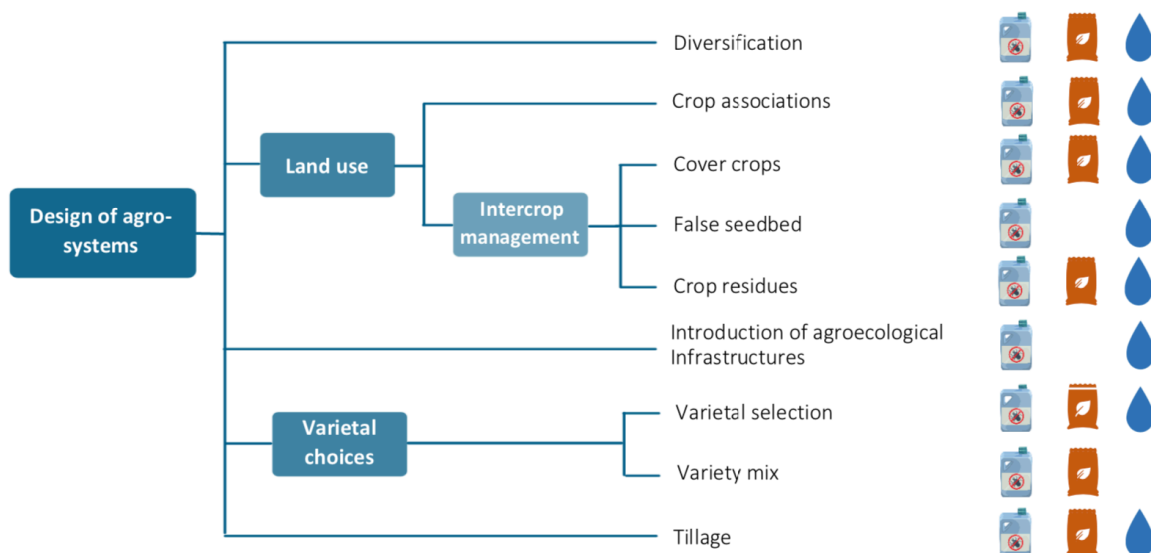
This report analyzes a set of practices that can be activated to reach the European objectives while fostering production capacities, farmers’ revenues and their working time.

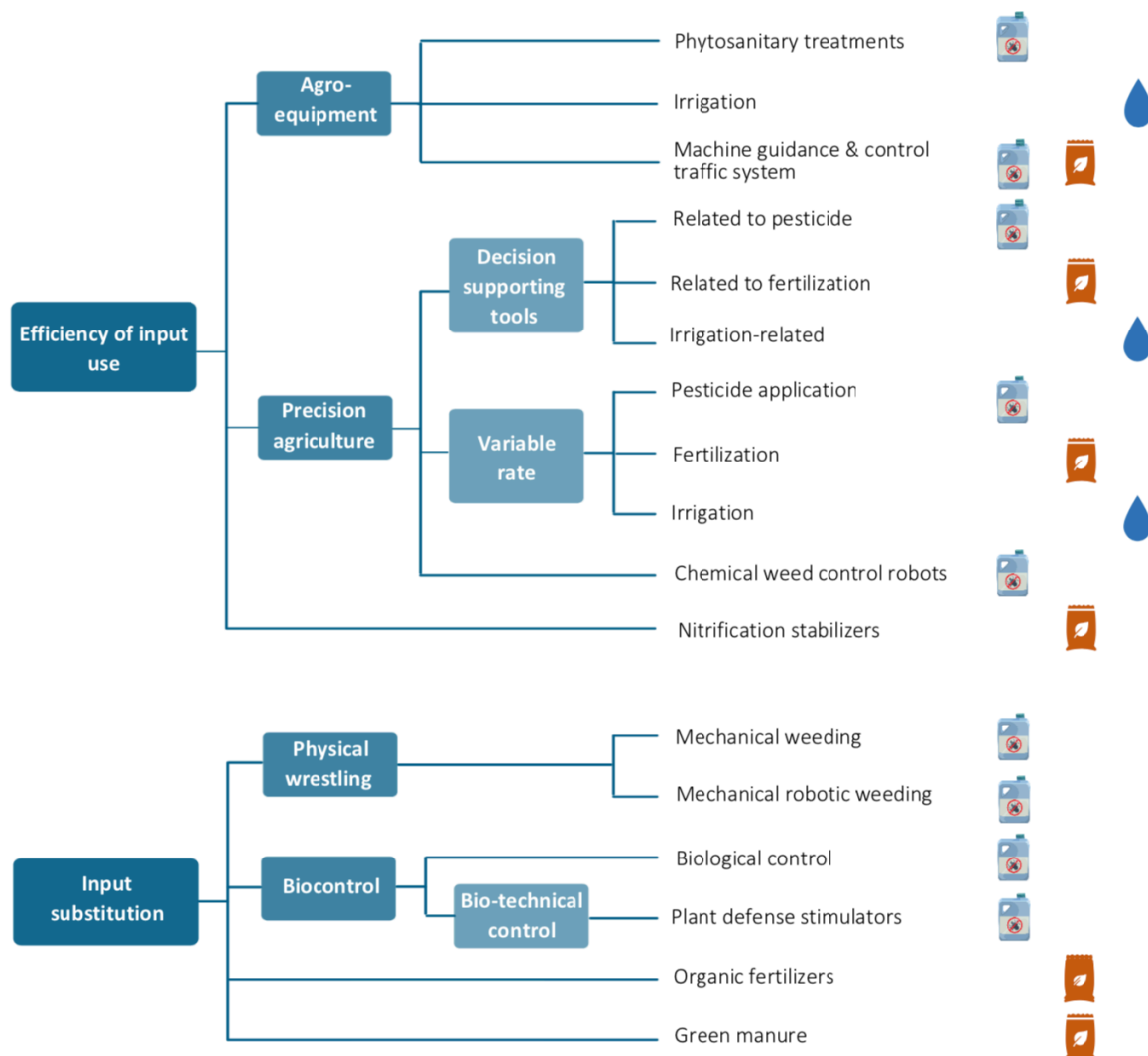
Numerous European studies have evaluated and quantified the effect of various practices at the farm or plot level. Based on a review of this work, this study aims to quantify the effect of different practices to identify those with the best mix between environmental and climatic impact and economic and social impact.

The different data compared are given below:



The practices studied and the inputs they affect are:





**Results can be summarized as follows:**

Practices that seems to achieve the better outcomes in line with the objectives of GHG net zero and economical use of inputs are, at the system redesign level:

- Diversification of rotations and maximum soil cover, especially during the intercropping period;
- Alternating tillage and shallow tillage;
- The selection of resistant varieties, either early or late ones.

In addition to these solutions, there are different ways to improve the efficiency of pesticides, fertilizers, and irrigation use, such as

- Modernization of agricultural equipment,
- DST recommendations
- Local and adjusted application of inputs.

Some of these solutions can be costly, others, such as DST or replacement of certain parts, are affordable alternatives.

Practices that seek to replace pesticides do not generally allow for complete removal of them. They are preventive or complementary alternatives. The substitution of synthetic fertilizers by green or organic fertilizers appears to be an interesting solution to reduce GHG emissions. However, the use of green fertilizers can be complex and the use of organic fertilizers depends on the ability to obtain organic matter.

Choosing the right practices depends on many factors which will then determine the efficiency of input use, climate, environment and socio-economic conditions. Certain practices can thus have beneficial or negative effects depending on the region of Europe that is being considered.

**Local or even regional support for farmers** seems useful to help them identify the sets of practices that are tailored to their situation. **Training is necessary** to enable them to quickly take control and use the maximum potential of their agricultural equipment. **The recommendations of DSTs must also be adjusted to local conditions.**

In addition to supporting farmers, **it is essential to ensure the accessibility of agricultural equipment and DST while fostering the modernization of equipment to improve the efficiency of input use.** This is a priority that public policies should focus on.

Robotics, on the other hand, is too new and too expensive. In 15 or 20 years, it could be a promising additional solution.

