



Transition paths to sustainable legume-based systems in Europe

## Benefits and constraints for the introduction of lentils in rotations in temperate regions

Currently, lentil is cultivated on a relatively small acreage in European countries like France and Italy, while in Germany it is only a niche product. The main reason for this is the challenge of cultivation in temperate regions.

One of the biggest difficulties in lentil cultivation is the high risk of lodging. To overcome this problem, lentil is grown with a companion crop in temperate climates. This requires compromises in crop management, which can result in yield losses for one of the two crops. The indeterminate growth poses an additional problem. In Central European regions, the grain moisture content of lentils at harvest is often still above 20%, so immediate drying is required to prevent quality loss. Furthermore, the two crops must be separated from each other using special equipment, e.g. vibrating screens, and drum separators, which are often too costly for an individual farmer.

However, the integration of lentil into the crop rotation is profitable in many respects. Mixed cultivation ensures high biodiversity on the field. The cultivation risk is spread over several crops, so the system is considered more stable, in terms of yield, than monocropping. The possible companion crops as well as the preceding or succeeding crops in the crop rotation are very diverse and make it easy to integrate lentils into existing structures.

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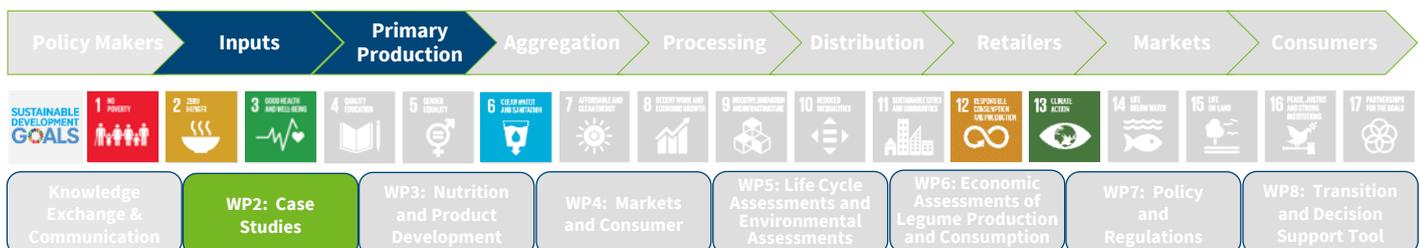
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Germany

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In addition, lentil is a legume that fixes nitrogen and therefore reduces the need for additional nitrogen fertilisers. Lentil, as a traditional food crop, also has a very high retail value in certain regions and is considered a specialty food. Moreover, consumers appreciate the regional cultivation of this nutrient-rich crop, which further increases demand.



**Figure 1.** Lentil trail station with companions. *Photo credits ©: Sabine Zikeli*



### About TRUE

The EU funded project "TTransition paths to sUustainable legume based systems in Europe" (TRUE) is a balanced practice-research partnership of 24 institutions, which aims to identify the best routes, or "transition paths" to **increase sustainable legume cultivation and consumption across Europe** and includes the entire legume feed and food value chains.

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