

Rapid intensification of farming after 1950 resulted in a dramatic decline in plant species diversity in European arable ecosystems, and pronounced shifts in species composition, including severe decreases in many species closely adapted to traditional agricultural practices. These changes in the arable vegetation have also resulted in pronounced losses of food and habitat resources for the dependent fauna. To counter these trends, and to conserve traditional arable plant communities, various strategies have been developed, ranging from an integration of conservation aspects into existing farming systems with a focus on crop production (“land sharing strategies”) to “land sparing” measures where conservation aspects take priority over crop production. This review gives an overview of those strategies, with a particular focus on arable plant conservation. Among the systems integrating species conservation into regular crop production, good results were achieved with organic farming and traditional “low-intensity farming systems”. Where production-focused management cannot deliver rare species persistence, targeted conservation measures are required. A wide range of such measures is available, e.g. in the form of conservation headlands, uncropped cultivated field margins, and wildflower strips, and in the form of arable reserves and fields primarily managed for conservation objectives. Finally, we discuss the possibility of re-introducing rare arable species at suitable sites, highlighting the importance of favourable management for successful establishment, based on existing experimental evidence.