Biodiversity in its entire complexity is a key parameter for ecosystem functioning, and conservation efforts need to consider all three levels of biodiversity – habitats, species and genes. There is largely an agreement that species richness directly relates to habitat diversity in many ecosystems. Genetic diversity, however, has not been included in empirical studies on biodiversity relationships to date. The EC-funded project INTRABIODIV elucidates the relationships between the three biodiversity levels, exemplified on plant diversity in the European Alps and the Carpathian Mountains. The results of this project should indicate possible correlations among the three diversity levels and provide a basis for decisions on conservation areas. In this introduction, I will summarize our motivation to approach such a large-scale study. More specifically, the sampling design and overall methodological background will be provided for better understanding of the subsequent summarizing presentations of specific results.