

Across the European Union, the Water Framework Directive is a major driver for change in river basin management. However, its focus on integrated management and, in particular, on ecological quality raises major scientific and technical questions. In the UK, the focus of experimental hydrology has been on the uplands, and at small catchment scale (< 10 km²), whereas major management pressures lie in the lowlands, and for catchment management units of about 300-400 km². Particular problems arise for permeable lowland catchments: the scientific understanding of the major UK aquifers (the Chalk and the Triassic Sandstone) is poor, and tools for the integrated modelling of surface water-groundwater interactions are limited. In response to these factors, the LOWland CAatchment Research programme (LOCAR) was conceived. A major objective of the programme is to develop new interdisciplinary science and improved modelling tools to meet the challenges of integrated catchment management. The paper describes the research programme and addresses the issues raised in designing and implementing a major interdisciplinary research initiative.