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A European vision for hydrological observations and experimentation

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A Vision for Transformative Hydrological Monitoring – Planning for the UK Floods and Droughts Research Infrastructure (FDRI)

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Here we present the UK vision for new world-leading hydrological observation networks and sensor innovation test beds that will provide the long-term datasets needed to enable the mitigation of the impacts of hydrological extremes. Plans are underway for a Floods and Droughts Research Infrastructure (FDRI). This represents a major capital investment expected to be funded by the UK Research and Innovation Infrastructure Fund and delivered through the Natural Environment Research Council (NERC) at an estimated cost of £38m. FDRI is urgently needed to make the UK more adaptable and resilient to floods and droughts. It will include major new hydrological catchment instrumentation, with innovative technology to provide observations of key components of the terrestrial water cycle, and in-field facilities for trialling and developing new sensing technologies. Extensive community consultation and reviews have identified key science questions that are being used to inform infrastructure design. Successful impact will be enabled through strong investment in digital infrastructure to achieve a hydrological data commons. Integrated near real-time datasets will be publicly accessible, consolidated and inter-operable, ready for application specific analysis and modelling. As FDRI planning develops, there are opportunities to design-in the latest thinking on catchment monitoring strategies with innovative sensing, and to ensure that long-term hydrological datasets will be able to answer a wide variety of future research questions.