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Co-producing knowledge in hydrological science: new forms of public participation in flood risk management

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The notion that risk management might be moved 'upstream' has two different connotations. The first is grounded in democratic accountability and theories of knowledge, with a growing recognition that those actively implicated in risk management should be involved in the co-production of that knowledge. The second, specifically in relation to river basin management, poses the possibility that at least some risk reduction might be achieved through making interventions in river catchments some way 'upstream' of where those risks are manifest. There is growing evidence that at least some flood risk reduction, for instance, can be achieved through a large number of small, low cost, upstream interventions. In this paper, I will argue that these new approaches to flood risk reduction are only going to be effective if we simultaneously explore ways of co-producing the knowledge surrounding them: our approach to doing flood risk science has to move 'upstream' as well as our solutions to flood risk management problems. I will explain why this is the case and then illustrate the role that co-production of hydrological science, involving both traditional 'experts' and those who are 'expert' because they live with flood risk on a day-to-day basis. I will outline some of the ways by which this co-production can be achieved and illustrate how co-production can both subvert the dominance of existing flood science technologies but also produce models that are more closely matched to: (a) the data poor environments of many rural areas; and (b) the uncertain economic and social possibilities of different interventions. In doing this, I will challenge the traditional assumption that flood science 'experts' (like those meeting at EGU) have a knowledge base that is any different to those who live with flood risk, something that points to the need for much more sophisticated public engagement and hydrological science in both river basin management and risk management. The current emphasis upon scientific determination of risk followed by communication by appropriate competent authorities has a very high risk of failure unless there is a radical change to how we engage with those who live with hydrological risk.