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Addressing uncertainty to facilitate participatory governance

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The Common Fisheries Policy reform in 2002 has already started a process of strengthened participation in fishery governance. The recently released Green Paper on the CFP further explores avenues to increase participatory decision-making. Regardless of whether this increased stakeholder involvement will take place in the knowledge production, the advisory phase, or in decision-making, there will be a need to present "science for policy" in a way that stakeholders understand it. Stakeholders should be able to evaluate the relevance, strengths, and limitations of the scientific approach. Communication of uncertainty is a key element in such a process. So far, discussions on uncertainty have mainly focused on technical uncertainty (i.e. uncertainty that can be quantified through some kind of statistical or mathematical model). In this paper we review the literature on ways of categorizing the *sorts* of uncertainty (as opposed to the *origin* of uncertainty). We present an overview of tools that have been developed to assess and communicate different sorts of uncertainty and we discuss the relevance and applicability of these tools to fishery management situations. Although tools that cover technical and to some extent epistemic uncertainty already exist within the domain of fishery science for policy (like Bayesian methods and simulation techniques), we conclude that tools from other research areas that cover broader aspects of uncertainty are available and could very usefully be applied in the fisheries domain. For example, tools to reflect whether the policy problem has been addressed adequately.

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