



Knowledge management across the environment-policy interface in China: what knowledge is exchanged, why, and how is this undertaken?

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Global to local environmental policy-making is increasingly evidenced-based. Knowledge exchange (KE) is increasingly used by environmental scientists and policymakers, to deliver evidence-based policy and practice. There is thus an urgent need to identify whether and how knowledge is exchanged between knowledge producers and users in environmental science fields. Frameworks to evaluate KE practice are emerging. Here we apply an assessment framework developed in social medicine to identify what forms of environmental knowledge are exchanged, and why and how they are exchanged.

We focussed on China as international research to better manage Chinese ecosystem services is rapidly increasing, yet, how to best integrate this into political decision-making and the public realm remains a challenge. How KE is practiced in China is unknown. We addressed this through: 1) a systematic analysis of published KE research in China compared to global trends; 2) evaluating KE for environmental policy and management in China; 3) quantitative surveys of Chinese (n = 72) and British (n = 16) scientists researching Chinese environmental problems.

China's contribution to the global KE database was low (6-7%) across all disciplines. The systematic review of two databases identified two key findings. One, there were no papers in the environmental sector examining the science-policy-practice interface in China out of 291 potentially relevant papers. Two, only 13 of 423 potentially relevant KE paper explicitly examined KE for environmental topics, notably for agriculture and information exchange (i.e. What). Most papers reported a one-way interaction between scientists and users (i.e. How), used to change practice (i.e. Why). Our quantitative survey showed significantly less awareness and use of KE methods (i.e. How) by Chinese scientists. The paucity of documented KE research and limited evidence for two-way interaction show KE at the environmental science-policy-practice interface in China is limited. Promotion of KE practice may benefit environmental decision-making in China. More broadly, our study shows how KE frameworks from social medicine are effective in understanding KE practice at the environmental science-policy-practice interface.