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Social capital in stressed social-ecological systems: understanding social learning in agricultural communities in China to aid environmental policy and practice

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Social learning is increasingly used to address environmental challenges including sustainable farming. How sustainable agricultural knowledge is co-produced, shared and used between farmers, scientists and government is important for building capacity and trust for sustainability in stressed socio-ecological communities worldwide. However, such understanding is largely lacking in developing economies. This research presents the findings from analysis of smallholder farmers' social learning in three agricultural regions in China. Combining an existing social capital framework with questionnaires (Q) and interviews (I) with farmers (Q n=632; I n=30) and officials (Q n=77, I n=64), we demonstrate how farmers access and share farming knowledge through bonding, bridging and linking networks. In two regions, family bonding was the dominant learning pathway while linking networks to access 'formal knowledge' from government (or scientists) were limited. However, in the third region, government played a more important role in farmers' knowledge sharing and acquisition processes. In all regions, learning from researchers was largely absent. Key suggestions about ways to enhance use of multiple forms of knowledge are provided. First, this study highlights the need for a more locally and socially embedded approach to facilitate enhanced farmers' knowledge exchange and learning, to then build trust and capacity to help better address pressing local environmental challenges. Second, we show how social dynamics research can usefully inform knowledge exchange plans for collaborative, international development science, so that it can be best suited to local contexts, to optimise research impacts, capacity building and avoiding of mismatches.