Visual science communication development as a process for active stakeholder engagement

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Visual science communication products are effective tools for communicating scientific issues across language and cultural barriers. Diagrams, symbols, and infographics can be largely self-explanatory, requiring very little text to convey complex messages and ideas. Creating these visualizations requires both skilled graphic design capabilities, which science communicators have, as well as comprehensive knowledge of the process in question, which they may not.

Traditionally, the development of science communication products has been accomplished through communication between scientists and the science communicator. But thorough knowledge of the system often resides in a variety of stakeholders, including scientists, managers, and resource users. Resource users in particular are often underutilized as sources of information, and are often not consulted in environmental decision-making, while at the same time are disproportionally affected by those decisions.

We advocate a creative process that fully engages stakeholders in the development of science communication products to integrate knowledge from non-traditional sources, increase environmental science literacy, and ensure that results are applicable to important user groups. This is achieved in a fun, interactive, and iterative process in a group meeting setting that begins with a whiteboard or paper drawing that establishes boundaries of the system. Progressive iterations revise, add detail, and include important linkages to create a comprehensive product. This approach leads to vigorous discussion that improves engagement by all parties, and ultimately to products that are understandable and accepted by a wide set of stakeholders. We illustrate this approach with case studies from Coastal India, the Philippines, and Samoa, in which a variety of science communication products were created, including ecosystem health report cards, conceptual diagrams, data visualization, and messaging.