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TITLE: Catalyzing action towards the sustainability of deltas

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ABSTRACT:

Deltaic systems are among the most dynamic and productive environments on Earth and many have a high population density. Deltas play a central role in food and water security but are increasingly facing hazards such as submergence, riverine and coastal flooding, and coastal erosion. This paper synthesizes efforts of the Belmont Forum Deltas project, an international network of interdisciplinary research collaboration with focal areas in the Mekong, the Ganges Brahmaputra, and the Amazon deltas. The inherent complexity and dearth of knowledge about deltas require disciplinary expertise to advance jointly with interdisciplinary collaboration. An overarching research framework articulates focal research areas and collaborative modules, serving as an umbrella for both crosscutting and specific research questions. These modules have allowed for common definition of goals, responsibilities, and products, but flexible and decentralized disciplinary and interdisciplinary collaborations. Self-organization within and across areas of expertise has proven effective in bringing collaborators to commit to specific efforts. Knowledge co-production workshops focusing on vulnerability and risk have successfully strengthened interactions with regional organizations. As a distributed network, challenges remain in terms of type of and level of interaction and hands-on collaborative work among research partners, including joint fieldwork, but successes far outweigh difficulties. To illustrate these points, we present a review of three research domains built upon different arrangements of disciplinary and interdisciplinary collaborations: advancing biophysical classifications of deltas, understanding deltas as coupled social?ecological systems, and analyzing and informing social and environmental vulnerabilities in delta regions.

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