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PROMOTING ENVIRONMENTAL AND SOCIO-ECONOMIC SUSTAINABILITY IN RURAL ALASKA THROUGH TRANSDISCIPLINARY RESEARCH AND COLLABORATIVE ENGAGEMENT BETWEEN SCIENTISTS, POLICY MAKERS AND STAKEHOLDERS IN DECISION-MAKING

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The increasing extent and vulnerability of technologically advanced society together with aspects of global climate change intensifies the frequency and severity of natural disasters in the far north. Every year, Arctic communities face the devastating consequences of extreme events, including loss of life, property and infrastructure damage, and environmental decline. Environmentally sound and policy efficient strategies have to be developed to minimize these consequences. However, hazard-prone areas in the Arctic differ geographically and culturally. There is no one-size-fits-all solution. Thus, it is crucial that future Arctic leaders are not only aware of the conditions that make some natural Earth processes hazardous to people, but also understand how people perceive and adjust to potential natural hazards in their regions. Such comprehensive decision-making can be accomplished via implementation of transdisciplinary research efforts (e.g., geoscience, communication, emergency management, and public administration). In May 2013, an ice jam caused major flooding in Galena, a remote village in interior Alaska. Within two days, flooding destroyed nearly the entire region's infrastructure, and displaced over 60 percent of its residents. Almost a year later, a significant part of Galena's population was still evacuated in Fairbanks and other neighboring towns. Logistical and cultural features of the far north, as well as bureaucracy caused the holdup in the recovery efforts. The federal government was unwilling to spend millions of dollars on the area, which may be destroyed by the next flood. Massive floods inundated towns along the Yukon River before, but people return to refurbish and again inhabit the same territories. Rivers have a significant importance to Alaskan rural communities. Not only do rivers provide food, drink, transportation, and irrigation, but they also carry significant aesthetic and cultural significance for the Alaskan people. The flood resulted in environmental and socio-economic disasters. Although less than 500 people permanently live in Galena, the operational airport makes it a governmental, social, educational, and travel hub for ten other communities. The Majority of the neighboring villagers lost their jobs as well as opportunity for prospective employment. The Galena case study provides a unique example of challenges in communicating with and educating the public and policy makers about natural hazards. This case study demonstrates the importance of collaborative engagement between natural and social scientists with policy makers and community stakeholders in promoting the sustainable future of the far north.