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TITLE: Public Perceptions of Aquaculture: Evaluating Spatiotemporal Patterns of Sentiment around the World

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ABSTRACT:

Aquaculture is developing rapidly at a global scale and sustainable practices are an essential part of meeting the protein requirements of the ballooning human population. Locating aquaculture offshore is one strategy that may help address some issues related to nearshore development. However, offshore production is nascent and distinctions between the types of aquatic farming may not be fully understood by the public-important for collaboration, research, and development. Here we evaluate and report, to our knowledge, the first multinational quantification of the relative sentiments and opinions of the public around distinct forms of aquaculture. Using thousands of newspaper headlines ( $N_{\text{total}} = 1,596$ ) from developed (no. countries = 26) and developing (42) nations, ranging over periods of 1984 to 2015, we found an expanding positive trend of general 'aquaculture' coverage, while 'marine' and 'offshore' appeared more negative. Overall, developing regions published proportionally more positive than negative headlines than developed countries. As case studies, government collected public comments ( $N_{\text{total}} = 1,585$ ) from the United States of America (USA) and New Zealand mirrored the media sentiments; offshore perception being particularly negative in the USA. We also found public sentiment may be influenced by local environmental disasters not directly related to aquaculture (e.g., oil spills). Both countries voiced concern over environmental impacts, but the concerns tended to be more generalized, rather than targeted issues. Two factors that could be inhibiting informed discussion and decisions about offshore aquaculture are lack of applicable knowledge and actual local development issues. Better communication and investigation of the real versus perceived impacts of aquaculture could aid in clarifying the debate about aquaculture, and help support future sustainable growth.

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