

Addressing Climate Migration in Maine

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In collaboration with The Climate Initiative and local community partners.



Abstract

Maine, recognized as a climate-safe haven, is expected to become a destination for climate refugees, presenting both challenges and opportunities. This project, supported by a grant from the Maine Economic Improvement Fund (MEIF), seeks to ensure the swift and equitable integration of climate refugees and New Mainers into Maine communities, addressing both the economic and cultural benefits of this migration. It focuses on educating students and community members through 5-8 student-led conversations, developed in collaboration with local high schools, community organizations, and USM's Office of Equity, Inclusion, and Community Impact (EICI). These conversations, supported by tools like ArcGIS Story Maps and EN-ROADS climate simulators, are also integrated into Dr. Anzalone's economics and Dr. Vazquez Jacobus's sociology classes. Early data show increased awareness of climate impacts on marginalized communities, strong community engagement, and empowered youth advocacy.

Background



As climate change intensifies, Maine is increasingly viewed as a destination for those displaced by environmental degradation. The state's appeal lies in its relatively safe geography from climate risks, such as hurricanes and rising sea levels. Between 2020 and 2022, Maine saw an influx of over 34,200 individuals, 10.5% of whom were international migrants, including a growing number of climate refugees.

This project focuses on empowering youth and marginalized communities to become central to the conversation surrounding climate migration in Maine. Through collaboration with The Climate Initiative (TCI) and local partners, this project engages students and communities in a multifaceted educational process. Key aspects include community conversations, educational workshops, and the development of interactive digital tools such as an ArcGIS Story Map, which visually presents the patterns of climate migration in Maine. The project emphasizes the importance of equitable integration strategies for climate refugees, particularly considering Maine's aging workforce and need for skilled labor in healthcare, technology, and education

Methodology

The **Addressing Climate Migration in Maine** project uses a mixed-methods approach to assess the effectiveness of its educational interventions. Data collection involves pre- and post-intervention surveys designed to measure shifts in participants' knowledge, attitudes, and behaviors related to climate migration. Surveys are distributed to students and community members who participate in structured dialogues and workshops.

These educational interventions are supported by tools such as EN-ROADS, a climate solutions simulator, and ArcGIS Story Maps, which visually depict climate migration patterns in Maine. The project leverages the ArcGIS platform to allow participants to explore real-world data and visualize how climate migration is reshaping communities in Maine.

Qualitative data is gathered through participant reflections, community conversation transcripts, and facilitator observations, which are then thematically analyzed. Quantitative data from the surveys is analyzed using statistical methods like paired t-tests and ANOVA to evaluate changes in participants' climate-related awareness and their willingness to take action

Data and Analysis

The pre- and post-surveys aimed to assess the participants' understanding and engagement with climate change issues before and after attending the event. Key areas of focus included understanding climate change impacts, confidence in speaking about climate-related issues, and feeling empowered to take action. The pre-survey sample size was 90, and the post-survey sample size was 78. Participants' knowledge of climate migration increased, with more than 60% of respondents expressing greater confidence in their ability to explain the causes and consequences of climate migration after the interventions

Key findings include:

- **Awareness:** Participants reported a significant increase in their understanding of the disparate impacts of climate change on BIPOC (Black, Indigenous, and People of Color) communities. Prior to the intervention, only 30% of participants were aware of these issues, but this number rose to 70% in the post-survey.
- **Empowerment:** 55% of participants indicated a heightened sense of agency to engage in climate action at the community level, reflecting the project's goal of empowering youth and marginalized groups. Participants reported feeling more empowered to speak out about climate issues after the event, showing a change score of +0.77 as well.

Data and Analysis Continued

- **Community Action:** Participants expressed a desire for collective action, with over 60% stating that government and corporate initiatives should complement individual efforts to address climate migration. Participants felt slightly more valued within their communities post-event, with a change score of +0.35.
- **Understanding Climate Change:** There was a notable improvement in participants' understanding of how climate change affects their communities, with a change score of +0.63 on a 5-point scale.
- **Confidence in Speaking About Climate Change:** Participants felt significantly more confident in discussing climate change after the event, with a change score of +0.77.

The community conversations and educational workshops successfully created an environment where participants from diverse backgrounds found common ground on complex climate-related issues. One of the most notable outcomes was the significant increase in participants' understanding of how climate change impacts their communities and their confidence in discussing these issues. This was particularly evident in the marked improvement in scores across several key areas, including understanding, empowerment, and confidence in climate advocacy.



1. **Intergenerational Dialogue:** Younger participants played a pivotal role in influencing the views of older participants, highlighting the power of youth-led initiatives in shaping community perspectives. The data reflects that confidence in speaking about climate change increased sharply (+0.77), reinforcing broader research showing that young people are highly effective in educating older generations about climate issues.
2. **Community Empowerment:** The structured dialogues significantly boosted participants' feelings of empowerment, as evidenced by a +0.77 increase in the sense of agency to engage in climate advocacy. Participants emphasized that climate migration and other issues cannot be addressed by individual actions alone and require systemic changes at the policy level, a reflection of their growing understanding of collective climate action.

Key Insights Continued

3. **Localized Relevance:** The strategy of discussing local climate events, such as rising sea levels on Maine's coastal communities, proved highly effective. The clear improvement in understanding climate impacts (+0.63) shows that making these issues tangible and directly relevant helped participants grasp the urgency of action. Future sessions will expand on this approach with local high school students and community groups to further strengthen the link between local experiences and global climate challenges.
4. **Areas for Growth:** While participants' understanding and confidence grew substantially, the modest increase in feeling valued within their communities (+0.35) suggests there is room to enhance community-level engagement. This indicates a need for future workshops to focus on building stronger connections between individuals and their communities to foster a greater sense of collective voice.

Conclusion

The **Addressing Climate Migration in Maine** project has successfully engaged students and community members in meaningful dialogues that highlight the importance of collective action in addressing climate migration. Data from pre- and post-surveys indicate a marked increase in participants' knowledge and willingness to take action on this issue. The educational tools and resources developed through this project, including the EN-ROADS climate simulator and ArcGIS Story Maps, will be further refined and incorporated into future educational modules.

Moving forward, the project aims to broaden its impact by facilitating additional community conversations, particularly targeting high school students and marginalized communities. Empowering youth as leaders in climate action provides a model for addressing climate migration that can be applied both locally and globally

References

- Denworth, L. (2019, May 6). Children change their parents' minds about climate change. *Scientific American*.
<https://www.scientificamerican.com/article/children-change-their-parents-minds-about-climate-change/>
- Malo, S. (2019, May 6). Children may be their parents' best climate-change teachers, scientists find. *Reuters*.
<https://www.reuters.com/article/us-usa-climatechange-education/children-may-be-their-parents-best-climate-change-teachers-scientists-find-idUSKCN1SC1GR/>
- North American Association for Environmental Education. (n.d.). *NAAEE*.
<https://naaee.org/about>
- Soren, K. (2021, May 20). Over 100 youth-led groups convene to address intersectional climate justice. *Inequality.org*.
<https://inequality.org/research/youth-climate-justice/?emci=4131f0ea-9ebc-eb11-a7ad-501ac57b8fa7&emdi=3d3b7fdf-b9bc-eb11-a7ad-501ac57b8fa7&ceid=3871417>