

COASTAL FARMING CHALLENGES WORKSHOP FINDINGS

A workshop funded by the National Science Foundation's Coastlines and People Program.

INTRODUCTION

Maryland Sea Grant and partners convened a series of workshops from late 2020 through spring 2021 with coastal farmers and woodlot managers located in the Chesapeake and coastal bays region in Maryland and Virginia. The goal of the workshops was to learn about coastal farming challenges that farmers and woodlot managers may be experiencing due to sea level rise and to identify potential research and policy gaps affecting their ability to adapt to these changes. This document serves as a summary of our article "Resisting-accepting-directing sea level rise on the Chesapeake Bay: Agricultural producers' motivations and actions" available here: doi.org/10.1016/j.jenvman.2023.117355.

WORKSHOP DESIGN

Thirty-five coastal farmers and woodlot managers participated in this project. Participants were recruited through existing agriculture networks (e.g. Land Grant Extension, US Department of Agriculture Natural Resources Conservation Service) and a local newspaper. Participants manage and/or own agricultural land ranging from 5 - 6,700 acres and produce a variety of crops (e.g. timber, corn, vegetables). Data were collected through three virtual 90-minute workshops, digital pre- and post-surveys, and phone interviews. The workshops included informative talks by experts about sea level rise and adaptation strategies for farmers, as well as discussion sessions for farmers and woodlot managers to voice their concerns and questions regarding adaptation. Participants shared their experiences and perspectives on changes to their land and potential management options to address landscape changes (Figure 1).

FINDINGS

IMPACTS AND MANAGEMENT

Participants' motivations to continue farming include sustaining their livelihood, continuing their family's legacy on the land, preserving cultural identity in the region, and/or furthering their own dreams and goals for the property.

Discussions during virtual workshops highlighted participants' current and planned land management strategies in response to sea level rise. These strategies vary depending on: the percentage of land affected by flooding and saltiness; the cost and effectiveness of available management techniques; perceived policy hurdles; and knowledge of the problem and available mitigation options. Some participants indicated they would like to continue managing land as they have been in the short term but expect to have to change their land management in the long term.

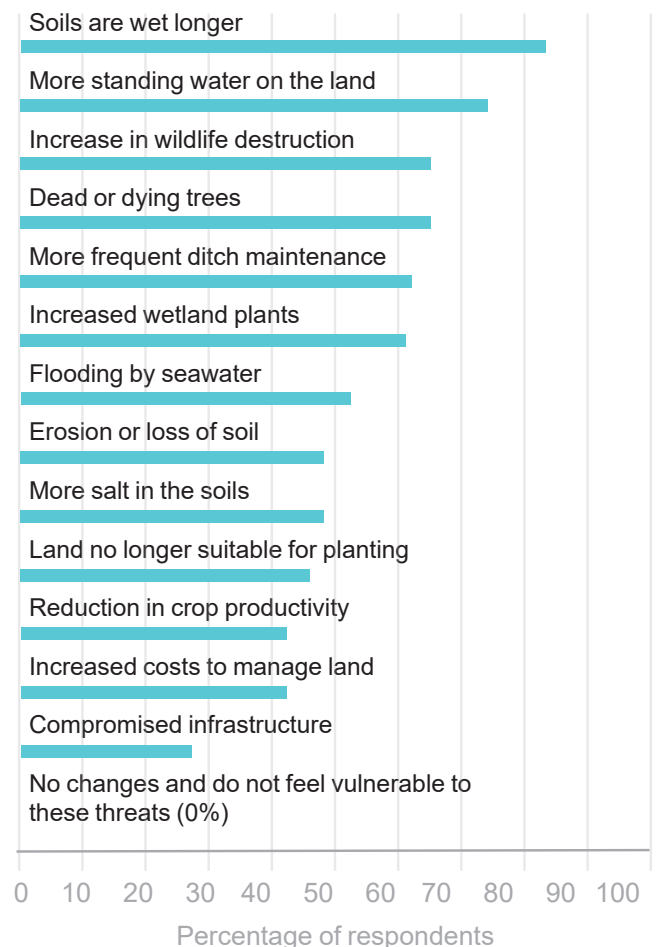


Figure 1. Reported observed impacts attributed to sea level rise and flooding by participants in the pre-survey.

Table 1. Summarized possible courses of action and participants' assessment of relevant challenges according to three broad categories of how participants might respond to landscape changes due to sea level rise and flooding.

		PREDOMINANT STRATEGIES		
		RESISTING CHANGES TO THE LAND	ACCEPTING CHANGE OF THE LAND	DIRECTING TRANSFORMATION OF THE LAND TO AN ALTERNATIVE, DESIRED CONDITION
LAND MANAGEMENT OPTIONS		Tide gates, dikes and berms, drainage ponds, catch basins, and spillways to improve drainage; salty soil remediation	Alternative crops (e.g. switch-grass, quinoa) and/or salt-tolerant crop varieties, ways to work around wet/salty areas, letting affected land go fallow	Actions that may allow for financial gain on otherwise unprofitable (i.e. flooded and/or salty) land and also contribute to environmental goals, such as conservation easements, hunting/recreation, ecotourism, carbon markets, and participation in programs that incentivize transition to wetlands
	CHALLENGES	Available methods sometimes fail, may be cost-prohibitive, or might not be worth investment on less productive lands	Areas that are too wet may not produce good yields, are inefficient to farm, or may put machinery at risk. Alternative crops and/or salt-tolerant versions of standard crops may also present challenges such as low yield, limited markets, or need for new farm machinery	Some options (e.g. easements) limit practices farmers may use on the land and require navigation of policy hurdles (e.g. paperwork, planting/maintenance requirements, liabilities). In addition, transitioning to alternative economic revenues is challenging due to the required restructuring of business models

RESEARCH AND POLICY GAPS

In the post-survey, participants (n=18) were asked to vote for three of 16 research and policy gaps (generated from workshop discussions and phone interviews) they felt should be addressed by agencies and/or research. The top topics were:

- Develop cost-effective drainage options to reduce flooding (8 votes)
- Map current and forecasted saltwater intrusion areas (7 votes)
- Develop carbon credit/carbon sequestration programs and markets (6 votes)

Other ranked topics (4 or 5 votes) included: affordable erosion control options; new markets for alternative and/or salt-tolerant crops; local timber markets/processing operations; address destructive wildlife; control *Phragmites sp.*; increase timely access to technical service providers; increase flexibility of USDA Conservation Reserve Program (CRP) including the Conservation Reserve Enhancement Program (CREP) lands' plant cover requirements.

Throughout this small pilot project, participants expressed interest in learning more about novel opportunities (e.g. carbon market, technological developments in flood control) and any policies, funding, or available science which could help maintain operations and/or transition to different land uses. Further, respondents thought technical service providers and boundary organizations could facilitate actions on policy and research gaps by “conveying coastal challenges of agriculture to policy makers” and “facilitating collaborations for research on coastal agricultural issues.”

CALL FOR COLLABORATION

Maryland Sea Grant is interested in collaborating further with farmers, woodlot managers, researchers, extension & outreach specialists, and policymakers to continue this initiative and help Maryland communities become more resilient to weather and climate hazards. Please contact Taryn Sudol at sudol@mdsg.umd.edu for more information or visit the website <https://bit.ly/MDSG-coastal-agr> for workshop presentations and project reports.

