



Harry R. Hughes
CENTER FOR AGRO-ECOLOGY

Strategic Plan: 2019-2024

Organizational Values

We deliver information that is science-based, applied, and unbiased that fosters collaborative solutions. Our work is grounded in the values of equity and environmental justice.

Vision

The Hughes Center serves as a national model highlighting Maryland's agriculture, forestry and environmental communities, using collaboration to form science-based solutions to manage and conserve natural resources in Maryland and the Chesapeake Watershed.

Mission

Provide leadership to promote environmentally sound and economically viable agriculture and forestry as Maryland's preferred land use through research, outreach and collaboration.

Introduction

These strategies define the direction of the organization over the next one to five years. The goals identified here will be used internally to guide work plans and by the board to frame its' grant making, assess staff productivity and evaluate outcomes delivered to our many constituents.

Identifying and selecting activities that can have a meaningful impact on our mission and vision requires careful consideration of the landscape in Maryland. The following objectives and goals identify areas where the Hughes Center is positioned to affect meaningful outcomes.

Chesapeake Bay Watershed Health

The Hughes Center will continue to drive national recognition of Maryland's farmers as leaders in environmental practices. The Chesapeake Bay is a keystone of our region and one of the nation's greatest natural treasures. The health of the Bay and surrounding waterways depends on the region's citizens from both urban and rural communities. The Hughes Center will champion improving watershed health and the health of Maryland's waterways amidst changes in climate, populations and our landscape.

Maryland's agriculture community is leading the implementation of conservation efforts that protect the land and the waterways surrounding the Chesapeake Bay. Despite the agricultural community achieving a significant reduction of nutrients to the Bay, Maryland's farmers will continue to be required to increase their efforts as the state's sectors pull together to address the Phase III Watershed

Implementation Plan. Technical and financial support will be needed across all sectors for the state to meet its commitments. New best management practices will be developed and implemented and partnerships will continue to emerge between Maryland's jurisdictions, nonprofits, businesses and the agricultural community.

Agricultural Best Management Practices

The Hughes Center will continue to contribute to the Bay watershed effort through its longstanding role as a source of unbiased information on nutrient management. Long-term studies on cover crops and no-till have influenced state programs and policies and have spurred widespread adoption by farmers. Educational forums such as the Phosphorus Conference have helped to improve public understanding and scientific consensus on this highly important and controversial issue.

Addendum A highlights current research and other initiatives addressing these goals.

Chesapeake Bay TMDL Goals

The Hughes Center has played a lead role in connecting local implementers to the statewide TMDL goals. The Hughes Center's work to expand understanding across the urban/suburban and agricultural sectors is important to ensure collaboration and mutual respect. The Hughes Center will highlight past agriculture and forestry Bay cleanup accomplishments, while supporting goals that recognize farm profit as a starting point for considering increased nutrient regulation, and that tie technical and financial support to the investments that will be needed to implement additional best management practices

Addendum B highlights current research and other initiatives addressing these goals.

Agriculture: Resilient Climate-Smart Food System in Maryland

The Hughes Center will provide leadership identifying and implementing forward-thinking solutions for the future of agriculture, forestry and the food system in the face of climate change. The Hughes Center will work to increase agricultural economic opportunities by expanding demand for and supply of local food. We envision a food system based on a circular economic model. The system will minimize external inputs, reduce losses of resources such as nutrients, treat agricultural wastes such as poultry litter as a resource, sequester carbon, increase local food sourcing, and increase the resilience of the supply chain. It will benefit both the region's urban and rural residents.

Climate-Smart Agriculture

The Hughes Center must continue to be a forward-thinking leader on issues that greatly impact the region's health, such as climate change and population growth. A healthy environment, including a healthy Chesapeake Bay, and profitable agriculture and forestry industries are not mutually exclusive; both are critical to each other's success. Insightful research can provide

objective information about how a changing future will support or threaten working lands. Asking the right questions at the right time can have a meaningful impact at regional, state and local levels.

Science tells us that climate-related challenges will likely intensify in the coming years. National and global climate assessments, as well as state evaluations of their respective climate vulnerabilities, make very clear the challenges we all have ahead of us are mounting and require action now. Climate-smart agriculture involves more than carbon sequestration. It includes pragmatic ways to adapt, improve resilience and sustainably intensify the production of food, fiber and a wide range of ecosystem system services provided by sustainably managed farms, ranches and woodlands.

The Hughes Center's Board and staff are supported by scientists whose insight has connected land-based activities to the well-being of adjacent aquatic ecosystems. In the past, these insights have changed the way farm-based nutrients are used globally. The Hughes Center seeks to continue this legacy by convening experts to explore issues that will impact the future well-being of farming, forestry and the Chesapeake Bay, such as saltwater intrusion, soil health, and land-use changes.

Addendum C highlights current research and other initiatives to address these goals.

Future Food Systems

Buying locally produced food has a multiplier effect on the local economy. Purchasing local food has three times the economic impact than purchasing non-local food. Efforts to research the gaps in local production and food distribution will be complemented by a funded effort to reach out to farmers and share opportunities to access hidden resources. The Hughes Center will identify barriers and opportunities to local food markets through collaboration, and will use its relationship with state and local agencies to highlight regulations that restrict access to local foods.

Bivalve aquaculture yields public benefits as both a source of local food and ecosystem service. A sector of agriculture, bivalve aquaculture offers alternative farming in a variety of aquatic environments. It also is an important tool used to enhance commercial and recreational bivalve fisheries and to restore threatened and endangered species and habitats.

The Center supports competitive, technologically appropriate and diverse aquaculture in Maryland that meets the increasing demand for seafood and products that are affordable and meet high standards for safety, quality and environmental stewardship, with maximum opportunity for profitability and economic growth. The Center will investigate priorities for research, science, and technology development that encourage bivalve aquaculture in the state to build an industry that increases seafood availability, jobs, economic opportunities, and recreational opportunities while providing for the restoration and promotion of healthy aquatic ecosystems and the recreational fisheries which rely on them.

Addendum D highlights current research and other initiatives that address these goals.

Forestry

The Hughes Center will continue to ensure that Maryland's forests and forest industry are environmentally and economically secure and are integrated into the health and economy of the state. Proper management of Maryland's forests can enhance the state's industry while providing solutions to address climate change.

The Hughes Center recognizes that Maryland's forests and the forest industry play a significant role in the health of Maryland's environment and economy. Forests account for 38% of the state with more than three-quarters of that forest land in private ownership, and the rate of private ownership of small forest parcels increases annually. In addition to the local and regional benefits of all Maryland forests, western Maryland forests are part of a vast network of resilient and connected Appalachian forests which stretch almost 2,000 miles from northern Alabama to Canada, across 14 states and three Canadian provinces, and are globally important for climate mitigation and adaptation.

The Center encourages an innovative and sustainable wood industry that takes an ecosystem-based approach to management and harvesting. To effectively manage and maintain the forests, the Hughes Center will bring together scientists, resource managers, landowners, and policymakers to understand challenges and threats and identify opportunities to sustainable forest management and protection, and to educate the public on the importance of forests to both the environment and economy of the state.

Addendum E highlights current research and other initiatives that address these goals.

Addendum A: Agricultural Best Management Practices

Current Research:

- Hughes Center is partnering with Penn State, Ohio State, Virginia Tech on a five-year USDA, NIFA funded proposal to analyze thriving agricultural systems within urban landscapes while enhancing ecosystem services. (Ongoing)
- The Hughes Center has funded a project by Dr. Gurpal Toor to optimize nutrient use and reduce losses in crop production systems in the Chesapeake Bay Watershed. (Ongoing)
- The Hughes Center has funded research by the Maryland Soil Conservation Districts to look at new and emerging cover crops and their economic and environmental impacts. This research could assist with the adoption of new and additional agricultural practices. (Recently Completed)

Communication/Education/Collaboration/Technical Assistance:

- The Hughes Center supports the work of the Delmarva Land and Litter Collaborative (DLLC) to address the issues of litter in a joint effort with diverse stakeholders. The Hughes Center is a committed member of this project and staff serve on the Steering Committee and the Communications Committee. In the past year, DLLC has produced several projects including a storyboard of the chicken industry on the Delmarva. In addition, a panel from DLLC was recently invited to present to the Chesapeake Bay Commission. (Ongoing)
- As part of the thriving Ag systems project as well as other endeavors, the Hughes Center is looking at several different approaches to address the need for technical assistance to the agricultural community; both short and long-term. (Ongoing)
- Partner with MDE, Sea Grant, Chesapeake Bay Foundation and Soil Conservation Districts to conduct a survey of those organizations providing technical service throughout the state and determine needs, gaps, and potential collaboration. This survey was to guide a workshop in March 2020 that was canceled by the pandemic. Survey results were shared with those engaged in several other efforts focused on technical service needs. The group is currently exploring the next step. (Ongoing)
- The Hughes Center is engaged in a SARE-funded project with the Agriculture Law Education Initiative to provide education and resources to technical services providers to encourage the use of best management practices on leased lands (43% of the state's agricultural lands.) The proposal to expand this work to additional audiences was not funded. However, the implementation of conservation practices on leased land is important to the 2025 WIP goals and Ag profitability. As a result, there exists many opportunities for collaborative efforts to continue this work. (Ongoing)

Addendum B: Chesapeake Bay TMDL Goals

Current Research:

None

Communication, education, collaboration, technical assistance:

- Held five regional Phase III WIP workshops on a semi-annual and annual basis, to acquaint stakeholders with Phase III WIP expectations. Future workshops are anticipated when in-person events can commence. (Ongoing)
- The Hughes Center will continue to Work with MDE and MDA to ensure engagement with local stakeholders throughout the WIP Phase III process. (Ongoing)
- The Hughes Center will continue to collaborate with the Alliance for the Bay LGAC, MACo, MML, the Environmental Finance Center and others to educate local officials and provide educational opportunities to the general public regarding water quality issues. (Ongoing)
- In 2019, the Hughes Center was named in state legislation to help the Maryland Department of Agriculture facilitate listening sessions and develop a strategic plan for Maryland agriculture. Now that the plan has been written, Hughes Center staff is undergoing a process with these leading ag entities to identify the gaps in the industry's success and facilitate collaboration among the group to fill them. (Ongoing)
- The Hughes Center facilitated a meeting between agricultural industry leaders to begin a discussion of the strategic plan for agriculture and identify issues on which the group can collaborate to solve. The Hughes Center remains the facilitator of this effort. Both short and long-term objectives were identified to be pursued by the Hughes Center or others (Ongoing)
- Partner with the Hughes Center for Watershed Protection, UMD Sea Grant to help facilitate the outreach to stakeholders in Maryland for the Conowingo Watershed Implementation Plan. (Ongoing)
- Finalized and publicized an online compendium of best management practices to reduce pollution moving into waterways and the Chesapeake Bay. This compendium will be reassessed in 2021. (Recently Completed)

Addendum C: Climate-Smart Agriculture

Current Research:

- The Hughes Center has funded Dr. Kate Tully's research to help the agricultural community understand the impact of saltwater intrusion on their farmlands and determine the best practices respond to salt water intrusion. Current funding and the NFWF grant will continue to further Dr. Tully's research to increase adaptation by farmers to address saltwater intrusion. Part of this project is outreach to the agricultural community. (Ongoing)
- The Hughes Center has funded a project by Dr. Gurpal Toor to assess the effectiveness of soil health practices in enhancing soil organic carbon in Maryland. (Ongoing)
- The Hughes Center will help facilitate the development of an agriculture climate vulnerability assessment report and Climate Smart Agriculture Action Plan to help Maryland farmers sustainably intensify production; adapt and improve resilience; and reduce and/or sequester greenhouse gas emissions.

Communication, education, collaboration, technical assistance:

- The Hughes Center is engaged in MDA's Soil Health Advisory Committee serving on the committee as well as having the interns provide research regarding the top five best management practices. (Ongoing)
- Convene experts and regional stakeholders to assess the threat of saltwater intrusion on Delmarva. The recently funded NFWF grant award to Dr. Kate Tully includes funding for a region wide conference in 2021 focusing on the issue of saltwater intrusion. (Ongoing)
- The Hughes Center serves on the Statewide Saltwater Intrusion Workgroup. (Ongoing)

Addendum D: Future Food Systems

Current Research:

- Research from the Hughes Center's multiple food system work over the period 2012 to 2019 provided many findings about food distribution and the consumer supply chain which were shared with state agencies, NGOs, and food farms. The pandemic has made the findings very timely and several of the recommendations are the impetus behind current initiatives including the proposed 2021 legislation to create a statewide Food Policy Council. (Recently Completed)

Communication, education, collaboration, technical assistance:

- The pandemic has created the opportunity to increase the general consumer's understanding and appreciation for Maryland agriculture. The Hughes Center's earlier work to understand the general public's knowledge of agriculture has laid the groundwork for current efforts in educating the public. The Hughes Center is working with a diverse group of organizations (Future Harvest, Metropolitan Washington Council of Governments, MARBIDCO, MDA) to determine both short- and long-term action items to address the issues with the food supply system. (Ongoing)
- The Hughes Center is working with Future Harvest and Metropolitan Washington Council of Government on the Resilient Crisis Ready Food System project. A survey was conducted to identify issues and creative approaches to food system bottlenecks that have been highlighted as a result of the pandemic. As a result, efforts are now focused on different aspects including meat processing, cold storage, and transportation. The Hughes Center, along with UMD Extension and MWCOG, has organized a regional Meat Processing group to collaboratively look at the issues and develop solutions. (Ongoing)
- The Hughes Center staff and interns have been asked by the Task Force on Farm to State Institutions to investigate unanswered questions posed by the Task Force members as well as provide areas within the food system that could be enhanced by both legislative and monetary investments. (Ongoing)
- In accordance with House Bill 831 and Senate Bill 723 passed during the 2021 Maryland General Assembly, the Hughes Center will participate in the Maryland Food System Resiliency Council. The council created in this legislation will address the food insecurity crisis in the State due to the pandemic, develop recommendations to increase the long-term resiliency of the food system, and develop recommendations to increase the production and procurement of Maryland certified food. The Center joins more than two dozen other members of the Council. (Ongoing)
- The Hughes Center provided scholarships to underserved farmers to attend the Delmarva Soil Summit. The Hughes Center in collaboration with Baltimore City's Urban Ag Extension staff provided 10 scholarships to urban farmers to the 2021 Future Harvest conference. Of the ten scholarship recipients, six are current urban farmers, and four aspiring urban farmers. All 10 are members of historically underserved communities. We have heard that two of them are young adults. (Recently Completed)

Addendum E: Forestry

Current Research:

- The Maryland General Assembly named the Hughes Center (SB729) as the entity to conduct a technical study to determine the breadth and health of Maryland's forests by obtaining data regarding all aspects of Maryland's forests and forestry programs. At present, the Hughes Center is convening a group to identify the data necessary to address the priorities. (Ongoing)

Communication, Education, Collaboration, Technical Assistance:

The Hughes Center funded a project by Jonathan Kays, Agnes Kedmenecz (UMD Extension), and Craig Highfield (Alliance for the Bay) to improve the health of small forested parcels by training service providers on forest management. This project which will conclude in 2022 also includes the publication of a forest management guide. (Ongoing)

- Working with a communications firm and the public, the Hughes Center conducted a survey and listening sessions of the general public to determine the public's knowledge about forests and the forest industry in Maryland. The results were shared with a number of forest stakeholders. As a result of these efforts, a booklet educating the public about forests in Maryland will be published in e2021. (Recently Completed)