



# Resilient Approaches, Resilient Outcomes

Nathan Robbins  
Climate Change Specialist  
Climate and Adaptation Program

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

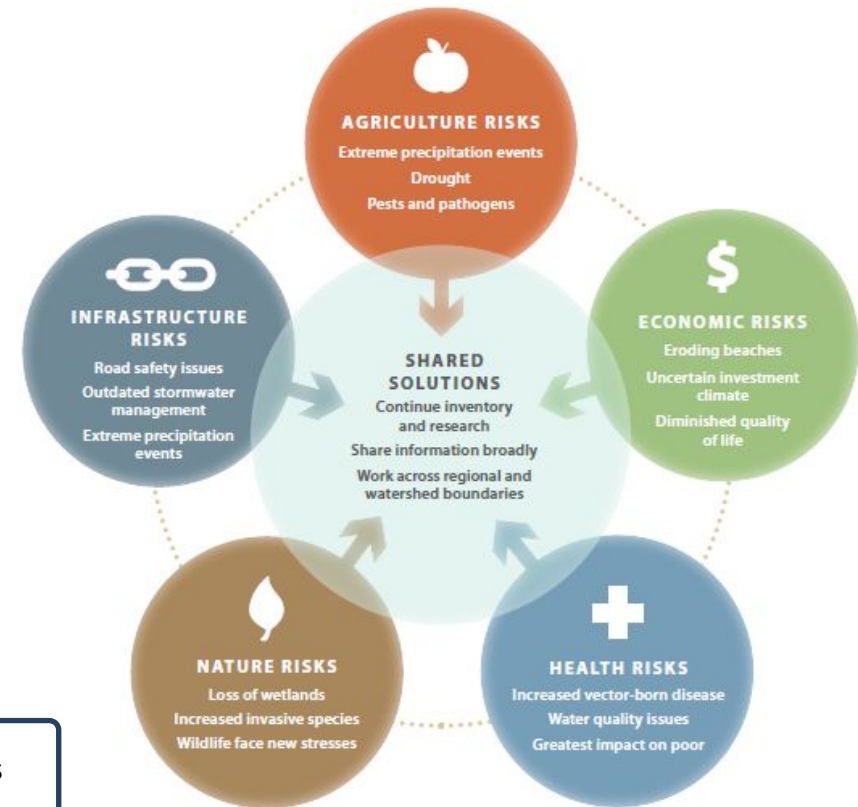
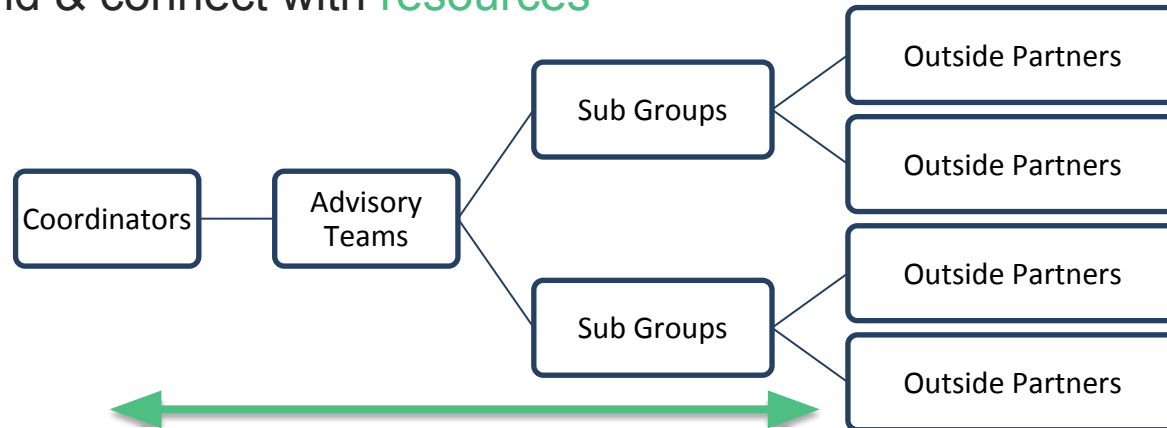
*Protecting Maine's Air, Land and Water*

# Basic Premises

Listen and tailor resources to meet needs

Using Sustainable Principles...

- ✓ Make it **easy**
- ✓ Establish a network and channel the power of **groups**
- ✓ Work together to share knowledge and emphasize **solutions**
- ✓ Early adopters and **champions** of change
- ✓ Fund & connect with **resources**

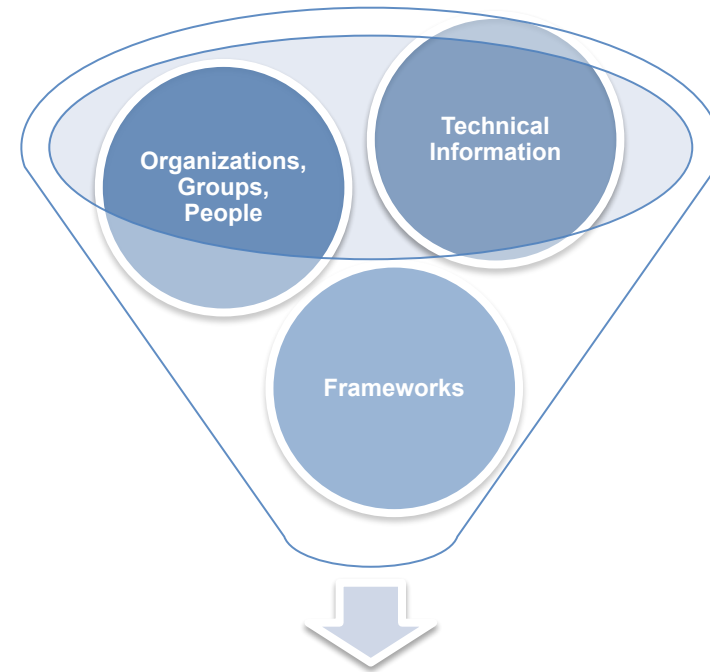
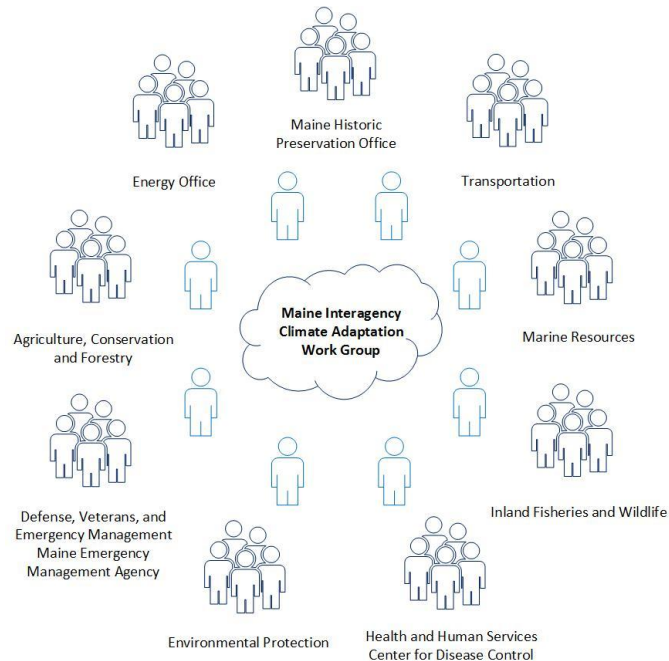


*People and Nature, Adapting to a Changing Climate: Charting Maine's Course, 2010*

# Coordinating State Resources

Advance resilience efforts, create a positive **feedback loop**, and **direct outreach** to communities can advance resilience efforts.

- ✓ Enhance **understanding** of communities' needs for resilience efforts, and understand what is needed for [ ] **technical assistance**



*Centralized Climate Directory*

# State of Maine Climate Resources and Technical Assistance

Information to **enable and enhance consideration** of climate-related factors that can be integrated into **decision making** for short and long-term **projects and plans**.

## Iterative Assistance Process



### What is Climate Change?

Climate Explored

*What determines the state of the Earth's climate, and how is it studied?*

### What is Being Done to Reduce the Rate of Change?

Mitigation Actions

*How can greenhouse gas emissions be reduced and carbon storages and sinks be increased?*

### Maine Adaptation Toolkit

*A centralized source for information on implementing adaptation measures or strategies*

### What is Impacted by Climate?

Climate Trends & Data

*What changes are being observing? Resources and tools to help.*

### What is Being Done to Build Resilience to Climate Impacts?

Adaptation Actions

*How can vulnerabilities be reduced and beneficial opportunities be increased?*

*Live October 23, 2015*

<http://www.maine.gov/dep/sustainability/climate/index.html>

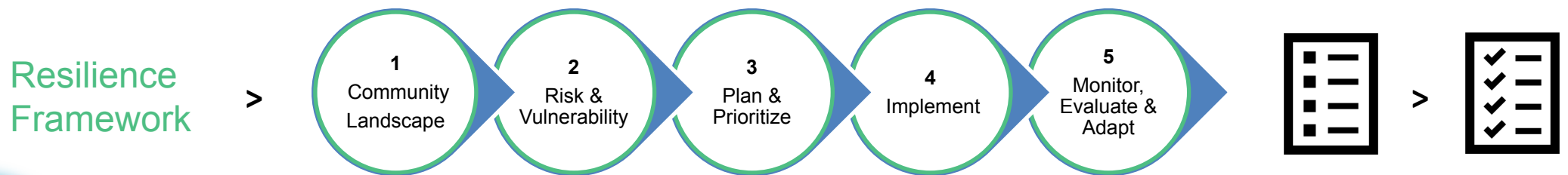
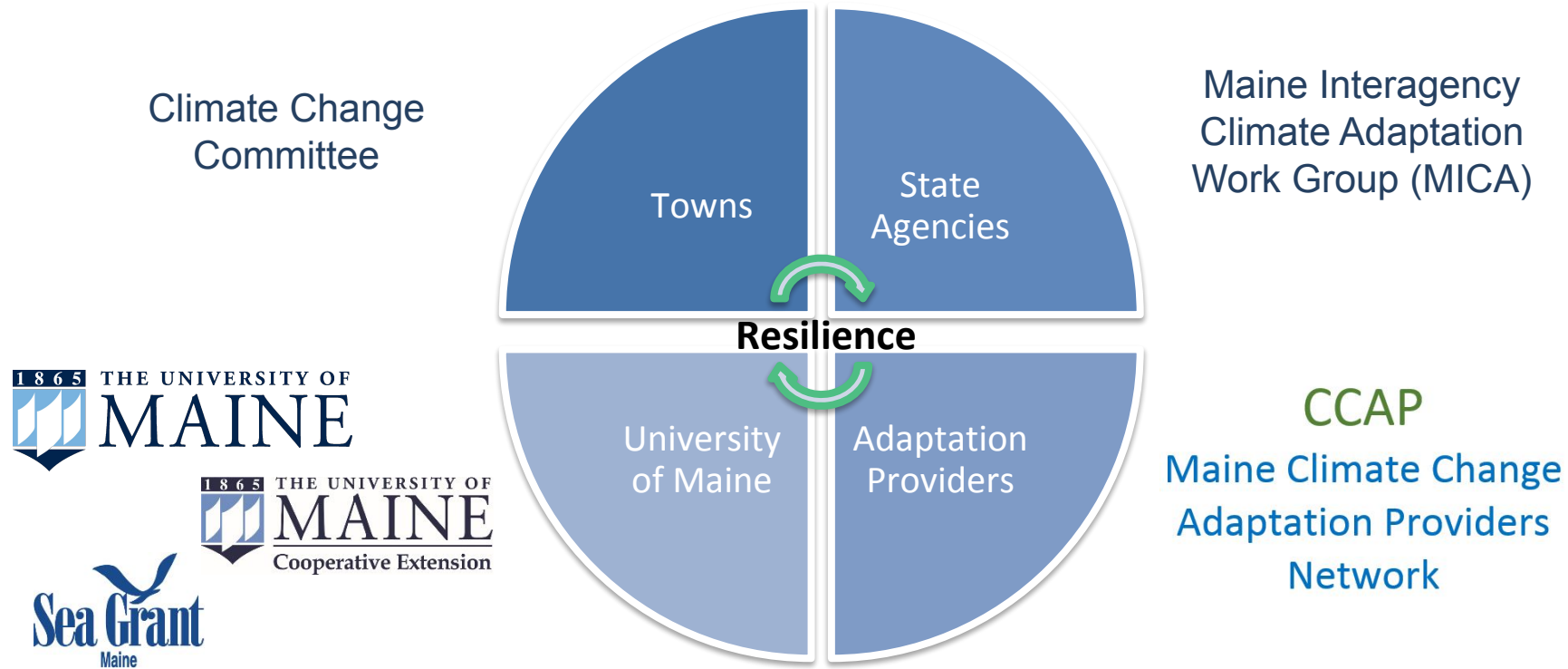
## Topic-Specific Toolkits:

1. Working Landscapes: Agriculture & Working Forests
2. Ecosystems, Habitat, Wildlife Open Spaces
3. Marine Resources & Fisheries
4. Energy & Communication
5. Transportation
6. Drinking Water, Wastewater Utilities, and Stormwater
7. Buildings & Homes
8. Community Planning
9. Public Health & Services
10. Social Vulnerability



# Going Together: “Charting Maine’s Course”

Match statewide resources with needs for Belfast





Contact:

Nathan Robbins  
Climate Change Specialist – Maine DEP  
[nathan.p.robbins@maine.gov](mailto:nathan.p.robbins@maine.gov)  
207-592-6590

[www.maine.gov/dep](http://www.maine.gov/dep)





# Belfast Maine's Climate Change Committee

Mayor Samantha Paradis and Emma Swartz



# The Municipal Focus

- Comprehensive planning
- Community building through resiliency
- Utilizing and analyzing municipal data to make informed decisions about climate

Has advantages and disadvantages!

# Belfast's Path So Far

- Convened a group of concerned citizens and petitioned to become an official city committee
- 1 year provisional appointment by the council
- 3 reports on sea change in Belfast
- Reappointment as a permanent committee to address climate change
- Next steps: Convene community outreach meetings, Work on Global Covenant of Mayors commitments including a Climate Action Plan

# Useful Resources and Collaborations

## **University of Maine**

- Storm surge research with citizen science, Coastal Mapping

## **Silver Jackets**

- High Water Mark Project

## **Gulf of Maine Research Institute**

- Citizen Science Program

## **Mayors Covenant on Climate and Energy**

In December 2018, Belfast pledged to complete the following within three years:

- A community-scale greenhouse gas (GHG) emission inventory;
- An assessment of climate hazards and vulnerabilities;
- Ambitious, measurable and time-bound target(s) to reduce/limit GHG emissions;
- Ambitious adaptation vision & goals, based on quantified scientific evidence when possible, to increase local resilience to climate change;
- Ambitious and just goal to improve access to sustainable energy; and
- Plan to address climate change mitigation / low emission development, climate resilience and adaptation, and access to sustainable energy, including provisions for regular progress reports.

## **Other Organizations of Note**

- Island Institute, Maine Center for Coastal Fisheries, Penobscot Bay Stewards, Local activist groups

# Resource Wish List

- A database on other coastal municipalities doing this work
- Networking and dialogue with other municipalities engaged in climate change adaptation and resilience



1865

THE UNIVERSITY OF



MAINE

# CLIMATE CHANGE FRAMEWORK

## Science, Technology & Engineering

(Applied & Basic)



### Climate Change Institute

*Global leader in Climate Science*

Maine Climate Office

- Maine State Climatologist Office

### Centers and Institutes

Maine Sea Grant  
UMaine Extension

### Academic Areas

(Schools and Departments)

- Marine Sciences
- Geology
- Forestry
- Agriculture
- Ecology
- Economics
- Social Science
- Health

# Climate Change Adaptation Providers Network (CCAP)



2018 Spring CCAP Network Meeting, Brunswick, ME

# Purpose....

- **Knowledge** exchange, peer-to-peer learning
- Improve **communication** across practitioners
- Share **opportunities** funding/training/events
- Chart **shared roles** and responsibilities
- **Collaborate** on projects
- Determine **mutual goals** and activities



2017 5<sup>th</sup> Annual CCAP & CAW Network Meeting, Wells, ME



# 2019 Barriers to a Changing Climate, Longitudinal Study



**Bowdoin**



**Climate Adaptation Actions**  
Q17 - Within the next two years, rank the degree to which you feel you need information and/or training on the following issues.

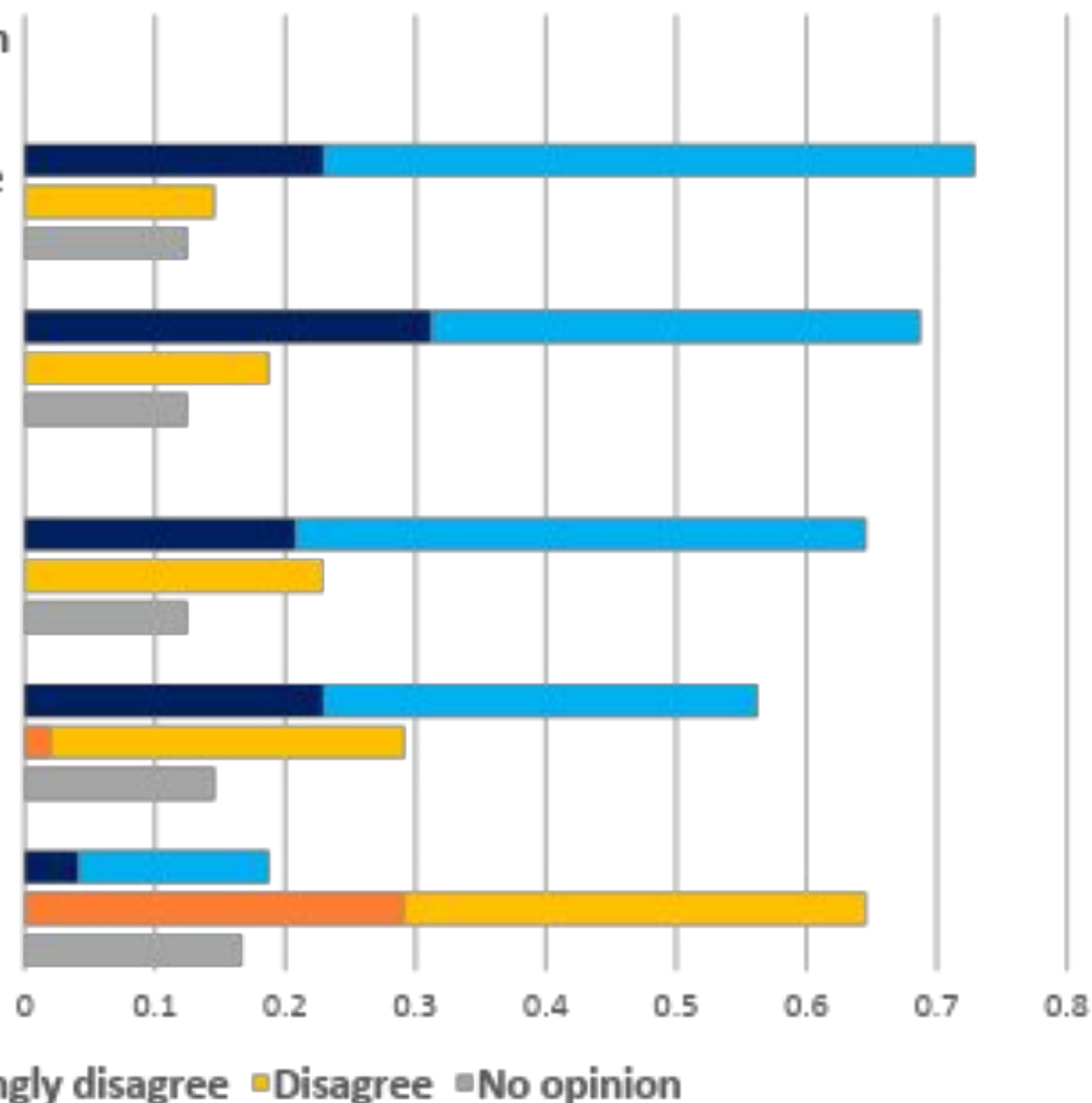
I have compelling information about anticipated future risks of climate change.

I am taking action in my work to adapt to coastal climate problems.

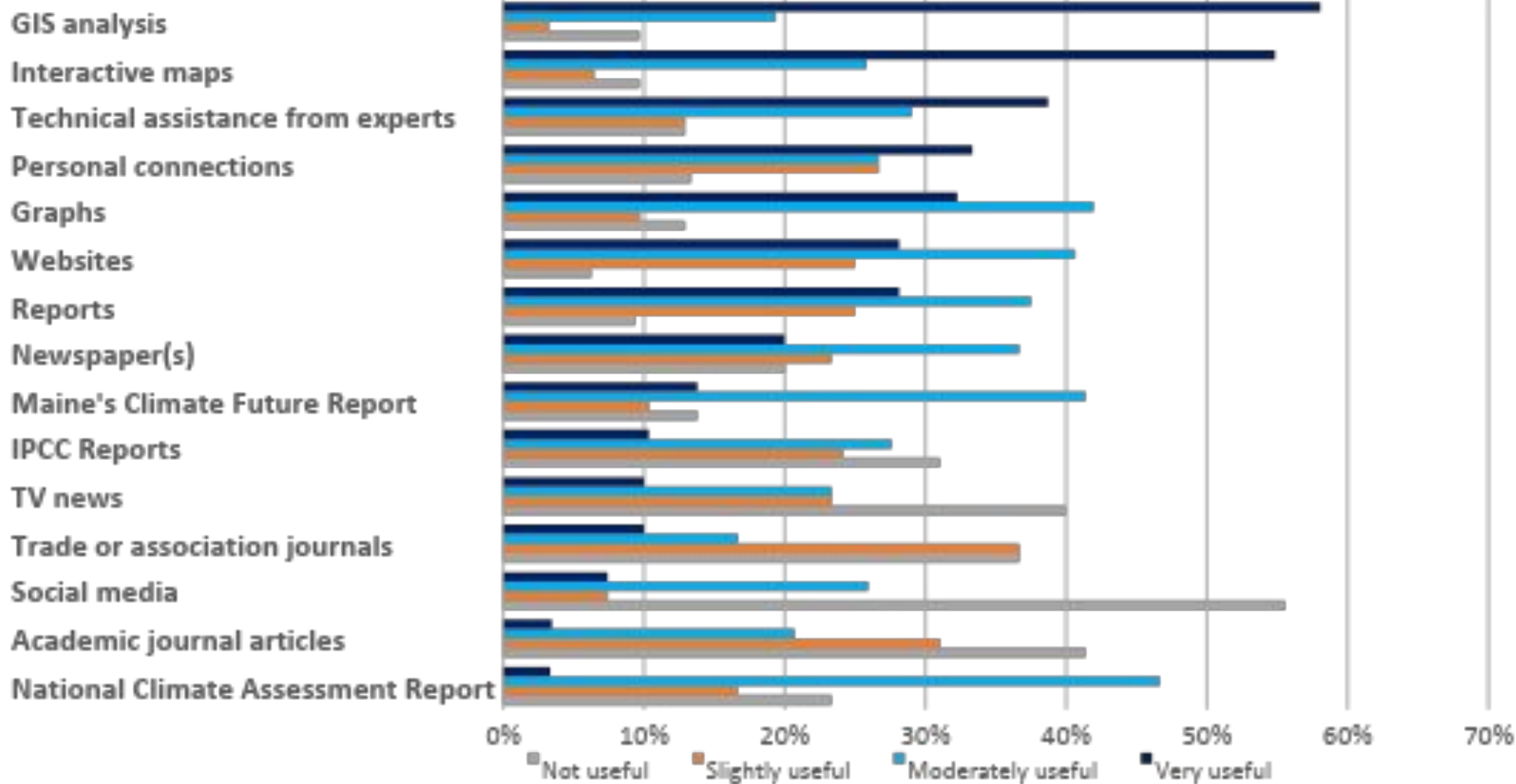
I devote time and resources to taking action.

I am taking a leadership role on this issue.

I have adequate funding to take action regarding this issue in my work.



Resources used for adaptation planning - ranking



## Status of adaptation planning

My municipality or organization is coordinating with other entities in taking steps to prepare for the effects of climate change.

I have shared information about the expected effects of global climate change in Maine with my professional network.

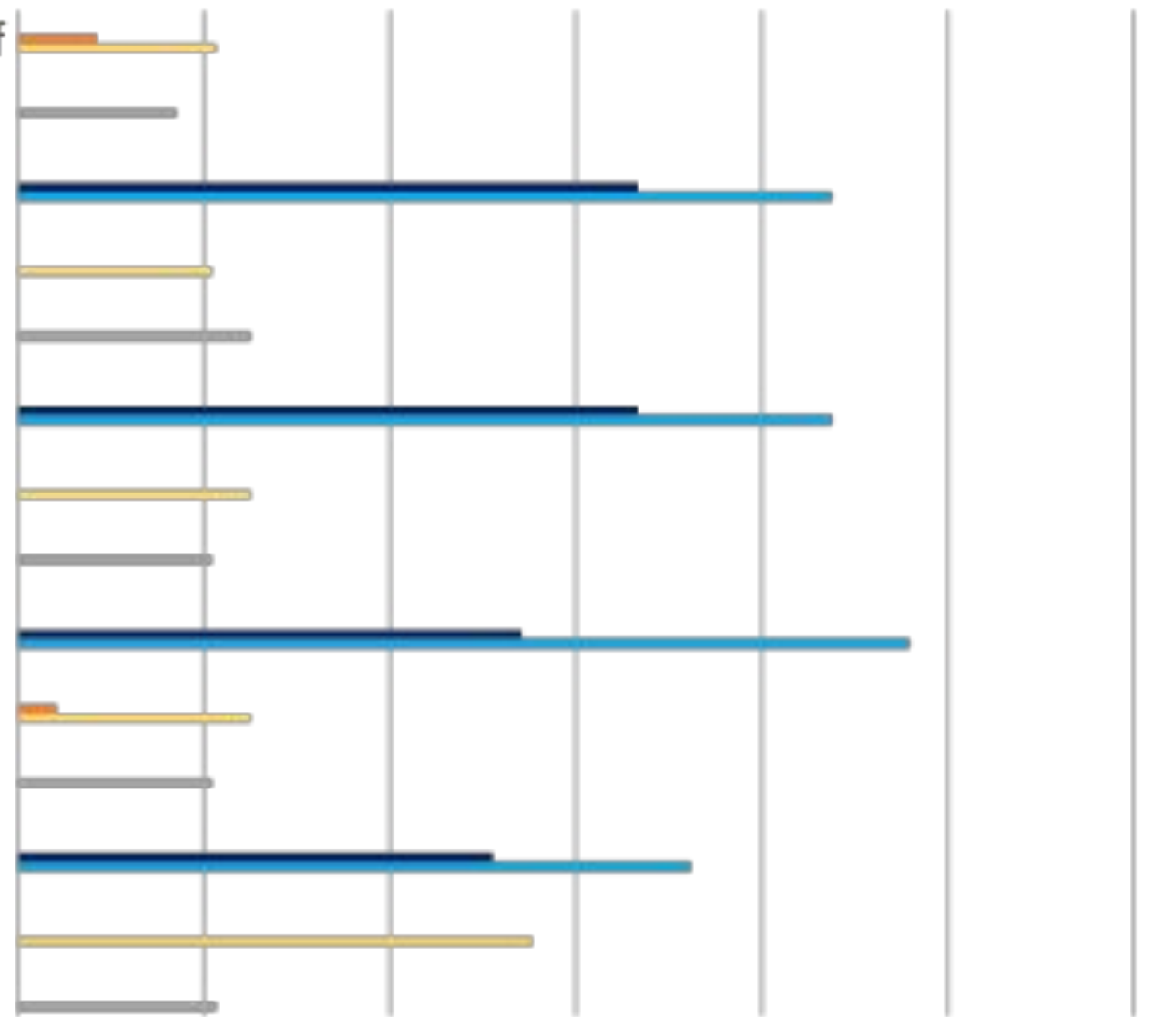
I have shared information about reported changes and variability in the earth's climate with my professional network.

My municipality or organization is preparing for the effects of climate change.

I have taken steps in my current position to reduce the apparent causes of global climate change.

0% 10% 20% 30% 40% 50% 60%

■ No opinion ■ Disagree ■ Strongly disagree ■ Agree ■ Strongly agree



## Municipal needs for adaptation planning

