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CLIMATE WORKING GROUP (CWG) REVIEW OF THE DRAFT CLIMATE PROGRAM OFFICE STRATEGIC PLAN 2023-2027

PRESENTED TO THE NOAA SCIENCE ADVISORY BOARD
BY THE CLIMATE WORKING GROUP (CWG)

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Climate Working Group (CWG) Review of the Draft Climate Program Office Strategic Plan 2023-2027

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Introduction

The Climate Program Office (CPO) Strategic Plan 2023-2027 centers on four major goals – 1) Advance the science foundation for climate change adaptation, resilience; and mitigation; 2) Improve knowledge of climate, its risks and impacts, and solutions; 3) Enhance literacy and capacity to respond to climate change; and 4) Empower our workforce to advance the National Oceanic and Atmospheric (NOAA) priorities. These goals address important directions for CPO to continue to play a pivotal role in NOAA’s mission. The importance of various aspects such as research development, Diversity, Equity, Inclusion, Justice, and Access (DEIJA), community engagement, education and societal risks are crucial for ongoing progress of the CPO. These factors play a significant role in enhancing the resources and services offered by the CPO across NOAA office and other Federal agencies. The reviewers commend the CPO for sharing its strategic plan with other line offices for feedback in the development process. This approach, which promotes both horizontal and vertical integration of goals, presents a valuable opportunity for increasing coordination and dissemination of the CPO’s expertise across the agency.

Recognizing that this is a strategic plan that will be followed by the development of an implementation plan, this review offers three major overarching suggestions for the strategic plan followed by specific suggestions addressing the implementation of the 4 goals.

Overarching Suggestions:

- **More specific “moonshot” level goals in service of the nation are required for our citizens:** While the reviewers are very supportive of the directions suggested in the Strategic Plan, the high-level presentation of goals and sub-goals reads as very general. Specific goals are needed to fully appreciate continued and expanded investment in NOAA’s Climate Program Office (the same could be said for NOAA’s strategic plan).
- **The Strategic Plan understates the significance of CPO to NOAA and the national and international climate enterprises.** The reviewers recommend assessing the plan for opportunities where a few more sentences could be used to better highlight the CPO’s contributions. The Strategic Plan should be edited with an eye to its potential as a communication product that can generate awareness, interest, and support for CPO efforts. Examples include:
 - Address the motivators that identify how the CPO is needed now more than ever and how its value will expand in the next 5 years (e.g., increasing frequency of billion dollar disasters due to flooding, hurricanes, wildfires, drought).
 - Emphasize the CPO’s complementary dual roles on driving fundamental science and meeting direct societal needs for climate information (e.g., playing a leading role in the USGCRP).
 - Expand on the CPO mission, identity, and relationship to the rest of NOAA.
 - Highlight the CPO’s role in achieving the NOAA goal for a Climate Ready Nation.
- **Add examples of broadly relevant initiatives under each goal:** This will more effectively engage the key audiences for this document. Concrete descriptions highlight key strengths/initiatives and illustrate the importance of furthering this work. Examples include:
 - The leadership on heat extremes is an example where NOAA CPO based work is central to national and international efforts with health and economic repercussions. (Goals 1,2).
 - Linking CPO research and applications programs to emerging climate hazards and priorities in different regions of the US, and set program goals by region (Goals 1,2).

Goal 1: Advance the science foundation for climate change adaptation, resilience, and mitigation

Advance the Nation’s Earth system and social science capabilities, while working collaboratively across communities, to support adaptive capacity and inform societal responses to climate risks and impacts, and climate change mitigation efforts. CPO investments lead to better knowledge of climate variability and change, including its complex, cascading, and compounding risks and impacts on communities, to inform impactful adaptation and mitigation strategies.

Recommendations

Increase the accessibility of language in the goal statement.

- The language here could be more understandable in policy arenas. For example, ideally goal 1 could be rephrased as, “Ensure that the CPO continues to advance the science-based knowledge of Earth’s atmosphere, ocean, land, and ice systems. This knowledge will

support the nation’s health, well-being, and economic prosperity and can inform strategies to mitigate risks from extreme weather and natural disasters.”

For consideration in the implementation plan

- In the development of the implementation plan, a detailed and broadly accessible description of goals for model development and prediction improvement communicates the need and value of resourcing this activity.
- Similarly, the implementation plan should address the strategy for high performance computing to support the CPO science and prediction.
- Highlight key scientific areas in which the CPO seeks to advance understanding of climate processes and predictability during the next 5 years through its research initiatives and funding programs.

Goal 2: Improve partnerships and trusted actionable information for climate adaptation, resilience, and mitigation

Strengthen, enhance, and expand the equitable co-development and applications of actionable climate and related information and services so that they are responsive to user needs and support partnerships with local communities and states, tribal nations, government agencies, and industry sectors to develop and implement long term climate adaptation and mitigation, and short-term resilient strategies.

Recommendations

Increase the accessibility of language in the goal statement.

- Example: Strengthening, enhancing, and expanding partnerships across local, state, federal, and tribal governments, non-government organizations, and businesses enables equitable and trusted co-development of long-term strategies and implementable actions to improve resilient communities facing extreme weather events and natural disasters.

Highlight the value of science and engagement partnerships which bring together resources of NOAA and other entities to support applications at the community level. The CPO has expanded partnership networks over the past five years to support implementation of science - e.g., work with the American Society of Chemical Engineers (ASCE) on updating engineering standards; the CPO plays a critical role in moving science outside of the labs and into applications. Production and communication of science for a changing climate benefits from the CPO’s ability to act in this capacity. There is opportunity to highlight this existing capability within the CPO through its partnerships.

- Example: the intent to expand coverage of CAP/RISA and NIDIS to the national level

For consideration in the implementation plan

- Be clear about how the CPO connectivity across NOAA and other federal agencies supports efforts, such as prediction, data monitoring and analysis, coordinating research efforts on topics such as drought and heat. Any ability to map this capability to work in a

matrix environment that illustrates the value to the NOAA mission could be a broadly useful communication device.

- The CPO expanded partnership networks over the past five years to support implementation of science - e.g., work with the ASCE on updating engineering standards; the CPO plays a critical role in moving science outside of the labs and into applications. Moving these applications and pilots to operational products is the next step.
- Set operational goals and commensurate budgets for the stakeholder services that the CPO provides. In particular, play a leading role in USGCRP with regard to climate prediction.
- The CPO should prioritize enhancing knowledge/technology transfer processes to ensure state and regional entities can readily operationalize production with support from CPO.
- Clearly identify the role of the private sector versus NOAA in the equitable and sustainable provision of “last-mile” needs of citizens with respect to climate information. CPO is putting itself in the position of being the de facto climate-service, but without a clear mandate. While NOAA can do more to make its climate science decision-useful, it will never have the scope of staff to meet all climate adaptation needs.
- Promote mechanisms/agreements that enable NOAA staff to participate in state and local planning collaboratives and processes.
- Emphasize making the CPO’s science more visible and accessible. Currently, peer-reviewed reports and other research products from NOAA/CPO labs and funded programs are not easily identifiable or accessible. A universal numbering/catalog system (along the lines of USGS Open-File Report series) with an online interface to research products.
- Note success in serving NOAA in research develop of fundamental science and developing partnership network connecting to societal needs, there is room to grow in expanding pilot concepts into full scale implementation within NOAA and among partners (Research to Operations needs a clearer pipeline)

Goal 3: Enhance literacy and capacity to respond to climate change

Educate, train, and grow the nation’s abilities to make climate-informed decisions, and innovate and lead on climate science, adaptation, and mitigation. Build climate literacy and leadership across the nation’s regions and sectors for a diverse, adaptive, climate-ready nation.

Recommendations

Increase the accessibility of language in the goal statement.

- Possible alternative: Educate, train, and improve the nation’s ability to use knowledge of the climate system for advancing the health, well-being, and prosperity of the country that can reduce the consequences of natural disasters and adapt to changing conditions

For consideration in the implementation plan

- Provide explicit recognition of the need to build out the national workforce of climate/weather/ocean/hydrographic modelers, data scientists and scientific software engineers. The reviewers see this as key to achieving the goal of a “Climate Ready Nation”.
- Delineate methods for expanded engagement with networks of nonprofits and service providers who are already working in marginalized, overburdened and underserved communities as the pathway to building community capacity.
- Explicitly address the impact of climate change on unequal and underserved communities that are more likely to bear the brunt of the effects of climate change manifested in more polluted and degraded environments, as well as underserved public health environments.

Goal 4: Empower our workforce to advance NOAA’s priorities

Enhance and sustain a diverse, highly skilled, dedicated, and competent CPO workforce, and evolve the business practices they require (tools, processes, policies etc.) to be adaptive to changing needs and conditions. Through a culture of openness and collaboration, the CPO will ensure contributions of the staff will be valued and integrated in a manner that benefits all members of the CPO, its partners, and networks.

For consideration in the implementation plan

- Include a strategy around workforce development and retention for scientists, scientific software engineers, data scientists, geophysical model developers. This plan should recognize the connections between present internal needs and the need to expand the overall national numbers of people with these skill sets in the future
- Intentionally expand the NOAA workforce with training and ability in relatable communication with the broadest possible audience.
- Expand external engagement in developing the future workforce, e.g., engage universities to broaden the scientist pool for mission critical research roles to address future needs. In particular, engage minority serving institutions to encourage participation of underserved populations.
- Address how the CPO’s Climate and Societal Interactions Division efforts and expertise could be better disseminated within NOAA (see external review suggestions)