

Assessing Equity in the Distribution of Fisheries Management Benefits: Data and Information Availability

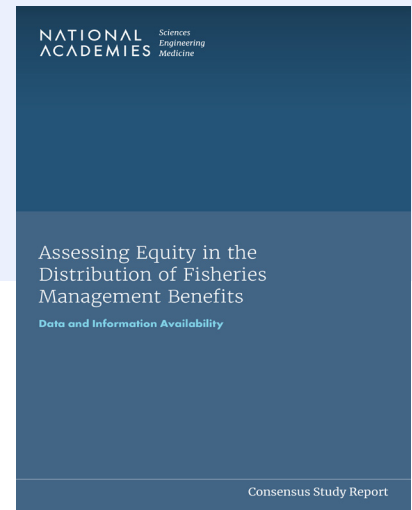
In May 2023, the National Oceanic and Atmospheric Administration's (NOAA's) National Marine Fisheries Service (NMFS) released its Equity and Environmental Justice Strategy (EEJS). Three overarching goals are articulated in the EEJS: "(1) Prioritize identification, equitable treatment and meaningful involvement of underserved communities; (2) Provide equitable delivery of services; and (3) Prioritize equity and environmental justice in meeting its mandated mission."¹ (NMFS, 2023b, p.2).

As part of its effort to address the stated goals and advance equity, NMFS requested that the National Academies of Sciences, Engineering, and Medicine provide an independent, third-party review of the data and information needs and availability for assessing equity in the distribution of benefits derived from current fisheries management practices. The study included the following elements:

- Determine the categories of information required to adequately assess where and to whom the primary benefits of commercial and for-hire fishery management accrue;
- Determine current sources of information and the additional information, if any, NMFS would need to collect;
- Identify potential obstacles to collecting this additional data; and
- Identify methodologies the agency could use to assess the relative distribution of benefits from federal commercial and for-hire fishery management based on available information.

To carry out its task, the report's authoring committee examined the definition of equity (see Box 1), the relationship of equity to the committee's task, and the degree to which filling particular information gaps contributes to NMFS achieving its equity-related objectives. The committee articulates the need for consideration of all dimensions of equity, and addresses their task from both a distributional equity focus and more broadly.

¹ National Oceanic and Atmospheric Association Fisheries. 2023. Equity and environmental justice strategy. See <https://www.fisheries.noaa.gov/s3/2023-05/NOAA-Fisheries-EEJ-Strategy-Final.pdf>. P. 2.



BOX 1: WHAT IS EQUITY?

The committee highlights four elements of Equity:

- Distributional equity refers to considers the distribution of benefits and costs to individuals or groups at various scales.
- Recognitional equity acknowledges the rights, knowledge, values, interests, and priorities of a diverse array of individuals and groups in management considerations.
- Procedural equity requires consideration of who is involved in the decision-making processes.
- Contextual equity cuts across the other elements to consider social, economic, environmental, cultural, political history, and circumstances that affect other forms of equity.

NOAA'S MANDATE FOR EQUITY

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), which serves as the primary legislation governing federal fisheries management in the United States, sets forth 10 National Standards that are required in fishery management plans. National Standard 4 specifically requires fair and equitable allocation of fishing privileges². National Standard 1, 2, and 8 are also pertinent to equity.

National Standard 1 refers to the 'greatest benefits to the nation,' calling for the consideration of who benefits and how. National Standard 2 guidelines require the inclusion of "pertinent economic, social, [and] community . . . information for assessing the success and impacts of measurement measures" in fisheries Stock Assessment and Fishery Evaluation reports. Finally, National Standard 8 calls for consideration of geographic communities and their participation in fisheries as well as evaluating economic impacts on fishing communities. In addition to the MSA, the National Environmental Policy Act includes requirements for meaningful participation in decision-making along with consideration of any social impacts, including equity concerns, that may arise from agency decision-making. Beyond these key pieces of legislation, a series of executive orders further

demands consideration of equity, environmental justice, underserved communities, and tribes and Indigenous peoples. Finally, the NMFS EEJS released in May 2023, not only sets forth NMFS' goals and objectives for ensuring equity in their decision-making, but also describes the broader policy landscape. Together these elements provide NMFS with a mandate for a multidimensional and contextual approach to centering equity in its work.

Recommendation 2-1: The National Marine Fisheries Service should develop and implement a contextual, place-based, and participatory approach to identifying and integrating multi-dimensional equity considerations into decision-making processes in ways that balance previous and more recent mandates. Outcomes of these processes should include, among other things, clear identification of the criteria for, and appropriate subjects of, equity considerations.

DISTRIBUTIONAL EQUITY OF FISHERY PERMIT AND QUOTA BENEFITS

To carry out its analysis of equity in primary benefits, the committee provides a stylized fishery, which does not represent an ideal, equitable fishery, but rather a fishery for which there is substantial available information to assess distributional equity. The use of the model fishery illustrates that comprehensive demographic data related to characteristics of permit and quota holders and their geographic locations are required

² The committee recognizes that revisions to the guidance documents for some national standards, including National Standard 4, are underway. The committee is aware of the Advance Notice of Proposed Rulemaking that was issued in May 2023 (88 F.R. 30934), but for the purposes of this report relied on the existing guidance.

for NMFS to determine where and to whom the benefits of permits and allocated quota accrue and to meet the MSA mandate for fair and equitable distribution of benefits as well as mandates in recent Executive Orders.

However, various barriers can limit collection of necessary demographic data. For example, a complex pattern of permit ownership complicates analyses of where and to whom benefits accrue.

Adding to the challenge, a common factor impacting data acquisition and analysis is the need for significant investments in capacity in the non-economic social sciences within NMFS. Needs assessments at regional and national levels would provide important direction as the agency looks to fill this capacity.

Recommendation 3-1: The National Marine Fisheries Service should take advantage of current opportunities both within the agency and in academia to expand work on equity by generating dashboards and data summaries that more fully express the distribution of permits and quota holdings in the nation’s fisheries. Progress on these activities need not await more comprehensive discussion of equity or wider availability of data.

Recommendation 3-2: The National Marine Fisheries Service (NMFS) should develop a guidance document(s) to inform and establish principles that lead to definitions of equity (see, e.g., Recommendation 2-1), and processes for measuring and assessing equity over time by NMFS, regional science centers, and Council staff. This document(s) should parallel guidance documents related to the Magnuson-Stevens Act. For example, NMFS has issued technical guidance that provides national, operational definitions of abundance and exploitation thresholds. Accordingly, even though regional methods for evaluating these thresholds may differ, an integrated, national summary of the status of fish stocks is possible. The committee views the suggested equity guidance documents as working in a similar fashion.

Recommendation 3-3: The National Marine Fisheries Service (NMFS) should undertake a needs assessment in each region and at the national level that can provide guidance on different investment strategies for developing social science capacity and leadership within the agency. These investments could include staffing focused on early-career scientists or a mix of scientists at different career stages with diverse disciplinary expertise and skill sets, including in research design and qualitative and quantitative data collection and analysis. The committee recommends that increasing capacity needs to include, but not be limited to, the leadership level, such as a Senior Scientist for Social Sciences within the NMFS Directorate.

BENEFICIARIES OF FISHERY MANAGEMENT DECISIONS

After considering the distributional equity of benefits that accrue to permit and quota holders, the committee broadened its focus to the flow of benefits that accrue more comprehensively, recognizing important non-monetary benefits such as cultures, food security, and traditions at the individual, community, and societal scales, and looking at other common categories of beneficiaries, including crew, the processing and distributing sector, and communities. The report concludes that the beneficiaries of commercial and for-hire fishery management go beyond current permit and quota holders to include others engaged directly in the fishery (e.g., non-permit holding vessel captains and crew), shoreside facilities involved in processing and distributing fishery products, local and regional businesses that rely directly and indirectly on fishery activity, and local fishing communities.

Efforts to collect the data needed to assess the distribution of benefits among non-permit-holding participants and others have been fragmentary. Some data related to economic values that accrue in the processing and distribution sectors and in specific fishing communities are available, based primarily on the value of fish and shellfish landed in particular ports. Work has been conducted to

establish indicators of coastal community social vulnerability (CSVI) to inform consideration of the impacts of fishery management on communities, although there are limitations to grounding such data in U.S. census data. A primary challenge for NMFS is the need to increase its capacity to design, conduct, and analyze social science data to assess the full flow of benefits from fishery management decisions.

Recommendation 4-1: The National Marine Fisheries Service should commit to regular collection, analyses, and interpretation of social and economic data to characterize the full flow of benefits and beneficiaries from the nation's fisheries. The committee recommends collecting, and within the extent of the law, disseminating publicly this information at more regular intervals to adequately assess the impacts of management decisions and changes in fisheries.

Recommendation 4-2: The National Marine Fisheries Service should continue developing community-level indicators of fishing engagement, dependence, and reliance. However, the committee also recommends further developing products that are not geographically constrained or limited by the spatial resolution of U.S. Census data, which may not always align with a holistic definition of equity.

CHALLENGES TO DEVELOPING A COMPREHENSIVE APPROACH TO EQUITY

Movement towards comprehensively addressing and integrating equity concerns into fishery management faces a range of challenges. For example, the committee explored six particular challenges to fair treatment and meaningful involvement for underserved communities identified in the NMFS EEJS and recent executive orders, summarized below:

1. NMFS acknowledges that it has yet to fully identify underserved communities and account for impacts, including past injustices and exclusions, many of which stem from structural barriers within society as well as within the Agency's approach to underserved communities

and in some cases fisheries science and management more broadly.

2. The long history of some fishery allocation programs make identifying and obtaining demographic data on those excluded from participation and benefits difficult. Those who currently have access may resist efforts to address prior inequities.
3. Procedural equity issues exist related to costs, language, and other geographic and cultural barriers to meaningful participation in fishery management processes.
4. The highly hierarchical and complex nature of the fishery management process can under-emphasize the more nuanced, often qualitative data or Traditional and Indigenous Knowledge that might best inform implementation and assessment of multidimensional equity in fishery management.
5. Ocean management policies beyond fisheries, such as area closures to protect biodiversity, may become more pressing concerns in some geographies, leading to an under-engagement in fisheries.
6. Social science capacity within NMFS is limited.

The committee notes that in acknowledging these barriers NMFS has already conducted substantive work considering the inseparable multi-dimensional nature of equity, and how challenging the task of addressing equity in that way will be.

NEXT STEPS AND CURRENT EFFORTS FOR ASSESSING EQUITY

Embedded in context and with key terms subject to interpretation, this holistic definition of equity fits uneasily within a governing logic of standardized, quantified, comparable, and easy-to-measure indicators. Efforts to "make equity fit" by adopting universal definitions and measures risk perpetuating current inequities. If the full

complexity of equity is integrated into a measurement regime in ways that are comparatively complex, it may not be prioritized for policy implementation, but, if metrics are oversimplified, their meaning may become questionable.

Recent work on equity supports the development of a comprehensive strategy for incorporating equity into management, tailored within regions. It would be useful to assess recognitional equity—meaning who is represented and what views are represented—in decision-making processes related to benefits, and procedural equity—how those processes are structured as well as considering the distribution of the full flow of benefits from the nation’s fisheries.

A council and its related advisory bodies and decision-making structures could serve as a helpful case study. The committee expects such a study would be both tractable and informative. Similarly, it could be useful to assess to what degree participatory (public and otherwise) processes consider and integrate questions of both recognitional and procedural equity, although this would expand the scope of an initial case study substantially.

While a shift towards a more inclusive approach to equity will take time and resources, shorter-term and lower-cost changes may help begin to “move the needle.” NMFS can indicate its commitment to improving equity by identifying points in relevant processes that are inconsistent with policy and could be modified within a more comprehensive approach to equity. There are examples from federal, state, and international efforts that may offer lessons or be informative as NMFS moves forward in adopting a broader multidimensional approach to equity.

Recommendation 5-1: NMFS should continue its work on equity in the nation’s fisheries, and it should move beyond a focus on distributional outcomes associated with permit and quota holdings to a more multidimensional assessment of equity. This will require addressing a range of complex challenges that can be informed by existing programs, projects, and frameworks, and will not likely be achieved by minor adjustments to existing efforts. Addressing these challenges will, among other things, demand a contextually based, multidimensional approach and a considerable expansion of the social science capacity within the agency as well as the development of partnerships across a range of governmental and non-governmental sectors.

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