

# THE U.S. NEEDS STRONGER MARINE AQUACULTURE DATA TO SUPPORT SUSTAINABLE SEAFOOD GROWTH

## Policy Brief

This content is based on results from research and a series of multi-stakeholder workshops conducted with support from the NOAA National Sea Grant Program.

## DATA MATTER!

The U.S. supports a diverse portfolio of marine aquaculture farms that provide jobs and economic benefits, healthy and sustainable food, ecosystem benefits, and more. High quality, consistent, and current production data (e.g., species, value, and volume) is needed to support effective management, help farmers adapt to changing conditions, justify federal and state research funding, and ensure that benefits to society are maximized while risks are minimized. The current federal system for marine aquaculture data collection, while mandatory under federal law, is infrequent (i.e., every five years). It is also inconsistent, with varying quality and accessibility across states. Responsible growth of the sector will require improvements in data collection and sharing.



*U.S. marine aquaculture is likely much more diverse and valuable than currently reported.*

*Improving consistency and timeliness of data across jurisdictions could provide important benefits for farmers, improve the efficacy of management, and maximize benefits marine aquaculture can provide to society and the environment.*

# WHO BENEFITS?

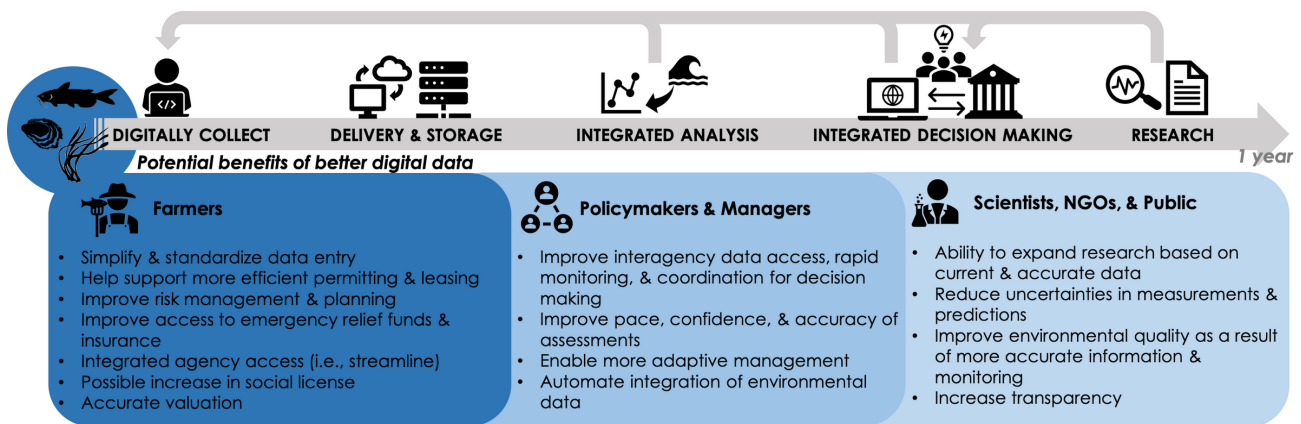


Fig 1. Potential benefits of better digital data for stakeholders collected on an annual basis.

## COVID CASE STUDY

The COVID-19 pandemic resulted in major shocks to U.S. food systems, including seafood. Domestic aquaculture producers were among those seeking COVID relief funds. However, federal relief funding was calculated based on inadequate data, much of which are only available through the U.S. Department of Agriculture (USDA) Census of Aquaculture. According to a survey conducted by The Virginia Technical Institute, it is unclear if the COVID assistance programs will be sufficient to help U.S. seafood farmers. There are still many uncertainties (e.g., disruptions in the market and increased cost of production) that will impact U.S. seafood farmers' ability to recuperate from COVID-related losses. COVID is one example of how shocks can impact food supplies and associated livelihoods. Successful long-term recovery and the sector's ability to adapt to future shocks (e.g., climate change) will require more up-to-date, comprehensive, and consistent data so effective assistance can be distributed.

# SOLUTIONS

Two multi-stakeholder workshops were held in June 2021 to discuss the challenges, opportunities, and policy mechanisms to improve marine aquaculture data quality and consistency. Workshop participants included representatives from industry, state and federal government agencies, and academia. The following solutions were identified and discussed by workshop participants.

## Data Reporting Platforms

There should be continued use of the detailed, 5-year USDA Census of Agriculture and follow-on Special Study: Census of Aquaculture. Additionally, selecting a single digital platform for reporting marine aquaculture data across states is essential. There are two platforms with the greatest potential to digitally integrate and streamline marine aquaculture data and use:

1

### Expand annual trout and catfish surveys to include marine species.

These USDA surveys are voluntary and only focus on the most nationally valuable species. Reporting for additional species would occur through existing state offices and integrated with other publicly reported USDA National Agricultural Statistics Service surveys. The data are digitally transcribed to the National Agricultural Statistics Service Quick-Stat platform.

2

### Adopt the Fishery Information Networks (FINs) to collect annual data.

FINs are used for mandatory data collection of all federally managed wild-caught commercial fisheries and in three states for marine shellfish aquaculture. This mandate could be expanded to include all marine aquaculture. The National Oceanic and Atmospheric Administration (NOAA) could leverage FINs to integrate marine aquaculture data into a "One-Stop-Shop" digital query platform.

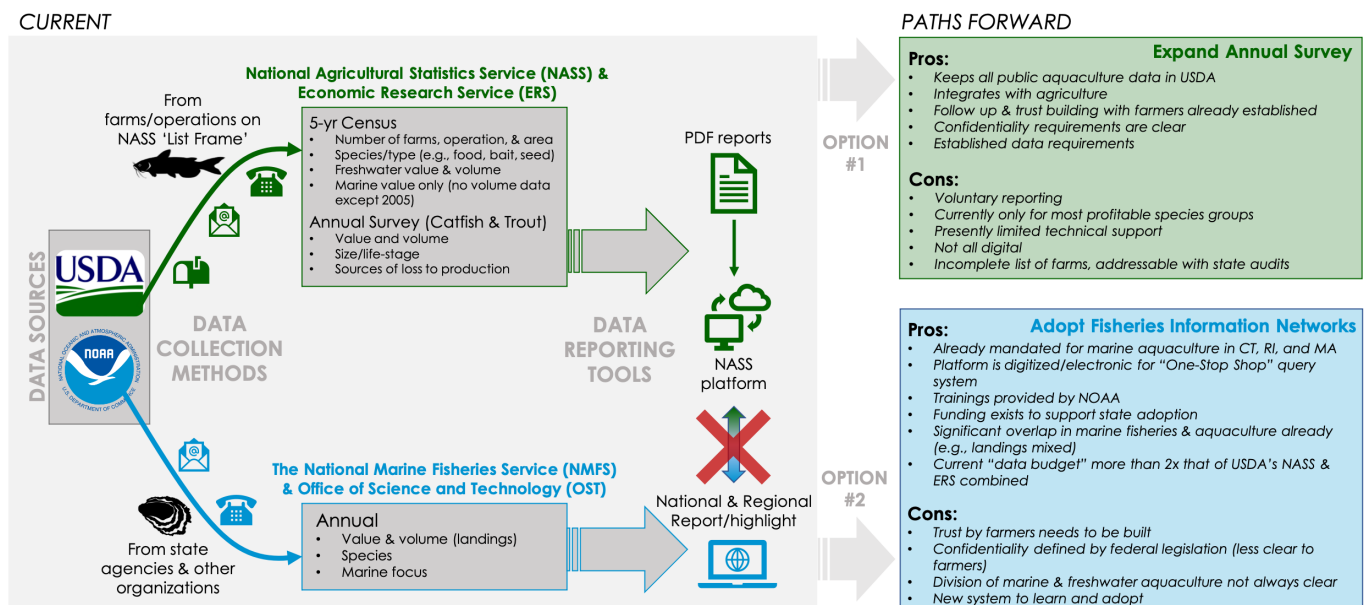


Fig. 2. Current marine aquaculture data collection process by USDA and NOAA platforms and the two alternate future pathways forward: the USDA Survey (option #1) or FINs (option #2) and the trade-offs of each.

## Policy Solutions

Improved data collection will require supporting policies or mandates to require compliance, coordination, and capacity building for management agencies and industry. Here are some key policy tools and actions that were identified to facilitate stronger, more consistent data collection for U.S. marine aquaculture:

### Solution

### Policy Actions

#### **Integrate marine aquaculture data into an existing data collection platform (see Fig. 2)**

- Mandate the integration of aquaculture data into chosen digital platform.
- Provide capacity support and resources (e.g., staff, training, access to technology, enforcement, etc.) for federal and state agencies to adopt the new data platform.

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#### **Establish minimum reporting requirements**

- Provide funding and capacity support for agencies to establish a participatory framework to build trust with farmers to collect data and enforce reporting requirements (e.g. staff, training, technology, etc.).
- Provide incentives for farmers to comply (e.g., support more efficient permitting, increase access to disaster relief funds, etc.).

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#### **Facilitate interagency collaboration**

- Establish new or leverage existing partnerships (e.g., MOUs and interagency committees) to facilitate interagency collaboration to reduce redundancies and improve efficiencies in data reporting requirements. Agencies should also collaborate to define and identify specific data needs for effective management for a given state.
- Provide funding and staff capacity support for agency collaborations.

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#### **Increase funding to support improved reporting and data collection**

Direct funds to support these efforts at federal and state levels as appropriate:

- Digitizing data and collection at state level
- Identifying and clearly conveying specific data needs
- Building capacity among agency staff and farmers
- Technology adoption programs
- Industry-independent data collection
- Research on benefits of better data reporting

# CHALLENGES

All of these solutions have potential to benefit industry, agencies, and national food security by facilitating stronger, more consistent data collection for U.S. marine aquaculture. However, there are challenges that must be considered as these solutions are adopted:

- Mandates would improve accuracy, but could face resistance.
- Specific data needs must be clearly defined and coordinated across jurisdictions.
- There is increased farmer resistance to publicly reporting financial data of potential value to domestic and foreign competitors.
- Data requirements for farmers must be simple, streamlined, and attainable within farm staff capacity and technology limits or with adequate support to add capacity as needed.
- Buy-in from the farming community, states, and agencies will be critical for maximum success.
- Most of the proposed solutions will require some capacity support (e.g. staff, training, access to technology, enforcement, etc.).
- It is easier to mandate reporting for farming in shared public spaces (the commons), which is where most marine aquaculture occurs, than for farming on privately owned land.

# CONCLUSIONS

Current and consistent marine aquaculture data is critical for a sustainable and economically viable marine aquaculture sector that contributes to the U.S. seafood supply.

Leveraging established USDA or FINs platforms can support more standardized digital data collection and management to improve data quality and consistency across states.

Policy solutions to improve the quality and consistency of U.S. marine aquaculture data include:

- Selecting and mandating use of a platform to standardize data digitization
- Establishing minimum reporting requirements
- Facilitating interagency collaboration
- Increasing funding to support improvements in data reporting and collection

This policy brief is based on research and a series of multi-stakeholder workshops conducted as part of a collaborative project funded by the NOAA National Sea Grant Program in 2019. The project was designed to study marine aquaculture data and policy to support sustainable seafood development in the U.S. The workshops included participants from state and federal agencies, industry, and academia. This project is a collaboration between the University of California-Santa Barbara, Florida State University, California Sea Grant, and the Aquarium of the Pacific.

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*This paper reflects the views of the authors and is not necessarily reflective the views of the workshop participants, reviewers, or their respective institutions.*