

Puerto Rico Marine Economy Statistics Workshop

Overview and Objectives

The virtual workshop for Marine Economy Data in the Commonwealth of Puerto Rico was held on December 7th 11am-2pm AST (December 7th, 10am-1pm EST). This workshop is part of a larger project by the National Oceanic and Atmospheric Administration (NOAA) Office for Coastal Management (OCM) to expand the Economics: National Ocean Watch (ENOW) dataset to Puerto Rico, U.S. Virgin Islands, Commonwealth of Northern Mariana Islands, Guam and American Samoa. Before the workshop convened, the project team, which includes NOAA OCM and contractors from ERG, Tetra Tech, and Middlebury's Center for the Blue Economy, compiled a comprehensive list of data sources for potential use in developing the ENOW dataset for each of the five jurisdictions. The project team also sought contacts who could speak to either the statistical resources available within the jurisdictions or to the state of the economy in each of the jurisdictions, either broadly or specifically for certain ocean-related sectors. The project team held multiple one-on-one conversations with some of these contacts and also invited some people to two previous bimonthly meetings, split between the Caribbean and Pacific, to gather more insight about potentially useful data sources and other contacts that could help with the development of the ENOW dataset. The project team sent out read-ahead materials to attendees, which provided background information on the current ENOW datasets, a preliminary list of other industries to consider, a list of sources relevant to the Puerto Rico ocean economy already collected, preliminary data collected from the Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages (QCEW), and a summary of data gaps.

The goals of the workshop were to:

- Get feedback on how to define the ocean economy in the region to develop a dataset that is most valuable. (I.e., should we modify the traditional ENOW definition?)
- Get feedback on whether we have the best available data.
- Continue to develop relationships throughout the territories to achieve community involvement and guide the development of a valuable dataset.

High-Level Outcomes

This 3-hour workshop provided the project team with essential information from local and regional experts and potential ENOW data users. Specifically we achieved the following outcomes:

- Nine additional data sources that could inform the dataset.
- Additional industries to incorporate into the Puerto Rico ENOW definition, one of which being food markets.
- Developed an improved understanding of how stakeholders could use ENOW data.
- Developed an improved understanding of inland recreation activities.

The discussions also revealed gaps and limitations on data gathering in Puerto Rico:

- The Tourism and Recreation, and Living Resources sectors contain lots of self-employment and workers operating without licenses or permits, which may be hard to capture.
- While participants confirmed data gaps exist related to government spending, research & education, and the electric sector, they did not have suggestions of additional contacts to reach out to fill these gaps or recommended contacts for the team to reach out to regarding data streams.

Attendees

Table 1 provides a list of workshop attendees (not including the project team) by organization and jurisdiction. The project team invited more people beyond this list of attendees. The project team gathered this list of prospective attendees while searching for data resources and through connections already made during one-on-one meetings and two previous bimonthly meetings for the Pacific and Caribbean jurisdictions.

Table 1. List of Workshop Attendees

Name	Organization	Position
Aitza Pabon	DRNA/JBNERR	Directora
Alberto Mercado	The Nature Conservancy	Puerto Rico Program Manager
Aurora Justiniano-Santos	NOAA	PR Management Liaison
Fernando Lugo	Bureau of Economic Analysis	Economist
Iris Santos-Díaz	Departamento de Desarrollo Económico y Comercio	Sub Secretaria
Juan Agar	NOAA	Economist
Julio Morell	CARICOOS	Director
Maria Vega-Rodriguez	Puerto Rico Department of Environmental & Natural Resources	Coral Reefs Conservation & Management Program Manager
Marianna Defendini	University of Puerto Rico Mayagüez - Sea Grant	Student
Patricia Chardon-Maldonado	CARICOOS	Deputy/Technical Director
Ricardo Rivera Amill	Departamento de Agricultura	Fishing Program Manager
Ruperto Chaparro	Puerto Rico Sea Grant	Director
Soledad Gaztambide	Foundation for Puerto Rico	WCRP Senior Program Officer/Chief Resiliency Officer

Walter Keithly	Caribbean Fishery Management Council	Consultant
Yasmin Detrés	CARICOOS	Education and Outreach Coordinator

Workshop Agenda

The workshop agenda is presented below, along with the discussion questions posed in each of the main workshop sections.

Introduction and background

How you define the ocean economy

- A. *Jamboard Question: How would you define the ocean related economy in Puerto Rico?*
- B. *Jamboard Question: What types of jobs are in the ocean economy? (We asked this for a number of sectors, e.g., tourism and recreation, boat building/repair, living resources, marine transportation, marine construction, offshore oil, research and education, energy, government, and other)*

Overview of ENOW, data collected, and gaps

- C. *Discussion Question: Are we missing any economic data streams (annual or better) that could inform the size of the ocean economy?*
- D. *Discussion Question: Are we missing any economic data (e.g., reports or data that could inform what percent of an industry is ocean dependent) that could help us create our dataset?*
- E. *Discussion Question: Do you have any recommendations for how we can fill any of our gaps?*

*****Break *****

Potential additions to the Ocean Economy

- F. *Jamboard Question: Which candidate industries should be included in USVI's ocean economy?*
- G. *Discussion Question: How does the nature of recreation change as one moves inland?*

Presentation and critique of data

- H. *Jamboard Question: Do these data reflect your understanding of the economy? What ocean economy sectors have high levels of self employment?*
- I. *Discussion Question: What geographic level of data would be useful to you? Would that depend?*
- J. *Jamboard Question: How have you used some of these data in the past? If you haven't before, how could you use this dataset if made available?*

Wrap up

Workshop Discussions

How you define the Ocean Economy

For this section of the workshop, we asked participants to brainstorm what they thought defined the ocean economy in Puerto Rico. Workshop participants used sticky notes and a Google Jamboard to share their thoughts. Participants listed many activities they associated with the ocean economy, including shipping, recreation, tourism, fishing, and telecommunications. Participants also noted that coastal and ocean ecosystems provide valuable services, such as coastal protection, that allow other industries to operate.

After the broad brainstorm, we asked participants what types of jobs were in the ocean economy related to the following sectors: Living Resources, Tourism and Recreation, Ship and Boat Building, Marine

Construction, Marine Transportation, Offshore Mineral Resources, Energy, Government, Research and Education, and Other¹.

Participants listed key businesses in almost every sector. Tourism and Recreation was the most heavily populated slide. There are many coastal hotels, tours, ocean-related sports and activities, and eco-tourism companies operating in Puerto Rico. Participants listed non-governmental organizations, federal government and university-related research institutions. The dependence on imports (which come by boat) was pointed out in multiple sectors. For example, while ocean-dependent energy is not currently produced in Puerto Rico, participants pointed out all fuels are imported by boat. To see all the responses from this Jamboard, see [Appendix B](#).

Overview of ENOW

For this section, we presented a summary of the current ENOW dataset, described the data sources currently available for Puerto Rico, and discussed data gaps. During the presentation we asked participants to provide any data streams, or other related data reports or sources, that could help inform the ENOW dataset for Puerto Rico.

Participants recommended the following sources:

- Puerto Rico Department of Agriculture,
- USDA/Farm Service Agency
- Puerto Rico Destination Marketing Organization
- Puerto Rico Tourism Company
- Hotel Industry Association
- Science Trust (self-employment data)
- The Caribbean Fisheries Management Council had fish landing stats which could be extrapolated to income.
- Bureau of Transportation Statistics (shipping data)
- Economic Activity Index (September 2021)
- Economic Contribution of Reef Using Visitor Spending to the Puerto Rican Economy Report by the National Marine Sanctuaries

Participants did not suggest specific individuals to follow-up with to fill gaps, but did suggest a meeting with high up government officials who could provide contacts.

Candidate Industries

During this section, we used Jamboard to present possible industries to be included in ENOW data for Puerto Rico. Participants were asked to vote on how much they thought the candidate industry was ocean dependent (almost entirely, partially, not at all, or only when business is overlooking the ocean). For each candidate industry, we provided the number of establishments, employment and annual payroll, though some data was suppressed. Candidate industries were presented in sets, grouped by the ENOW sector they could be added to. The team presented twenty-two candidate industries but

¹ There are six existing ENOW sectors: Living Resources, Tourism and Recreation, Ship and Boat Building, Marine Construction, Marine Transportation, and Offshore Mineral Resources. Energy, Government, and Research and Education are proposed additions.

participants only commented on a few of them. Food markets were the only industry noted to be highly ocean dependent, as there is almost no inland fishing. Participants did point out that for industries like clothing and gift stores, they could be ocean dependent when the business is not just overlooking the ocean, but when businesses fall into the larger impact region where ocean-dependent activities overflow into. To see all the responses from this Jamboard, see [Appendix B](#).

After the jamboard activity, we opened up to a discussion on how the nature of recreation changes as one goes inland. Puerto Rico has many inland recreational draws that are not related to the ocean, including El Yunque National Forest, zip lines, hiking, and other natural reserves. Participants noted that many people come to Puerto Rico to visit friends and family, and that this distinction is likely made in some tourism data. The Outdoor Recreation Association was also suggested as a helpful resource in understanding the draw of inland recreation.

Dataset Critique

For our final discussion, we asked participants to critique the data currently gathered for developing Puerto Rico ENOW data. The data (industry employment, payroll, and establishments) was presented in a jamboard, organized by ENOW category (Living Resources, Marine Construction, Marine Transportation, Offshore Mineral Resources, Ship and Boat Building, and Tourism and Recreation). Participants were asked to vote on whether the data gathered was a fair representation, not too far off, or a poor representation. They were also asked to note if the candidate industry might have substantial self-employment.

Overall the data presented was not very representative. Fishing has significant self-employment, as well as undocumented and seasonal employment participants. Many Tourism and Recreation outfitters are also not documented because they lack the resources to buy required insurance for permits. Shipping and boat repair was also deemed too low. AirBnBs and second vacation homes were suggested as important industries to include in the Tourism and Recreation sector. Marine Construction, Marine Transportation, and Offshore Mineral Resources were not commented on. To see all the responses from this Jamboard, see [Appendix B](#).

We then polled participants on what level of granularity would be most useful to them (Commonwealth-level, municipio-level, or more granular than municipio). Most participants said commonwealth and/or municipio level data would be most helpful to them.

Participants were then asked how they would use ENOW data. Participants shared that they would use it to demonstrate benefits for grant applications and advocacy, build community profiles and for strategic planning.

Appendix A: Slides

[This link](#) provides access to a pdf of the slide deck.²

(https://docs.google.com/presentation/d/1rgHd2LAsoz7xELS1K9XERAng_z6gBsclaazW6dnmU8E/edit?usp=sharing)

² The workshop was recorded for note-taking purposes.

Appendix B: Jamboards

The workshop used three separate Jamboards to collect participant feedback:

- B1. [Defining the Ocean Economy](#)
- B2. [Candidate Industries](#)
- B3. [Data Set Critique](#)
- B3. [Data Use](#)

Appendix C: Post-Workshop Survey Results

Below are the results of the post-workshop survey. There were 2 responses.

1. I feel like my voice was heard in today's workshop

Strongly Agree - 0

Agree - 1

Neutral - 0

Disagree - 0

Strongly Disagree - 1

2. How might you use ENOW data developed for your jurisdiction? (Short answer)

- Very Useful to strategic planning
- Description and modeling purposes

3. Are there other folks we should engage about this effort who might inform our process or be interested in using the data?

- Not now
- NA

4. Are there any improvements we could make to the workshop format?

- No
- I liked a lot...good job.