

Review of *Marine Spatial Planning: Economic Indicators Draft 1*.

Reviewer:

Todd Lee, PhD

Program Manager, Economic and Social Science Research Program

FRAM Division, Northwest Fisheries Science Center

NOAA Fisheries

Seattle, WA

206-302-2436

todd.lee@noaa.gov

The review was based on the document (*Marine Spatial Planning: Economic Indicators Draft 1*) as well as a listing of questions for the review. The review findings are given below for each question.

- The list of potential indicators appears to be fairly comprehensive in terms of their ability to monitor changes in regional economic activity and human economic wellbeing.
- Organization of the paper:
 - I was not completely clear to me, at first, that the Population title is the first indicator. I'd suggest inserting a new heading before Population to indicate that the indicator listing follows.
 - I think it is very important to group the indicators into categories based on themes. These could be themes such as: demographics, employment, income, regional economic activity, and economic reliance on the marine environment. Once they are grouped and the data are available, I'd suspect that some of the indicators could be removed without losing much if any information. However, it is often difficult to make that determination until the data are available. To begin to narrowing down the list I'd suggest grouping indicators under themes, then ranking each indicator under each theme based on criteria like importance, information content, uniqueness and interpretation (how easily it can be understood). I think a somewhat clear ordering would come out of this.
- There are over 40 indicators, which is a fairly large number for people to synthesize. Moreover, quite a few of the indicators are composed of sub-indicators. I think grouping indicators by themes would help alleviate this issue to some extent, but some consolidation or cutting would likely benefit the final product. Again, without seeing the data, it is somewhat difficult to make suggestions. An additional idea would be to pick a few primary indicators for each theme, then have supporting or secondary indicators for each theme at the end of the document. This would allow for a manageable set of main indicators, but also provide a more detailed and a more nuanced exploration of each theme.
- The paper does a good job explaining the motivation behind most of the indicators. As an additional component to the indicator explanations, I'd suggest listing whether an increase in the indicator is assumed to be a positive, negative, neutral, or undefined change in human economic wellbeing and/or regional economic activity. Knowing this could also help summarize the results across all indicators.

- Many of the indicators do not explain what type of statistic or variable will be used. For example, they do not state whether it will be the total, mean, median, percent, etc. Each indicator should state this. Moreover, please explicitly state what each indicator is. I've highlighted below a few cases where I did not know what measure would be used. Perhaps put this information right after the indicator title, or change the indicator title to reflect exactly what is being measured.
- How the indicators are presented (table, graph, graph with trend, etc) is very important. As the indicators are further developed it would be useful to construct some examples for review comment.
- Marine Spatial Planning Section. The last sentence too narrowly focuses on "changes in the economy over time", which is usually understood to be broad economic measures. Some of the indicators also relate to what I'd call "human wellbeing". I'd suggest changing the sentence to read "... is developing economic indicators to measure a wide range of important factors associated with human economic wellbeing and the health of regional economies."
- Economic Indicators Section
 - It is not completely clear to me who will use the indicators, and what they will be used for. I'd suggest being more explicit about that as it will help guide indicator section and how they are tracked/presented.
- Methods Section
 - It would be useful for the review to know more about how the indicators will be presented, how trends will be shown, will there be measures of variation, and the time periods of the indicators. This information should be in the Methods, or shown for each indicator selected.
 - I'd also suggest discussing criteria regarding the number of indicators as there is a trade-off between the number and scope of indicators, and having a small enough set of indicators that can be more easily understood and tracked.
 - This would be a good place to note that although it is important to relate the indicators to the marine environment and changes in the marine environment (including changes in its uses), doing so will be difficult.
- Defining your Region Section
 - This section is a bit confusing in terms of its takeaway. Does the region vary by indicator? If so, it is important to explain which ones and why. The details of this could be handled later for each indicator, but a general discussion would be useful here.
 - The import/export discussion seems most relevant to regional economic impact measurement. Starting the discussion with this is confusing because it relates to just one or a few indicators. It would be better to begin this section with a more general discussion of how regions are defined and how that may vary by indicator.
- Benchmarks: This is not what I think of for benchmarks, which I typically think of as fixed reference points. I'd move this discussion to the Methods or Economic Indicators sections.
- Specific Indicators
 - Population: Not clear if this is population size or growth. I'd suggest population size if a trend line is shown.
 - Components of population change: For this indicator and others with subcomponents, I'd suggest showing each component in one graph/table that that can be done clearly.

- Education attainment/enrollment: It is not clear how these will be presented (e.g., total number, percent, etc). For all indicators I'd suggest they list exactly what will be presented. For the above, percent may make the most sense.
- Employment by industry/occupation: Can these be mapped to those directly related to the marine environment?
- Unemployment change during recessions: This could be shown on the unemployment rate graphic by highlighting recession years in some way.
- Components of labor earning: It is not clear what the actual indicators would be.
- Source of income: unclear how that differs from Components of labor income.
- Average earnings per job: this indicator in particular would be useful to look at a distribution.
- Ecosystem services: what data are available for this?

1. *Are there any indicators that are missing?* I have not identified any.
2. *Are there any indicators that seem superfluous or unnecessary?* Yes, but please see my comments above.
3. *Do any of the indicators have incorrect information?* Several have incomplete information. See above, and review indicator descriptions to ensure that what is being measured is clear.
4. *Do any of the indicators need additional explanation or clarification?* See incomplete information comments above.
5. *Tribal data is not specifically called out, as most of these indicators can be used in the same way on tribal data, but tribal data is often considered separately. Should this be addressed in any way? If so, how?* I do not have specific comments about this.
6. *Should the indicators be grouped/organized differently than they are currently?* Yes, see above.
7. *Are there resources/references that are currently missing that should be included?* Not that I am aware of.
8. *Since these indicators are primarily for coastal communities and marine based industries, are there resources available that should be included that are specific to those areas?* This is probably the most difficult or challenging aspect of the indicators since there may not be a lot of information. One option would be to look at revenue or other reassures from specific industries. Commercial fishing for example, has revenue information by port, which could then be aggregated to a larger region. Recreational fishing data may be available that provides participation rates by port areas.
9. *It has been requested that approximately 5 of the indicators be specified as being the most important to measure. Which indicators do you feel are most important?* I agree with this comment. As stated above, I think you should start with themes, and then rank indicators under each theme. I am more than happy to review further work on this after the themes are settled. If establishing themes is determined to not be a workable approach, I suppose picking the top 5 would serve a similar purpose. I'd pick five that address the following: demographics, employment, income, regional economic activity, and economic reliance on the marine environment.

10. *Are there any index/composite measures that should be included that coastal communities may find helpful in assessing their economic health? Not that I'm aware of.*