

Reply to comments for Discussion Paper 2012-64

We greatly appreciate the time devoted to reading and commenting our MS from two invited readers and one anonymous reviewer. Here, we present our reply. Page numbers refer to the latest version.

Reader 1 (Andy Thorpe):

1) The whole text was proof-read by a native English speaker (J. Schoeder), who is listed in the acknowledgements section (p.23).

2-3) It is true that analyzing subsidies policy was not the objective in this investigation. We reckon that granting subsidies for lowering variable costs of fleets is part of a poor policy, which often results in over-exploitation. In a new section of the Discussion (“Adaptation actions for the Mexican fishery sector”) we explain in more detail the main issues of adaptation for fisheries in Mexico. In such section, we state that “... implementation of such [adaptation] actions has been awkward [in Mexico]...” being one of our arguments, that subsidies foster over-exploitation of fish stocks and generate fuel emissions (p. 20). We, nevertheless, did not discuss much on mitigation actions, since our conceptual framework was rather focused on adaptation, following recommendations of the other reviewers.

4) The paper by Cheung et al. (2010, *Global Change Biology* 16: 24-35. DOI: 10.1111/j.1365-2486.2009.01995.x) rather deals with global (i.e. aggregate) data on fisheries in several countries. Anyway, we deepened the discussion on both our results and Cheung’s in pp. 15-16.

5) The paragraph in discussion devoted to the choice of fisheries was edited and moved over to the Methods section (pp. 6-7).

6) Unfortunately, no disaggregated data are available for employment in fisheries activities. Actually, a number of fishermen in Mexico shift from one fishery to another (even from non-fishing activities and vice versa), depending on the fishing season. We assumed, therefore, that people hired in coastal fishing activities participate either directly or indirectly on activities concerning shrimp and sardine fisheries (e.g. extraction, processing or trading). We mention the fact that using aggregate data for labor is a drawback in our analysis but, as noted by McClanahan et al. (2013, *Fish and Fisheries* (in press). DOI: 10.1111/faf.12045), obtaining accurate data on tropical fisheries is rather difficult (p. 14).

7) Similarly, time series data on gross registered tonnage (GRT) is rather difficult to obtain. We are aware that it is a better measure of fishing effort than number of vessels, but we decided to use the same definition as in the study of Dalton (2001, *Journal of Environmental Economics and Management* 42 (3): 336-359, <http://dx.doi.org/10.1006/jeem.2000.1158>).

8) In the Discussion we point out that: “...it would be difficult to either recommend or forecast an influx of financial capital in sardine fisheries, due to the associated high variability and uncertainty. Hence, we could not suggest that increases of sardine stocks would help to alleviate food insecurity” (p. 19).

9) It is true that other fisheries (aside from shrimp) will be affected by climate change, with respect to coastal facilities. In fact, distribution and storage in many coastal communities are

mostly devoted to shrimp landings during the fishing season. We briefly discuss this issue in pp. 17-18.

10) We consider that aquaculture is of relevance to both food security and fisheries, because some systems rely heavily on wild fish stocks as either nourishment (e.g. tuna) or postlarvae input (e.g. shrimp). Such facilities have increased in both number and capacity in the past years. We explain this issue in order to clarify the importance of the fishing-aquaculture link for food security and climate change (p. 22).