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Response

We thank Arunachalam and Suresh Ramanan for their comments on our article.

The authors mention that one noteworthy argument of our article is the discontent in land statistics data, especially degraded land statistics by different agencies. This is because of the adoption of various methodologies to assess degraded land as well as the classification systems used. We have clearly mentioned in table 1 the broad methodology used by various organizations. All the studies were associated with a certain level of uncertainty due to choice of datasets, satellite-data resolution, methodology used, etc. Hence the area statistics provided by all the various organizations may differ.

Regarding the Wasteland Atlas of India – 2019, since wasteland and land degradation (LD) are different by definition and as the current scope of the work is on land degradation, we did not discuss wastelands.

With regard to the confusion on terminologies 'wasteland' and 'degraded land', we would like to mention that they are not the same. Land degradation includes part of land currently put to various uses like agriculture, forest, etc. with notable land degradation processes like water erosion, wind erosion, salinisation, acidification, etc. that could restrict the productivity of the land. Wasteland is a form of severe land degradation and currently not put to any economic use, and requires additional efforts to make it useful. Thus, wasteland mostly forms a subset of land degradation. Besides, some of the LD processes like acidification, sheet erosion, frost heaving, etc. were not considered in the wasteland mapping project.

According to the authors, our article states that 27.77% of the land is degraded in India, but it does not mention the total geographical area used for this computation. Though the geographical area has not been mentioned explicitly in our article, it can be easily derived using % LD area and its spatial extent: (91,206,650 * (100.0/27.77)) = 328,435,902 ha (from table 3).

Arunachalam and Suresh Ramanan also want to know whether we have included the recorded forest area (71.22 m ha) of India. The mapping of land degradation in our study includes both non-forest and forest areas.

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Fisheries ecolabelling – clearing the haze

This is regarding the article by Ramachandran and Parappurathu[1] on ecolabelling and fisheries sustainability. The article comes at a time when the Voluntary Sustainability Standards have an increasing global presence for many natural commodities, and the Food and Agriculture Organization (FAO) has initiated a harmonization process through a separate forum[2]. In fisheries, the most widely used standard is that of the Marine Stewardship Council (MSC), which follows the FAO ecolabelling[3] and responsible fisheries guidelines with a footprint of ~15% of the 90+ million tonnes global fish catch. The authors argue against non-state entities in fisheries governance, where none exists[1]. Reading this article one gets the distinct feeling of eating a half-cooked meal, as the authors fail to fathom the current global and national scenario and perspectives. The MSC has several critics, most of whom have been cited by the authors[1]; but most critics aim at improving the system and toughening the standards. Fishery resources are an unseen public resource in a public space held in trust by the Government, which manages the exploitation through regulations. Under a wider commons than that of Hardin's example, with multitudinous stakeholders, most governments fail to manage the fisheries sustainably. The MSC standards, a non-state and not-for-profit entity, force governments to manage and regulate the fishery resources sustainably, but do not per se get involved in any management. For example, the establishment of a small participatory Clam Fisheries Management Council to fulfil the requirements of the MSC standards for India's Ashtamudi short-neck clam later led to a new regulation on fisheries co-management by the Government of Kerala.

An example of the authors' lack of understanding of the process is given in the statement: 'It is almost impossible for the fish consumer to verify whether the standards are followed in a marine fishery, which is invisible and often fugitive'. They seem unaware of the dual facets of the MSC standards, one on fish stock sustainability and the other on the chain of custody (CoC) or traceability. After catching fish, the seafood products may pass through many stages. The MSC CoC standard ensures that products from MSC-certified sustainable fisheries are traceable and separated from non-certified products. Another flawed statement made by the authors is 'MSC has given ecolabel certification to two molluscan fisheries, the Ben Tre Clam in Vietnam and Ashtamudi short-necked clam in India, without charging the normal fee from the stakeholders'. This makes it amply clear that the authors have not done a proper literature survey. Details about the Ashtamudi short-neck clam certification and the cost of certification are available in the public domain[4].

Yet another unsound contention put forth by the authors is that the cost of management of the fisheries is borne by the state and the sustainability certificate agencies take a cut from the proceeds (0.5% royalty on the wholesale value[1]). Rightly so, as management of fishery resources is the responsibility of the state and the benefits of sustainable exploitation are trickled down

to all players in the value chain. The authors go on to promote a Government-led sustainability certificate. This essentially is a self-certification or territorial eco-certification which also has distinct dimensions of transnationality similar to the MSC, that comes to bear on fisheries governance and production networks[5]. The authors fail to mention these intricacies, and also, more importantly, that nearly a dozen fisheries in India have recently moved towards MSC certification due to market demand for sustainably fished products from the importers[6]. This seems highly prejudicial and not adhering to scientific ethics.

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Response

We appreciate the comments of Mohamed and Malayilethu regarding our article in *Current Science*.

While claiming to be 'clearing the haze around ecolabelling', they have conveniently maintained silence on the merit of our core arguments (public ownership and stewardship of fishery resources; boundary conundrum and inclusiveness; threat of market access restrictions; food sovereignty issues, and so on), which we would like to interpret as either an obligatory reticence to their present affiliations or as an endorsement.

The reference to the harmonization process initiated by FAO and the subjective claim that the MSC is the most widely used standard are supposedly red herrings that hide commercial interests behind the veneer of global public benefits.

If sustainability of natural commodities, most of which are held under public trust by the state (the *de jure* CPR-owner), is the real aim of the private promoters of voluntary ecolabels, why is such certification, in practice, limited only to highly valued poster species, rather than targeting the widely consumed (and traded) low-value species which form the backbone of most fisheries in developing maritime economies? One cannot easily fathom this bias, but to consider it as an oxymoronic position that keeps afloat the very logic of commercial certification.

That the MSC does not per se get involved in fisheries management reveals the conflict of interest. It would be too naïve to accept the cliché that a non-state actor stretches its muscles, that too with the help of a business arm, to 'compell' a country's fisheries to follow sustainability norms with absolutely no commercial interests.

Then the authors try to tinker on our ignorance of the MSC processes, especially the traceability. Going by the MSC process, the product while being consumed can still be from a damaged ecosystem (from a multispecies perspective), as is likely in most tropical-water fisheries. (Note: Since the objective of our article was not a diagnosis of the MSC, we do not want to elaborate this point further).

The authors also allege that we have failed to fathom scenarios and perspectives, and that reading our paper is like eating a half-cooked meal. However, their attempt harping on silly omissions with hardly any neutrality is like forcibly opening the cooker even before the first whistle is heard.

Regarding the Ashtamudi short-necked clam fishery, the authors have tried to rebut our argument that the MSC did not charge the normal fee from fisher stakeholders, by providing a reference. Though the total cost of the certification was Rs 29.84 lakhs, no mention has been made on who the payer is. We have gathered from reliable sources that about Rs 15 lakhs was borne by a state-funded agency, the Marine Product Export Development Agency. We would also like to update the authors on the recent developments happening in the country. The Friends of Earth, another player in the ecolabel market, has expressed interest in recognizing equivalence if India moots its own ecolabel in fisheries. The authors could have been more enlightening had they given at least a glimpse of the present status of the MSC-labelled Ashtamudi fishery.

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