A very useful study but the 'headline' figure of OP global OP plantation area, which I assume is dated as of 2021 is given as 23.98 Mha.

However, just a few lines later an FAO estimate from 2022 is quoted as a much higher area of 30 Mha - this discrepancy is not discussed anywhere in the paper. A figure of 30 Mha is also reported by FAO in 2023 and is widely used by other sources such as https://ourworldindata.org/palm-oil

Moreover, the 2024 value quoted by USDA (which might just be using the FAO data) is also 30 Mha.

In contrast, the much-quoted 2022 value of 23 Mha by Statista is much closer to the current authors' value

It would be nice to have some discussion about these discrepancies, which are from reputable bodies like FAO, USDA etc, because these headline values are widely quoted and used by policymakers, NGOs, the media etc.

Response #1: Thank you for pointing out this issue in the manuscript. We have now included a new figure comparing our oil palm area estimates with the FAO and USDA statistics for the top 10 countries with the largest oil palm areas. Our estimates align well with the reported areas from both agencies, except for Nigeria. In Nigeria, our estimates differ from the FAO's by approximately 4.5 Mha, which largely accounts for the gap between our global oil palm mapped area (23.98 Mha) and the FAO's reported figure (29.62 Mha). The revised manuscript presents these results and discusses the likely reasons for this discrepancy in Nigeria (line 271).

"*Our area estimates also align with national statistics for oil palm harvested areas reported by FAO and USDA (Figure A7). The largest discrepancy occurred in Nigeria, where we estimated 0.38 ± 0.13 Mha, compared to the 4.86 Mha and 3.00 Mha reported by FAO and FAS-USDA, respectively. This difference may result from the inclusion of semi-wild oil palms in the FAO and USDA statistics. Semi-wild oil palm, common in West Africa, is mostly omitted in our oil palm layer as these palms typically grow scattered across the landscape, making them difficult to map accurately with Sentinel-1.*"

The revised manuscript also discusses the likely reason for the discrepancy between our total estimate and the global statistic from FAO (line 373):

"*Subsistence-level palm oil in Africa could add millions of hectares; areas of these unaccounted traditional oil palm plantations were estimated to be 6.66 Mha in Africa in 2013 (Carrere, 2010). The presence of unaccounted semi-wild oil palms likely explains the ~4.5 Mha discrepancy between our area estimates and FAO's oil palm area in Nigeria, as well as the difference between our global oil palm mapped area (23.98 Mha) and the FAO's reported global harvested area (29.62 Mha) for 2021. Despite this discrepancy, the comparison with official statistics supports the validity of our oil palm extent layer, as our area estimates closely align with the FAO and USDA-reported oil palm areas in other top-producing countries.*"
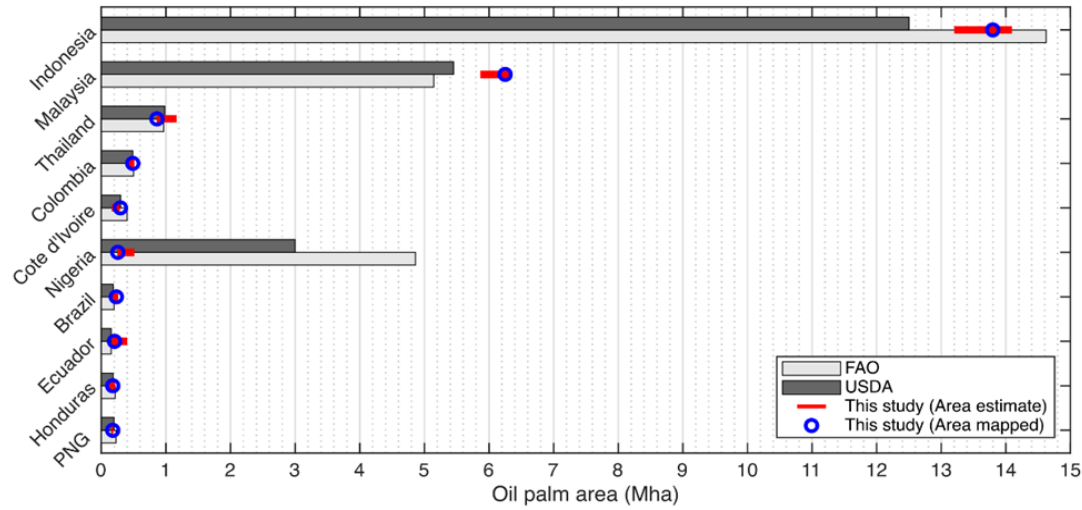
Figure A7: Oil palm area for the 10 highest producing countries according to the dataset presented in this study. The bars depict the oil palm area for 2021 according to official statistics (FAO and USDA), the blue circles represent the mapped oil palm area using the deep learning model, and the red line shows our oil palm area estimate with a 95% confidence interval.

We also extracted the oil palm area from the SPAM dataset, which is an average for 2019-2021. SPAM reports a total area of 28.6 Mha, identical to the FAO's reported area for 2020. This is because SPAM derives its crop maps from FAO data. Additionally, we retrieved the oil palm area from STATISTA for 2020, which reported 28.7 Mha—essentially the same as the FAO and SPAM figure for 2020. Since both SPAM and STATISTA likely rely on FAO, we did not include these estimates in the manuscript to avoid redundancy with FAO's data.