

Quantifying Greenhouse Gas (GHG) Emissions Associated with Global Seafood Production

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2 FAO Data Assembly

2.1 Join FAO Data

FAO Global Capture Production data was downloaded as .csv files in a zipped folder. The following .csv files were used in this analysis:

- `Capture_Quantity.csv` (core catch quantity)
- `CL_FI_COUNTRY_GROUPS.csv` (country information)
- `CL_FI_SPECIES_GROUPS.csv` (species information)

Prior to joining the .csv files, “PISCES”, “CRUSTACEA”, “MOLLUSCA”, and “IN-VERTEBRATA AQUATICA” were filtered out of the major groups represented in the `CL_FI_SPECIES_GROUPS.csv`. Additionally, ISSCAAP group 82 (Corals) was removed. These species were assumed not to be the target species of the fishing gear types (“fishing”, “squid_jigger”, “drifting_longlines”, “pole_and_line”, “other_fishing”, “trollers”, “fixed_gear”, “pots_and_traps”, “set_longlines”, “set_gillnets”, “trawlers”, “dredge_fishing”, “seiners”, “purse_seines”, “tuna_purse_seines”, “other_purse_seines”, “other_seines”, and “driftnets”) represented in the broadcasting emissions dataset.

ISSCAAP groups 41 and 51, representing freshwater crustaceans and freshwater molluscs respectively, as well as the species “River eels”, were filtered out because any emissions associated with freshwater collection would have been eliminated during the intersection of the FAO regions shapefile and the emissions grid. Therefore, it is assumed that none of the resulting emissions can be attributed to fishing for freshwater species.

The analysis is conducted with species distinguished by a unique numeric code in the `identifier` column, and then additional species information is joined back to the final table. Species information was obtained from a modified version of the `data-keys/master_species_key.csv` created by Danielle Ferraro and Gordon Blasco and provided by emLab. Some species in the resulting FAO dataset were not represented in the `master_species_key.csv`, so the missing species were added from the FAO `CL_FI_SPECIES_GROUPS.csv`.

3 Merge Emissions Datasets

3.1 Join Emissions Data

describe emissions datasets