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Supplementary Information

1 Gear data included in the study

Anchoveta case

Table SI.1: Amount of gear per vessel

Component	Material	[g/t anchoveta]	Lifetime of component [yr]
Net	Nylon	1 856.17	4
	Lead	27.35	4
	LDPE	0.27	4

Total mass of net material per vessel: 41 115.91 kg.

Cod case

Table SI.2: Amount of material per gillnet

Component	Material	Total [kg]	Lifetime of component [yr]
Headrope	70% PP/30% HDPE	2.26	8
Floaters included in the headline	EPP	3.38	8
Footrope	50% Plastic (70% PP/30% HDPE) + 50% Lead	10.37	8
Nets	PA 66	3.55	1
Bridle lines	70% PP/30% HDPE	0.74	3
		20.30	8

Pieces of gillnet/gillnet vessel's size of 11-14.99 m: 140 (Standal et al. 2020)

2 CFs for microplastics physical effects on biota used in the study

The factors used in the LCIA calculations for this study are shown here. Emissions of microplastic were mainly to the ocean, but it was assumed that some plastic production emissions (beads) occurred away from the ocean (river). These CFs were supplied by Saadi in December 2024. For updated CFs for these microplastic (MP) emissions and MP emissions to other compartments, see Saadi et al. (2025, full reference provided in the main body of the paper). Readers should note that there were some adjustments to the factors by Saadi as a result of the review process and that the factors below have changed a little, e.g. EPS micro sphere emission to the marine compartment in the Saadi et al. (2025) is 52 048 144,1705603 PAF·m3·day/kg compared to 52 006 153,9628 PAF·m3·day/kg in the table below.

	PAF·m^3·day/kg microplastic	
Emission compartment	Ocean	River
EPS beads	52 006 153,9628	39 004 615,47
HDPE beads	233 230 479,3375	174 922 859,5
HDPE microfibres	6 514 058,26854	
HDPE film fragments	85 488 298,06226	
LDPE beads	50 335 478,5	37 751 608,88
LDPE film fragments	47 881 462,16313	
PA beads	74 195 143,74111	7419514,374
PA film fragments	20 534 851,20771	
PA microfibres	1 372 745,028045	
PET film fragments	187 675,7577	
PP beads	58 882 072,272	44 161 554,2
PP film fragments	11 182 197,85116	
PP microfibres	379 601,2741631	
TRWP (microplastic beads)	244 851 650,3958	