

Supplementary Materials

S1. Participant Characteristics

	FFQ Completed N=15,138	FFQ ≥90.0% N=11,449	FFQ <90.0% N=3,689
	% (n)	% (n)	% (n)
Age groups*			
40-49	25.7 (3896)	28.6 (3278)	16.8 (618)
50-59	27.3 (4116)	28.8 (3300)	22.1 (816)
60-69	28.2 (4274)	27.6 (3152)	30.4 (1122)
70-79	15.2 (2301)	12.6 (1447)	23.1 (854)
80+	3.6 (551)	2.4 (272)	7.6 (279)
Sex*			
Male	46.1 (6985)	46.6 (5337)	44.7 (1648)
Female	53.9 (8153)	53.4 (6112)	55.3 (2041)
Body Mass Index			
Normal ≤24.99	32.9 (4966)	33.3 (3800)	31.7 (1166)
Overweight 25.0 - 29.99	43.8 (6610)	43.6 (4986)	44.2 (1624)
Obese ≥30.00	23.3 (3522)	23.1 (2636)	24.1 (886)
Smoking Status*			
Current smoker	12.6 (1892)	12.6 (1431)	12.7 (461)
Former smoker	45.6 (6845)	44.9 (5104)	47.9 (1741)
Non-smoker	41.8 (6264)	42.5 (4834)	39.4 (1430)
Physical Activity Level^a*			
Sedentary	13.6 (1996)	13.2 (1476)	15.0 (520)
Light	58.7 (8598)	58.6 (6552)	58.9 (2046)
Moderate	24.8 (3640)	25.2 (2815)	23.7 (825)
Vigorous	2.9 (423)	3.0 (339)	2.4 (84)
Educational Level^b*			
Primary	23.7 (3533)	20.6 (2333)	33.8 (1200)
Secondary	27.2 (4056)	27.4 (3098)	26.9 (958)
Tertiary short	19.4 (2880)	20.3 (2305)	16.2 (575)
Tertiary long	29.7 (4414)	31.7 (3591)	23.1 (823)
Income Level (NOK)*			
≤350000 (Very low)	13.5 (1957)	11.0 (1220)	21.8 (737)
351000 – 550000 (Low)	21.6 (3138)	21.3 (2372)	22.6 (766)
551000 – 750000 (Moderate)	18.4 (2678)	18.8 (2090)	17.4 (588)
750000 – 1000000 (High)	22.7 (3289)	23.7 (2644)	19.0 (645)
1000000 + (Very high)	23.8 (3460)	25.2 (2809)	19.2 (651)

^a Exercise and physical activity in leisure time over the last year: sedentary (reading, watching TV/screen or other sedentary activity); light (walking, cycling or other forms of exercise at least 4 h a week); moderate (participation in recreational sports, heavy gardening, snow shoveling, etc., at least 4 h a week); vigorous (participation in hard training or sports competitions, regularly, several times a week).

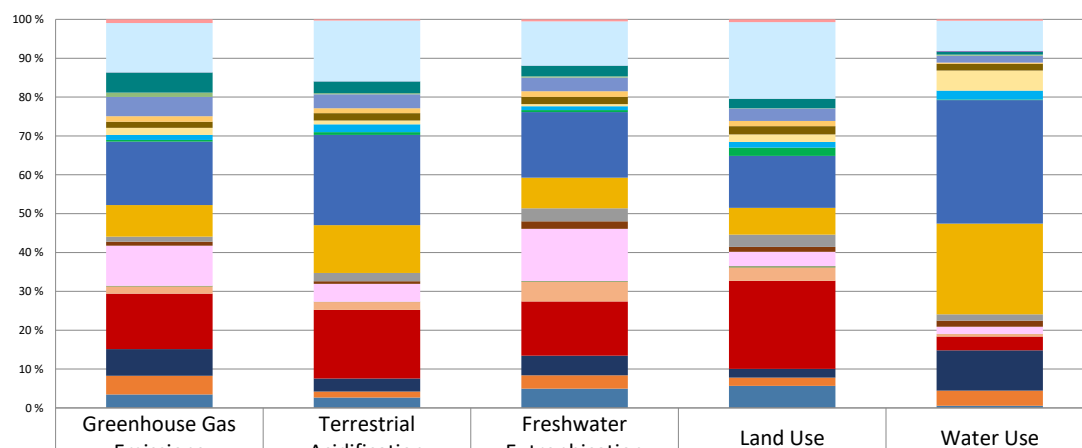
^b Primary (up to 10 years of schooling); secondary education (a minimum of 3 years); tertiary short (college/university less than 4 years); tertiary long (college/university 4 years or more).

NOK; Norwegian kroner

*A statistically significant difference was observed ($p < 0.05$) between the groups FFQ ≥ 90.0% and FFQ < 90.0% tested using Pearson's chi-square test.

Where the totals do not sum to the overall number of participants, the difference reflects the number of participants with unavailable data for those variables.

S2. Absolute values of contribution of the 22 different food groups to each impact category



Greenhouse gas emissions (kg CO₂-equivalent), terrestrial acidification (g SO₂-equivalent), freshwater eutrophication (g P-equivalent), land use (m²a crop-equivalent), and water use (m³)

S3. Socio-demographic categories stratified by quartiles of the total environmental impact across all the environmental impact categories

Indicator	Greenhouse Gas Emissions			
Quartiles	Q1	Q2	Q3	Q4
<u>Age</u>				
40-49	23.6% (651)	27.1% (747)	30.0% (826)	33.3% (919)
50-59	25.5% (703)	28.1% (773)	29.1% (803)	31.7% (874)
60-69	29.2% (804)	28.9% (796)	27.1% (746)	25.3% (698)
70-79	17.4% (480)	13.5% (372)	12.1% (334)	8.3% (228)
80+	4.3% (118)	2.4% (67)	1.7% (46)	1.3% (37)
<u>Sex</u>				
Female	68.7% (1892)	60.5% (1668)	48.6% (1339)	39.1% (1078)
Male	31.3% (864)	39.5% (1087)	51.4% (1416)	60.9% (1678)
<u>Education</u>				
Primary	27.5% (748)	18.8% (512)	17.3% (471)	17.8% (488)
Secondary	26.9% (732)	26.1% (711)	26.5% (724)	28.3% (775)
Tertiary short	17.8% (483)	21.3% (580)	22.1% (604)	20.8% (570)
Tertiary long	27.8% (757)	33.8% (920)	34.0% (928)	33.0% (901)
<u>Income</u>				
<=350000	16.9% (447)	10.4% (279)	8.7% (234)	7.9% (213)
351000-550000	26.4% (699)	20.8% (557)	18.5% (498)	19.4% (523)
551000-750000	18.4% (486)	19.8% (532)	18.0% (484)	18.1% (489)
750000-1000000	20.2% (534)	22.9% (615)	26.0% (699)	25.8% (698)
1000000+	18.1% (480)	26.1% (700)	28.8% (774)	28.8% (779)
<u>Body Mass Index</u>				
Normal<=24.99	35.5% (977)	35.5% (975)	34.0% (933)	29.1% (800)
Overweight 25.0-29.99	42.3% (1164)	42.6% (1171)	44.4% (1220)	45.5% (1252)
Obese>=30.00	22.1% (608)	22.0% (604)	21.6% (593)	25.4% (699)
Indicator	Terrestrial Acidification			
Quartiles	Q1	Q2	Q3	Q4
<u>Age</u>				
40-49	19.7% (546)	27.7% (714)	31.5% (873)	36.6% (1015)
50-59	26.5% (736)	28.5% (792)	29.4% (817)	30.5% (845)
60-69	31.8% (883)	29.3% (812)	26.3% (729)	23.6% (656)
70-79	17.8% (495)	13.9% (387)	11.4% (316)	7.9% (218)
80+	4.1% (115)	2.5% (70)	1.4% (40)	1.5% (41)
<u>Sex</u>				
Female	67.8% (1881)	60.1% (1668)	49.7% (1380)	38.7% (1075)
Male	32.2% (894)	39.9% (1107)	50.3% (1395)	61.3% (1700)
<u>Education</u>				
Primary	27.4% (748)	19.8% (544)	16.8% (461)	18.0% (495)
Secondary	26.3% (718)	26.7% (735)	27.3% (750)	28.2% (777)
Tertiary short	17.8% (485)	20.3% (557)	23.2% (638)	20.4% (562)
Tertiary long	28.6% (780)	33.2% (914)	32.7% (899)	33.3% (917)
<u>Income</u>				
<=350000	16.1% (430)	10.3% (279)	9.5% (257)	7.8% (213)
351000-550000	25.7% (684)	21.0% (566)	19.1% (516)	19.7% (538)
551000-750000	18.9% (502)	20.1% (543)	18.2% (493)	17.6% (479)
750000-1000000	20.3% (541)	22.7% (614)	26.3% (710)	25.4% (694)
1000000+	19.0% (506)	25.9% (699)	26.9% (727)	29.5% (805)
<u>Body Mass Index</u>				
Normal<=24.99	35.8% (992)	34.8% (963)	32.7% (906)	30.8% (853)
Overweight 25.0-29.99	42.6% (1179)	43.2% (1196)	44.4% (1229)	44.5% (1233)
Obese>=30.00	21.6% (597)	22.0% (608)	22.9% (635)	24.7% (685)
Indicator	Freshwater Eutrophication			
Quartiles	Q1	Q2	Q3	Q4

	<u>Age</u>				
	40-49	22.1% (610)	26.9% (742)	30.7% (849)	34.0% (941)
	50-59	25.0% (691)	29.0% (801)	28.7% (793)	31.8% (878)
	60-69	30.2% (834)	29.5% (815)	26.4% (729)	24.9% (687)
	70-79	18.2% (503)	12.4% (343)	12.6% (348)	8.1% (223)
	80+	4.6% (126)	2.2% (62)	1.6% (44)	1.3% (35)
	<u>Sex</u>				
	Female	68.8% (1902)	59.4% (1641)	49.6% (1370)	38.5% (1063)
	Male	31.2% (862)	40.6% (1122)	50.4% (1393)	61.5% (1701)
	<u>Education</u>				
	Primary	27.8% (758)	19.1% (523)	17.2% (471)	17.6% (483)
	Secondary	26.2% (715)	27.1% (740)	25.8% (705)	29.1% (796)
	Tertiary short	17.6% (479)	20.2% (553)	23.4% (640)	20.7% (566)
	Tertiary long	28.4% (773)	33.6% (918)	33.6% (921)	32.6% (894)
	<u>Income</u>				
	<=350000	16.6% (438)	10.1% (272)	9.2% (247)	7.8% (212)
	351000-550000	25.7% (679)	21.4% (578)	19.1% (514)	19.1% (519)
	551000-750000	18.8% (495)	19.5% (526)	18.6% (502)	18.0% (488)
	750000-1000000	20.3% (535)	23.4% (633)	24.7% (665)	26.5% (719)
	1000000+	18.7% (493)	25.7% (694)	28.4% (765)	28.6% (776)
	<u>Body Mass Index</u>				
	Normal<=24.99	36.1% (995)	35.1% (969)	33.6% (927)	29.1% (802)
	Overweight 25.0-29.99	42.2% (1163)	43.3% (1194)	44.4% (1222)	45.1% (1245)
	Obese>=30.00	21.7% (598)	21.6% (595)	22.0% (606)	25.8% (713)
	<u>Indicator</u>	Land Use			
	<u>Quartiles</u>	Q1	Q2	Q3	Q4
	<u>Age</u>				
	40-49	20.7% (571)	27.7% (764)	30.6% (845)	34.3% (949)
	50-59	26.5% (732)	27.9% (772)	29.3% (809)	30.7% (849)
	60-69	31.0% (856)	28.2% (778)	27.1% (749)	24.8% (685)
	70-79	17.4% (482)	14.0% (387)	11.4% (316)	8.7% (240)
	80+	4.5% (123)	2.2% (62)	1.6% (44)	1.4% (40)
	<u>Sex</u>				
	Female	69.9% (1933)	61.7% (1706)	48.6% (1343)	37.2% (1027)
	Male	30.1% (831)	38.3% (1057)	51.4% (1420)	62.8% (1736)
	<u>Education</u>				
	Primary	26.0% (709)	18.7% (511)	18.0% (493)	19.2% (527)
	Secondary	25.0% (681)	26.5% (724)	26.7% (732)	30.0% (882)
	Tertiary short	18.2% (498)	20.9% (571)	21.1% (578)	21.2% (580)
	Tertiary long	30.8% (841)	33.8% (922)	34.2% (936)	29.5% (809)
	<u>Income</u>				
	<=350000	16.3% (431)	10.1% (272)	9.1% (245)	8.5% (231)
	351000-550000	25.4% (672)	21.2% (572)	19.0% (511)	19.5% (529)
	551000-750000	18.8% (497)	18.4% (496)	18.8% (505)	18.7% (509)
	750000-1000000	20.3% (539)	22.8% (614)	25.7% (691)	26.1% (708)
	1000000+	19.3% (511)	27.5% (740)	27.3% (734)	27.2% (739)
	<u>Body Mass Index</u>				
	Normal<=24.99	37.3% (1027)	36.3% (1000)	32.2% (889)	28.6% (789)
	Overweight 25.0-29.99	42.2% (1163)	42.8% (1178)	45.4% (1253)	44.4% (1223)
	Obese>=30.00	20.6% (567)	20.9% (577)	22.4% (617)	27.0% (745)
	<u>Indicator</u>	Water Use			
	<u>Quartiles</u>	Q1	Q2	Q3	Q4
	<u>Age</u>				
	40-49	21.4% (596)	25.7% (714)	29.5% (819)	36.9% (1027)
	50-59	27.5% (764)	28.6% (794)	29.2% (811)	29.9% (830)
	60-69	31.3% (869)	29.7% (826)	26.9% (747)	23.0% (640)
	70-79	16.8% (466)	13.2% (366)	12.6% (350)	8.4% (233)
	80+	3.1% (85)	2.9% (80)	1.9% (52)	1.8% (50)

<u>Sex</u>				
Female	61.1% (1699)	56.5% (1570)	51.7% (1438)	45.4% (1262)
Male	38.9% (1081)	43.5% (1210)	48.3% (1341)	54.6% (1518)
<u>Education</u>				
Primary	27.4% (750)	21.3% (585)	17.7% (486)	16.3% (449)
Secondary	29.4% (804)	27.7% (762)	26.4% (727)	25.8% (711)
Tertiary short	19.1% (523)	19.8% (544)	22.1% (609)	20.5% (566)
Tertiary long	24.1% (661)	31.3% (861)	33.8% (931)	37.4% (1029)
<u>Income</u>				
<=350000	14.7% (392)	11.0% (298)	9.2% (250)	8.6% (234)
351000-550000	23.7% (635)	21.6% (584)	20.4% (557)	19.7% (535)
551000-750000	19.5% (521)	18.8% (508)	18.8% (512)	17.8% (483)
750000-1000000	21.9% (587)	23.9% (646)	25.0% (680)	24.3% (659)
1000000+	20.2% (540)	24.7% (667)	26.6% (725)	29.7% (806)
<u>Body Mass Index</u>				
Normal<=24.99	31.7% (879)	32.0% (886)	34.3% (952)	35.6% (980)
Overweight 25.0-29.99	43.3% (1200)	45.4% (1259)	43.7% (1211)	42.4% (1177)
Obese>=30.00	25.1% (695)	22.6% (627)	22.0% (611)	22.0% (610)

S4. ANOVA Results

	Df	Sum Sq	Mean Sq	F value	P value	Tukey correction (adjusted p value)
OUTCOME: TOTAL TERRESTRIAL ACIDIFICATION ARISING FROM FOOD CONSUMPTION						
SEX	1	0.12850	0.128501	589.9792	< 2.2e-16*	Significant
AGE	4	0.09662	0.024154	110.8977	< 2.2e-16*	Only group 70-79 and 80+ is not significant (0.3444230)
EDUCATION	3	0.00157	0.000525	2.4094	0.065026	Not significant
INCOME	4	0.00166	0.000414	1.9022	0.107083	Not significant
BMI	2	0.00235	0.001174	5.3889	0.004579*	Only group normal weight-overweight is not significant (0.6767049)
RESIDUALS	10691	2.32856	0.000218			
OUTCOME: TOTAL FRESHWATER EUTROPHICATION ARISING FROM FOOD CONSUMPTION						
SEX	1	0.00006036	6.0361e-05	600.2461	< 2.2e-16*	Significant
AGE	4	0.00003531	8.8260e-06	87.7728	< 2.2e-16*	Significant
EDUCATION	3	0.00000190	6.3200e-07	6.2858	0.0002948*	Groups secondary-tertiary short, secondary-tertiary long, and tertiary short-tertiary long are not significant (0.9283668, 0.9800789, 0.9926664)
INCOME	4	0.00000190	4.7400e-07	4.7177	0.0008389*	Only groups very low income-high income and very low income-very high income are significant (0.0303665, 0.0056028)
BMI	2	0.00000148	7.4200e-07	7.3783	0.0006279*	Only group normal weight-overweight is not significant (0.3715594)
RESIDUALS	10645	0.00107047	1.0100e-07			
OUTCOME: TOTAL GREENHOUSE GAS EMISSIONS ARISING FROM FOOD CONSUMPTION						
SEX	1	1241.9	1241.94	593.1228	< 2.2e-16*	Significant
AGE	4	556.5	139.13	66.4445	< 2.2e-16*	Only group 40-49 and 50-59 is not significant (0.1216089)
EDUCATION	3	27.1	9.04	4.3166	0.004763*	Only groups primary-tertiary short, and primary-tertiary long are significant (0.0096325, 0.0161837)
INCOME	4	67.8	16.94	8.0907	1.648e-06*	Only groups very low income-high income, very low income-very high income and low income-very high income are significant (0.0076769, 0.0006175, 0.0072432)
BMI	2	28.1	14.03	6.6988	0.001238*	Only group normal weight-overweight is not significant (0.4502983)
RESIDUALS	10615	22226.7	2.09			
OUTCOME: TOTAL LAND USE ARISING FROM FOOD CONSUMPTION						
SEX	1	1653.8	1653.83	763.8489	< 2.2e-16*	Significant
AGE	4	775.0	193.74	89.4830	< 2.2e-16*	Significant
EDUCATION	3	40.6	13.54	6.2525	0.0003092*	Only group secondary-tertiary long is significant (0.0001255)
INCOME	4	25.1	6.28	2.9021	0.0205597*	Not significant
BMI	2	78.0	39.01	18.0185	1.541e-08*	Only group normal weight-overweight is not significant (0.0816517)
RESIDUALS	10641	23039.1	2.17			
OUTCOME: TOTAL WATER USE ARISING FROM FOOD CONSUMPTION						
SEX	1	6.81	6.8106	143.1817	< 2e-16*	Significant
AGE	4	13.54	3.3858	71.1812	< 2e-16*	Only groups 60-69 and 80+, and 70-79 and 80+ are not significant (0.2564848, 0.9999655)
EDUCATION	3	4.78	1.5940	33.5120	< 2e-16*	Only group secondary-tertiary short is not significant (0.2602209)
INCOME	4	0.10	0.0248	0.5217	0.71983	Not significant
BMI	2	0.74	0.3690	7.7574	0.00043*	Only group overweight-obese is not significant (0.7572824)
RESIDUALS	10714	509.62	0.0476			
ANAVO; Analysis of Variance, DF; Degree of Freedom, *Statistically significant, p<0.05						

S5. Regression Results

	ESTIMATE	STANDARD ERROR	T STATISTICS	P VALUE
OUTCOME: TOTAL TERRESTRIAL ACIDIFICATION ARISING FROM FOOD CONSUMPTION^A				
SEX	-1.202e-03	7.909e-04	-1.520	0.12853
<u>AGE</u>				
50-59	-1.238e-03	2.251e-04	-5.500	3.88e-08*
60-69	-1.852e-03	2.390e-04	-7.747	1.03e-14*
70-79	-2.447e-03	3.256e-04	-7.515	6.17e-14*
80+	-2.857e-03	6.615e-04	-4.318	1.59e-05*
<u>EDUCATION</u>				
SECONDARY	1.459e-04	7.620e-04	0.191	0.84814
TERTIARY SHORT	-1.167e-03	1.041e-03	-1.121	0.26243
TERTIARY LONG	-2.087e-03	1.205e-03	-1.732	0.08332
<u>INCOME</u>				
LOW	-3.869e-05	6.680e-04	-0.058	0.95382
MODERATE	7.799e-04	7.477e-04	1.043	0.29696
HIGH	8.578e-04	8.696e-04	0.986	0.32397
VERY HIGH	2.576e-03	1.388e-03	1.856	0.06355
<u>BMI</u>				
OVERWEIGHT	1.447e-03	2.012e-04	7.193	6.79e-13*
OBESE	2.534e-03	2.409e-04	10.519	< 2e-16*
OUTCOME: TOTAL FRESHWATER EUTROPHICATION ARISING FROM FOOD CONSUMPTION^B				
SEX	-1.127e-05	1.626e-05	-0.693	0.488317
<u>AGE</u>				
50-59	7.459e-06	4.628e-06	1.612	0.107088
60-69	-1.108e-06	4.911e-06	-0.226	0.821518
70-79	-1.838e-05	6.677e-06	-2.753	0.005910*
80+	-5.198e-05	1.353e-05	-3.843	0.000122*
<u>EDUCATION</u>				
SECONDARY	2.089e-05	1.568e-05	1.332	0.182975
TERTIARY SHORT	-8.941e-06	2.136e-05	-0.419	0.675483
TERTIARY LONG	-4.775e-05	2.489e-05	-1.918	0.055106
<u>INCOME</u>				
LOW	1.330e-05	1.371e-05	0.971	0.331804
MODERATE	3.253e-05	1.539e-05	2.114	0.034527*
HIGH	4.696e-05	1.793e-05	2.619	0.008834*
VERY HIGH	7.453e-05	2.848e-05	2.617	0.008878*
<u>BMI</u>				
OVERWEIGHT	3.499e-05	4.135e-06	8.463	< 2e-16*
OBESE	6.411e-05	4.950e-06	12.951	< 2e-16*
OUTCOME: TOTAL GREENHOUSE GAS EMISSIONS ARISING FROM FOOD CONSUMPTION^C				
SEX	-1.102e-02	7.712e-02	-0.143	0.88635
<u>AGE</u>				
50-59	6.721e-02	2.199e-02	3.056	0.00225*
60-69	7.402e-02	2.337e-02	3.168	0.00154*
70-79	1.023e-02	3.176e-02	0.322	0.74725
80+	-1.091e-01	6.409e-02	-1.702	0.08886
<u>EDUCATION</u>				
SECONDARY	7.104e-02	7.432e-02	0.956	0.33921
TERTIARY SHORT	-7.688e-02	1.014e-01	-0.758	0.44848
TERTIARY LONG	-3.502e-01	1.174e-01	-2.983	0.00286*
<u>INCOME</u>				
LOW	5.984e-02	6.534e-02	0.916	0.35981
MODERATE	1.793e-01	7.323e-02	2.449	0.01434*
HIGH	2.110e-01	8.540e-02	2.471	0.01348*
VERY HIGH	3.447e-01	1.352e-01	2.549	0.01081*
<u>BMI</u>				
OVERWEIGHT	1.496e-01	1.966e-02	7.608	3.02e-14*
OBESE	2.696e-01	2.354e-02	11.453	< 2e-16*
OUTCOME: TOTAL LAND USE ARISING FROM FOOD CONSUMPTION^D				
SEX	-3.806e-03	8.041e-02	-0.047	0.962249
<u>AGE</u>				

50-59	-8.485e-02	2.308e-02	-3.676	0.000238*
60-69	-1.618e-01	2.446e-02	-6.615	3.90e-11*
70-79	-2.476e-01	3.323e-02	-7.450	1.01e-13*
80+	-3.763e-01	6.712e-02	-5.605	2.13e-08*
EDUCATION				
SECONDARY	-6.666e-02	7.786e-02	-0.856	0.391925
TERTIARY SHORT	-1.389e-01	1.063e-01	-1.307	0.191162
TERTIARY LONG	-3.219e-01	1.230e-01	-2.617	0.008890*
INCOME				
LOW	1.966e-02	6.813e-02	0.289	0.772914
MODERATE	8.675e-02	7.619e-02	1.139	0.254852
HIGH	1.245e-01	8.896e-02	1.399	0.161748
VERY HIGH	2.986e-01	1.432e-01	2.086	0.037035*
BMI				
OVERWEIGHT	1.742e-01	2.058e-02	8.465	< 2e-16*
OBESE	3.580e-01	2.464e-02	14.527	< 2e-16*
OUTCOME: TOTAL WATER USE ARISING FROM FOOD CONSUMPTION^E				
SEX	-2.419e-02	1.382e-02	-1.750	0.080149
AGE				
50-59	-1.185e-02	3.936e-03	-3.012	0.002602*
60-69	-1.452e-02	4.180e-03	-3.474	0.000516*
70-79	-1.631e-02	5.699e-03	-2.861	0.004228 *
80+	5.613e-03	1.155e-02	0.486	0.627051
EDUCATION				
SECONDARY	2.518e-02	1.333e-02	1.890	0.058847
TERTIARY SHORT	1.572e-02	1.833e-02	0.858	0.391101
TERTIARY LONG	2.445e-02	2.127e-02	1.150	0.250372
INCOME				
LOW	-3.199e-03	1.169e-02	-0.274	0.784289
MODERATE	1.367e-02	1.313e-02	1.041	0.297998
HIGH	-1.975e-04	1.528e-02	-0.013	0.989688
VERY HIGH	-5.077e-03	2.456e-02	-0.207	0.836251
BMI				
OVERWEIGHT	-5.259e-04	3.523e-03	-0.149	0.881322
OBESE	-1.616e-03	4.207e-03	-0.384	0.700873
*P<0.05 MODEL INCLUDED INTERACTION EFFECT BETWEEN SEX:EDUCATION:INCOME AND ADJUSTED FOR SMOKING STATUS, PHYSICAL ACTIVITY STATUS, AND ENERGY INTAKE. REFERENCE CATEGORIES WERE FEMALE, AGE 40-49, PRIMARY EDUCATION, VERY LOW INCOME, AND NORMAL WEIGHT.				
A 68.2% OF THE VARIABILITY IN TOTAL IMPACT CAN BE EXPLAINED BY THE MODEL (F=441.5, P<0.05).				
B 70.9% OF THE VARIABILITY IN TOTAL IMPACT CAN BE EXPLAINED BY THE MODEL (F=499.8, P<0.05).				
C 68.3% OF THE VARIABILITY IN TOTAL IMPACT CAN BE EXPLAINED BY THE MODEL (F=439.5, P<0.05).				
D 67.0% OF THE VARIABILITY IN TOTAL IMPACT CAN BE EXPLAINED BY THE MODEL (F=415.4, P<0.05).				
E 53.4% OF THE VARIABILITY IN TOTAL IMPACT CAN BE EXPLAINED BY THE MODEL (F=237.0, P<0.05).				

56. Pairwise comparisons for each interaction category of interest

Greenhouse Gas Emissions										Terrestrial Acidification					
Male 'Primary Education' Very Low Income	Male 'Primary Education' Very High Income	Male 'Tertiary Long Education' Very Low Income	Male 'Tertiary Long Education' Very High Income	Female 'Primary Education' Very Low Income	Female 'Primary Education' Very High Income	Female 'Tertiary Long Education' Very Low Income	Female 'Tertiary Long Education' Very High Income	Male 'Primary Education' Very Low Income	Male 'Primary Education' Very High Income	Male 'Tertiary Long Education' Very Low Income	Male 'Tertiary Long Education' Very High Income	Female 'Primary Education' Very Low Income	Female 'Primary Education' Very High Income	Female 'Tertiary Long Education' Very Low Income	Female 'Tertiary Long Education' Very High Income
	+	+	+	+	+	-	+	Male 'Primary Education' Very Low Income	+	+	+	Male 'Primary Education' Very Low Income	+	-	+
Male 'Primary Education' Very High Income		-	-	-	-	-	-	Male 'Primary Education' Very High Income		-	-	Male 'Primary Education' Very High Income		-	-
Male 'Tertiary Long Education' Very Low Income			+	-	+	-	+	Male 'Tertiary Long Education' Very Low Income			-	Male 'Tertiary Long Education' Very Low Income		-	-
Male 'Tertiary Long Education' Very High Income				-	+	-	+	Male 'Tertiary Long Education' Very High Income				Male 'Tertiary Long Education' Very High Income		-	+
Female 'Primary Education' Very Low Income					+		+	Female 'Primary Education' Very Low Income				Female 'Primary Education' Very Low Income		-	+
Female 'Primary Education' Very High Income								Female 'Primary Education' Very High Income				Female 'Primary Education' Very High Income		-	-
Female 'Tertiary Long Education' Very Low Income								Female 'Tertiary Long Education' Very Low Income				Female 'Tertiary Long Education' Very Low Income			+

Freshwater Eutrophication										Land Use					
Male 'Primary Education' Very Low Income	Male 'Primary Education' Very High Income	Male 'Tertiary Long Education' Very Low Income	Male 'Tertiary Long Education' Very High Income	Female 'Primary Education' Very Low Income	Female 'Primary Education' Very High Income	Female 'Tertiary Long Education' Very Low Income	Female 'Tertiary Long Education' Very High Income	Male 'Primary Education' Very Low Income	Male 'Primary Education' Very High Income	Male 'Tertiary Long Education' Very Low Income	Male 'Tertiary Long Education' Very High Income	Female 'Primary Education' Very Low Income	Female 'Primary Education' Very High Income	Female 'Tertiary Long Education' Very Low Income	Female 'Tertiary Long Education' Very High Income
Male 'Primary Education' Very Low Income	+	+	+	+	+	-	+	Male 'Primary Education' Very Low Income	+	-	+	Male 'Primary Education' Very Low Income	+	-	+
Male 'Primary Education' Very High Income		-	-	-	-	-	-	Male 'Primary Education' Very High Income		-	-	Male 'Primary Education' Very High Income		-	-
Male 'Tertiary Long Education' Very Low Income			-	-	+	-	+	Male 'Tertiary Long Education' Very Low Income			+	Male 'Tertiary Long Education' Very Low Income		-	+
Male 'Tertiary Long Education' Very High Income				-	+	-	+	Male 'Tertiary Long Education' Very High Income				Male 'Tertiary Long Education' Very High Income		-	-
Female 'Primary Education' Very Low Income					+	-	+	Female 'Primary Education' Very Low Income				Female 'Primary Education' Very Low Income		-	+
Female 'Primary Education' Very High Income						-	-	Female 'Primary Education' Very High Income				Female 'Primary Education' Very High Income		-	-
Female 'Tertiary Long Education' Very Low Income							+	Female 'Tertiary Long Education' Very Low Income				Female 'Tertiary Long Education' Very Low Income			+

Water Use										Land Use					
Male 'Primary Education' Very Low Income	Male 'Primary Education' Very High Income	Male 'Tertiary Long Education' Very Low Income	Male 'Tertiary Long Education' Very High Income	Female 'Primary Education' Very Low Income	Female 'Primary Education' Very High Income	Female 'Tertiary Long Education' Very Low Income	Female 'Tertiary Long Education' Very High Income	Male 'Primary Education' Very Low Income	Male 'Primary Education' Very High Income	Male 'Tertiary Long Education' Very Low Income	Male 'Tertiary Long Education' Very High Income	Female 'Primary Education' Very Low Income	Female 'Primary Education' Very High Income	Female 'Tertiary Long Education' Very Low Income	Female 'Tertiary Long Education' Very High Income
Male 'Primary Education' Very Low Income	+	+	+	+	+	+	+	Male 'Primary Education' Very Low Income	+	-	+	Male 'Primary Education' Very Low Income	+	+	+
Male 'Primary Education' Very High Income		+	+			-	-	Male 'Primary Education' Very High Income			+	Male 'Primary Education' Very High Income		+	+
Male 'Tertiary Long Education' Very Low Income			-					Male 'Tertiary Long Education' Very Low Income				Male 'Tertiary Long Education' Very Low Income		+	+
Male 'Tertiary Long Education' Very High Income								Male 'Tertiary Long Education' Very High Income				Male 'Tertiary Long Education' Very High Income		-	-
Female 'Primary Education' Very Low Income			+					Female 'Primary Education' Very Low Income				Female 'Primary Education' Very Low Income		-	+
Female 'Primary Education' Very High Income								Female 'Primary Education' Very High Income				Female 'Primary Education' Very High Income		-	-
Female 'Tertiary Long Education' Very Low Income								Female 'Tertiary Long Education' Very Low Income				Female 'Tertiary Long Education' Very Low Income			+

The figure is organized from row to column. Lighter colors indicate weaker associations, while darker colors represent stronger associations. Positive associations are marked with a "+" sign, and negative associations with a "-" sign. Predicted differences between interacting groups are calculated by using pairwise function with a Bonferroni correction. Red cells indicate statistical significance with $p < 0.05$, while blue cells indicate $p \geq 0.05$. The color scale is derived using quantile-based partitioning.

S7. INTERACTION EFFECTS IN REGRESSION MODEL

	Effect Estimate	Standard Error	T Statistics
OUTCOME: TOTAL GREENHOUSE GAS EMISSIONS ARISING FROM FOOD CONSUMPTION			
Male*Secondary Education	-1.971e-01	1.270e-01	-1.553
Male*Tertiary Education Short	4.414e-02	1.806e-01	0.244
Male*Tertiary Education Long	4.648e-01	2.180e-01	2.132**
Male*Low Income	-2.337e-02	1.033e-01	-0.226
Male*Moderate Income	-1.370e-01	1.115e-01	-1.229
Male*High Income	5.455e-02	1.223e-01	0.446
Male*Very High Income	1.428e-01	1.831e-01	0.780
Secondary Education*Low Income	-2.696e-02	9.732e-02	-0.277
Tertiary Education Short*Low Income	1.705e-01	1.244e-01	1.370
Tertiary Education Long*Low Income	3.911e-01	1.336e-01	2.927**
Secondary Education*Moderate Income	-7.102e-02	1.050e-01	-0.677
Tertiary Education Short*Moderate Income	6.201e-02	1.345e-01	0.461
Tertiary Education Long*Moderate Income	2.652e-01	1.388e-01	1.911
Secondary Education*High Income	-7.419e-02	1.122e-01	-0.662
Tertiary Education Short*High Income	2.149e-02	1.338e-01	0.161
Tertiary Education Long*High Income	3.660e-01	1.428e-01	2.563**
Secondary Education*Very High Income	-1.182e-01	1.631e-01	-0.725
Tertiary Education Short*Very High Income	2.632e-03	1.696e-01	0.016
Tertiary Education Long*Very High Income	3.229e-01	1.750e-01	1.845
Male*Secondary Education*Low Income	8.950e-02	1.579e-01	0.567
Male*Tertiary Education Short*Low Income	-5.922e-02	2.120e-01	-0.279
Male*Tertiary Education Long*Low Income	-6.597e-01	2.453e-01	-2.689**
Male*Secondary Education*Moderate Income	3.344e-01	1.657e-01	2.018**
Male*Tertiary Education Short*Moderate Income	3.357e-02	2.172e-01	0.155
Male*Tertiary Education Long*Moderate Income	-4.108e-01	2.443e-01	-1.682
Male*Secondary Education*High Income	1.308e-01	1.696e-01	0.771
Male*Tertiary Education Short*High Income	-6.094e-02	2.154e-01	-0.283
Male*Tertiary Education Long*High Income	-6.206e-01	2.456e-01	-2.527**
Male*Secondary Education*Very High Income	9.832e-02	2.280e-01	0.431
Male*Tertiary Education Short*Very High Income	-1.234e-01	2.541e-01	-0.486
OUTCOME: TOTAL TERRESTRIAL ACIDIFICATION ARISING FROM FOOD CONSUMPTION			
Male*Secondary Education	2.251e-04	1.296e-03	0.174
Male*Tertiary Education Short	2.819e-03	1.855e-03	1.520
Male*Tertiary Education Long	5.295e-03	2.270e-03	2.332**
Male*Low Income	1.591e-03	1.057e-03	1.505
Male*Moderate Income	4.033e-04	1.140e-03	0.354
Male*High Income	1.867e-03	1.249e-03	1.495
Male*Very High Income	1.865e-03	1.875e-03	0.994
Secondary Education*Low Income	4.218e-04	9.961e-04	0.423
Tertiary Education Short*Low Income	2.149e-03	1.277e-03	1.683
Tertiary Education Long*Low Income	2.438e-03	1.371e-03	1.778
Secondary Education*Moderate Income	-3.376e-04	1.074e-03	-0.314
Tertiary Education Short*Moderate Income	1.336e-03	1.378e-03	0.969
Tertiary Education Long*Moderate Income	1.409e-03	1.424e-03	0.989

Secondary Education*High Income	-3.492e-05	1.146e-03	-0.030
Tertiary Education Short*High Income	1.136e-03	1.370e-03	0.830
Tertiary Education Long*High Income	2.398e-03	1.463e-03	1.639
Secondary Education*Very High Income	-9.777e-04	1.675e-03	-0.584
Tertiary Education Short*Very High Income	-2.902e-04	1.742e-03	-0.167
Tertiary Education Long*Very High Income	1.419e-03	1.798e-03	0.789
Male*Secondary Education*Low Income	-1.670e-03	1.611e-03	-1.037
Male*Tertiary Education Short*Low Income	-3.547e-03	2.176e-03	-1.630
Male*Tertiary Education Long*Low Income	-7.437e-03	2.545e-03	-2.922**
Male*Secondary Education*Moderate Income	1.118e-03	1.689e-03	0.662
Male*Tertiary Education Short*Moderate Income	-2.711e-03	2.227e-03	-1.217
Male*Tertiary Education Long*Moderate Income	-5.136e-03	2.534e-03	-2.027**
Male*Secondary Education*High Income	-7.581e-04	1.730e-03	-0.438
Male*Tertiary Education Short*High Income	-3.546e-03	2.208e-03	-1.606
Male*Tertiary Education Long*High Income	-7.537e-03	2.548e-03	-2.958**
Male*Secondary Education*Very High Income	-4.094e-04	2.335e-03	-0.175
Male*Tertiary Education Short*Very High Income	-2.943e-03	2.607e-03	-1.129
OUTCOME: TOTAL FRESHWATER EUTROPHICATION ARISING FROM FOOD CONSUMPTION			
Male*Secondary Education	-2.393e-05	2.667e-05	-0.897
Male*Tertiary Education Short	2.886e-05	3.805e-05	0.759
Male*Tertiary Education Long	9.244e-05	4.665e-05	1.981**
Male*Low Income	-1.551e-07	2.173e-05	-0.007
Male*Moderate Income	-1.019e-05	2.344e-05	-0.435
Male*High Income	7.885e-06	2.569e-05	0.307
Male*Very High Income	1.214e-05	3.857e-05	0.315
Secondary Education*Low Income	-3.296e-06	2.049e-05	-0.161
Tertiary Education Short*Low Income	4.160e-05	2.621e-05	1.587
Tertiary Education Long*Low Income	6.357e-05	2.828e-05	2.248**
Secondary Education*Moderate Income	-1.321e-05	2.210e-05	-0.598
Tertiary Education Short*Moderate Income	1.631e-05	2.824e-05	0.578
Tertiary Education Long*Moderate Income	3.357e-05	2.938e-05	1.143
Secondary Education*High Income	-2.806e-05	2.362e-05	-1.188
Tertiary Education Short*High Income	-7.766e-06	2.817e-05	-0.276
Tertiary Education Long*High Income	5.038e-05	3.020e-05	1.669
Secondary Education*Very High Income	-3.649e-05	3.440e-05	-1.061
Tertiary Education Short*Very High Income	-9.013e-06	3.573e-05	-0.252
Tertiary Education Long*Very High Income	4.012e-05	3.698e-05	1.085
Male*Secondary Education*Low Income	1.957e-06	3.315e-05	0.059
Male*Tertiary Education Short*Low Income	-3.478e-05	4.465e-05	-0.779
Male*Tertiary Education Long*Low Income	-1.190e-04	5.225e-05	-2.278**
Male*Secondary Education*Moderate Income	4.801e-05	3.476e-05	1.381
Male*Tertiary Education Short*Moderate Income	-4.074e-05	4.567e-05	-0.892
Male*Tertiary Education Long*Moderate Income	-8.536e-05	5.206e-05	-1.640
Male*Secondary Education*High Income	2.347e-05	3.561e-05	0.659
Male*Tertiary Education Short*High Income	-1.883e-05	4.533e-05	-0.416
Male*Tertiary Education Long*High Income	-1.346e-04	5.236e-05	-2.571**
Male*Secondary Education*Very High Income	2.188e-05	4.803e-05	0.456

Male*Tertiary Education Short*Very High Income	-3.392e-05	5.355e-05	-0.633
OUTCOME: TOTAL LAND USE ARISING FROM FOOD CONSUMPTION			
Male*Secondary Education	-2.254e-02	1.325e-01	-0.170
Male*Tertiary Education Short	1.329e-01	1.922e-01	0.692
Male*Tertiary Education Long	2.524e-01	2.317e-01	1.089
Male*Low Income	8.981e-02	1.079e-01	0.832
Male*Moderate Income	1.971e-02	1.163e-01	0.170
Male*High Income	1.435e-01	1.276e-01	1.124
Male*Very High Income	7.573e-02	1.935e-01	0.391
Secondary Education*Low Income	6.562e-02	1.017e-01	0.645
Tertiary Education Short*Low Income	8.263e-02	1.305e-01	0.633
Tertiary Education Long*Low Income	2.052e-01	1.400e-01	1.465
Secondary Education*Moderate Income	7.172e-02	1.097e-01	0.654
Tertiary Education Short*Moderate Income	1.149e-01	1.405e-01	0.818
Tertiary Education Long*Moderate Income	1.006e-01	1.453e-01	0.692
Secondary Education*High Income	-1.582e-03	1.172e-01	-0.013
Tertiary Education Short*High Income	4.570e-02	1.399e-01	0.327
Tertiary Education Long*High Income	1.641e-01	1.495e-01	1.098
Secondary Education*Very High Income	-9.735e-02	1.722e-01	-0.565
Tertiary Education Short*Very High Income	-1.215e-01	1.790e-01	-0.679
Tertiary Education Long*Very High Income	5.207e-02	1.846e-01	0.282
Male*Secondary Education*Low Income	-1.509e-02	1.649e-01	-0.092
Male*Tertiary Education Short*Low Income	-4.195e-02	2.248e-01	-0.187
Male*Tertiary Education Long*Low Income	-3.956e-01	2.601e-01	-1.521
Male*Secondary Education*Moderate Income	1.899e-01	1.729e-01	1.099
Male*Tertiary Education Short*Moderate Income	-9.449e-02	2.298e-01	-0.411
Male*Tertiary Education Long*Moderate Income	-2.087e-01	2.588e-01	-0.806
Male*Secondary Education*High Income	6.539e-02	1.771e-01	0.369
Male*Tertiary Education Short*High Income	-1.329e-01	2.280e-01	-0.583
Male*Tertiary Education Long*High Income	-3.689e-01	2.602e-01	-1.418
Male*Secondary Education*Very High Income	1.404e-01	2.401e-01	0.585
Male*Tertiary Education Short*Very High Income	-4.007e-02	2.698e-01	-0.149
OUTCOME: TOTAL WATER USE ARISING FROM FOOD CONSUMPTION			
Male*Secondary Education	-2.608e-02	2.270e-02	-1.149
Male*Tertiary Education Short	-2.370e-02	3.301e-02	-0.718
Male*Tertiary Education Long	1.152e-02	3.982e-02	0.289
Male*Low Income	-6.885e-03	1.841e-02	-0.374
Male*Moderate Income	-3.343e-02	1.987e-02	-1.683
Male*High Income	-1.140e-02	2.180e-02	-0.523
Male*Very High Income	5.596e-03	3.275e-02	0.171
Secondary Education*Low Income	1.603e-03	1.742e-02	0.092
Tertiary Education Short*Low Income	1.436e-02	2.245e-02	0.640
Tertiary Education Long*Low Income	2.586e-02	2.417e-02	1.070
Secondary Education*Moderate Income	-3.219e-02	1.882e-02	-1.711
Tertiary Education Short*Moderate Income	-2.522e-03	2.419e-02	-0.104
Tertiary Education Long*Moderate Income	1.049e-02	2.508e-02	0.418
Secondary Education*High Income	-1.590e-02	2.008e-02	-0.792

Tertiary Education Short*High Income	-1.186e-02	2.411e-02	-0.492
Tertiary Education Long*High Income	2.138e-02	2.578e-02	0.829
Secondary Education*Very High Income	-7.981e-03	2.951e-02	-0.270
Tertiary Education Short*Very High Income	1.323e-02	3.076e-02	0.430
Tertiary Education Long*Very High Income	3.268e-02	3.177e-02	1.029
Male*Secondary Education*Low Income	-2.804e-03	2.815e-02	-0.100
Male*Tertiary Education Short*Low Income	2.394e-02	3.850e-02	0.622
Male*Tertiary Education Long*Low Income	-3.929e-02	4.457e-02	-0.882
Male*Secondary Education*Moderate Income	4.294e-02	2.952e-02	1.455
Male*Tertiary Education Short*Moderate Income	3.758e-02	3.938e-02	0.954
Male*Tertiary Education Long*Moderate Income	-1.149e-03	4.442e-02	-0.026
Male*Secondary Education*High Income	2.169e-02	3.023e-02	0.718
Male*Tertiary Education Short*High Income	3.372e-02	3.908e-02	0.863
Male*Tertiary Education Long*High Income	-3.188e-02	4.466e-02	-0.714
Male*Secondary Education*Very High Income	-2.503e-03	4.077e-02	-0.061
Male*Tertiary Education Short*Very High Income	2.657e-03	4.596e-02	0.058

*Model included age, sex, education, income, body mass index, interaction effects between sex:education:income, and adjusted for smoking status, physical activity, and energy intake. Reference categories were female, primary education, and very low income. Education is categorized into four levels; primary (up to 10 years of schooling), secondary education (a minimum of 3 years), tertiary short (college/university less than 4 years), and tertiary long (college/university 4 years or more). Income is given in Norwegian kroner, and categorized into five levels; <=350000 (very low), 351000 – 550000 (low), 551000 – 750000 (moderate), 750000 – 1000000 (high), 1000000 + (very high). **statistically significant (p < 0.05).*

S8. Total number of individuals in each intersectional group					
	Greenhouse gas emissions	Terrestrial Acidification	Freshwater Eutrophication	Land Use	Water Use
Male*Primary Education*Very Low Income	207	207	206	209	209
Male*Primary Education*Very High Income	63	64	63	62	67
Male*Tertiary Long Education*Very Low Income	25	24	24	24	24
Male*Tertiary Long Education*Very High Income	716	720	719	717	713
Female*Primary Education*Very Low Income	380	384	381	386	381
Female*Primary Education*Very High Income	47	47	47	46	46
Female*Tertiary Long Education*Very Low Income	67	67	66	67	66
Female*Tertiary Long Education*Very High Income	849	850	846	849	845