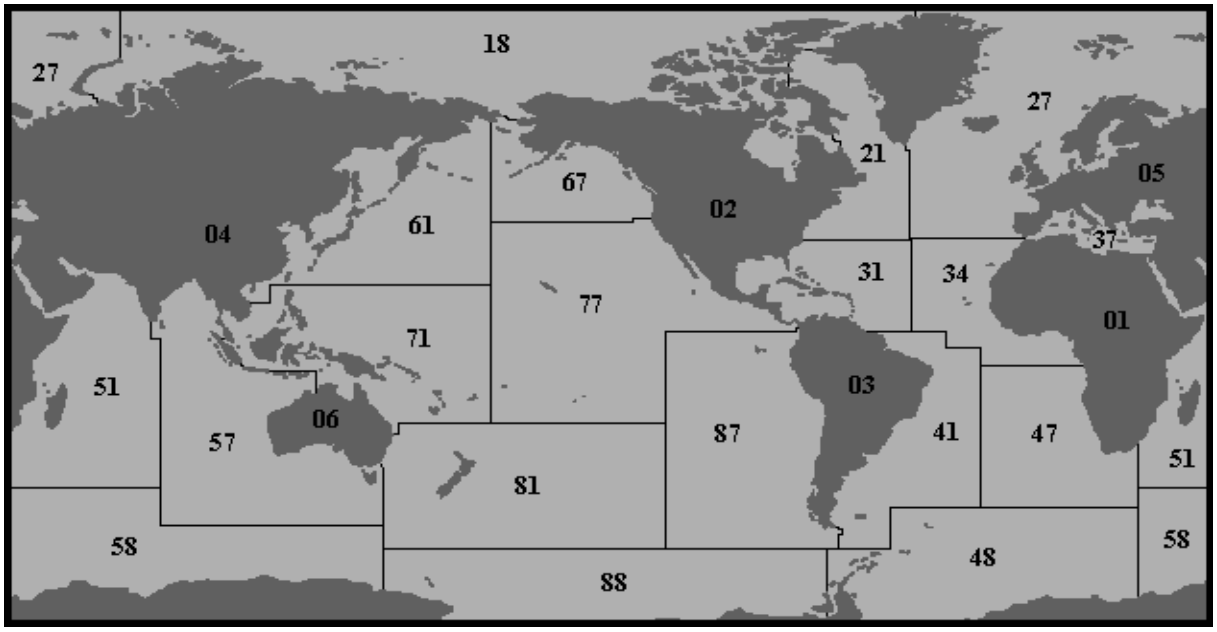
ANNEXES

ANNEX 1
Nomenclatural table of 41 seafood species, relevant for Belgian consumption

English name	Dutch name	French name	Scientific name
Anchovy	Ansjovis	Anchois	Engraulis encrasicolus
Anglerfish	Zeeduivel, lotte	Badroie, lotte, Crapaud	Lophius piscatorius
Brill	Griet	Barbue	Scophthalmus rhombus
Cod	Kabeljauw	Cabillaud	Gadus morhua
Common (brown) shrimp	Noordzeegarnaal	Crevette grise	Crangon crangon
Common whelk	Slak/Wulk	Buccin	Buccinidae
Conger	Zeepaling, congeraal	Congre	Conger conger
Crab	Krab	Crabe	Cancer pagurus
Eel	Paling	Anguille	Anguilla anguilla
European catfish	Meerval	Silure, poisson-chat	Clarias gariepinus
European plaice	Schol, pladijs	Plie	Pleuronectes platessa
Haddock	Schelvis	Eglefin	Melanogrammus aeglefinus
Halibut	Heilbot	Flétan	Hippoglossus hippoglossus/stenolepis – Reinhardtius hippoglossoides
Herring	Haring	Hareng	Clupea harengus
John dory	Zonnevis	Saint-pierre	Zeus faber
Ling	Leng	Lingue	Molva molva/dypterygia
Lobster	Zeekreeft	Homard	Homarus gammarus
Mackerel	Markeel	Maquereau	Scomber scombrus
Milkfish	Melkvis, bandeng	Chanos	Chanos chanos
Mussel	Mossel	Moule	Mytilus edulis
Nile perch	Victoriabaars	Perche du Nil	Lates niloticus
Norway lobster	Langoestine	Langoustine	Nephrops norvegicus
Oyster	Oesters	Huître	Ostrea edulis - Crassostrea gigas
Redfish	Roodbaars	Sébaste	Sebastes marinus/mentella
Saithe &Pollack	Alaska koolvis	Lieu de l'Alaska	Theregra chalcogramma
Saithe &Pollack	Koolvis & Pollack	Lieu noir/jeune	Pollachius pollachius/virens
Salmon	Zalm, Atlantische	Saumon	Salmo salar
Salmon	Zalm, Pacifische	Saumon	Oncorhynchus spp
Sardine, pilchard	Sardien	Sardine, pilchard	Sardina pilchardus
Scampi	Scampi, tijgergarnaal, gamba	Crevette géante, tigrée	Penaeus spp
Sea bream	Zeebrasem, dorade	Dorade	Pagellus bogaraveo
Skate, ray	Rog	Raie	Rajidae spp.
Sole (Dover)	Tong	Sole (commune)	Solea solea
Sprat	Sprot	Sprat, amelette	Sprattus sprattus
Squid, octopus	Inktvis, octopus	Poulpe, encornet	Octopus vulgaris
Squid, octopus	Inktvis, pijlinktvis	Calmar	Loligo forbesi/vulgaris
Squid, octopus	Inktvis, zeekat	Sèche	Sepia officinalis
St-James shell	Sint-Jakobsschelp	Coquille Saint-Jacques	Pecten maximus/jacobeus
Swordfish	Zwaardvis	Espadon	Xiphias gladius
Tilapia	Tilapia	Tilapia	Oreochromis niloticus/aureaus/mossambica
Trout	Forel	Truite	Salmo trutta
Trout, rainbow	Forel, regenboog-	Truite arc-en-ciele	Oncorhynchus mykiss
Tuna	Tonijn	Thon	Thunnus albacares/alalunga/maccoyii/obesus/thynnus – Katsuwonus pelamis
Turbot	Tarbot	Turbot	Scophthalmus maximus, Psetta maxima
Whiting	Wijting	Merlan	Merlangius merlangus
Wolf fish	Zeewolf	Loup de mer	Anarhichas lupus

ANNEX 2

Map of the 24 international fishing grounds all over the world with a table indicating the area codes and names (www.fao.org)



	Area code	Area name
Continents	1	Africa - Inland waters
	2	America, North - Inland waters
	3	America, South - Inland waters
	4	Asia - Inland waters
	5	Europe - Inland waters
	6	Oceania - Inland waters
Parts of an ocean	21	Atlantic, Northwest
	27	Atlantic, Northeast
	31	Atlantic, Western Central
	34	Atlantic, Eastern Central
	37	Mediterranean and Black Sea
	41	Atlantic, Southwest
	47	Atlantic, Southeast
	48	Atlantic, Antarctic
	51	Indian Ocean, Western
	57	Indian Ocean, Eastern
	58	Indian Ocean, Antarctic
	61	Pacific, Northwest
	67	Pacific, Northeast
	71	Pacific, Western Central
	77	Pacific, Eastern Central
	81	Pacific, Southwest
	87	Pacific, Southeast
	88	Pacific, Antarctic

ANNEX 3
Reference List Data Base Nutrients in Seafood

(1) Dias M.G., Sanchez M.V., Bartolot H., Oliviera L. Vitamin content of fish and fish product consumed in Portugal. Electronic Journal of Environmental, Agricultural and Food Chemistry 2003; 2(4).

(2) Mattila P, Ronkainen R, Lehikoinen K, Piironen V. Effect of household cooking on the vitamin D content in fish, eggs, and wild mushrooms. Journal of food composition and analysis 1999; 12:153-160.

(3) Mattila P, Piironen V, Uusi-Rauva E, Koivistoinen P. Cholecalciferol and 25-hydroxycholecalciferol contents in fish and fish products. Journal of food composition and analysis 1995; 8:232-243.

(4) Suzuki H, Hayakawa S, Wada S, Okazaki E, Yamazawa M. Effect of solar drying on vitamin D3 and provitamin D3 contents in fish meat. Journal of Agricultural and Food Chemistry 1988; 36:803-806.

(5) Gokoglu N, Yerlikaya P, Cengiz E. Effects of cooking methods on the proximate composition and mineral contents of rainbow trout (Oncorhynchus mykiss). Food Chemistry 2004; 84(1):19-22.

(6) Piironen V, Toivo J, Lampi AM. New data for cholesterol contents in meat, fish, milk, eggs and their products consumed in Finland. Journal of food composition and analysis 2002; 15(6):705-713.

(7) Echarte M, Conchillo A, Ansorena D, Astiasaran I. Evaluation of the nutritional aspects and cholesterol oxidation products of pork liver and fish pates. Food Chemistry 2004; 86(1):47-53.

(8) Alasalvar C, Taylor KDA, Zubcov E, Shahidi F, Alexis M. Differentiation of cultured and wild sea bass (Dicentrarchus labrax): total lipid content, fatty acid and trace mineral composition. Food Chemistry 2002; 79(2):145-150.

(9) Hamre K, Lie O, Sandnes K. Seasonal development of nutrient composition, lipid oxidation and colour of fillets from Norwegian spring-spawning herring (Clupea harengus L.). Food Chemistry 2003; 82(3):441-446.

(10) Nettleton JA, Exler J. Nutrients in Wild and Farmed Fish and Shellfish. Journal of Food Science 1992; 57(2):257-260.

(11) Sanchez-Muniz FJ, Viejo JM, Medina R. Deep-frying of sardines in different culinary fats. Changes in the fatty acid composition of sardines and frying fats. Journal of agriculture and food chemistry 1992; 40:2252-2256.

(12) Bell JG, McEvoy J, Webster JL, McGhee F, Millar RM, Sargent JR. Flesh lipid and carotenoid composition of Scottish farmed Atlantic salmon (Salmo salar). Journal of Agricultural and Food Chemistry 1998; 46(1):119-127.

(13) Candela M, Astiasaran I, Bello J. Effects of frying and warmholding on fatty acids and cholesterol of sole (Solea solea), codfish (Gadus morhua) and hake (Merluccius merluccius). Food Chemistry 1997; 58(3):227-231.

(14) Espe M, Nortvedt R, Lie O, Hafsteinsson H. Atlantic salmon (Salmo salar, L.) as raw material for the smoking industry. I: effect of different salting methods on the oxidation of lipids. Food Chemistry 2001; 75(4):411-416.

(15) Espe M, Nortvedt R, Lie O, Hafsteinsson H. Atlantic salmon (Salmo salar, L) as raw material for the smoking industry. II: Effect of different smoking methods on losses of nutrients and on the oxidation of lipids. Food Chemistry 2002; 77(1):41-46.

(16) Ruiz-Roso B, Cuesta I, Perez M, Borrego E, Perez-Olleros L, Varela G. Lipid composition and palatability of canned sardines. Influence of the canning process and storage in olive oil for five years. Journal of the Science of Food and Agriculture 1998; 77(2):244-250.

(17) Agren JJ, Hanninen O. Effects of cooking on the fatty-acids of 3 fresh-water fish species. Food Chemistry 1993; 46(4):377-382.

(18) Salo-Vaananen P, Ollilainen V, Mattila P, Lehikoinen K, Salmela-Molsa E, Piironen V. Simultaneous HPLC analysis of fat-soluble vitamins in selected animal products after small-scale extraction. Food Chemistry 2000; 71(4):535-543.

(19) Metcalf RG, James MJ, Mantzioris E, Cleland LG. A practical approach to increasing intakes of n-3 polyunsaturated fatty acids: use of novel foods enriched with n-3 fats. The European journal of clinical nutrition 2003; 57(12):1605-1612.

(20) Garcia-Arias MT, Pontes EA, Garcia-Linares MC, Garcia-Fernandez MC, Sanchez-Muniz FJ. Cooking-freezing-reheating (CFR) of sardine (*Sardina pilchardus*) fillets. Effect of different cooking and reheating procedures on the proximate and fatty acid compositions. Food Chemistry 2003; 83:349-356.

(21) Hepburn FN, Exler J, Weihrauch JL. Provisional Tables on the Content of Omega-3-Fatty-Acids and Other Fat Components of Selected Foods. Journal of the American Dietetic Association 1986; 86(6):788-793.

(22) Mustafa FA, Medeiros DM. Proximate Composition, Mineral-Content, and Fatty-Acids of Catfish (Ictalurus-Punctatus, Rafinesque) for Different Seasons and Cooking Methods. Journal of Food Science 1985; 50(3):585-588.

(23) Tibbetts J. Eating away at a global food source. Environmental health perspectives 2004; 112(5):A283-A291.

(24) Holland B, Brown J, Buss DH. Fish and fish products. The third supplement to McCance & Widdowson's. The composition of food (5th edition). 5 ed. Cambridge: 1993.

(25) Mattila P, Piironen V, Haapala R, Hirvi T, UusiRauva E. Possible factors responsible for the high variation in the cholecalciferol contents of fish. Journal of Agricultural and Food Chemistry 1997; 45(10):3891-3896.

(26) Egaas E, Lambertsen G. Naturally Occurring Vitamin-D3 in Fish Products Analyzed by Hplc, Using Vitamin-D2 As An International Standard. International Journal for Vitamin and Nutrition Research 1979; 49(1):35-42.

(27) Takeuchi A, Okano T, Teraoka S, Murakami Y, Kobayashi T. High-Performance Liquid-Chromatographic Determination of Vitamin-D in Foods, Feeds and Pharmaceuticals by Successive Use of Reversed-Phase and Straight-Phase Columns. J Nutr Sci Vitaminol 1984; 30(1):11-25.

(28) Villalobos MC, Gregory NR, Bueno MP. Determination of Vitamin-D2 and Vitamin-D3 in Foods, Feeds, and Pharmaceuticals, Using High-Performance Liquid-Chromatography - Comparison of 3 Different Columns. Journal of Micronutrient Analysis 1990; 8(2):79-89.

(29) Kenny DE, O'Hara TM, Chen TC, Lu ZR, Tian X, Holick MF. Vitamin D content in Alaskan Arctic zooplankton, fishes, and marine mammals. Zoo Biology 2004; 23(1):33-43.

(30) Aminullah Bhuiyan AKM, Ratnayake WMN, Ackman RG. Nutritional composition of raw and smokes Atlantic mackerel (*Scomber scomber*): Oil- ad water-solubles vitamins. Journal of food composition and analysis 1993; 6:172-184.

(31) Sondergaard H, Leerbeck E. Vitamin D content of Danish foods. Supplement concerning fish. Soborg, Denmark: 1984.

(32) Strubbe K. Probabilistische benadering van de inname van poy-onverzadigde vetzuren versus contaminanten bij consumptie van vis en zeevruchten. Ghent University, 2003.

(33) Candela M, Astiasaran I, Bello J. Deep-fat frying modifies high-fat fish lipid fraction. Journal of Agricultural and Food Chemistry 1998; 46(7):2793-2796.

(34) Aro T, Tahvonene R, Mattila T, Nurmi J, Sivonen T, Kallio H. Effects of season and processing on oil content and fatty acids of baltic herring (*Clupea harengus membras*). Journal of Agricultural and Food Chemistry 2000; 48:6085-6093.

(35) Sérot T, Gandemer G, Demaimay M. Lipid and fatty acid composition of muscle from farmed and wild adult turbot. Aquaculture International 1998; 6:331-343.

(36) Cahu C, Salen P, de Lorgeril M. Farmed and wild fish in the prevention of cardiovascular diseases: Assessing possible differences in lipid nutritional values. Nutrition Metabolism and Cardiovascular Diseases 2004; 14(1):34-41.

(37) Bandarra NM, Batista I, Nunes ML, Empis JM, Christie WW. Seasonal changes in lipid composition of sardine (Sardina pilchardus). Journal of Food Science 1997; 62(1):40-42.

(38) Olsson GB, Olsen RL, Carlehog M, Ofstad R. Seasonal variations in chemical and sensory characteristics of farmed and wild Atlantic halibut (Hippoglossus hippoglossus). Aquaculture 2003; 217(1-4):191-205.

(39) Hermans C. Voedingswaarde van vis: probabilistische benadering van de inname van vitamine D en van de invloed van bereiding op het gehalte aan essentiële vetzuren. Ghent University, 2004.

(40) Kromhout D. Vis en gezonde voeding. Nutrinews special, 1-16. 1999.

(41) Refsgaard HHF, Brockhoff PB, Jensen B. Biological variation of lipid constituents and distribution of tocopherols and astaxanthin in farmed Atlantic salmon (Salmo salar). Journal of Agricultural and Food Chemistry 1998; 46(3):808-812.

(42) Souci SW, Fachmann W, Kraut H. Food composition and nutrition tables. 6 ed. München: Scientific Publishers Stuttgart, 2000.

(43) Danish Institute for Food and Veterinary Research. Danish Food Composition Databank (revision 6.0). www.foodcomp.dk. 1-6-2005.

(44) Beemster CJM, van der Heijden LJM, Hulshof KFAM, Langius JAE, van Oosten HM, Pruissen-Boskaljon JC et al. Nevo-tabel. Nederlands voedingsstoffenbestand. Den Haag: 2001.

(45) USDA National Data Laboratory. USDA National Nutrient Database for Standard Reference. Release 16-1. www.nalusda.gov/fnic/foodcomp/ . 2004.

(46) Food Standards Agency. McCance and Widdowson's. The composition of foods, Sixth summary edition. Cambridge: Royal Society of Chemistry, 2002.

(47) Gökçe MA, Tasbozan O, Celik M, Tabakoglu SS. Seasonal variation in proximate and fatty acid compositions of female common sole (*Solea solea*). Food Chemistry 2004; 88:419-423.

(48) Naczk M, Williams J, Brennan K, Liyanapathirana C, Shahidi F. Composition characteristics of green crab (*Carinus maenas)*. Food Chemistry 2004; 88:429-434.

(49) Skonberg DI, Perkins BL. Nutrient composition of green crab (Carcinus maenus) leg meat and claw meat. Food Chemistry 2002; 77(4):401-404.

(50) Astorg P, Arnault N, Czernichow S, Noisette N, Galan P, Hercberg S. Dietary intakes and food sources of n-6 and n-3 PUFA in french adult men and women. Lipids 2004; 39(6):527-535.

(51) Echarte M, Zulet MA, Astiasaran I. Oxidation process affecting fatty acids and cholesterol in fried and roasted salmon. Journal of Agricultural and Food Chemistry 2001; 49(11):5662-5667.

(52) Institut Paul Lambin. Table de composition des aliments. Buxelles: 2004.

(53) National Public Health Institute of Finland. Finnish Food Composition Database. www.fineli.fi . 18-4-2004.

(54) Salvini S., Parpinel M., Gnagnarella P., Maisonneuve P., Turrini A. Food Composition Database for Epidemiological Studies in Italy. 1998.

(55) Ackman RG. Fatty acids in Fish and Shellfish. In: Chow CK, editor. Fatty acids in food and their health implications. New York: Marcel Dekker, 2000: 153-175.

(56) Aro TL, Larmo PS, Backman CH, Kallio HP, Tahvonen RL. Fatty acids and fat-soluble vitamins in salted herring (Clupea harengus) products. Journal of Agricultural and Food Chemistry 2005; 53(5):1482-1488.

(57) Rasoarahona JRE, Barnathan G, Bianchini JP, Gaydou EM. Influence of season on the lipid content and fatty acid profiles of three tilapia species (Oreochromis niloticus, O-macrochir and Tilapia rendalli) from Madagascar. Food Chemistry 2005; 91(4):683-694.

(58) Sugiyama Jogakuen University. Food Composition Database in Sugiyama Univ. Standard Tables of Food Composition in Japan. http://database.food.sugiyama-u.ac.jp/index_asia.php . 9-2-2004.

(59) Health Canada. Canadian Nutrient File, version 2005. http://www.hc-sc.gc.ca/food-aliment/ns-sc/nr-rn/surveillance/cnf-fcen/e_index.html . 10-1-2005.

(60) Copeman LA, Parrish CC. Lipids classes, fatty acids, and sterols in seafood from gilbert bay, southern Labrador. Journal of Agricultural and Food Chemistry 2004; 52(15):4872-4881.

(61) Carnovale E, Marletta L. Copmosizione degli alimenti - Aggiornamento 2000. INRAN - Milano, editor. 2000.

(62) Favier J-C, Ireland-Ripert J, Toque C, Feinberg M. Répertoire général des aliments. 2 édition ed. Paris: 1995.

(63) NUBEL. Merknamendatabank. www.internubel.be . 2005.

(64) Zmijewski T, Kujawa R, Jankowska B, Kwiatkowska A, Mamcarz A. Slaughter yield, proximate and fatty acid composition and sensory properties of rapfen (Aspius aspius L) with tissue of bream (Abramis brama L) and pike (Esox lucius L). Journal of food composition and analysis 2006; 19(2-3):176-181.

(65) Karl H, Münker W. Jod in marinen lebensmitteln. Ernährungs-Umschau 1999; 46(8), 288-291.

(66) Julshamn K, Dahl L, Eckhoff K. Determination of iodine in seafood by inductively coupled plasma/mass spectrometry. Journal of AOAC International 2001; 84(6), 1976-1983.

(67) Lee SM, Lewis J, Buss DH, Holcombe GD, Lawrance PR. Iodine in British foods and diets. The British Journal of Nutrition 1994; 72(3), 435-446.

(68) Wenlock RW, Buss DH, Moxon RE, Bunton NG. Trace nutrients. 4. Iodine in British food. The British Journal of Nutrition 1982; 47(3), 381-390.

(69) Karl H, Münker W, Krause S, Bagge I. Determination, spatial variation and distribution of iodine in fish. Deutsche Lebensmittel-Rundschau 2001; 97(3), 89-96.

(70) Sidwell VD. Chemical and nutritional composition of finfishes, whales, crustaceans, mollusks, and their products. NOAA Technical Memorandum NMFS, F/SEC-11, Seattle: 1981.

(71) Montag A, Grote B. Untersuchungen zur Jod-Brom-Relation in lebensmitteln. Zeitschrift für Lebensmitteluntersuchung und –Forschung 1981; 172, 123-128.

(72) Manthey M. Gehalte an Natrium, Kalium, Jod und Fluorid in Fischerzeugnissen. Deutsche Lebenmittel-Rundschau 1989; 85, 318-321.

(73) Harrison MT, McFarlane S, Harden R, Wayne E. Nature and availability of iodine in fish. The American journal of clinical nutrition 1965; 17, 73-77.

(74) Arannilewa ST, Salawu SO, Sorungbe AA, Ola-Salawu BB. Effect of frozen period on the chemical, microbiological and sensory quality of frozen tilapia fish (Sarotherodun galiaenus). African Journal of Biotechnology 2005; 4(8), 852-855.

ANNEX 4
Reference List Data Base Contaminants in Seafood

(1) Hites RA, Foran JA, Carpenter DO, Hamilton MC, Knuth BA, Schwager SJ. Global assessment of organic contaminants in farmed salmon. Science 2004; 303(5655):226-229.

(2) Julshamn K, Lundebye AK, Heggstad K, Berntssen MHG, Boe B. Norwegian monitoring programme on the inorganic and organic contaminants in fish caught in the Barents Sea, Norwegian Sea and North Sea, 1994-2001. Food Additives and Contaminants 2004; 21(4):365-376.

(3) Karl H, Ruoff U, Bluthgen A. Levels of dioxins in fish and fishery products on the German market. Chemosphere 2002; 49(7):765-773.

(4) Mahaffey KR, Clickner RP, Boduro CC. Blood organic mercury and dietary mercury intake: national health and nutrition examination survey, 1999 and 2000. Environmental health perspectives 2004; 112(5):562-570.

(5) Burger J, Gochfeld M. Mercury in canned tuna: white versus light and temporal variation. Environmental Research 2004; 96(3):239-249.

(6) Leonards PE, Lohman M, de Wit MM, Booy G, Brandsma SH, de Boer J. Actuele situatie van gechloreerde dioxines, furanen en polychloorbifenylen in visserij-producten: Quick- en Full-Scan. RIVO, editor. C034/00. 28-9-2000. IJmuiden.

(7) Karl H, Ruoff U, Schwind K-H, Jira W. Dioxins, dioxin-like PCBs and organochlorine pesticides in farmed salmon of various origin. Organohalogen compounds 2004; 66:1684-1690.

(8) Storelli MM, Giacominelli-Stuffler R, Storelli A, D'Addabbo R, Palermo C, Marcotrigiano GO. Survey of total mercury and methylmercury levels in edible fish from the Adriatic Sea. Food Additives and Contaminants 2003; 20(12):1114-1119.

(9) Storelli MM, Giacominelli-Stuffler R, Storelli A, Marcotrigiano GO. Polychlorinated biphenyls in seafood: contamination levels and human dietary exposure. Food Chemistry 2003; 82(3):491-496.

(10) Storelli MM, Stuffler RG, Storelli A, Marcotrigiano GO. Total mercury and methylmercury content in edible fish from the Mediterranean Sea. Journal of Food Protection 2003; 66(2):300-303.

(11) Storelli MM, Stuffler RG, Marcotrigiano GO. Total and methylmercury residues in tuna-fish from the Mediterranean sea. Food Additives and Contaminants 2002; 19(8):715-720.

(12) Storelli MM, Marcotrigiano GO. Total mercury levels in muscle tissue of swordfish (Xiphias gladius) and bluefin tuna (Thunnus thynnus) from the Mediterranean Sea (Italy). Journal of Food Protection 2001; 64(7):1058-1061.

(13) Storelli MM, Marcotrigiano GO. Fish for human consumption: risk of contamination by mercury. Food Additives and Contaminants 2000; 17(12):1007-1011.

(14) Storelli MM, Marcotrigiano GO. Cadmium and total mercury in some cephalopods from the South Adriatic Sea (Italy). Food Additives and Contaminants 1999; 16(6):261-265.

(15) Bayarri S, Baldassarri LT, Iacovella N, Ferrara F, di Domenico A. PCDDs, PCDFs, PCBs and DDE in edible marine species from the Adriatic Sea. Chemosphere 2001; 43(4-7):601-610.

(16) Corsolini S, Focardi S, Kannan K, Tanabe S, Borrell A, Tatsukawa R. Congener Profile and Toxicity Assessment of Polychlorinated-Biphenyls in Dolphins, Sharks and Tuna Collected from Italian Coastal Waters. Marine Environmental Research 1995; 40(1):33-53.

(17) Sonesten L. Mercury content in roach (Rutilus rutilus L.) in circumneutral lakes - effects of catchment area and water chemistry. Environmental Pollution 2001; 112(3):471-481.

(18) Strubbe K. Probabilistische benadering van de inname van poy-onverzadigde vetzuren versus contaminanten bij consumptie van vis en zeevruchten. Ghent University, 2003.

(19) National Food Administration. Interim Report 1 - Study of dioxin levels in fatty fish from Sweden 2000-2001. 2003.

(20) National Food Administration. Interim Report 2 – Study of dioxin levels in fatty fish from Sweden 2000-2001. 2003.

(21) National Food Administration. Interim Report 3 – Study of dioxin levels in fatty fish from Sweden 2001-2002. 2003.

(22) National Food Administration. Interim Report 4 - Study of dioxin levels in fatty fish from Sweden 2000-2003. 2003.

(23) National Food Administration. Interim Report 5 - Study of dioxin-like PCBs in fatty fish from Sweden 2000-2002. 2003.

(24) Deboer J, Stronck CJN, Traag WA, Vandermeer J. Non-Ortho and Mono-Ortho Substituted Chlorobiphenyls and Chlorinated Dibenzo-P-Dioxins and Dibenzofurans in Marine and Fresh-Water Fish and Shellfish from the Netherlands. Chemosphere 1993; 26(10):1823-1842.

(25) Knowles TG, Farrington D, Kestin SC. Mercury in UK imported fish and shellfish and UK-farmed fish and their products. Food Additives and Contaminants 2003; 20(9):813-818.

(26) US Department of health and human services and US Environmental Protection Agency. Mercury levels in commercial fish and shellfish. Washington DC, editor. http://vm.cfsan.fda.gov/~frf/sea-mehg.html. 2004.

(27) Storelli MM, Giacominelli SR, Marcotrigiano GO. Total mercury in muscle of benthic and pelagic fish from the South Adriatic Sea (Italy). Food Addit Contam 1998; 15(8):876-883.

(28) Kiviranta H, Vartiainen T, Parmanne R, Hallikainen A, Koistinen J. PCDD/Fs and PCBs in Baltic herring during the 1990s. Chemosphere 2003; 50(9):1201-1216.

(29) Potrykus J, Albalat A, Pempkowiak J, Porte C. Content and pattern of organic pollutants (PAHs, PCBs and DDT) in blue mussels (Mytilus trossulus) from the southern Baltic Sea. Oceanologia 2003; 45(2):337-355.

(30) Larsen EH, Andersen NL, Moller A, Petersen A, Mortensen GK, Petersen J. Monitoring the content and intake of trace elements from food in Denmark. Food Additives and Contaminants 2002; 19(1):33-46.

(31) Riget F, Asmund G, Aastrup P. Mercury in Arctic char (Salvelinus alpinus) populations from Greenland. Science of the Total Environment 2000; 245(1-3):161-172.

(32) Voegborlo RB, El Methnani AM, Abedin MZ. Mercury, cadmium and lead content of canned tuna fish. Food Chemistry 1999; 67(4):341-345.

(33) Ruoff U, Bluthgen A, Karl H. Zum Vorkommen polychlorierter Dienzo-p-dioxine und -furane (PCDD/F) in Speisefishen, Krebs-, Weichtieren und Fischerzeugnissen. Kieler Milchwirtschaftliche Forschungsberichte 1999; 51:51-61.

(34) EU Directorate-General Health and Consumer Protection. Assessment of dietary intake of dioxins and related PCBs by the population of EU Members States. Directorate-General Health and Consumer Protection, editor. 2000.

(35) Hallikainen A, Kiviranta H. Dioxin in fish from Finland. Ministry of agriculture and Forestry, editor. 28-2-2003.

(36) Nuurtamo M, Varo P, Saari E, Koivistoinen P. Mineral element composition of Finnish foods. VI. Fish and fish products. Acta Agriculturae Scandinavica 1980; Suppl 22:77-87.

(37) Plessi M, Bertelli D, Monzani J. Mercury and selenium content in selected seafood. Journal of food composition and analysis 2001; 14:461-467.

(38) Dietz R, Riget F, Johansen P. Lead, cadmium, mercury and selenium in Greenland marine animals. Science of the Total Environment 1996; 186(1-2):67-93.

(39) Easton MDL, Luszniak D, der Geest E. Preliminary examination of contaminant loadings in farmed salmon, wild salmon and commercial salmon feed. Chemosphere 2002; 46(7):1053-1074.

(40) Goemans G, Belpaire C, Raemaeckers M, Guns M. Het Vlaamse palingpolluentenmeetnet, 1994-2001:gehalten aan polychloorbifenylen, organochloorpesticiden en zware metalen in paling. Instituut voor Bosbouw en Wildbeheer, editor. IBW.Wb.V.R.2003.99. 2003. Hoeilaart.

(41) Johansen P, Muir D, Asmund G, Riget F. Contaminants in the traditional Greenland diet. 492, 1-74. 2004. National Environmenta REsearch Institute. NERI Technical report.

(42) Olsson A, Vitinsh M, Plikshs M, Bergman A. Halogenated environmental contaminants in perch (Perca fluviatilis) from Latvian coastal areas. Science of the Total Environment 1999; 239(1-3):19-30.

(43) Falandysz J, Wyrzykowska B, Warzocha J, Barska I, Garbacik-Wesolowska A, Szefer P. Organochlorine pesticides and PCBs in perch Perca fluviatilis from the Odra/Oder river estuary, Baltic Sea. Food Chemistry 2004; 87(1):17-23.

(44) Falandysz J, Wyrzykowska B, Puzyn T, Strandberg L, Rappe C. Polychlorinated biphenyls (PCBs) and their congener-specific accumulation in edible fish from the Gulf of Gdansk, Baltic Sea. Food Additives and Contaminants 2002; 19(8):779-795.

(45) Jacobs M, Ferrario J, Byrne C. Investigation of polychlorinated dibenzo-p-dioxins, dibenzo-p-furans and selected coplanar biphenyls in Scottish farmed Atlantic salmon (Salmo salar). Chemosphere 2002; 47(2):183-191.

(46) Atuma SS, Aune M, Bergh A, Wicklund-Glynn A, Darnerud PO, Larsson L et al. Polychlorinated biphenyls in salmon (*Salmo salar*) from the Swedish East Coast. Organohalogen compounds 1998; 39:153-156.

(47) Gregor P, Hajslová J. Planar PCBs in selected freshwater fish from Czech Republic. Organohalogen compounds 1998; 39(249):252.

(48) Becher G, Jensen AJ, Zubchenko A, Haug LS, Hvidsten NA, Johnsen BO et al. Dioxins and non-ortho PCBs in Atlantic salmon, *Salmo salar*, from major Norwegian and Russian salmon rivers. Organohalogen compounds 1998; 39:427-430.

(49) Falandysz J, Chwir A, Wyrzykowska B. Total mercury contamination of some fish species in the Firth of Vistula and the Lower Vistula River, Poland. Polish Journal of Environmental Studies 2000; 9(4):335-339.

(50) Boszke L, Siepak J, Falandysz J. Total mercury contamination of selected organisms in Puck Bay, Baltic Sea, Poland. Polish Journal of Environmental Studies 2003; 12(3):275-285.

(51) Ministry of Agriculture FaF. Dioxins and polychlorinated biphenyls in foods and human milk. Food Surveillance Sheet No. 105. 1997. MAFF, London.

(52) Ministry of Agriculture FaF. Dioxins and PCBs in farmed trout in England and Wales. Food Surveillance Sheet No. 145. 1997. MAFF, London.

(53) Ministry of Agriculture FaF. Dioxins and PCBs in UK and imported marine fish. Food Surveillance Sheet No. 184. 1999. MAFF, London.

(54) Food Safety Authority of Ireland. Investigation on PCDDs/PCDFs and several PCBs in fish samples (Salmon and Trout). 1-105. 30-11-2001. ERGO Forschungsgesellschaft mbH.

(55) Laboratoire intercommunal de chimie et de bactériologie. PCB dans le poissons gras. 15-2-2002.

(56) Dabeka R, McKenzie AD, Forsyth DS, Conacher HBS. Survey of total mercury in some edible fish and shellfish species collected in Canada in 2002. Food Additives and Contaminants 2004; 21(5):434-440.

(57) Smith GC, Hart ADM, Rose MD, Macarthur R, Fernandes A, White S et al. Intake estimation of polychlorinated dibenzo-p-dioxins, dibenzofurans (PCDD/Fs) and polychlorinated biphenyls (PCBs) in salmon: the inclusion of uncertainty. Food Additives and Contaminants 2002; 19(8):770-778.

(58) Atuma SS, Linder CE, WicklundGlynn A, Andersson O, Larsson L. Survey of consumption fish from Swedish waters for chlorinated pesticides and polychlorinated biphenyls. Chemosphere 1996; 33(5):791-799.

(59) Mayer R. PCDD/PCDF levels in freshwater fish from Southern Germany. Organohalogen compounds 2002; 57:181-184.

(60) Abad E, Llerena JJ, Saulo J, Caixach J, Rivera J. Study on PCDDs/PCDFs and co-PCBs content in food samples from Catalonia (Spain). Chemosphere 2002; 46(9-10):1435-1441.

(61) van Leeuwen SPJ, Traag WA, Hoogenboom LAP, Deboer J. Dioxins, furans and dioxin-like PCBs in wild, farmed, imported and smoked eel from the Netherlands. Organohalogen compounds 2002; 57:217-220.

(62) Pieters H, van Leeuwen SPJ, de Boer J. Verontreiniging in aal en snoekbaars: monitoringprogramma ten behoeve van de Nederlandse sportvisserij - 2002. RIVO, editor. C078/03, 1-18. 2003. IJmuiden.

(63) Schoeters G, Goyvaerts MP, Ooms DL, Van Cleuvenbergen R. The evaluation of dioxin and dioxin-like contaminants in selected food samples obtained from the Belgian market: comparison of TEQ measurements obtained through the CALUX bioassay with congener specific chemical analyses. Chemosphere 2004; 54(9):1289-1297.

(64) Wu WZ, Schramm KW, Xu Y, Kettrup A. Accumulation and partition of polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/F) in the muscle and liver of fish. Chemosphere 2001; 43(4-7):633-641.

(65) Ylitalo GM, Buzitis J, Krahn MM. Analyses of tissues of eight marine species from Atlantic and Pacific coasts for dioxin-like chlorobiphenyls (CBs) and total CBs. Arch Environ Contam Toxicol 1999; 37(2):205-219.

(66) Tyrrell L, Glynn D, Mchugh B, Rowe A, Monaghan E, Costello J et al. Trace metal and chlorinated hydrocarbon concentrations in various fish species landed at selected Irish ports, 2001. Marine Institute, editor. 13, 1-21. 2003. Dublin. Marine Environment & Health Series.

(67) Tyrrell L, Glynn D, Rowe A, Mchugh B, Costello J, Duffy C et al. Trace metal and chlorinated hydrocarbon concentrations in various fish sepcies landed at selected Irish ports, 1997-2000. Marine Institute, editor. 8, 1-25. 2003. Dublin. Marine Environment and Health Series.

(68) Burger J, Gaines KF, Boring CS, Stephens WL, Snodgrass J, Gochfeld M. Mercury and selenium in fish from the Savannah River: Species, trophic level, and locational differences. Environmental Research 2001; 87(2):108-118.

(69) Roots O. Dioxin content in Baltic herring and sprat in autumn 2002. Estonian Environmental Research Centre, editor. 397. 31-1-2003.

(70) Otsa E, Roots O, Simm A. Level of dioxins and poly-chlorinated biphenyls (PCB), similar to dioxins, in the fish in the coastal sea of Estonia in the year 2003. Estonian Environmental Research Centre, editor. 133. 24-10-2003.

(71) Jacobs MN, Covaci A, Schepens P. Investigation of selected persistent organic pollutants in farmed Atlantic salmon (Salmo salar), salmon aquaculture feed, and fish oil components of the feed. Environ Sci Technol 2002; 36(13):2797-2805.

(72) Voorspoels S, Covaci A, Maervoet J, Schepens P. PCBs and OCPs in marine species from the Belgian North Sea and the Western Scheldt Estuary. Organohalogen compounds 2004; 66:1704-1710.

(73) van Leeuwen SPJ, Traag WA, Hoogenboom LAP, Booij G, Lohman M, Dao QT et al. Dioxines, furanen en PCBs in aal: onderzoek naar wilde aal, gekweekte aal, geïmporteerde en gerookte aal. RIVO, editor. C034/02, 1-34. 2002. IJmuiden, RIVO.

(74) Schöter-Kermani C, Herrmann T, Päpke O, Stachel B. PCDDs, PCDFs, and dioxin-like PCBs in Breams (Abramis brama) from German Rivers: results from the German Environmental Specimen Bank. Organohalogen compounds 2004; 66:1779-1782.

(75) Hove H, Julshamn K, Haldorsen A-KL. Levels of PCDDs, PCDFs, dioxin-like PCBs in fillet of Norwegian eel (*Anguilla anguilla*). Organohalogen compounds 2003; 60-65.

(76) Watanabe KH, Desimone FW, Thiyagarajah A, Hartley WR, Hindrichs AE. Fish tissue quality in the lower Mississippi River and health risks from fish consumption. Sci Total Environ 2003; 302(1-3):109-126.

(77) Baeyens W, Leermakers M, Papina T, Saprykin A, Brion N, Noyen J et al. Bioconcentration and biomagnification of mercury and methylmercury in North Sea and Scheldt estuary fish. Arch Environ Contam Toxicol 2003; 45(4):498-508.

(78) Storelli MM, Storelli A, Giacominelli-Stuffler R, Marcotrigiano GO. Mercury speciation in the muscle of two commercially important fish, hake (*Merluccius merluccius*) and striped mullet (*Mullus barbatus*) from the Mediterranean sea: estimated weekly intake. Food Chemistry 2005; 89:295-300.

(79) Forsyth DS, Casey V, Dabeka R, McKenzie AD. Methylmercury levels in predatory fish species marketed in Canada. Food Additives and Contaminants 2004; 21(9):849-856.

(80) Sanzo JM, Dorronsoro M, Amiano P, Amurrio A, Aguinagalde FX, Azpiri MA. Estimation and validation of mercury intake associated with fish consumption in an EPIC cohort of Spain. Public Health Nutr 2001; 4(5):981-988.

(81) Love JL, Rush GM, McGrath H. Total mercury and methylmercury levels in some New Zealand commercial marine fish species. Food Addit Contam 2003; 20(1):37-43.

(82) Svobodova Z, Dusek L, Hejtmanek M, Vykusova B, Smid R. Bioaccumulation of mercury in various fish species from Orlik and Kamyk water reservoirs in the Czech Republic. Ecotoxicol Environ Saf 1999; 43(3):231-240.

(83) Kucuksezgin F, Altay O, Uluturhan E, Kontas A. Trace metal and organochlorine residue levels in red mullet (Mullus barbatus) from the eastern Aegean, Turkey. Water Res 2001; 35(9):2327-2332.

(84) Jewett SC, Zhang X, Naidu AS, Kelley JJ, Dasher D, Duffy LK. Comparison of mercury and methylmercury in northern pike and Arctic grayling from western Alaska rivers. Chemosphere 2003; 50(3):383-392.

(85) Juresa D, Blanusa M. Mercury, arsenic, lead and cadmium in fish and shellfish from the Adriatic Sea. Food Addit Contam 2003; 20(3):241-246.

(86) Campbell LM, Osano O, Hecky RE, Dixon DG. Mercury in fish from three rift valley lakes (Turkana, Naivasha and Baringo), Kenya, East Africa. Environ Pollut 2003; 125(2):281-286.

(87) Binelli A, Provini A. Risk for human health of some POPs due to fish from Lake Iseo. Ecotoxicol Environ Saf 2004; 58(1):139-145.

(88) Perugini M, Cavaliere M, Giammarino A, Mazzone P, Olivieri V, Amorena M. Levels of polychlorinated biphenyls and organochlorine pesticides in some edible marine organisms from the Central Adriatic Sea. Chemosphere 2004; 57(5):391-400.

(89) Nakata H, Hirakawa Y, Kawazoe M, Nakabo T, Arizono K, Abe S et al. Concentrations and compositions of organochlorine contaminants in sediments, soils, crustaceans, fishes and birds collected from Lake Tai, Hangzhou Bay and Shanghai city region, China. Environ Pollut 2005; 133(3):415-429.

(90) Belpaire C, Van Thuyne G, Cooreman K. PCB metingen in consumptiepaling uit de handel in Vlaanderen. 22-11-2000.

(91) Usero J, Izquierdo C, Morillo J, Gracia I. Heavy metals in fish (Solea vulgaris, Anguilla anguilla and Liza aurata) from salt marshes on the southern Atlantic coast of Spain. Environ Int 2004; 29(7):949-956.

(92) Bordajandi LR, Gomez G, Fernandez MA, Abad E, Rivera J, Gonzalez MJ. Study on PCBs, PCDD/Fs, organochlorine pesticides, heavy metals and arsenic content in freshwater fish species from the River Turia (Spain). Chemosphere 2003; 53(2):163-171.

(93) Castro MS, McLaughlin EN, Davis SL, Morgan RP. Total mercury concentrations in lakes and fish of western Maryland, USA. Arch Environ Contam Toxicol 2002; 42(4):454-462.

(94) Scerbo R, Ristori T, Stefanini B, De Ranieri S, Barghigiani C. Mercury assessment and evaluation of its impact on fish in the Cecina river basin (Tuscany, Italy). Environmental Pollution 2005; 135:179-186.

(95) Capelli R, Drava G, Siccardi C, De Pellegrini R, Minganti V. Study of the distribution of trace elements in six species of marine organisms of the Ligurian Sea (north-western Mediterranean)--comparison with previous findings. Ann Chim 2004; 94(7-8):533-546.

(96) NIFES. Nifes Seafood-data - Levels of undesirable substances. http://www.nifes.no/seafood-data/indexe.html . 1-9-2004.

(97) Storelli MM, Marcotrigiano GO. Content of mercury and cadmium in fish (Thunnus alalunga) and cephalopods (Eledone moschata) from the south-eastern Mediterranean Sea. Food Additives and Contaminants 2004; 21(11):1051-1056.

(98) Campbell LM, Balirwa JS, Dixon DG, Hecky RE. Biomagnification of mercury in fish from Thruston Bay, Napoleon Gulf, Lake Victoria (East Africa). African Journal of Aquatic Science 2004; 29(1):91-96.

(99) Campbell L, Dixon DG, Hecky RE. A review of mercury in Lake Victoria, East Africa: implications for human and ecosystem health. J Toxicol Environ Health B Crit Rev 2003; 6(4):325-356.

(100) Szefer P, Domagala-Wieloszewska M, Warzocha J, Garbacik-Wesolowska A, Ciesielski T. Distribution and relationships of mercury, lead, cadmium, copper and zinc in perch (Perca fluviatilis) from the Pomeranian Bay and Szczecin Lagoon, southern Baltic. Food Chemistry 2003; 81(1):73-83.

(101) Corsolini S, Ademollo N, Romeo T, Greco S, Focardi S. Persistent organic pollutants in edible fish: a human and environmental health problem. Microchemical Journal 2005; 79(1-2):115-123.

(102) Burger J, Stern AH, Gochfeld M. Mercury in commercial fish: optimizing individual choices to reduce risk. Environ Health Perspect 2005; 113(3):266-271.

(103) Seixas S, Bustamante P, Pierce GJ. Interannual patterns of variation in concentrations of trace elements in arms of Octopus vulgaris. Chemosphere 2005; 59(8):1113-1124.

(104) Raemaeckers M. Contamination data ICES. Personal communication, 26-4-2005.

(105) Green NW, Knutzen J. Organohalogens and metals in marine fish and mussels and some relationships to biological variables at reference localities in Norway. Marine Pollution Bulletin 2003; 46(3):362-374.

(106) Andersen JL, Depledge MH. A survey of total mercury and methylmercury in edible fish and invertebrates from Azorean waters. Marine Environmental Research 1997; 44(3):331-350.

(107) Zhang XM, Naidu AS, Kelley JJ, Jewett SC, Dasher D, Duffy LK. Baseline concentrations of total mercury and methylmercury in salmon returning via the Bering Sea (1999-2000). Marine Pollution Bulletin 2001; 42(10):993-997.

(108) Gallani B, Boix A. Dioxins and PCBs in Food and Feed: Data available to the European Commission. EUR 21093 EN. 2004.

(109) Ueno D, Watanabe M, Subramanian A, Tanaka H, Fillmann G, Lam PK et al. Global pollution monitoring of polychlorinated dibenzo-p-dioxins (PCDDs), furans (PCDFs) and coplanar polychlorinated biphenyls (coplanar PCBs) using skipjack tuna as bioindicator. Environ Pollut 2005; 136(2):303-313.

(110) Naso B, Perrone D, Ferrante MC, Bilancione M, Lucisano A. Persistent organic pollutants in edible marine species from the Gulf of Naples, Southern Italy. Sci Total Environ 2005; 343(1-3):83-95.

(111) Ikem A, Egiebor NO. Assessment of trace elements in canned fishes (mackerel, tuna, salmon, sardines and herrings) marketed in Georgia and Alabama (United States of America). Journal of food composition and analysis 2005; 18(8):771-787.

(112) Knutzen J, Bjerkeng B, Naes K, Schlabach M. Polychlorinated dibenzofurans/dibenzo-p-dioxins (PCDF/PCDDs) and other dioxin-like substances in marine organisms from the Grenland fjords, S. Norway, 1975-2001: present contamination levels, trends and species specific accumulation of PCDF/PCDD congeners. Chemosphere 2003; 52(4):745-760.

(113) Danish Veterinary and Food Administration. Chemical contaminants. Food monitoring, 1998-2003. Part 1. 2005.

(114) Danish Veterinary and Food Administration. Combined report on dioxin in salmon and herring form the Baltic Sea. 2004.

(115) Corsolini S, Borghesi N, Focardi S. Chlorinated dibenzo-dioxins, -furans and biphenyls in tissues of wild and farmed bluefin tuna (Thunnus thynnus) from the Western Mediterranean Sea: accumulation patterns, toxic equivalents and risk for human consumption. Organohalogen compounds 2005; 67:1478-1483.

(116) Bignert A, Sundqvist K, Wiberg K. Spatial and seasonal variation on the dioxin and PCB content in herring from the northern Baltic Sea. Organohalogen compounds 2005; 67:1403-1405.

(117) Nakamura M, Handa H, Tagate H, Kawakami H, Nagasaki T, Ikezu A et al. Comparison of dioxin and dioxin-like PCB concentrations in differing wild and farmed tuna sections available on the Japanese market using the CALUX assay and HRGC/HRMS. Organohalogen compounds 2005; 67:1508-1512.

(118) Diletti G., Ripani A, Ceci R, De Benedictus A, Scortichini G. PCDD/PCDF levels in farmed eels at different stages of growth. Organohalogen compounds 2005; 67:1462-1464.

(119) Bordajandi LR, Gomez G, Abad E, Rivera J, Mar Fernandez-Baston M, Blasco J et al. Survey of persistent organochlorine contaminants (PCBs, PCDD/Fs, and PAHs), heavy metals (Cu, Cd, Zn, Pb, and Hg), and arsenic in food samples from Huelva (Spain): levels and health implications. J Agric Food Chem 2004; 52(4):992-1001.

(120) Emami Khansari F, Ghazi-Khansari M, Abdollahi M. Heavy metals content of canned tuna fish. Food Chemistry 2005; 93(2):293-296.

(121) Fattore E, Carubelli G, Nichetti S, Mariani G, Crosa G, Calamari D et al. PCB contamination in farmed and wild sea bass (Dicentrarchus labrax L.) and exposure evaluation associated with fish consumption. Organohalogen compounds 2005; 67:1427-1430.

(122) Shelepchikov AA, Shenderyuk VV, Brodsky ES, Baholdina LP. Contamination of Russian Baltic fish by polychlorinated dibenzo-p-dioxins, dibenzofurans and dioxin-like biphenyls. Organohalogen compounds 2005; 67:1502-1507.

(123) FAVV. Contamination data Seafood. Personal communication.

ANNEX 5

Distributions of the different nutrients and contaminants in seafood

Table 1 Distribution and its parameters for the EPA&DHA concentration in 34 fish species, as well as the number of data points used (N)

Species	Distribution	Param1	Param2	Param3	Param4	Param5	N
	uniform			min	max		
	betageneral	α1	α2	min	max		
	normal	μ	σ	Tr min	Tr max		
	loglogistic	β	α	Tr min	Tr max	γ (min)	
	lognorm	μ	σ	Tr min	Tr max	shift	
Anchovy	uniform	NA	NA	3.0852	20.6615	NA	7
Anglerfish	normal	1.5832	0.8678	0.5000	5.2200	NA	5
Caviar	normal	15.2756	13.1798	0.0000	NA	NA	9
Cod	normal	3.3168	0.9774	0.5000	8.8000	NA	29
Common shrimp	normal	3.6600	0.9785	1.5000	14.0000	NA	3
Common whelk	betageneral	0.3113	2.9108	0.0692	1.0713	NA	3
Conger	uniform	NA	NA	0.0000	4.0000	NA	2
Crab	betageneral	0.9539	3.6449	2.3222	9.5440	NA	21
Eel	betageneral	0.5414	2.3157	0.0000	40.3848	NA	10
European plaice	normal	2.5188	2.5569	0.5000	10.0200	NA	6
Haddock	betageneral	0.5221	2.7852	1.6850	2.9060	NA	9
Halibut	normal	4.7376	3.6458	0.2450	23.5600	NA	14
Herring	loglogistic	16.1697	10.6812	3.4350	56.0000	-3.5261	37
John dory	uniform	NA	NA	2.5000	7.5000	NA	1
Lobster	normal	1.7130	1.6039	0.0000	NA	NA	6
Mackerel	betageneral	0.3500	2.3370	12.0212	45.1811	NA	18
Mussel	loglogistic	56.5106	42.5258	0.9840	16.2200	-53.1307	11
Nile perch	betageneral	0.2856	2.7272	0.2626	10.5809	NA	11
Norway lobster	normal	1.7130	1.6039	0.0000	NA	NA	6
Saint-James shell	loglogistic	0.0484	1.0334	0.9450	7.4000	1.8880	6
Saithe and Pollack	betageneral	1.0133	2.4937	1.7505	10.4212	NA	12
Salmon	normal	20.6855	8.0150	2.2500	65.4000	NA	67
Sardine	normal	19.9393	10.9294	1.9730	NA	NA	45
Scampi	normal	4.1746	0.8729	1.0000	10.9000	NA	10
Sea bream	normal	4.4740	3.9125	0.0000	17.7000	NA	8
Skate	uniform	NA	NA	1.0000	2.5500	NA	2
Sole	betageneral	0.2856	2.7272	0.2626	10.5809	NA	11
Sprat	loglogistic	22.6204	2.9426	6.5000	71.4600	-9.4869	3
Squid	normal	3.5102	1.7501	0.5250	18.2000	NA	9
Surimi	normal	3.5900	0.2735	1.6000	NA	NA	3
Trout	lognormal	13.9674	2.7366	1.0000	48.2400	-4.2529	33
Tuna	betageneral	0.3667	2.0300	2.1431	34.7867	NA	20
Whiting	normal	2.3234	0.5577	0.5000	10.3600	NA	4
Wolffish	normal	4.4740	3.9125	0.0000	17.7000	NA	8

Table 2 Distribution and its parameters for the vitamin D concentration in 34 fish species, as well as the number of data points used (N)

Species	Distribution	Param1	Param2	Param3	Param4	Param5	N
	uniform			min	max		
	betageneral	α1	α2	min	max		
	normal	μ	σ	Tr min	Tr max		
	lognorm	μ	σ	Tr min	Tr max	shift	
Anchovy	lognormal	0.0486	0.0757	0.0000	0.2800	-0.0039	12
Anglerfish	uniform	NA	NA	0.0000	0.0010	NA	2
Caviar	betageneral	0.6357	2.2928	0.0191	0.3793	NA	16
Cod	lognormal	0.0300	0.0817	0.0000	0.1560	-0.0022	16
Common shrimp	uniform	NA	NA	0.0000	0.0010	NA	3
Common whelk	uniform	NA	NA	0.0000	0.0010	NA	1
Conger	uniform	NA	NA	0.0000	0.0010	NA	3
Crab	uniform	NA	NA	0.0000	0.0010	NA	2
Eel	lognormal	0.1574	0.3891	NA	1.4000	0.0196	16
European plaice	lognormal	0.0013	0.0121	0.0000	0.0600	0.0000	6
Haddock	lognormal	0.0015	0.0015	0.0000	0.0280	-0.0004	6
Halibut	betageneral	0.3895	0.6429	0.0088	0.1526	NA	11
Herring	normal	0.1477	0.0909	0.0000	0.8140	NA	60
John dory	uniform	NA	NA	0.0000	0.0010	NA	1
Lobster	uniform	NA	NA	0.0000	0.0010	NA	2
Mackerel	lognormal	0.1127	0.0329	0.0005	0.4220	-0.0608	44
Mussel	lognormal	0.0024	0.0084	0.0000	0.0276	-0.0001	8
Nile perch	uniform	NA	NA	0.0000	0.0010	NA	1
Norway lobster	uniform	NA	NA	0.0000	0.0010	NA	1
Saint-James shell	uniform	NA	NA	0.0000	0.0010	NA	1
Saithe and Pollack	normal	0.0091	0.0090	0.0000	0.0500	NA	9
Salmon	lognormal	0.1383	0.0669	0.0000	0.6000	NA	58
Sardine	lognormal	0.2484	0.0629	0.0050	0.6000	-0.1633	34
Scampi	normal	0.0006	0.0003	NA	0.0100	NA	4
Sea bream	normal	0.0070	0.0061	0.0000	0.0460	NA	4
Skate	uniform	NA	NA	0.0000	0.0010	NA	1
Sole	lognormal	0.0522	0.0442	0.0000	0.1813	-0.0352	5
Sprat	normal	0.1477	0.0909	0.0000	0.8140	NA	3
Squid	uniform	NA	NA	0.0000	0.0010	NA	5
Surimi	uniform	NA	NA	0.0000	0.0010	NA	0
Trout	lognormal	3.4966	0.0267	0.0000	0.3800	-3.4261	28
Tuna	lognormal	0.0343	0.0240	0.0000	0.4600	-0.0039	31
Whiting	uniform	NA	NA	0.0000	0.0010	NA	11
Wolffish	betageneral	0.2263	0.4041	0.0049	0.0160	NA	4

Table 3 Distribution and its parameters for the iodine concentration in 34 fish species, as well as the number of data points used (N)

Species	Distribution	Param1	Param2	Param3	Param4	Param5	N
	uniform			**min**	**max**		
	betageneral	**α1**	**α2**	**min**	**max**		
	normal	**μ**	**σ**	**Tr min**	**Tr max**		
	logistic	**α**	**β**	**Tr min**	**Tr max**		
	loglogistic	**β**	**α**	**Tr min**	**Tr max**	**γ (min)**	
Anchovy	betageneral	0.4037	1.9862	0.0036	1.8848	NA	15
Anglerfish	loglogistic	5.3796	5.5783	0.002	21.26	-3.1012	44
Caviar	normal	0.4617	0.3209	0.002	2.798	NA	3
Cod	logistic	2.3563	0.3901	0.145	21.26	NA	19
Common shrimp	loglogistic	0.1989	1.1331	NA	14	0.1551	29
Common whelk	loglogistic	0.1989	1.1331	NA	14	0.1551	29
Conger	betageneral	0.4037	1.9862	0.0036	1.8848	NA	15
Crab	loglogistic	5.3796	5.5783	0.002	21.26	-3.1012	44
Eel	loglogistic	0.1138	1.9765	0.005	1.6	-0.0199	5
European plaice	logistic	0.3322	0.0044	0.05	3.8	NA	10
Haddock	logistic	1.449	0.5608	0.12	5.34	NA	12
Halibut	betageneral	0.2566	0.963	0.001	1.2251	NA	5
Herring	logistic	0.3361	0.0528	0.1215	1.33	NA	13
John dory	loglogistic	0.1989	1.1331	NA	14	0.1551	29
Lobster	normal	1.19	0.75	0.5	14	NA	3
Mackerel	logistic	0.7664	0.0362	0.22	3.02	NA	11
Mussel	normal	1.3081	0.0317	0.525	2.8	NA	3
Nile perch	uniform	NA	NA	0.002	0.006	NA	2
Norway lobster	loglogistic	0.1989	1.1331	NA	14	0.1551	29
Saint-James shell	loglogistic	5.3796	5.5783	0.002	21.26	-3.1012	44
Saithe and Pollack	loglogistic	1.1553	3.5795	0.002	4.7	-0.4792	10
Salmon	normal	0.3106	0.0637	0.15	1.3	NA	5
Sardine	uniform	NA	NA	0.145	0.48	NA	3
Scampi	loglogistic	0.1989	1.1331	NA	14	0.1551	29
Sea bream	betageneral	0.4037	1.9862	0.0036	1.8848	NA	15
Skate	loglogistic	5.3796	5.5783	0.002	21.26	-3.1012	44
Sole	normal	0.1773	0.0229	0.002	0.5	NA	3
Sprat	betageneral	0.7072	2.4604	0.2206	1.6409	NA	23
Squid	loglogistic	0.1989	1.1331	NA	14	0.1551	29
Surimi	loglogistic	5.3796	5.5783	0.002	21.26	-3.1012	44
Trout	normal	0.1309	0.0668	0.0752	0.5	NA	8
Tuna	normal	-0.0882	0.4142	0.035	1.12	NA	6
Whiting	loglogistic	5.3796	5.5783	0.002	21.26	-3.1012	44
Wolffish	betageneral	0.4037	1.9862	0.0036	1.8848	NA	15

Table 4 Distribution and parameters for the fat concentration in 34 fish species, as well as the number of data points used (N)

Species	Param1	Param2	Param3	Param4	Param5	Param6	N
	logistic	α	β	Tr min	Tr max		
	lognorm	μ	σ	Tr min	Tr max	shift	
	normal	μ	σ	Tr min	Tr max		
	uniform			min	max		
Anchovy	logistic	35.7088	10.1068	11.5000	160.0000	NA	10
Anglerfish	lognormal	4.3921	5.1988	2.0000	39.0000	3.4499	15
Caviar	lognormal	80.4766	73.9635	9.5000	424.0000	8.5785	32
Cod	lognormal	19.2092	2.3810	0.0000	34.0000	-12.3241	60
Common shrimp	uniform	NA	NA	4.1370	24.5890	NA	9
Common whelk	normal	8.6198	2.7826	2.0000	24.0000	NA	4
Conger	lognormal	99.0803	32.8900	3.5000	228.0000	-46.9713	8
Crab	lognormal	28.9413	4.9991	2.5000	110.0000	-20.5289	40
Eel	normal	213.6286	68.2837	35.5000	660.0000	NA	28
European plaice	uniform	NA	NA	4.5910	20.4270	NA	31
Haddock	lognormal	3.3519	2.1557	2.3500	42.0000	3.8266	19
Halibut	logistic	33.1170	16.2834	0.5000	354.8000	NA	28
Herring	logistic	123.7569	20.0719	6.0000	662.0000	NA	82
John dory	normal	7.6881	5.1868	1.5000	28.0000	NA	4
Lobster	normal	12.9476	3.7172	2.9500	38.0000	NA	21
Mackerel	lognormal	272.8077	65.2393	55.0000	618.0000	-89.6701	58
Mussel	lognormal	73.5831	10.1289	3.0000	89.6000	-51.2564	21
Nile perch	normal	13.7534	6.8617	4.0000	48.0000	NA	4
Norway lobster	uniform	NA	NA	3.5000	16.0000	NA	3
Saint-James shell	lognormal	12.8756	5.3110	0.5000	28.0000	-5.7020	7
Saithe and Pollack	lognormal	22.6623	3.0536	1.5000	40.0000	-13.1067	30
Salmon	normal	98.1080	35.8896	16.0000	361.2000	NA	100
Sardine	logistic	137.6906	25.5402	24.0000	368.0000	NA	56
Scampi	normal	12.9792	5.4646	3.0000	50.0000	NA	24
Sea bream	uniform	NA	NA	14.0000	70.0000	NA	4
Skate	normal	7.0500	3.6473	1.0000	25.2000	NA	12
Sole	lognormal	40.7345	6.0389	0.6500	52.0000	-35.0947	22
Sprat	normal	130.1250	41.4813	2.9000	36.8000	NA	8
Squid	lognormal	14.5848	12.6205	2.0000	94.0000	2.2428	29
Surimi	logistic	8.1651	0.7409	2.0000	26.2000	NA	8
Trout	lognormal	57.7602	44.4512	50.2500	366.0000	8.7146	56
Tuna	lognormal	93.5312	34.8306	1.0000	310.0000	-54.9499	34
Whiting	logistic	5.8661	0.5255	1.5000	16.2000	NA	18
Wolffish	logistic	31.1497	6.6996	2.9500	118.0000	NA	19

Table 5 Distribution and parameters for the mercury concentration in 34 fish species, as well as the number of data points used (N)

Species	%	Distribution	Param1	Param2	Param3	Param4	Param5	N
		betageneral	**α1**	**α2**	**min**	**max**		
		logistic	**α**	**β**	**Tr min**	**Tr max**		
		loglogistic	**β**	**α**	**Tr min**	**Tr max**	**γ (min)**	
		lognorm	**μ**	**σ**	**Tr min**	**Tr max**	**shift**	
		normal	**μ**	**σ**	**Tr min**	**Tr max**		
		uniform			**min**	**max**		
Anchovy	100	normal	53.2489	18.1537	14.0000	208.0000	NA	13
Anglerfish	100	uniform	NA	NA	21.3641	1141.271	NA	14
Caviar	100	no_distribution	NA	NA	NA	NA	NA	0
Cod	100	logistic	66.6564	6.7232	7.0000	8780.000	NA	104
Common shrimp	100	loglogistic	34.6900	3.0850	10.0000	1134.000	2.8172	42
Common whelk	100	uniform	NA	NA	50.5000	151.5000	NA	1
Conger	100	no_distribution	NA	NA	NA	NA	NA	0
Crab	100	loglogistic	65.1614	7.0722	8.5000	300.0000	-1.9272	11
Eel	100	normal	95.8212	71.4331	5.0000	640.0000	NA	27
European plaice	100	lognormal	147.393	22.9030	7.5000	404.0000	-100.71	41
Haddock	100	betageneral	1.2056	2.9272	8.1556	151.1400	NA	11
Halibut	100	normal	82.1316	7.8708	34.5000	308.0000	NA	3
Herring	100	logistic	33.2401	12.7331	1.5000	230.0000	NA	15
John dory	100	uniform	NA	NA	20.0000	75.0000	NA	2
Lobster	100	betageneral	0.3575	0.3728	59.7916	454.5314	NA	7
Mackerel, Mediterranean Sea	1.8	lognormal	262.450	32.3860	63.0000	580.0000	-57.2340	5
Mackerel, Northeast Atlantic Ocean	98.2	logistic	29.8991	8.6537	1.5000	200.0000	NA	12
Mussel	100	betageneral	0.0906	4.3860	8.4665	156.4585	NA	13
Nile perch	100	normal	82.3325	41.0294	4.8500	1181.600	NA	13
Norway lobster	100	betageneral	0.3575	0.3728	59.7916	454.5314	NA	7
Saint-James shell	100	loglogistic	0.3039	1.0202	NA	84.0000	19.9561	9
Saithe and Pollack	100	logistic	47.6786	7.5200	3.5000	500.0000	NA	15
Salmon, farmed	64.07	betageneral	0.7041	2.8444	16.9038	81.5676	NA	42
Salmon, Pacific Ocean	35.93	logistic	49.4647	13.8422	5.0000	234.0000	NA	32
Sardine, Eastern Central Atlantic Ocean	60.62	lognormal	15.8642	9.5737	NA	208.0000	5.7499	18
Sardine, Mediterranean Sea	39.38	logistic	101.107	11.5022	23.3650	468.0000	NA	8
Scampi	100	betageneral	0.0624	2.9870	17.0001	266.2788	NA	25
Sea bream	100	uniform	NA	NA	25.0000	75.0000	NA	1
Skate	100	uniform	NA	NA	4.6500	1650.000	NA	24
Sole	100	betageneral	0.7578	2.3677	4.4894	363.8900	NA	32
Sprat	100	uniform	NA	NA	5.0000	90.0000	NA	4
Squid, Mediterranean Sea	89.82	logistic	11.5608	1.5213	1.5000	166.8000	NA	9
Squid, Southwest Atlantic Ocean	10.18	uniform	NA	NA	35.0000	133.5000	NA	3
Surimi	100	no_distribution	NA	NA	NA	NA	NA	0
Trout	100	lognormal	22.3350	20.2067	NA	298.0000	29.0953	27
Tuna	100	lognormal	658.790	892.639	NA	6460.000	15.6585	153
Whiting	100	lognormal	54.2950	46.8510	NA	588.0000	22.5420	39
Wolffish	100	uniform	NA	NA	25.0000	75.0000	NA	1

Table 6 Distribution and parameters for the calculated methyl mercury concentration in 34 fish species, as well as the number of data points used (N)

Species	%	Distribution	Param1	Param2	Param3	Param4	Param5	N
		betageneral	**α1**	**α2**	**min**	**max**		
		logistic	**α**	**β**	**Tr min**	**Tr max**		
		loglogistic	**β**	**α**	**Tr min**	**Tr max**	**γ (min)**	
		lognorm	**μ**	**σ**	**Tr min**	**Tr max**	**shift**	
		normal	**μ**	**σ**	**Tr min**	**Tr max**		
		uniform			**min**	**max**		
Anchovy	100	normal	42.5055	14.4910	11.1754	245.8584	NA	13
Anglerfish	100	betageneral	0.3877	0.1551	63.5953	606.7781	NA	14
Caviar	100	no_distribution	NA	NA	NA	NA	NA	0
Cod	100	logistic	53.2079	5.3668	5.5877	7008.5602	NA	104
Common shrimp	100	loglogistic	11.7632	3.0850	NA	384.5291	0.9553	42
Common whelk	100	uniform	NA	NA	34.3575	103.0725	NA	1
Conger	100	no_distribution	NA	NA	NA	NA	NA	0
Crab	100	loglogistic	22.0956	7.0722	2.8823	101.7273	-0.6535	11
Eel	100	normal	76.4884	57.0208	3.9912	510.8745	NA	27
European plaice	100	loglogistic	15.2829	1.6400	NA	322.4896	17.8938	41
Haddock	100	betageneral	1.2056	2.9272	6.5101	120.6478	NA	11
Halibut	100	normal	65.5609	6.2828	27.5393	245.8584	NA	3
Herring	100	logistic	26.5336	10.1641	1.1974	183.5955	NA	15
John dory	100	uniform	NA	NA	15.9648	59.8681	NA	2
Lobster	100	betageneral	0.3575	0.3728	20.2748	154.1275	NA	7
Mackerel, Mediterranean Sea	1.8	lognormal	209.5021	25.8515	50.2892	462.9801	-45.6865	5
Mackerel, Northeast Atlantic Ocean	98.2	logistic	23.8667	6.9077	1.1974	159.6483	NA	12
Mussel	100	betageneral	0.0906	4.3860	2.8709	53.0536	NA	13
Nile perch	100	normal	65.7212	32.7514	3.8715	943.2021	NA	13
Norway lobster	100	betageneral	0.3575	0.3728	20.2748	154.1275	NA	7
Saint-James shell	100	loglogistic	0.1030	1.0202	NA	28.4836	6.7669	9
Saithe and Pollack	100	logistic	38.0590	6.0028	2.7938	399.1207	NA	15
Salmon, farmed	64.1	betageneral	0.7041	2.8444	13.4934	65.1106	NA	42
Salmon, Pacific Ocean	35.9	lognormal	201.7383	18.1925	3.9912	186.7885	-161.618	32
Sardine, Eastern Central Atlantic Ocean	60.62	loglogistic	20.7045	6.4354	1.9956	208.0000	-5.1385	18
Sardine, Mediterranean Sea	39.38	logistic	80.7084	9.1815	18.6509	373.5770	NA	8
Scampi	100	lognormal	34.1832	40640.102	NA	168.8673	5.7644	25
Sea bream	100	uniform	NA	NA	19.9560	59.8681	NA	1
Skate	100	betageneral	0.5848	1.3428	17.2469	1217.7227	NA	24
Sole	100	betageneral	0.7578	2.3677	3.5836	290.4710	NA	32
Sprat	100	uniform	NA	NA	3.9912	71.8417	NA	4
Squid, Mediterranean Sea	10.18	uniform	NA	NA	23.8121	90.8263	NA	3
Squid, Southwest Atlantic Ocean	89.82	logistic	7.8653	1.0350	1.0205	113.4818	NA	9
Surimi	100	no_distribution	NA	NA	NA	NA	NA	0
Trout	100	lognormal	17.8287	16.1298	NA	237.8760	23.2251	27
Tuna	100	betageneral	0.6326	3.3760	80.1298	2628.8888	NA	153
Whiting	100	lognormal	43.3407	37.3987	NA	469.3660	17.9942	39
Wolffish	100	uniform	NA	NA	19.9560	59.8681	NA	1

Table 7 Distribution and parameters for the iPCB concentration in 34 fish species, as well as the number of data points used (N)

Species	%	Distribution	Param1	Param2	Param3	Param4	Param5	N
		betageneral	**α1**	**α2**	**min**	**max**		
		logistic	**α**	**β**	**Tr min**	**Tr max**		
		loglogistic	**β**	**α**	**Tr min**	**Tr max**	**γ (min)**	
		lognorm	**μ**	**σ**	**Tr min**	**Tr max**	**shift**	
		normal	**μ**	**σ**	**Tr min**	**Tr max**		
		uniform			**min**	**max**		
Anchovy	100	betageneral	0.5762	3.0084	13.2207	92.6398	NA	10
Anglerfish	100	uniform	NA	NA	0.1000	1.8000	NA	3
Caviar	100	loglogistic	11.0376	2.5872	NA	203.0000	9.6586	21
Cod	100	logistic	0.9595	0.2620	0.1000	70.0000	NA	57
Common shrimp	100	loglogistic	0.7017	0.6924	NA	392.0000	0.2917	45
Common whelk	100	lognormal	10.6747	21.5897	0.1500	392.0000	-0.5751	120
Conger	100	loglogistic	11.0376	2.5872	NA	203.0000	9.6586	21
Crab	100	loglogistic	60.5177	1.5296	0.9950	560.0000	-24.0733	13
Eel	100	lognormal	386.1751	2410.4067	NA	11472.6680	9.4147	159
European plaice	100	loglogistic	1.0512	1.8705	0.1500	70.0000	0.1442	31
Haddock	100	loglogistic	0.4932	2.2905	0.1000	4.6763	-0.1356	11
Halibut	100	betageneral	1.9509	0.4589	9.8699	22.1100	NA	6
Herring, Baltic Sea	5.44	betageneral	1.0979	3.7898	4.7632	193.0384	NA	156
Herring, others	94.56	betageneral	0.3269	5.1964	7.0347	68.5782	NA	5
John dory	100	lognormal	10.6747	21.5897	0.1500	392.0000	-0.5751	120
Lobster	100	lognormal	10.6747	21.5897	0.1500	392.0000	-0.5751	120
Mackerel	100	lognormal	8.3498	10.4416	NA	116.0000	3.6131	16
Mussel	100	normal	7.4274	6.0454	0.5800	44.6200	NA	13
Nile perch	100	lognormal	10.6747	21.5897	0.1500	392.0000	-0.5751	120
Norway lobster	100	lognormal	10.6747	21.5897	0.1500	392.0000	-0.5751	120
Saint-James shell	100	logistic	0.8816	0.3054	0.1700	35.0000	NA	6
Saithe and Pollack	100	uniform	NA	NA	0.3691	1.8667	NA	3
Salmon	100	loglogistic	91.3367	21.7584	0.1523	640.7226	-79.8300	90
Sardine	100	logistic	13.6936	3.6041	2.6635	208.0000	NA	10
Scampi	100	uniform	NA	NA	0.0425	1.0990	NA	4
Sea bream	100	loglogistic	11.0376	2.5872	NA	203.0000	9.6586	21
Skate	100	betageneral	0.0682	0.9075	0.3674	38.0536	NA	13
Sole	100	lognormal	11.5521	12.1603	0.1900	70.0000	-4.4486	19
Sprat	100	logistic	9.1463	1.3977	3.5000	65.3874	NA	6
Squid	100	uniform	NA	NA	0.2900	66.2355	NA	6
Surimi	100	logistic	0.9959	0.4176	0.0500	560.0000	NA	120
Trout	100	logistic	13.3240	3.8499	2.6635	208.0000	NA	12
Tuna	100	loglogistic	11.0376	2.5872	NA	203.0000	9.6586	21
Whiting	100	lognormal	5.7108	13.9496	0.0500	70.0000	-0.1728	28
Wolffish	100	loglogistic	11.0376	2.5872	NA	203.0000	9.6586	21

Table 8 Distribution and parameters for the dlPCB concentration in 34 fish species, as well as the number of data points used (N)

Species	%	Distribution	Param1	Param2	Param3	Param4	Param5	N
		uniform			min	max		
		betageneral	α1	α2	min	max		
		normal	μ	σ	Tr min	Tr max		
		logistic	α	β	Tr min	Tr max		
		lognorm	μ	σ	Tr min	Tr max	shift	
Anchovy	100	uniform	NA	NA	0.2500	11.8500	NA	4
Mussel	100	normal	0.5565	1.2006	0.0500	4.0600	NA	13
Trout	100	loglogistic	0.4389	1.7373	NA	11.8000	0.4799	100
Herring, Baltic Sea	5.44	lognormal	6.3217	3.0684	0.2403	74.9800	-2.1033	182
Herring, North Sea	50.89	betageneral	0.2291	2.0719	0.8900	6.5646	NA	34
Herring, others	43.67	betageneral	0.4297	1.2207	4.9682	12.1607	NA	4
Halibut	100	normal	1.1586	0.5388	0.2150	23.3200	NA	10
Squid	100	betageneral	2.3843	1.2448	0.3454	1.9616	NA	4
Saint-James shell	100	loglogistic	0.0747	1.2186	0.0014	2.8000	0.0002	94
Cod	100	lognormal	0.1891	0.3882	NA	1.0640	0.0232	43
Caviar	100	loglogistic	1.1167	1.5980	0.0100	46.1106	-0.3190	68
Saithe and Pollack	100	betageneral	0.7251	1.7462	0.0029	0.8000	NA	4
Crab	100	loglogistic	0.0747	1.2186	0.0014	2.8000	0.0002	94
Norway lobster	100	lognormal	1.2752	0.3955	0.0008	4.8000	-0.7468	65
Mackerel	100	loglogistic	2.8421	13.5998	0.1800	41.1800	-1.6156	48
Common shrimp	100	normal	0.4227	0.3025	0.0050	1.8600	NA	5
Eel	100	lognormal	11.4557	20.5263	0.0450	230.0000	0.0159	142
Skate	100	loglogistic	0.0747	1.2186	0.0014	2.8000	0.0002	94
Sardine	100	logistic	2.0999	1.3447	0.0010	12.6000	NA	8
Scampi	100	betageneral	1.5552	7.3677	0.0011	0.2469	NA	16
European plaice	100	logistic	0.3374	0.0465	0.0630	2.0780	NA	14
Haddock	100	loglogistic	0.0227	2.5595	NA	0.7320	0.0177	31
Common whelk	100	lognormal	1.2752	0.3955	0.0008	4.8000	-0.7468	65
Sprat	100	logistic	3.1729	0.2637	0.4825	7.8000	NA	8
Surimi	100	loglogistic	0.0747	1.2186	0.0014	2.8000	0.0002	94
Sole	100	lognormal	1.2752	0.3955	0.0008	4.8000	-0.7468	65
Tuna	100	lognormal	16.4224	2603.7790	0.0100	46.1106	-0.0018	50
Nile perch	100	lognormal	1.2752	0.3955	0.0008	4.8000	-0.7468	65
Whiting	100	betageneral	0.3179	2.9870	0.0301	0.6557	NA	16
Salmon, Baltic Sea	45.08	loglogistic	3.0346	3.3585	NA	31.4000	6.1069	46
Salmon, farmed	27.62	lognormal	3.6574	1.5170	0.0350	16.0000	-1.9129	162
Salmon, Pacific Ocean	27.30	betageneral	0.4565	1.7419	0.0076	4.2119	NA	14
Anglerfish	100	loglogistic	0.0747	1.2186	0.0014	2.8000	0.0002	94
Sea bream	100	loglogistic	1.1167	1.5980	0.0100	46.1106	-0.3190	68
Wolffish	100	loglogistic	1.1167	1.5980	0.0100	46.1106	-0.3190	68
Lobster	100	normal	0.1695	0.3498	0.0021	1.0800	NA	3
John dory	100	lognormal	1.2752	0.3955	0.0008	4.8000	-0.7468	65
Conger	100	loglogistic	1.1167	1.5980	0.0100	46.1106	-0.3190	68

Table 9 Distribution and parameters for the dioxin concentration in 34 fish species, as well as the number of data points used (N)

Species	%	Distribution	Param1	Param2	Param3	Param4	Param5	N
		uniform			**min**	**max**		
		betageneral	**α1**	**α2**	**min**	**max**		
		normal	**μ**	**σ**	**Tr min**	**Tr max**		
		lognorm	**μ**	**σ**	**Tr min**	**Tr max**	**shift**	
		logistic	**α**	**β**	**Tr min**	**Tr max**		
		loglogistic	**β**	**α**	**Tr min**	**Tr max**	**γ (min)**	
Anchovy	100	normal	0.1196	0.4232	0.0200	2.6600	NA	7
Anglerfish	100	loglogistic	0.0687	3.3976	0.0009	5.0000	-0.0162	106
Caviar	100	normal	0.5372	0.4404	0.0040	15.1400	NA	92
Cod, Iceland	15.46	betageneral	0.9217	2.5834	0.0018	0.0632	NA	17
Cod, North Sea	38.05	loglogistic	0.4288	69.2198	0.0150	0.6000	-0.3815	10
Cod, others	46.49	uniform	NA	NA	0.0151	0.1890	NA	4
Common shrimp	100	logistic	0.6012	0.2085	0.0500	3.1400	NA	9
Common whelk	100	normal	0.5529	0.4326	0.0095	7.2900	NA	95
Conger	100	normal	0.5372	0.4404	0.0040	15.1400	NA	92
Crab	100	uniform	NA	NA	0.0350	3.7500	NA	5
Eel	100	betageneral	0.8510	2.4160	0.1660	5.9656	NA	82
European plaice	100	loglogistic	0.7626	25.2105	0.0280	2.9600	-0.4768	19
Haddock	100	lognormal	0.0248	0.0350	NA	0.2000	0.0214	33
Halibut, Northeast Atlantic Ocean	42.43	logistic	0.6826	0.1760	0.0900	15.1400	NA	27
Halibut, Northwest Atlantic Ocean	57.57	uniform	NA	NA	0.0262	0.9190	NA	12
Herring, Baltic Sea	5.44	betageneral	0.4462	3.3479	0.7263	37.2970	NA	261
Herring, North Sea	50.89	loglogistic	1.3309	6.7805	0.0555	5.4400	-0.5048	63
Herring, others	43.67	normal	9.3960	6.8145	0.1970	40.0000	NA	4
John dory	100	normal	0.5529	0.4326	0.0095	7.2900	NA	95
Lobster	100	uniform	NA	NA	0.0625	1.1400	NA	3
Mackerel	100	loglogistic	0.3335	4.9583	0.0500	13.8200	-0.0225	63
Mussel	100	normal	0.4420	0.7677	0.0500	7.2900	NA	16
Nile perch	100	normal	0.5529	0.4326	0.0095	7.2900	NA	95
Norway lobster	100	normal	0.5529	0.4326	0.0095	7.2900	NA	95
Saint-James shell	100	loglogistic	0.0687	3.3976	0.0009	5.0000	-0.0162	106
Saithe and Pollack	100	normal	0.0573	0.0383	0.0009	0.3460	NA	17
Salmon, Baltic Sea	45.08	lognormal	3.7818	3.4750	NA	34.8000	1.4440	51
Salmon, others	54.92	loglogistic	0.4700	1.5254	NA	15.6000	0.1247	152
Sardine	100	lognormal	1.0494	0.4920	0.0100	2.4000	-0.5447	16
Scampi	100	lognormal	4.7183	69167.9942	NA	0.5020	0.0320	15
Sea bream	100	normal	0.5372	0.4404	0.0040	15.1400	NA	92
Skate	100	loglogistic	0.0687	3.3976	0.0009	5.0000	-0.0162	106
Sole	100	normal	0.5529	0.4326	0.0095	7.2900	NA	3
Sprat	100	uniform	NA	NA	1.8595	4.1191	NA	23
Squid	100	betageneral	0.3239	1.8157	0.1069	1.7820	NA	9
Surimi	100	loglogistic	0.0687	3.3976	0.0009	5.0000	-0.0162	106
Trout	100	loglogistic	0.2700	1.6604	NA	9.6000	0.1293	99
Tuna	100	logistic	0.0462	0.6612	0.0040	10.0140	NA	42
Whiting	100	uniform	NA	NA	0.0177	0.0755	NA	14
Wolffish	100	logistic	0.5109	0.0190	0.1940	1.7100	NA	5

Table 10 Distribution and parameters for total TEQ concentration in 34 fish species, as well as the number of data points used (N)

Species	%	Distribution	Param1	Param2	Param3	Param4	Param5	N
		uniform			**min**	**max**		
		betageneral	**α1**	**α2**	**min**	**max**		
		normal	**μ**	**σ**	**Tr min**	**Tr max**		
		lognorm	**μ**	**σ**	**Tr min**	**Tr max**	**shift**	
		logistic	**α**	**β**	**Tr min**	**Tr max**		
		loglogistic	**β**	**α**	**Tr min**	**Tr max**	**γ (min)**	
Anchovy	100	loglogistic	1.6059	1.8653	0.0150	49.0126	-0.6089	55
Mussel	100	uniform	NA	NA	0.1200	6.0900	NA	13
Trout	100	loglogistic	0.5654	1.5764	NA	21.2000	0.6732	80
Herring, others	94.56	loglogistic	2.4942	2.2397	NA	59.4000	0.6846	67
Herring, Baltic Sea	5.44	betageneral	0.8608	3.2638	1.3899	54.3135	NA	186
Halibut	100	normal	1.6462	0.8000	0.3500	38.4600	NA	10
Squid	100	uniform	NA	NA	0.0650	4.8000	NA	4
Saint-James shell	100	loglogistic	0.1136	1.2063	NA	7.2000	0.0232	88
Cod	100	betageneral	0.4188	1.6878	0.0650	1.0239	NA	42
Caviar	100	loglogistic	1.6059	1.8653	0.0150	49.0126	-0.6089	55
Saithe and Pollack	100	normal	0.2928	0.1498	0.0036	1.8000	NA	4
Crab	100	loglogistic	0.1136	1.2063	NA	7.2000	0.0232	88
Norway lobster	100	normal	1.1112	0.8013	0.0139	8.1200	NA	76
Mackerel	100	loglogistic	0.8483	3.1177	NA	55.0000	0.5822	52
Common shrimp	100	normal	0.9698	0.6299	0.0600	5.7000	NA	7
Eel	100	loglogistic	7.8880	2.2451	0.2295	252.0000	-1.5753	106
Skate	100	loglogistic	0.1136	1.2063	NA	7.2000	0.0232	88
Sardine	100	lognormal	16.4456	2.4166	0.0500	15.8000	-13.2736	6
Scampi	100	betageneral	2.6814	4.9127	0.0381	0.1630	NA	14
European plaice	100	logistic	0.5841	0.0818	0.0800	2.5200	NA	17
Haddock	100	betageneral	0.3402	1.5712	0.0587	0.2269	NA	27
Common whelk	100	normal	1.1112	0.8013	0.0139	8.1200	NA	76
Sprat	100	normal	6.2662	1.1229	0.9233	15.0000	NA	10
Surimi	100	loglogistic	0.1136	1.2063	NA	7.2000	0.0232	88
Sole	100	normal	1.1112	0.8013	0.0139	8.1200	NA	76
Tuna	100	betageneral	0.1073	1.4759	0.0283	33.7238	NA	41
Nile perch	100	normal	1.1112	0.8013	0.0139	8.1200	NA	76
Whiting	100	betageneral	0.1771	1.4633	0.0770	0.9459	NA	15
Salmon, Baltic Sea	31.32	loglogistic	17.8256	7.9011	1.4850	65.9600	-3.6945	50
Salmon, farmed	51.12	lognormal	6.8722	1.9378	0.0500	30.8000	-4.4695	176
Salmon, Pacific Ocean	17.56	betageneral	0.1903	1.1646	0.0999	0.5514	NA	8
Anglerfish	100	loglogistic	0.1136	1.2063	NA	7.2000	0.0232	88
Sea bream	100	loglogistic	1.6059	1.8653	0.0150	49.0126	-0.6089	55
Wolffish	100	loglogistic	1.6059	1.8653	0.0150	49.0126	-0.6089	55
Lobster	100	uniform	NA	NA	0.0646	1.8450	NA	3
John dory	100	normal	1.1112	0.8013	0.0139	8.1200	NA	76
Conger	100	loglogistic	1.6059	1.8653	0.0150	49.0126	-0.6089	55