

Supplementary Information

Diet quality and water scarcity: Evidence from a large Australian population health survey

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Supplementary Table 1 Number of male and female participants in the study

	Male	Female	Total
Adults (19 years and older)	4,282	5,059	9,341
%	45.8	54.2	100

Supplementary Table 2 Age distribution of participants in the study. Age categories are defined according to the Australian dietary guidelines [1].

Age (years)	Count
19 to 50	5,157
51 to 70	2,906
71+	1,278
Total	9,341

Supplementary Table 3 Number of 19-50 year old adults in the quadrant analysis. Results are presented for 3 water-scarcity models, denoted WSI_HH_EQ [2], World_EQ [3] and AWARE [4]. HDQ and LDQ refer to higher and lower diet quality, respectively. HWF and LWF refer to higher and lower water-scarcity footprint, respectively.

Water-scarcity model	Quadrant	Count
WSI_HH_EQ	LDQ-LWF	1,253
	LDQ-HWF	585
	HDQ-LWF	683
	HDQ-HWF	886
	Within 0.25 SD	1,750
World_EQ	LDQ-LWF	1,313
	LDQ-HWF	538
	HDQ-LWF	681
	HDQ-HWF	916
	Within 0.25 SD	1,709
AWARE	LDQ-LWF	1,327
	LDQ-HWF	511
	HDQ-LWF	715
	HDQ-HWF	867
	Within 0.25 SD	1,737

Supplementary Table 4 Water-scarcity footprint (L-eq kg⁻¹) of imported agricultural commodities calculated using three water-scarcity models: WSI_HH_EQ [2], World_EQ [3] and AWARE [4]. Agricultural water consumption data [5].

Commodity	Water-scarcity model			Main countries of production
	WSI_HH_EQ	World_EQ	AWARE	
Tea leaves	4290	3462	2414	China, India, Indonesia, Sri Lanka
Coffee (green)	1078	911	645	Brazil, Colombia, India, Indonesia, Papua New Guinea, Vietnam
Hops	20.1	91.3	78.3	Czech Republic, Germany, New Zealand
Palm oil	1.4	5.3	5.2	Indonesia, Malaysia
Cocoa beans	561	335	1817	Brazil, Cameroon, Cote d'Ivoire, Ghana, Indonesia
Hazelnut	1606	3143	3822	Turkey, Italy
Coconut (desiccated)	319	1275	303	Thailand, Philippines

Note: Results presented using the AWARE water-scarcity model have been divided by 42.95, the global average value.

Supplementary Table 5 Generic aquaculture feed ration. Data sources [6-7].

Component	kg per kg aquaculture production
Fish meal	0.30
Fish oil	0.13
Plant-based ingredients	0.36
Winter cereal (50%)	
Vegetable oil (20%)	
Oilseed meal (30%)	
Other animal-based ingredients	0.52
Chicken meal (100%)	
Total	1.30

Supplementary Table 6 Data sources for water use in food processing.

Process	Data sources
Meat processing	8-11
Dairy processing	12
Vegetable processing	13
Fruit processing	14-17
Nut processing	18
Oilseed processing	18-19
Legume processing	19
Grain processing	18-19
Sugar processing	19
Beverage processing	20
Food manufacturing	
Margarine	
Cereal products	21
Bakery products	
Processed meat	
Other foods	
Seafood processing	22

Supplementary Table 7 Specific gravity of common foods and beverages. Source [23].

Product	Specific gravity
Water	1.000
Carbonated soft drink	1.041
Sports drink	1.041
Apple juice	1.041
Orange juice	1.041
Other citrus juice	1.052
Grape juice	1.052
Pineapple juice	1.052
Wine	0.994
Beer	1.006
Spirits	0.955
Cider	1.008
Milk, whole	1.030
Milk, flavoured	1.057
Rice beverage	1.049
Soy beverage	1.033
Cordial, concentrate, not juice based	1.672
Cordial, concentrate, juice based	1.580
Tomato sauce	1.036

Supplementary Table 8 Generic recipes used for food products

Food	Ingredient	g 100g ⁻¹
Popcorn	Corn	70
	Vegetable oil	30
Balsamic vinegar	Fermented grapes	10
	Water	90
Juice, fruit & vegetable blend	Vegetable juice	45
	Apple juice	25
	Lemon juice	5
	Orange juice	25
Sausages	Meat	75
	Corn flour	5
	Rice flour	5
	Water	15
Liquorice	Flour, wheat	30
	Sugar	35
	Water	20
Rice cake	Molasses	15
	Rice, brown	99
	Vegetable oil	1
Muesli or snack bar, with chocolate chips or coating	Muesli bar with chocolate chips or coating	80
	Milk chocolate	20
Soy sauce	Soybeans	20
	Water	80
	Sugar	10
Mayonnaise, regular fat	Egg	5
	Vegetable oil	65
	Vinegar	5
	Water	15
Extruded snack, cheese flavour	Corn flour	35
	Rice flour	35
	Whey powder	7
	Palm oil	23
	Sugar	50
Hazelnut spread	Palm oil	23
	Hazelnut	13
	Skim milk powder	7
	Cocoa powder	7
	Pastry	40
Pasty filled with vegetable & meat	Starchy root vegetable	35
	Beef	10
	Vegetable oil	5
	Water	10
Custard	Milk	89

	Sugar	6
	Thickener, flavours	5
	Custard	38
Danish pastry with custard filling	Egg	8
	Pastry	48
	Sugar	6
	Apple	58
Apple pie	Lemon juice	1
	Pastry	35
	Sugar	5
	Bacon	13
	Cheese	9
	Cream	23
Quiche Lorraine	Egg	15
	Milk	10
	Onion	7
	Pastry	23
	Pastry	50
Meat pie	Beef	25
	Corn flour	5
	Water	20
	Egg	2
	Margarine	9
Pastry (shortcrust)	Palm oil	9
	Flour, wheat	63
	Sugar	5
	Water	13
	Egg	14
	Vegetable oil	17
Muffin, cake style with berry, commercial, un-iced	Flour, wheat	20
	Milk	17
	Berries	14
	Sugar	19
	Cocoa	5
	Egg	11
	Flour, wheat	16
Cake or cupcake, chocolate, commercial, sugar-based icing	Milk	4
	Palm oil	13
	Sugar	37
	Water	13
	Madeira cake	62
	Coconut	8
Cake, lamington, unfilled	Sugar	14
	Cocoa	5
	Vegetable oil	1

	Other	10
	Mixed dried fruit	36
	Flour, wheat	36
Cake, fruit, commercial, un-iced	Sugar	12
	Vegetable oil	10
	Egg powder	6
Biscuit, savoury, corn cake	Maize	99
	Vegetable oil	1
Rice cracker, plain	Rice	197
	Vegetable oil	511
Biscuit, savoury, white wheat flour, water cracker	Flour, wheat	88
	Vegetable oil	12
	Cornflour	11
Cone, for ice-cream	Wheat flour	58
	Vegetable oil	8
	Sugar	23
	Flour, wheat	35
	Sugar	24
Biscuit, sweet, oat	Oats	13
	Coconut	8
	Butter	15
	Vegetable oil	5
	Flour, wheat	40
	Sugar	40
Biscuit, sweet with cream filling	Palm oil	18
	Cocoa powder	1
	Condensed milk	1
	Mixed dried fruit	20
Muesli, natural with dried fruit (nut free)	Oats	64
	Wheat bran	13
	Wheat germ	3
Pasta, from wheat	Wheat	100
	Malt barley	16
	Rice	19
Chocolate and malt powder	Milk solids	25
	Sugar	25
	Cocoa	15
	Sugar	27
	Flour, wheat	34
Madeira cake	Vegetable oil	14
	Water	5
	Egg	20
	Flour, wheat	74
Croissant	Butter	18
	Milk powder	4

	Sugar	4
	Flour, wheat	53
	Water	12
Doughnut, iced	Vegetable oil	16
	Sugar	14
	Other	5
	Flour, wheat	26
Biscuit, chocolate coated and cream filled	Milk chocolate	38
	Sugar	24
	Vegetable oil	11
	Other	1
	Condensed milk	1
	Sugar	22
Biscuit, arrowroot	Vegetable oil	11
	Flour, wheat	65
	Other	1
	Wheat, flour	90
Crispbread, plain	Vegetable oil	7
	Sugar	0.4
	Other	3
	Wheat, wholegrain	47
	Corn	20
Breakfast cereal, mixed grain	Mixed dried fruit	7
	Sugar	17
	Bran	7
	Other	2
	Corn	55
Breakfast cereal, corn flakes frosted	Sugar	41
	Other	4
	Rice	59
Breakfast cereal, puffed rice with chocolate	Sugar	37
	Cocoa	3
	Other	1
	Corn flakes	89
Breakfast cereal, corn flakes	Sugar	8
	Other	3
	Rice	90
Breakfast cereal, puffed rice	Sugar	9
	Other	1
	Oat flakes	45
	Barley	5
Breakfast cereal, oat clusters with nuts	Oat flour	3
	Sugar	23
	Vegetable oil	14
	Rice flour	5

	Nuts	5
	Oat	58
Breakfast cereal, oat clusters with fruit	Sugar	21
	Vegetable oil	10
	Rice flour	9
	Dried fruit	2
	Wheat, wholegrain	97
Breakfast cereal, wheat biscuits	Sugar	3
	Corn	73
Corn chips, without flavouring	Oil	27
	Potato	347
Chips (crisps), potato	Oil	38
	Tomato	156
Sauce, tomato	Sugar	24
	Sugar	40
Jam, stone fruit	Fruit	40
	Water	20
	Sugar	37
Cordial, concentrate, citrus base	Orange juice	13
	Pineapple juice	13
	Other citrus juice	6
Cordial, concentrate, not juice based	Sugar	40
	Glucose and dextrose from wheat starch	25
Lolly, jube type	Glucose and dextrose from corn starch	25
	Sugar	25
	Milk	188
Milk chocolate	Sugar	46
	Cocoa products	30
Tofu	Soy bean	21
Soy beverage	Soy bean	4.7
	Vegetable oil	1
Almond beverage	Almond flour	3
	Vegetable oil	0.5
Rice beverage	Rice flour	14
	Vegetable oil	0.5
Flavoured milk	Flavour	1
	Sugar	5
	Milk	94
Rum	Molasses	109
Beer	Hops	0.25
	Malt (Barley)	15
Juice (various)	Apple	154
	Orange	180
	Lemon	250
	Grapefruit	200

	Citrus, other	200
	Grape	133
	Pineapple	500
	Fruit, other	200
	Vegetable, mixed	200
Sports drink	Sugar	7
Soft drink, sugar sweetened	Sugar	11
	Canola oil	50
Margarine	Sunflower oil	15
	Water	35
	Yogurt, plain	94
Yogurt, sweetened	Sugar	6
	Ice-cream	87
Ice-cream, regular	Sugar	13

Supplementary Table 9 Water-scarcity footprint (L-eq kg⁻¹) of individual foods calculated using three water-scarcity models: WSI_HH_EQ [2], World_EQ [3] and AWARE [4].

Food	Description	WSI_HH_EQ	World_EQ	AWARE
Almond	Edible portion	1524.2	3447.9	10187.6
Almond beverage		47.6	107.5	318.0
Apple juice		21.2	51.5	118.2
Apple pie		18.1	38.4	98.8
Apples	Edible portion	13.7	32.9	76.2
Apricot (Dried)	Dried, edible	1120.3	3363.9	7758.4
Aquaculture salmon	Edible portion	15.5	51.7	89.4
Arrowroot biscuit		35.1	63.1	197.4
Avocado	Edible portion	113.1	120.2	287.4
Barley	Uncooked	6.1	22.8	43.8
Balsamic vinegar		12.5	32.2	85.8
Beef meat	Fresh, without bone	39.0	131.3	258.3
Beef offal	Fresh	22.1	74.6	146.7
Beer		1.8	7.7	12.0
Biscuit, chocolate and cream filling		145.1	216.1	662.0
Biscuit, savoury, corn cake		40.5	95.6	282.3
Biscuit, savoury, white wheat flour		6.3	23.6	44.1
Bread, wheat, white		3.5	13.1	24.6
Bread, wheat, wholemeal		3.0	11.3	21.1
Breakfast cereal, puffed rice, chocolate		216.9	977.1	1766.4
Breakfast cereal mix grain		71.8	188.3	468.5
Breakfast cereal, corn flakes		37.0	83.1	244.0
Breakfast cereal, frosted corn flakes		39.3	63.8	199.5
Breakfast cereal, oat cluster fruit		83.9	277.4	602.6
Breakfast cereal, oat cluster nut		134.8	337.2	902.7
Breakfast cereal, puffed rice		292.9	1464.4	2577.6
Breakfast cereal, wheat biscuit		5.5	16.4	33.1
Brown Rice	Uncooked	321.1	1623.4	2850.7
Butter		241.5	1025.6	1907.1
Cake or cupcake, chocolate	Sugar based icing	44.3	47.5	160.7
Cake, fruit, commercial, un-iced		294.3	822.1	1990.5
Cake, lamington	Unfilled	70.1	156.9	195.7
Canola oil	Refined, edible	36.1	136.5	255.8
Cheese		181.1	769.2	1430.3
Chips (crisps), potato		190.8	377.2	1070.5
Chocolate and malt powder	Unmixed	206.2	692.9	1385.6
Cider		21.7	54.2	120.9
Citrus fruit	Edible portion	116.3	222.3	743.0
Cocoa powder	Unsweetened	363.3	216.6	1175.9
Coconut, desiccated		319.3	1275.2	302.7
Coffee	Roasted bean	1283.1	1085.1	767.3
Cone for ice-cream	Cone only	28.4	47.6	150.6

Cordial, 50% juice, citrus	Concentrate, unmixed	72.7	111.1	361.1
Cordial, lime flavouring	Concentrate, unmixed	18.4	14.7	55.0
Corn flour		37.3	89.9	261.6
Corn chips		78.9	166.3	534.6
Cream		135.0	573.1	1065.7
Crispbread, wheat based, refined		17.3	41.6	116.4
Crispbread, wholegrain		23.4	49.4	153.9
Croissant		60.0	246.9	462.2
Custard		34.3	136.3	257.7
Danish pastry with custard		27.3	79.8	169.9
Eggs	Whole, without shell	62.8	127.8	313.7
Extruded cheese snack		160.7	762.3	1382.3
Flavoured milk, chocolate		39.3	145.7	282.2
Flavoured milk, other		35.6	143.6	270.5
Game meat		1.2	7.6	5.9
Grape juice		122.5	304.7	847.4
Grapes	Edible portion	92.0	228.5	636.5
Hazelnut spread		555.4	1066.1	1459.7
Honey		0.2	1.0	0.6
Ice-cream regular fat		61.5	240.1	455.9
Iced doughnut		39.1	73.3	237.2
Jam, stone fruit		104.5	273.3	651.1
Juice, fruit & vegetable blend		109.5	215.2	638.0
Lamb meat	Fresh, without bone	27.7	60.6	128.5
Lamb offal	Fresh	12.6	27.5	58.4
Liquorice		18.8	18.7	61.8
Lobster	Edible portion	2.8	13.4	9.3
Lolly, jube type		24.9	44.9	127.8
Madeira cake		31.6	60.4	146.9
Margarine		70.4	160.8	473.1
Mayonnaise	Regular fat	233.3	407.8	1521.5
Meat pie		17.8	52.2	114.3
Milk chocolate		292.5	421.8	1251.3
Muesli or snack bar, with chocolate chips or coating		158.5	312.4	918.6
Muesli, natural with dried fruit (nut free)		160.5	463.4	1112.3
Muffin, cake-style, berry, commercial, un-iced		85.7	203.9	539.7
Muesli bar with fruit/nut		271.7	646.6	1827.8
Muesli bar with nuts/seeds		125.0	284.9	835.4
Oat biscuit, sweet		76.0	255.1	355.1
Oats	Uncooked	6.3	23.4	45.1
Olive oil		962.8	2890.7	6668.0
Orange juice		209.5	401.0	1338.3
Other citrus juice		232.7	445.4	1486.9
Other nut	Edible portion	1020.7	2308.9	6822.2
Palm oil		1.4	5.3	5.2
Pasta from wheat	Dry, uncooked	4.9	18.4	35.0
Pastry (shortcrust)		13.1	31.1	78.3
Pasty, filled with vegetables & meat		32.7	72.4	190.6

Peanut	Edible portion	186.7	744.3	1398.2
Peanut oil	Refined, edible	345.6	1377.9	2588.3
Pears	Edible portion	9.6	32.0	61.7
Pig meat	Fresh, without bone	44.8	94.7	235.9
Pig offal	Fresh	8.6	18.2	45.4
Pineapple juice		115.5	146.9	373.1
Plantation fruit	Edible portion	23.1	29.2	74.4
Popcorn		64.7	138.3	438.9
Poultry meat	Fresh, without bone	41.4	95.2	216.0
Poultry offal	Fresh	21.1	48.4	109.7
Prawn	Edible portion	3.1	14.7	10.2
Processed beef products		40.6	141.6	266.3
Processed lamb products		29.3	71.0	136.5
Processed pig meat products		46.4	105.1	243.9
Processed poultry products		43.1	105.5	223.9
Quiche Lorraine		72.6	263.0	515.0
Reduced fat milk		24.9	105.6	196.3
Rice cake, wholegrain		319.8	1611.4	2835.3
Rice cracker, plain		366.4	1818.5	3229.4
Rice flour		366.9	1855.4	3258.0
Rice milk		46.9	231.4	411.5
Rum		12.5	20.7	43.3
Rye flour		5.5	20.6	39.7
Safflower oil	Refined, edible	38.7	146.1	273.8
Sauce, tomato, commercial		42.0	97.5	230.7
Sausage, beef		51.1	206.1	377.7
Sausage, chicken		52.9	179.0	345.9
Sausage, lamb		42.6	153.1	280.3
Sausage, pork		55.4	178.7	360.9
Soft drink, diet		0.2	1.2	1.3
Soft drink, sugar sweetened		5.2	5.0	16.0
Soy milk		10.1	33.2	72.6
Soy sauce		25.2	100.8	188.1
Soybean oil	Refined, edible	268.1	1068.9	2007.8
Sports drink		3.4	3.6	10.6
Starchy root veg	Edible portion	39.9	79.6	198.4
Stone fruit	Edible portion, includes berries	215.4	646.9	1492.0
Sugar	Refined	45.4	33.9	134.1
Sultana (Dried grape)	Dried, edible	432.2	1073.8	2991.6
Sunflower oil	Refined, edible	347.7	611.5	2297.0
Sweet biscuit with cream filling		24.8	26.6	85.1
Tea	Dried leaves	4289.9	3462.1	2414.4
Tofu		29.4	117.7	219.9
Tropical stone fruit	Edible portion	119.5	125.3	302.9
Veg, excluding starchy roots and avocado	Edible portion	44.5	88.2	221.2
Water, bottled		0.2	0.9	0.9
Water, tap		0.1	0.6	0.6
Wheat bran		6.3	23.5	45.3

Wheat flour, white		4.9	18.1	34.8
Wheat flour, wholegrain		4.2	15.5	29.8
White rice	Uncooked	366.9	1855.4	3258.0
Whole milk		35.5	150.8	280.5
Whole milk powder		277.0	1176.4	2187.6
Wild capture fish	Edible portion	5.2	24.4	16.9
Wine	Red or white	131.7	328.3	911.3
Winter legumes	Lupin, chickpea, faba, Lentil (canned/soaked)	2.6	5.9	11.3
Yogurt, plain		39.1	165.9	308.5
Yogurt, sweetened		39.4	158.0	298.0

Note: Results presented using the AWARE water-scarcity model have been divided by 42.95, the global average value.

Supplementary Table 10 Water-scarcity footprint results for Australian adult daily diets. Results are presented for 3 water-scarcity models, denoted WSI_HH_EQ [2], World_EQ [3] and AWARE [4]. Age categories are defined according to the Australian dietary guidelines [1].

Age	Water-scarcity model	Male		Female		Total	
		Mean	SD	Mean	SD	Mean	SD
19 to 50	WSI_HH_EQ	143.3	80.5	134.8	74.8	139.2	77.9
	World_EQ	386.3	232.4	343.3	209.9	365.3	222.7
	AWARE	837.4	523.0	753.3	483.5	796.4	505.9
51 to 70	WSI_HH_EQ	154.1	83.5	154.2	80.1	154.1	81.8
	World_EQ	379.9	227.4	365.8	213.7	372.8	220.8
	AWARE	835.2	537.2	807.8	511.1	821.5	524.5
71+	WSI_HH_EQ	135.0	67.2	131.7	68.2	133.1	67.7
	World_EQ	323.9	175.1	309.7	179.8	315.8	177.9
	AWARE	713.2	426.8	673.9	438.7	690.9	434.0
All adults	WSI_HH_EQ	145.6	80.5	139.8	76.1	142.7	78.4
	World_EQ	379.1	227.3	345.6	208.4	362.4	218.7
	AWARE	826.1	520.5	759.3	488.0	792.8	505.7

Note: Results presented using the AWARE water-scarcity model have been divided by 42.95, the global average value

Supplementary Table 11: Contribution of different foods (%) to the water-scarcity footprint calculated using the WSI_HH_EQ [2] model.

	19-50 years			51-70 years			71 years and older			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Fruit	16.8	19.1	17.9	16.7	20.0	18.3	22.2	21.2	21.6	17.2	19.6	18.4
Vegetables	7.0	8.1	7.5	7.8	7.9	7.8	9.1	8.7	8.9	7.4	8.1	7.8
Breads and cereals	11.4	9.7	10.6	7.6	6.4	7.0	5.4	5.2	5.3	9.8	8.3	9.1
Meat and alternatives	12.2	10.3	11.3	12.1	10.8	11.4	9.1	9.2	9.1	11.9	10.3	11.1
Fish	0.3	0.3	0.3	0.4	0.5	0.5	0.2	0.3	0.2	0.3	0.4	0.4
Red meat (no pork)	3.5	2.6	3.1	3.8	2.9	3.3	3.1	2.6	2.8	3.6	2.7	3.1
Poultry	4.0	3.1	3.5	2.4	2.4	2.4	2.3	2.1	2.1	3.4	2.8	3.1
Vegetarian meat alt and nuts	3.6	3.9	3.7	4.9	4.5	4.7	3.3	3.7	3.5	3.9	4.1	4.0
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pork	0.9	0.4	0.6	0.6	0.5	0.5	0.3	0.5	0.4	0.7	0.4	0.6
Dairy	13.6	11.8	12.7	9.1	9.9	9.5	9.2	9.7	9.4	12.0	11.0	11.5
Beverages	10.8	15.6	13.1	20.4	22.3	21.4	21.4	26.2	24.1	14.3	18.7	16.5
Discretionary foods	26.4	23.9	25.2	24.8	20.8	22.8	22.0	18.4	20.0	25.6	22.4	24.0
Sugar sweetened beverages	2.2	1.5	1.8	1.1	0.7	0.9	0.7	0.6	0.6	1.7	1.2	1.5
Savoury and sweet biscuits	2.0	2.4	2.2	2.0	2.0	2.0	2.8	2.9	2.8	2.1	2.3	2.2
Sweet and savoury pastries and pies	0.9	0.8	0.8	0.9	0.6	0.8	0.6	0.4	0.5	0.9	0.7	0.8
Processed meat, burgers, tacos, pizza	6.2	4.1	5.2	3.3	1.8	2.6	2.5	2.1	2.3	5.1	3.3	4.2
Dairy based desserts, cream, butter	2.0	1.8	1.9	3.0	1.7	2.3	3.5	2.7	3.1	2.4	1.9	2.1
Fried potato and extruded snacks	3.6	2.3	3.0	1.7	0.7	1.2	0.8	0.7	0.8	2.8	1.7	2.3
Muesli bars, confectionary and choc	3.0	3.4	3.2	2.9	2.9	2.9	2.4	2.1	2.2	3.0	3.1	3.0
Alcohol	4.8	5.8	5.3	8.6	8.8	8.7	7.2	5.2	6.1	6.0	6.5	6.3
Other - stock cubes, salt, dry soups, etc.	1.7	1.8	1.8	1.3	1.6	1.4	1.6	1.8	1.7	1.6	1.8	1.7
Healthy fats and oils	0.8	1.0	0.9	1.2	1.3	1.2	1.1	1.0	1.0	0.9	1.1	1.0
Misc.	1.0	0.6	0.8	0.4	0.6	0.5	0.7	0.3	0.5	0.8	0.5	0.7

Supplementary Table 12: Contribution of different foods (%) to the water-scarcity footprint calculated using the World_EQ [3] model.

	19-50 years			51-70 years			71 years and older			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Fruit	16.6	19.3	17.9	17.7	21.7	19.7	23.6	22.9	23.2	17.5	20.3	18.9
Vegetables	6.1	7.4	6.7	7.1	7.4	7.3	8.4	8.3	8.3	6.5	7.5	7.0
Breads and cereals	15.1	13.7	14.4	11.1	9.3	10.2	7.7	7.8	7.8	13.4	11.8	12.6
Meat and alternatives	12.2	10.7	11.5	13.1	12.1	12.6	9.9	10.2	10.1	12.3	11.0	11.6
Fish	0.4	0.4	0.4	0.6	0.7	0.6	0.3	0.4	0.4	0.4	0.5	0.5
Red meat (no pork)	3.9	3.0	3.5	4.7	3.7	4.2	3.7	3.3	3.5	4.1	3.2	3.7
Poultry	3.6	3.1	3.4	2.4	2.6	2.5	2.4	2.3	2.3	3.2	2.8	3.0
Vegetarian meat alt and nuts	3.4	3.8	3.6	5.0	4.6	4.8	3.3	3.7	3.5	3.8	4.0	3.9
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pork	0.8	0.4	0.6	0.5	0.5	0.5	0.3	0.5	0.4	0.7	0.4	0.6
Dairy	17.6	16.3	17.0	13.8	15.1	14.4	15.0	15.9	15.5	16.3	15.9	16.1
Beverages	4.8	7.0	5.9	8.8	9.9	9.4	8.8	12.2	10.7	6.2	8.4	7.3
Discretionary foods	25.7	24.1	24.9	26.7	22.4	24.6	24.8	21.2	22.8	25.9	23.3	24.6
Sugar sweetened beverages	1.1	0.8	1.0	0.6	0.4	0.5	0.4	0.4	0.4	0.9	0.7	0.8
Savoury and sweet biscuits	1.8	2.4	2.1	2.1	2.2	2.1	2.8	3.1	3.0	2.0	2.4	2.2
Sweet and savoury pastries and pies	0.9	0.9	0.9	1.0	0.7	0.8	0.7	0.5	0.6	0.9	0.8	0.9
Processed meat, burgers, tacos, pizza	7.1	4.8	6.0	4.3	2.4	3.3	3.4	2.9	3.1	6.0	3.9	5.0
Dairy based desserts, cream, butter	2.8	2.6	2.7	4.4	2.8	3.6	5.6	4.5	5.0	3.5	2.8	3.2
Fried potato and extruded snacks	3.0	2.1	2.6	1.4	0.7	1.1	0.8	0.8	0.8	2.4	1.6	2.0
Muesli bars, confectionary and choc	2.3	2.7	2.5	2.3	2.4	2.3	1.9	1.8	1.8	2.3	2.5	2.4
Alcohol	5.1	5.9	5.5	9.5	9.3	9.4	7.8	5.6	6.5	6.5	6.8	6.7
Other - stock cubes, salt, dry soups, etc.	1.6	1.8	1.7	1.3	1.6	1.4	1.5	1.7	1.6	1.5	1.7	1.6
Healthy fats and oils	0.7	0.8	0.8	1.1	1.2	1.2	1.0	0.9	1.0	0.8	0.9	0.9
Misc.	1.3	0.7	1.0	0.4	0.8	0.6	0.7	0.5	0.6	1.0	0.7	0.9

Supplementary Table 13: Contribution of different foods (%) to the water-scarcity footprint calculated using the AWARE [4] model.

	19-50 years			51-70 years			71 years and older			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Fruit	18.2	21.0	19.6	19.5	23.7	21.6	26.0	25.6	25.8	19.2	22.3	20.7
Vegetables	6.9	8.3	7.6	8.2	8.6	8.4	9.7	9.8	9.7	7.5	8.5	8.0
Breads and cereals	14.3	12.9	13.6	10.6	8.9	9.8	7.5	7.5	7.5	12.7	11.2	12.0
Meat and alternatives	12.9	11.6	12.3	14.3	13.3	13.8	10.6	11.5	11.1	13.1	12.0	12.6
Fish	0.3	0.3	0.3	0.4	0.6	0.5	0.2	0.3	0.2	0.3	0.4	0.4
Red meat (no pork)	3.9	3.0	3.5	4.8	3.7	4.3	3.8	3.5	3.6	4.1	3.3	3.7
Poultry	3.9	3.3	3.6	2.6	2.9	2.7	2.5	2.6	2.5	3.4	3.1	3.3
Vegetarian meat alt and nuts	3.9	4.5	4.2	5.8	5.6	5.7	3.8	4.5	4.2	4.4	4.8	4.6
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pork	0.9	0.4	0.6	0.6	0.5	0.6	0.3	0.5	0.5	0.8	0.5	0.6
Dairy	15.5	14.4	14.9	12.3	13.6	13.0	13.5	14.5	14.1	14.4	14.2	14.3
Beverages	2.1	3.0	2.6	3.7	4.1	3.9	3.5	5.5	4.7	2.7	3.6	3.1
Discretionary foods	28.2	27.1	27.6	29.7	25.6	27.6	27.2	24.0	25.4	28.5	26.3	27.4
Sugar sweetened beverages	1.4	1.1	1.3	0.8	0.5	0.7	0.5	0.5	0.5	1.2	0.9	1.0
Savoury and sweet biscuits	2.1	2.7	2.4	2.3	2.5	2.4	3.3	3.6	3.5	2.3	2.8	2.5
Sweet and savoury pastries and pies	1.1	1.0	1.0	1.1	0.8	1.0	0.7	0.5	0.6	1.1	0.9	1.0
Processed meat, burgers, tacos, pizza	7.0	4.8	5.9	4.3	2.4	3.4	3.3	2.9	3.1	6.0	3.9	5.0
Dairy based desserts, cream, butter	2.6	2.4	2.5	4.2	2.6	3.4	5.3	4.3	4.7	3.2	2.6	2.9
Fried potato and extruded snacks	3.9	2.7	3.3	2.0	0.9	1.4	1.1	1.0	1.0	3.1	2.0	2.6
Muesli bars, confectionary and choc	2.9	3.5	3.2	3.0	3.0	3.0	2.3	2.3	2.3	2.8	3.2	3.0
Alcohol	5.3	6.7	6.0	10.4	10.7	10.5	8.8	6.5	7.5	7.0	7.8	7.4
Other - stock cubes, salt, dry soups, etc.	1.9	2.2	2.1	1.6	2.1	1.9	1.7	2.5	2.2	1.8	2.2	2.0
Healthy fats and oils	0.8	1.0	0.9	1.3	1.4	1.4	1.2	1.1	1.2	1.0	1.1	1.1
Misc.	1.2	0.7	0.9	0.4	0.8	0.6	0.7	0.5	0.6	0.9	0.7	0.8

Note: Results presented using the AWARE water-scarcity model have been divided by 42.95, the global average value.

Supplementary Table 14: Food intake (serves person⁻¹) and water-scarcity footprint (L-eq person⁻¹) for Australian adult (19-50 years) daily diets. Four dietary patterns are compared: higher diet quality and lower water-scarcity footprint, lower diet quality and higher water-scarcity footprint, current diet and recommended diet as described by the Australian dietary guidelines¹. Water-scarcity footprints were calculated using the WSI_HH_EQ model [2].

	Higher diet quality & lower water-scarcity footprint		Lower diet quality & higher water-scarcity footprint		Current diet		Recommended diet	
	Serves	Water-scarcity footprint	Serves	Water-scarcity footprint	Serves	Water-scarcity footprint	Serves	Water-scarcity footprint
Fruit	1.06	14.2	1.79	49.6	1.38	31.1	2	45.0
Vegetables	3.07	10.5	1.47	7.6	2.47	9.7	5.5	21.5
Breads and cereals	4.38	9.6	4.51	17.4	4.57	14.8	6	19.4
Fresh meat & alternatives	2.62	13.2	1.82	13.4	2.32	16.0	2.8	19.3
Dairy products & alternatives	1.26	12.6	1.59	19.1	1.46	16.2	2.5	27.7
Discretionary foods	2.25	9.3	12.52	80.6	7.42	32.3	2.8	12.2
Miscellaneous foods		13.9		28.6		19.1		19.1
TOTAL		83.3		216.3		139.2		164.3

Supplementary Table 15: Food intake (serves person⁻¹) and water-scarcity footprint (L-eq person⁻¹) for Australian adult (19-50 years) daily diets. Four dietary patterns are compared: higher diet quality and lower water-scarcity footprint, lower diet quality and higher water-scarcity footprint, current diet and recommended diet as described by the Australian dietary guidelines¹. Water-scarcity footprints were calculated using the World_EQ model [3].

	Higher diet quality & lower water-scarcity footprint		Lower diet quality & higher water-scarcity footprint		Current diet		Recommended diet	
	Serves	Water-scarcity footprint	Serves	Water-scarcity footprint	Serves	Water-scarcity footprint	Serves	Water-scarcity footprint
Fruit	1.10	35.0	1.76	120.0	1.38	81.5	2.0	117.9
Vegetables	3.46	25.0	1.33	15.6	2.47	21.3	5.5	47.3
Breads and cereals	3.96	24.2	5.04	90.1	4.57	61.6	6.0	80.9
Fresh meat & alternatives	2.66	37.1	1.80	35.9	2.32	40.7	2.8	49.2
Dairy products & alternatives	1.13	41.6	1.77	70.6	1.46	55.9	2.5	95.6
Discretionary foods	2.37	23.9	12.30	207.2	7.42	80.6	2.8	30.4
Miscellaneous foods		19.8		34.0		23.7		23.7
TOTAL		206.7		573.4		365.3		445.1

Supplementary Table 16: Food intake (serves person⁻¹) and water-scarcity footprint (L-eq person⁻¹) for Australian adult (19-50 years) daily diets. Four dietary patterns are compared: higher diet quality and lower water-scarcity footprint, lower diet quality and higher water-scarcity footprint, current diet and recommended diet as described by the Australian dietary guidelines¹. Water-scarcity footprints were calculated using the AWARE [4] model.

	Higher diet quality & lower water-scarcity footprint		Lower diet quality & higher water-scarcity footprint		Current diet		Recommended diet	
	Serves	Water-scarcity footprint	Serves	Water-scarcity footprint	Serves	Water-scarcity footprint	Serves	Water-scarcity footprint
Fruit	1.08	83.4	2.00	352.0	1.38	199.9	2	289.3
Vegetables	3.40	59.7	1.32	37.2	2.47	51.3	5.5	114.1
Breads and cereals	4.14	58.6	4.68	142.5	4.57	116.4	6	153.0
Fresh meat & alternatives	2.67	79.4	1.65	72.0	2.32	97.7	2.8	118.0
Dairy products & alternatives	1.19	79.3	1.59	115.9	1.46	102.0	2.5	174.4
Discretionary foods	2.28	55.5	12.94	545.5	7.42	199.3	2.8	75.2
Miscellaneous foods		25.4		41.7		29.8		29.8
TOTAL		441.2		1306.8		796.4		953.8

Note: Results presented using the AWARE water-scarcity model have been divided by 42.95, the global average value

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