

Annex A: Selected Micronutrient Indicators by Country

COUNTRY	Proportion of pre-school age children with anaemia (Hb<110 g/L)	Proportion of pregnant women with anaemia (Hb<110 g/L)	Proportion of non-pregnant women with anaemia (Hb<120 g/L)	Proportion of pre-school age children with vitamin A deficiency (serum retinol <0.70 µmol/l)	Proportion of pregnant women with night blindness	Proportion of school-aged children with iodine deficiency (UI <100 µg/l (%))	Proportion of population at risk of inadequate intake of zinc	Proportion of households consuming adequately iodized salt (2000-2007) USI Rate (%)	Vitamin A supplementation coverage rate (6-59 months) 2007 Full coverage (%)	Type of Wheat Flour Fortification Program (M=Mandatory, V=Voluntary, P=Proposed)	Existence of national policy on zinc supplementation for diarrhoea (1=Enacted, 0=Not enacted)
Afghanistan	37.9	61.0	24.7	64.5	12.5	71.9	16.4	28	92	V	1
Albania	31.0	34.0	21.1	18.6	3.2	N/A	13.4	60	-	-	0
Algeria	42.5	42.8	31.4	15.7	5.3	77.7	6.6	61	-	-	0
Andorra	12.0	15.5	16.2	0*	0*	N/A	-	-	-	-	0
Angola	29.7	57.1	52.3	64.3	10.9	N/A	46.0	35	36	V	0
Antigua and Barbuda	49.4	29.5	26.5	7.4	3.9	N/A	10.0	-	-	-	0
Argentina	18.1	25.4	18.0	14.3	3.2	N/A	3.2	90	-	M	0
Armenia	23.9	12.0	12.4	0.6	3.2	6.3	49.4	97	-	P	0
Australia	8.0	12.4	14.7	0*	0*	46.3	5.1	-	-	M	0
Austria	10.5	15.5	14.8	0*	0*	49.4	8.4	-	-	-	0
Azerbaijan	31.8	38.4	40.2	32.1	3.3	74.4	47.5	54	95	V	0
Bahamas	21.9	23.3	22.7	0*	0*	N/A	10.4	-	-	-	0
Bahrain	24.7	27.7	51.3	0*	0*	16.2	-	-	-	M	0
Bangladesh	47.0	47.0	33.2	21.7	6.5	42.5	50.4	84	94	V	1
Barbados	17.1	23.0	17.2	6.5	3.2	N/A	13.3	-	-	M	0
Belarus	27.4	25.8	19.4	17.4	2.6	80.9	5.8	55	-	P	0
Belgium	8.7	12.9	13.5	0*	0*	66.9	10.9	-	-	-	0
Belize	35.9	51.7	31.2	11.7	4.6	26.7	22.2	90	-	M	0
Benin	81.9	72.7	63.2	70.7	9.9	8.3	16.5	55	73	V	1
Bhutan	80.6	49.6	54.8	22.0	6.8	13.5	4.1	96	48	P	0
Bolivia (Plurinational State of)	51.6	37.0	32.9	21.8	14.1	19.0	22.6	90	-	M	1
Bosnia and Herzegovina	26.8	34.8	21.3	13.2	4.5	22.2	30.4	62	-	-	0
Botswana	38.0	21.3	32.7	26.1	4.3	15.3	17.1	66	-	-	1
Brazil	54.9	29.1	23.1	13.3	3.5	0.0	20.3	88	-	M	0
Brunei Darussalam	24.2	38.9	20.4	0*	0*	N/A	12.8	-	-	-	0
Bulgaria	26.7	29.7	17.7	18.3	2.8	6.9	18.6	100	-	P	0
Burkina Faso	91.5	68.3	52.0	54.3	13.0	47.5	13.3	34	73	P	1
Burundi	56.0	47.1	28.0	27.9	8.0	60.5	46.5	98	83	-	0
Cambodia	63.4	66.4	57.3	22.3	8.0	N/A	43.6	73	76	V	1
Cameroon	68.3	50.9	44.3	38.8	6.0	91.7	27.7	49	-	-	1
Canada	7.6	11.5	14.3	0*	0*	N/A	13.3	-	-	M	0
Cape Verde	39.7	41.3	32.5	2.0	6.7	77.4	16.2	0	-	-	0
Central African Republic	84.2	54.8	49.8	68.2	13.3	79.5	22.7	62	78	-	0
Chad	71.1	60.4	52.4	50.1	2.7	29.4	21.1	56	54	-	1
Chile	24.4	28.3	4.8	7.9	3.4	0.2	12.5	100	-	M	0
China	20.0	28.9	19.9	9.3	4.2	15.7	14.1	94	-	V	0
Colombia	27.7	31.1	23.6	5.9	4.1	6.4	27.4	92	-	M	0
Comoros	65.4	55.0	47.8	21.5	9.4	N/A	49.9	82	0	-	0
Congo	66.4	55.3	52.8	24.6	8.0	N/A	42.9	82	79	-	1
Cook Islands	24.7	27.2	18.2	10.4	2.8	N/A	-	-	-	-	0
Costa Rica	20.9	27.9	18.9	8.8	4.4	8.9	29.0	92	-	M	0
Côte d'Ivoire	69.0	55.1	47.4	57.3	10.3	27.6	20.8	84	4	M	0
Croatia	23.4	28.4	17.5	9.2	3.0	28.8	37.0	90	-	-	0
Cuba	26.7	39.1	19.5	3.6	3.0	51.0	49.3	88	-	M	0
Cyprus	18.6	25.2	19.6	0*	0*	N/A	6.2	-	-	-	0
Czech Republic	18.4	22.3	16.9	5.8	2.9	47.7	12.3	-	-	-	0
Democratic People's Republic of Korea	31.7	34.7	34.7	27.5	5.3	N/A	39.8	40	95	-	0
Democratic Republic of the Congo	70.6	67.3	52.8	61.1	10.4	10.1	57.5	79	79	V	1
Denmark	9.0	12.4	14.3	0*	0*	70.8	9.2	-	-	-	0
Djibouti	65.8	56.2	46.4	35.2	9.1	N/A	37.3	0	94	-	1

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Dominica	34.4	35.1	23.7	4.2	3.6	N/A	7.4	-	-	-	0
Dominican Republic	34.6	39.9	27.1	13.7	4.5	86.0	44.7	19	-	M	1
Ecuador	37.9	37.8	29.2	14.7	3.7	0.0	29.6	99	-	M	0
Egypt	29.9	45.4	27.6	11.9	5.0	31.2	8.6	78	87	M	1
El Salvador	18.4	10.5	26.8	14.6	4.3	4.6	41.7	62	13	M	1
Equatorial Guinea	40.8	41.7	38.4	13.9	8.3	N/A	-	33	-	-	1
Eritrea	69.6	55.3	52.1	21.4	11.6	25.3	32.4	68	50	P	1
Estonia	23.4	22.7	17.7	8.7	2.6	67.0	8.4	-	-	-	0
Ethiopia	75.2	62.7	52.3	46.1	22.1	68.4	21.7	20	86	-	1
Fiji	39.1	55.6	31.8	13.6	3.8	75.4	15.2	31	-	M	0
Finland	11.5	15.0	15.3	0*	0*	35.5	5.7	-	-	-	0
France	8.3	11.5	9.1	0*	0*	60.4	4.2	-	-	-	0
Gabon	44.5	46.2	36.7	16.9	10.5	38.3	18.6	36	0	-	1
Gambia	79.4	75.1	59.1	64.0	7.9	72.8	36.1	7	82	-	0
Georgia	40.6	41.6	22.7	30.9	3.7	80.0	47.3	87	-	V	0
Germany	7.8	12.3	12.3	0*	0*	27.0	12.5	-	-	-	0
Ghana	76.1	64.9	43.1	75.8	7.7	71.3	21.0	32	77	M	1
Greece	12.1	18.6	14.6	0*	0*	N/A	10.8	-	-	V	0
Grenada	32.0	31.4	24.0	14.1	3.2	N/A	15.2	-	-	M	0
Guatemala	38.1	22.1	20.2	15.8	6.8	14.4	48.3	40	29	M	1
Guinea	79.0	63.2	50.4	45.8	17.8	32.4	33.9	51	94	M	1
Guinea-Bissau	74.9	57.7	52.9	54.7	11.3	N/A	29.0	1	64	-	0
Guyana	47.9	52.0	53.9	4.1	3.5	26.9	31.9	-	-	M	0
Haiti	65.3	63.2	54.4	32.0	9.4	58.9	55.6	3	-	M	0
Honduras	29.9	32.4	14.7	13.8	4.8	31.3	44.3	80	-	M	1
Hungary	18.8	20.7	16.6	7.0	2.7	65.2	14.7	-	-	V	0
Iceland	7.8	11.8	14.1	0*	0*	37.7	3.1	-	-	-	0
India	74.3	49.7	52.0	62.0	12.1	31.3	25.9	51	33	V	1
Indonesia	44.5	44.3	33.1	19.6	1.7	16.3	34.4	73	87	M	1
Iran (Islamic Republic of)	35.0	40.5	33.0	0.5	4.0	19.7	6.7	99	-	M	0
Iraq	55.9	38.2	45.3	29.8	7.0	N/A	18.5	28	-	M	0
Ireland	10.3	14.8	17.5	0*	0*	60.8	5.2	-	-	P	0
Israel	11.8	17.4	18.6	0*	0*	N/A	12.2	-	-	V	0
Italy	10.9	15.5	14.4	0*	0*	55.7	9.1	-	-	-	0
Jamaica	48.2	40.7	23.8	29.4	4.5	N/A	22.6	100	-	M	1
Japan	10.6	14.8	21.3	0*	0*	N/A	23.5	-	-	-	0
Jordan	28.3	38.7	28.6	15.1	4.4	24.4	8.3	88	-	M	0
Kazakhstan	36.3	26.0	35.5	27.1	2.6	53.1	9.6	92	-	V	1
Kenya	69.0	55.1	46.4	84.4	6.4	36.8	32.9	91	15	V	1
Kiribati	41.9	38.4	30.7	21.8	4.6	N/A	33.7	-	-	P	0
Kuwait	32.4	31.3	28.7	0*	0*	31.4	4.2	-	-	M	0
Kyrgyzstan	49.8	34.1	38.0	26.3	3.3	88.1	13.8	76	95	M	0
Lao People's Democratic Republic	48.2	56.4	46.1	44.7	11.9	26.9	35.7	84	69	-	0
Latvia	26.7	25.0	18.9	13.0	2.6	76.8	10.7	-	-	-	0
Lebanon	28.3	31.6	25.2	11.0	3.7	55.5	8.0	92	-	-	0
Lesotho	48.6	25.4	27.3	32.7	4.4	21.5	31.2	91	38	V	1
Liberia	86.7	62.1	58.0	52.9	13.3	3.5	59.2	-	85	-	1
Libyan Arab Jamahiriya	33.9	34.5	29.9	8.0	4.2	N/A	5.2	90	-	P	0
Lithuania	23.8	24.2	17.9	11.1	2.6	62.0	8.9	-	-	-	0
Luxembourg	9.4	10.3	18.8	0*	0*	30.7	31.5	-	-	-	0

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Madagascar	68.3	50.1	45.6	42.1	7.5	N/A	32.9	75	95	-	1
Malawi	73.2	47.3	43.9	59.2	5.8	N/A	34.2	50	90	V	0
Malaysia	32.4	38.3	30.1	3.5	4.4	57.0	14.1	-	-	V	0
Maldives	81.5	55.4	49.6	9.4	4.6	43.1	13.7	44	62	-	0
Mali	82.8	73.4	61.0	58.6	19.1	68.3	11.1	79	89	P	1
Malta	16.3	26.1	15.6	4.0	3.7	N/A	10.6	-	-	-	0
Marshall Islands	30.0	38.1	24.1	60.7	4.3	N/A	-	-	39	-	0
Mauritania	68.2	52.7	50.4	47.7	9.7	69.8	14.0	2	89	-	0
Mauritius	16.8	37.5	14.0	9.2	4.0	4.4	29.5	0	-	-	0
Mexico	29.4	26.2	20.8	26.8	3.8	8.5	20.2	91	-	M	0
Micronesia (Federated States of)	18.7	37.8	24.2	54.2	3.6	N/A	-	-	-	-	0
Monaco	5.0	6.3	13.3	0*	0*	N/A	-	-	-	-	0
Mongolia	21.4	37.3	13.6	19.8	3.4	52.8	1.6	83	94	P	0
Montenegro	29.5	33.6	26.7	17.2	3.3	N/A	-	71	-	-	0
Morocco	31.5	37.2	32.6	40.4	2.2	63.0	7.6	21	-	M	0
Mozambique	74.7	52.4	48.2	68.8	5.3	68.1	60.5	54	42	P	1
Myanmar	63.2	49.6	44.9	36.7	1.1	22.3	34.6	60	93	-	1
Namibia	40.5	30.6	35.0	17.5	6.2	28.7	14.2	63	-	-	0
Nauru	20.0	19.2	25.7	10.0	8.9	N/A	-	-	-	-	0
Nepal	78.0	74.6	66.7	32.3	19.6	27.4	21.3	63	95	V	1
Netherlands	8.7	12.5	14.2	0*	0*	37.5	7.3	-	-	-	0
New Zealand	11.3	17.6	10.2	0*	0*	65.4	4.6	83	-	M	0
Nicaragua	17.0	32.9	9.0	3.1	5.1	0.0	49.7	97	-	M	1
Niger	81.3	65.5	62.2	67.0	17.1	0.0	9.4	46	95	P	1
Nigeria	76.1	66.7	62.0	29.5	7.7	40.4	12.8	97	55	M	1
Niue	21.6	31.7	11.9	15.5	3.0	N/A	-	-	-	-	0
Norway	6.4	9.3	13.3	0*	0*	N/A	8.0	-	-	-	0
Oman	50.5	42.7	34.0	5.5	4.4	49.8	-	61	-	M	0
Pakistan	50.9	39.1	27.9	12.5	7.8	63.6	11.1	17	95	V	1
Palau	22.2	27.3	21.1	8.9	3.7	N/A	-	-	-	-	0
Panama	36.0	36.4	40.3	9.4	4.7	8.6	33.0	95	-	M	0
Papua New Guinea	59.8	55.2	43.1	11.1	10.3	27.7	14.6	-	7	P	0
Paraguay	30.2	39.3	26.2	14.1	4.5	13.4	13.4	94	-	M	0
Peru	50.4	42.7	40.4	14.9	6.5	10.4	41.6	91	-	M	0
Philippines	36.3	43.9	42.1	40.1	7.9	23.8	31.9	45	83	M	1
Poland	22.7	25.3	18.7	9.3	2.8	64.0	9.5	-	-	V	0
Portugal	12.7	17.3	15.0	0*	0*	N/A	9.9	-	-	-	0
Qatar	26.2	29.1	36.2	0*	0*	30.0	-	-	-	M	0
Republic of Korea	16.5	22.6	14.0	0*	0*	N/A	19.4	-	-	-	0
Republic of Moldova	40.6	36.5	23.4	25.6	5.1	62.0	30.8	60	-	P	0
Romania	39.8	30.0	20.1	16.3	3.0	46.9	18.3	74	-	P	0
Russian Federation	26.5	20.8	19.8	14.1	2.8	56.2	11.7	35	-	P	0
Rwanda	41.9	10.6	59.4	6.4	7.9	0.0	39.8	88	76	-	1
Saint Kitts and Nevis	22.9	25.6	20.8	7.1	2.9	N/A	11.5	100	-	-	0
Saint Lucia	32.2	33.4	25.0	11.3	3.7	N/A	7.8	-	-	-	0
Saint Vincent and the Grenadines	32.3	32.7	24.1	2.1	3.8	N/A	20.7	-	-	M	0
Samoa	35.5	33.4	19.7	16.1	3.3	N/A	-	-	-	P	0
San Marino	9.1	11.3	16.5	0*	0*	N/A	-	-	-	-	0
Sao Tome and Principe	36.7	40.4	26.2	95.6	5.0	N/A	36.7	37	48	-	0
Saudi Arabia	33.1	32.0	32.3	3.6	5.1	23.0	9.4	-	-	M	0

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Senegal	70.1	57.6	48.4	37.0	12.7	75.7	25.3	41	94	P	1
Serbia	29.5	33.6	26.7	17.2	3.3	20.8	-	73	-	-	0
Seychelles	23.8	24.9	21.1	8.0	3.2	N/A	18.8	-	-	-	0
Sierra Leone	83.2	59.7	62.9	74.8	9.7	N/A	56.7	45	86	-	1
Singapore	18.9	23.8	18.4	0*	0*	N/A	-	-	-	P	0
Slovakia	23.4	25.2	19.4	8.3	2.9	15.0	16.4	-	-	-	0
Slovenia	14.0	18.9	15.1	0*	0*	N/A	12.5	-	-	-	0
Solomon Islands	51.7	51.1	39.2	13.1	6.6	N/A	22.8	-	-	P	0
Somalia	N/A	N/A	N/A	61.7	12.8	N/A	17.1	1	4	-	0
South Africa	24.1	21.8	26.4	16.9	4.5	29.0	19.7	62	-	M	1
Spain	12.9	17.6	16.3	0*	0*	50.1	9.0	-	-	-	0
Sri Lanka	29.9	29.3	31.6	35.3	3.5	30.0	44.7	94	-	V	0
Sudan	84.6	57.7	43.5	27.8	9.6	62.0	10.8	11	90	V	1
Suriname	25.7	32.4	20.4	18.0	4.8	N/A	30.2	-	-	M	0
Swaziland	46.7	24.3	36.5	44.6	4.1	34.5	20.5	80	32	V	0
Sweden	8.6	12.9	13.3	0*	0*	N/A	11.3	-	-	-	0
Switzerland	6.3	9.7	12.2	0*	0*	24.0	7.6	-	-	-	0
Syrian Arab Republic	41.0	39.3	33.4	12.1	4.6	N/A	6.5	79	-	V	0
Tajikistan	37.7	44.6	41.2	26.8	3.8	N/A	66.8	46	92	V	1
Thailand	25.2	22.3	17.8	15.7	3.7	34.9	41.6	47	-	-	0
The former Yugoslav Republic of Macedonia	25.8	31.8	12.2	29.7	3.3	8.7	11.3	94	50	-	0
Timor-Leste	31.5	22.9	31.5	45.8	13.4	N/A	-	60	64	-	0
Togo	52.4	50.2	38.4	35.0	9.5	6.2	22.9	25	-	P	0
Tonga	27.6	34.0	21.5	17.0	3.0	N/A	-	-	-	-	0
Trinidad and Tobago	30.4	29.7	24.3	7.2	3.7	N/A	36.9	28	-	M	0
Tunisia	21.7	32.3	26.3	14.6	4.5	26.4	6.8	97	-	-	0
Turkey	32.6	40.2	26.3	12.4	5.4	60.9	22.2	64	-	P	0
Turkmenistan	35.8	29.9	47.3	28.0	3.4	18.7	24.2	87	-	P	1
Tuvalu	34.2	33.1	26.3	21.8	3.6	N/A	-	-	-	-	0
Uganda	64.1	41.2	28.7	27.9	8.3	3.9	23.8	96	-	V	1
Ukraine	22.2	27.3	9.2	23.8	2.5	70.1	15.8	18	-	V	0
United Arab Emirates	27.7	27.9	43.9	0*	0*	56.6	7.5	-	-	V	0
United Kingdom of Great Britain and Northern Ireland	8.0	15.2	8.8	0*	0*	N/A	8.6	-	93	M	0
United Republic of Tanzania	71.8	58.2	47.2	24.2	2.7	37.7	22.9	43	93	V	1
United States of America	3.1	5.7	6.9	0*	0*	15.9	9.1	-	-	M	0
Uruguay	19.1	27.1	16.9	11.9	3.2	N/A	4.0	-	-	M	0
Uzbekistan	38.1	53.8	64.8	53.1	3.4	39.8	24.4	53	84	V	1
Vanuatu	59.0	57.3	54.1	16.1	11.8	N/A	18.0	-	-	P	0
Venezuela (Bolivarian Republic of)	33.1	39.6	28.3	9.4	4.7	0.0	41.0	90	-	M	0
Viet Nam	34.1	32.2	24.3	12.0	4.1	84.0	27.8	93	95	V	0
Yemen	68.3	58.1	51.0	27.0	9.8	30.2	13.1	30	47	M	0
Zambia	52.9	46.9	29.1	54.1	5.7	72.0	38.0	77	95	V	1
Zimbabwe	19.3	18.8	34.3	35.8	4.6	14.8	43.4	91	83	V	1

SOURCE

Values in bold italics are regression based estimates

* Countries with a GDP ≥ US\$ 15,000 are assumed to be free of vitamin A deficiency of public health significance.

WHO, CDC. Worldwide prevalence of anaemia, 1993-2005. WHO global database on anaemia. Geneva, World Health Organization, 2008.

WHO, CDC. Worldwide prevalence of anaemia, 1993-2005. WHO global database on anaemia. Geneva, World Health Organization, 2008.

WHO, CDC. Worldwide prevalence of anaemia, 1993-2005. WHO global database on anaemia. Geneva, World Health Organization, 2008.

WHO. Global prevalence of vitamin A deficiency in populations at risk 1995-2005. WHO global database on vitamin A deficiency. Geneva, World Health Organization, in press.

WHO. Global prevalence of vitamin A deficiency in populations at risk 1995-2005. WHO global database on vitamin A deficiency. Geneva, World Health Organization, in press.

WHO global database on iodine deficiency (<http://www.who.int/ymins/iodine/data/en/index.html>, accessed 31 July 2007)

IZINGC. Estimated Risk of Zinc deficiency by Country, FNB vol. 25, no 1 suppl 2 (2004)

UNICEF global database on iodized salt consumption)

UNICEF Vitamin A programme database: supplementation coverage

FFI database

Zinc Task Force, using data from UNICEF, USAID and WHO