

Trends in micronutrient deficiencies and in control programs

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The Micronutrient Report

Current Progress and Trends in the Control of Vitamin A, Iodine, and Iron Deficiencies

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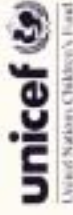
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UNEP
United Nations Environment Programme



The Micronutrient Initiative



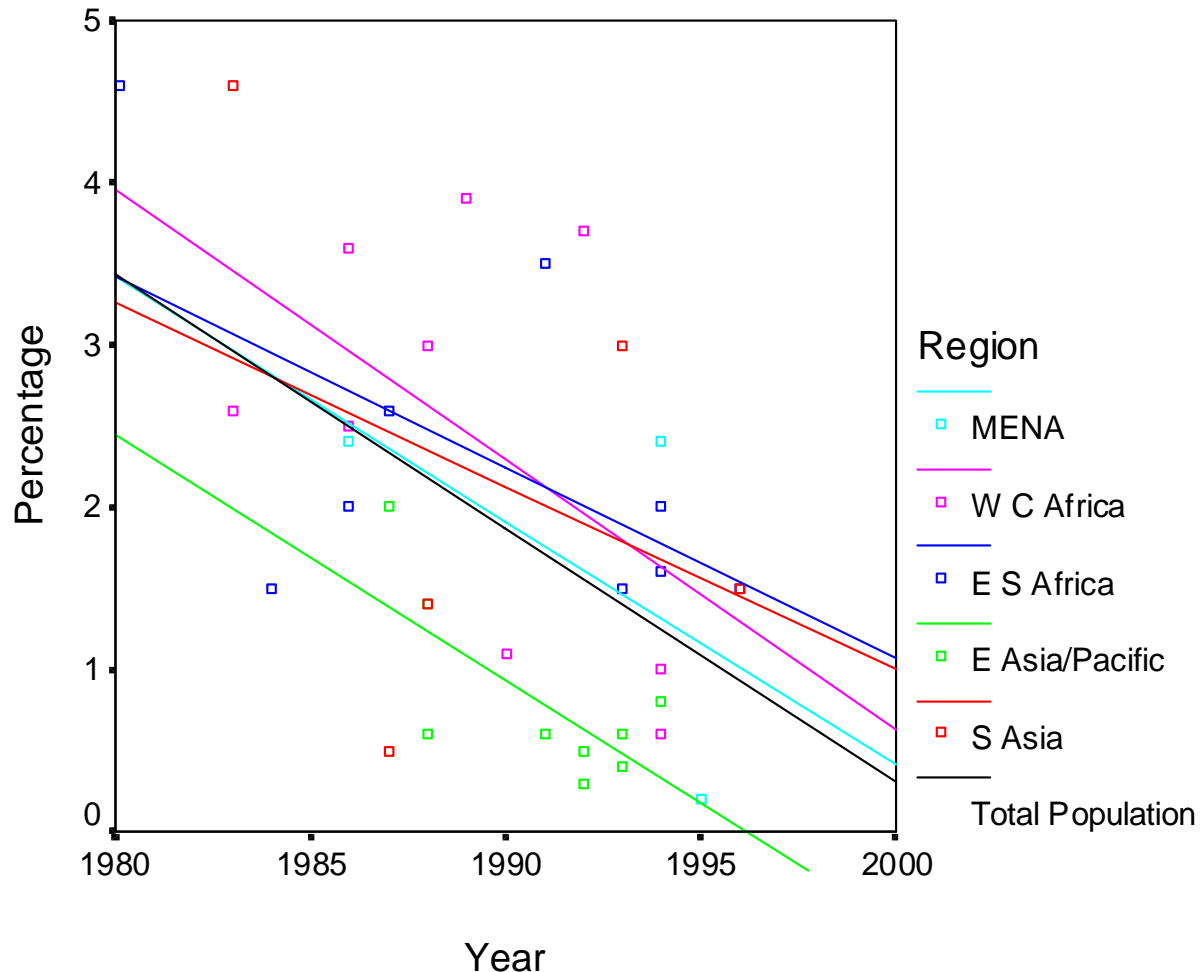
United Nations Children's Fund



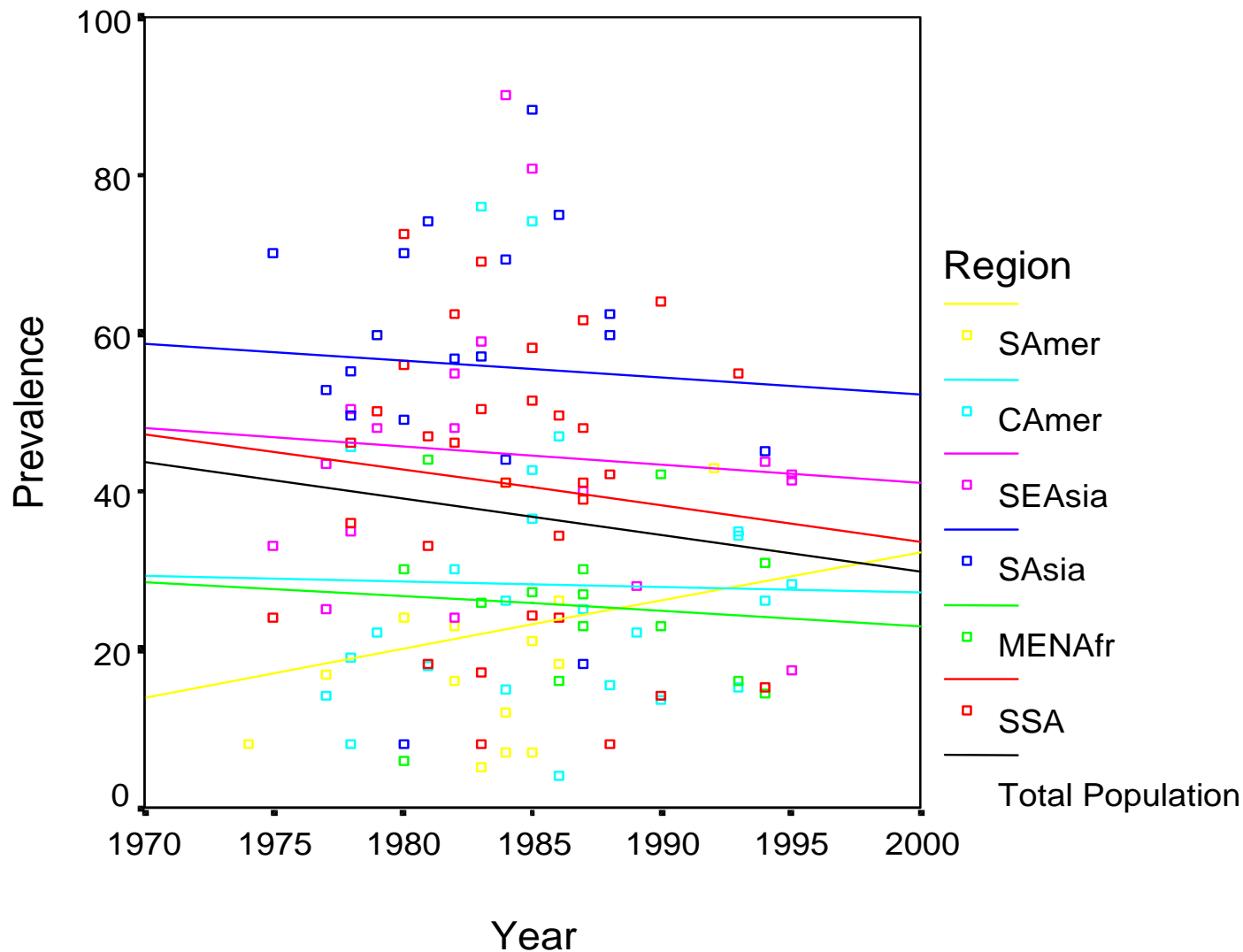
Ways of estimating trends

- Compare national surveys at different times
- Fit regression to diverse national results
- Interpolate regional estimates at different times and compare

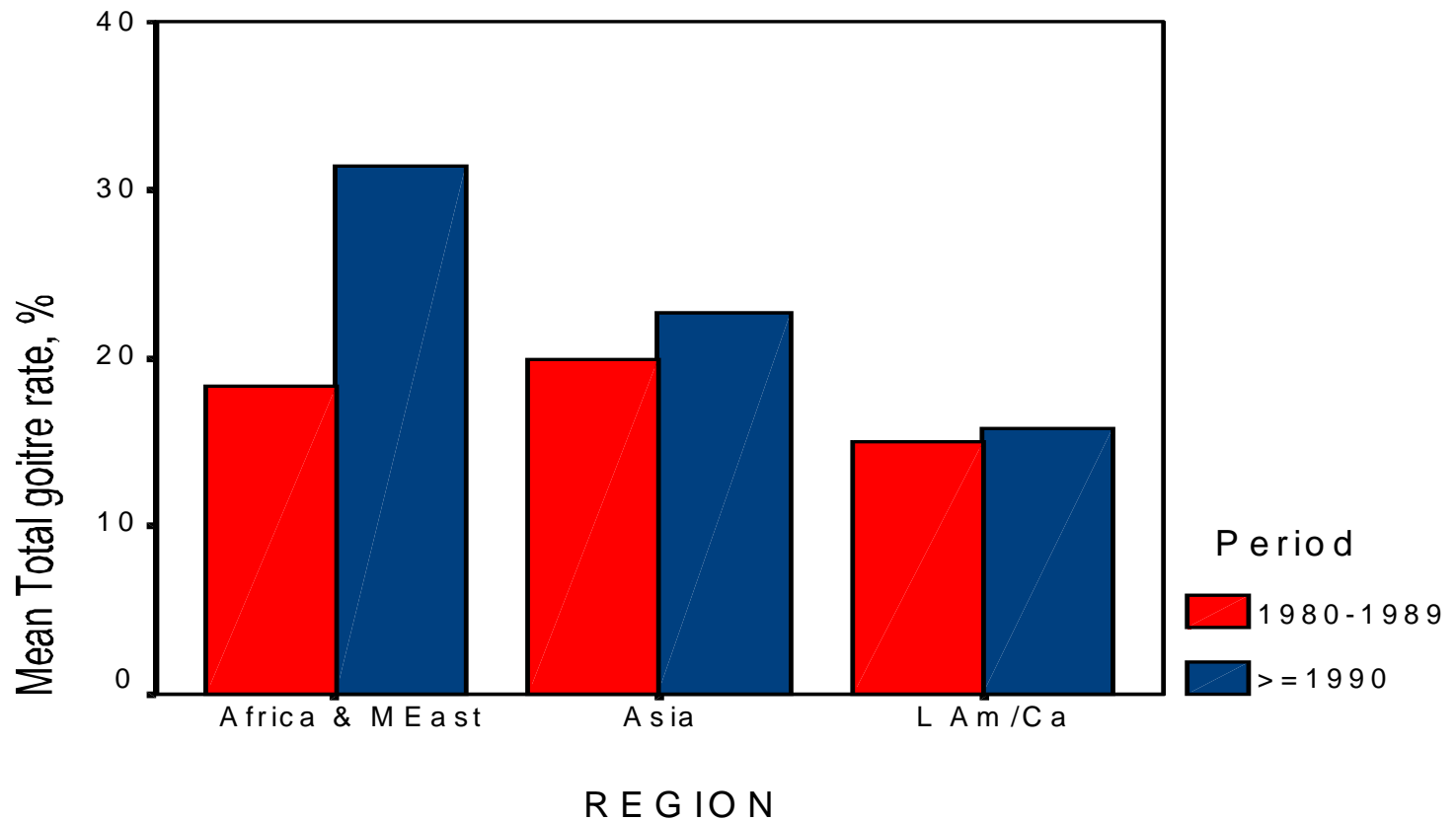
Scatterplot of clinical VAD (XN + X1B) in preschool children, country survey data by year, with trend estimates by region



Scatterplot of anaemia among non-pregnant women (< 12g/dl Hb, 15-49 yrs) by year from available survey data



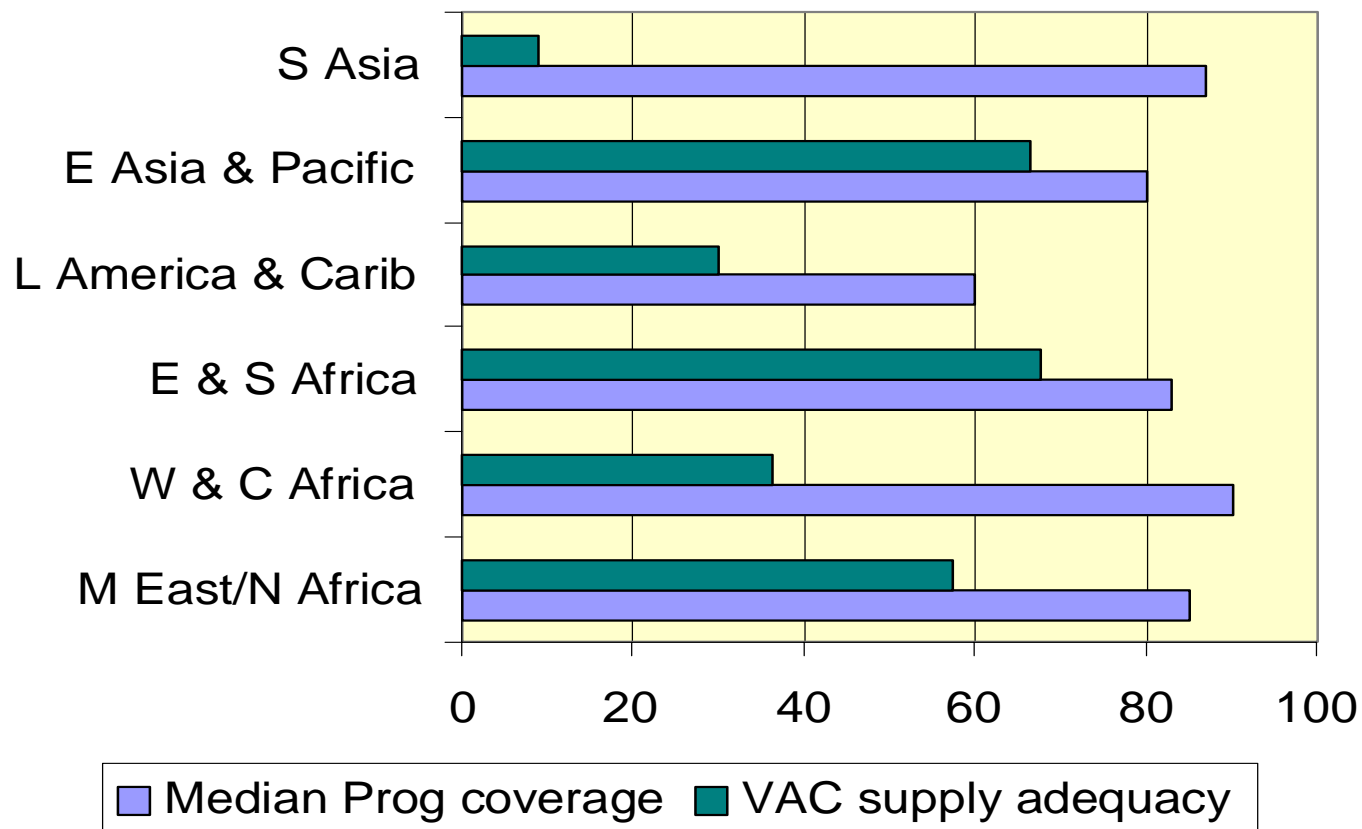
Trends in prevalences of IDD (TGR) by country groups, school aged children, from averages of national survey data, for 1980-89 and 1990-date



Illustrative Table of Prevalences of Nutritional Problems and Implied Overlap of Deficiencies in Preschool Children

Region	Underweight (1995)		Anemia (1975-97)		Vitamin A Deficiency (sub-clinical) 1995		IDD Affected 1985-1996		With 2 or more Nutritional Deficiencies	
	Prevalence	Est. No. affected (millions)	Prevalence	Est. No. Affected (mill.)	Prevalence	Est. No. Affected (millions)	Prevalence	Est. No. Affected (mill.)	Prevalence	Est. No. Affected (millions)
South Asia	52%	87.4	52.7%	93.8	35.6%	59.5	25.3%	42.5	27.4 — 35.6%	46.1 — 59.8
Sub-Saharan Africa	30%	30.9	33.1%	34.1	35.3%	36.0	29.2%	30.1	11.7 — 35.2 %	12.1 — 36.3
Middle East/ North Africa	16%	7.4	38.3%	17.7	9.8%	4.2	24.0%	11.1	9.2 — 24.0 %	4.3 — 7.4
East Asia / Pacific	23%	39.3	14.1%	20.0	18.2%	29.6	18.2%	31.1	4.2 — 18.2 %	8.2 — 31.1
Latin America/Caribbean	11%	6.2	22.9%	13.0	19.6%	10.2	15.6%	8.8	4.5 — 19.6 %	2.5 — 11.1
TOTAL	31%	171	35 %	190	26 %	140	23 %	124	13 — 27%	73 — 146

Vitamin A Supplementation with high dose capsules for pre-school children: reported programme coverage, and estimated adequacy of external capsule supply, 1998



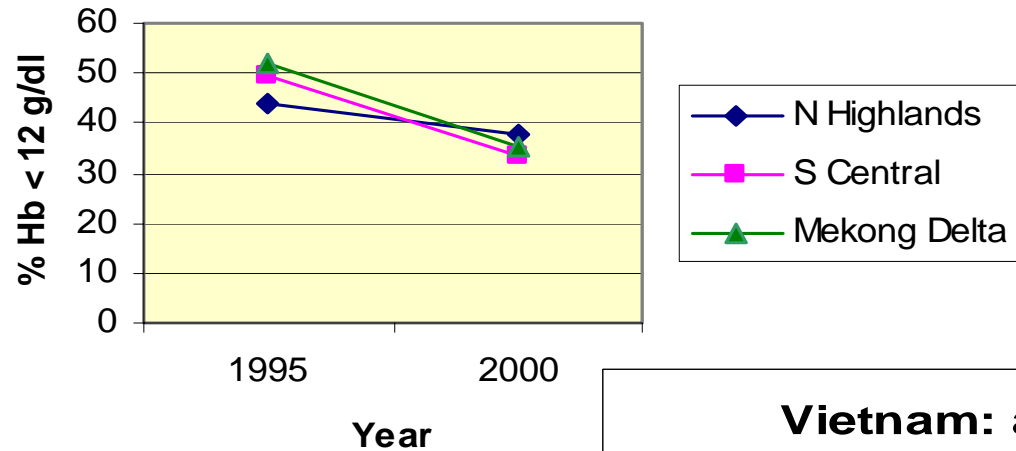
Regional procurement of vitamin A capsules

UNICEF Region	Total Number of Vitamin A Capsules Procured in Millions						200,000 IU Vitamin A Need for Children 12-59mo in Countries with Reported Capsule Procurement for 1998*	Estimated Adequacy of Capsule Supply for Children 12-59mo in Countries Receiving UNICEF Vitamin A Capsules	Median Value for 1998 Reported Vitamin A Program Coverage of Children 6-59mo*
	1993	1994	1995	1996	1998	Regional Annual Average (1993-1996, 1998)	1998 (in millions)	1998 (%)	1998 (median %) (n)
South Asia	5.36	46.50	48.06	2.40	6.73	21.81	62.73	9.1	87 (5)
East Asia & Pacific	3.95	13.70	12.64	26.00	31.31	17.52	36.32	66.6	80 (8)
Latin America & Caribbean	8.90	26.80	25.56	4.30	23.32	17.78	62.05	30.0	60 (9)
East & Southern Africa	14.13	51.40	38.95	11.80	31.08	29.47	33.85	67.8	83 (13)
West & Central Africa	3.92	6.02	9.40	5.15	36.33	12.16	73.15	36.2	90 (11)
Middle East & North Africa	8.68	17.40	0.32	17.40	24.73	13.71	21.32	57.6	85 (6)
Total	44.94	161.82	134.93	67.05	153.5	112.45	289.42	38.1	80 (52)

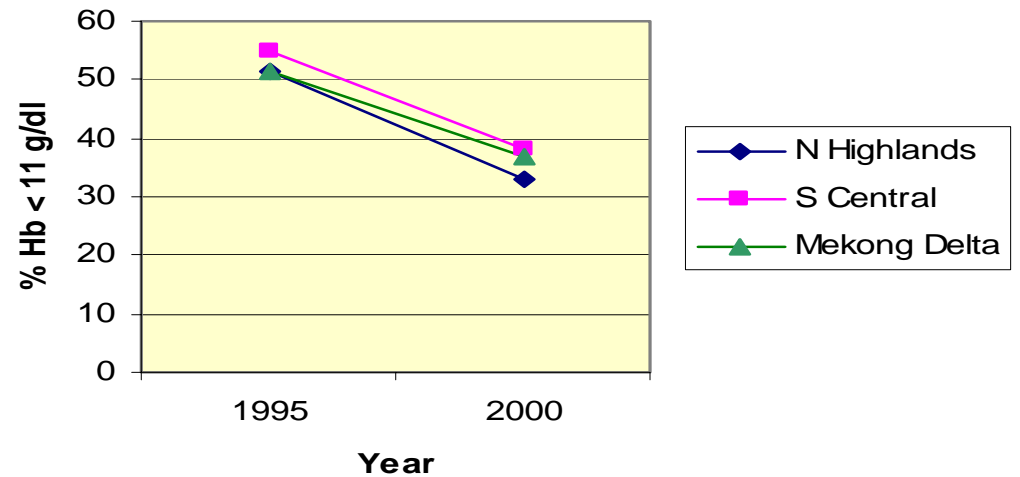
Regional procurement of iron tablets

UNICEF Region	Total Number of Iron Tablets Procured in Millions					Annual Number of Births in Millions for Reporting Countries	Estimated Annual Adequacy of Iron Tablet Supply in Reporting Countries	Program Coverage Reported for Pregnant Women 1996*		
	1993	1994	1995	1996	Ave 1993-1996			1996	1996 (%)	Median Value (%)
South Asia	106.03	85.29	134.40	132.80	114.63	10.74	4.1	56	(51-61%)	2
East Asia & Pacific	76.96	306.00	105.85	82.13	142.74	5.77	4.7	50	(30-82%)	7
Latin America & Caribbean	20.91	70.59	63.75	35.18	47.61	4.85	2.4	66	(20-100%)	10
East & Southern Africa	229.38	139.95	142.72	75.42	146.87	8.09	3.1	78	(20-90%)	6
West & Central Africa	81.32	32.55	48.71	85.86	62.11	11.32	2.5	52	(25-95%)	10
Middle East & North Africa	204.16	33.67	295.50	45.33	144.67	3.70	4.1	60	(25-95%)	4
Annual Global Total	718.76	668.05	790.93	456.73	658.63	44.47	3.4	55	(20-100%)	39

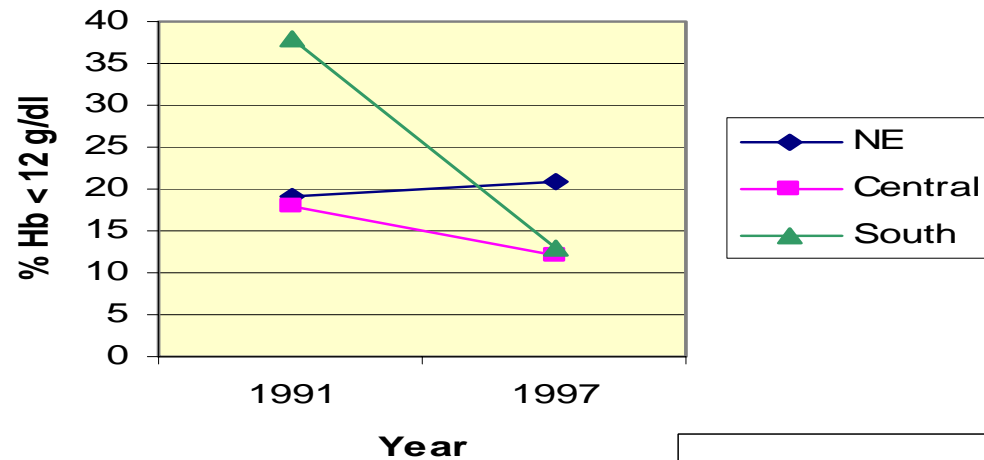
Vietnam: anemia in children



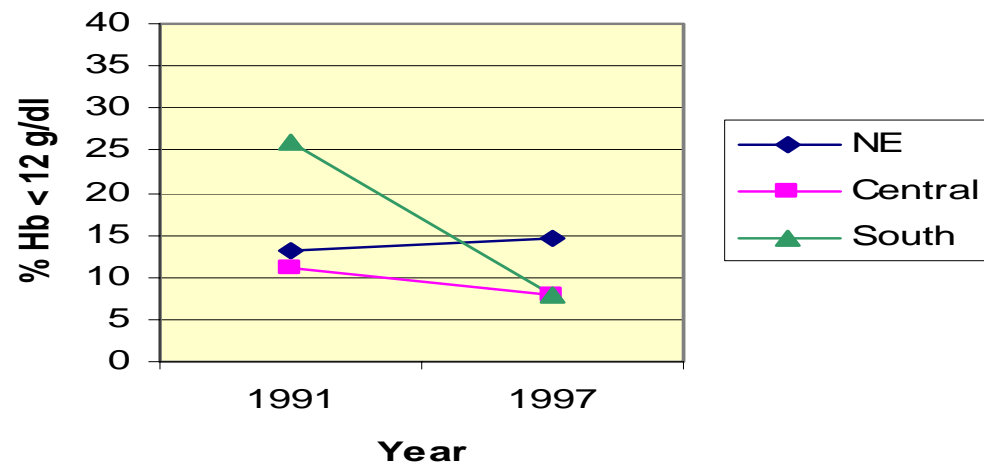
Vietnam: anemia in pregnant women



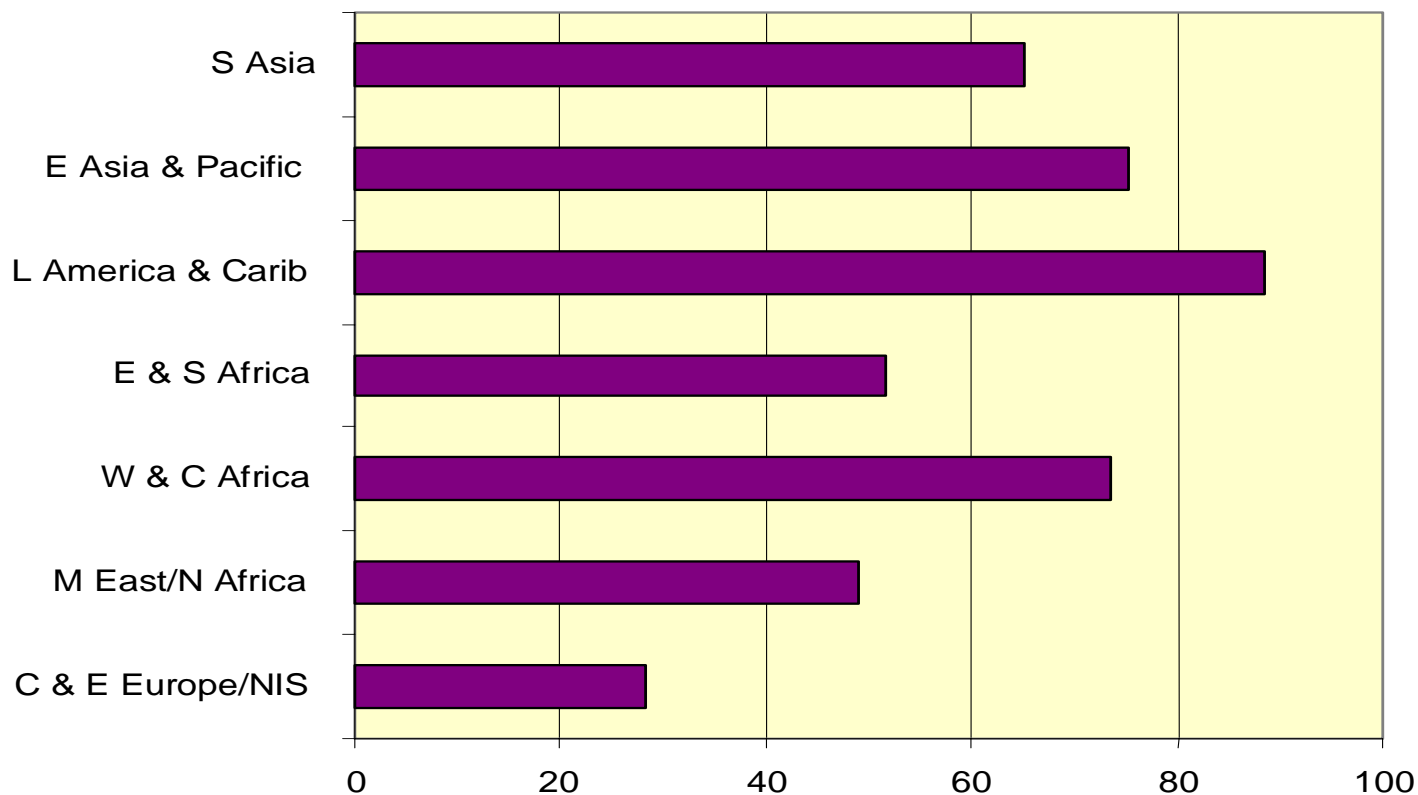
Thailand: anemia in women



Thailand: anemia in men



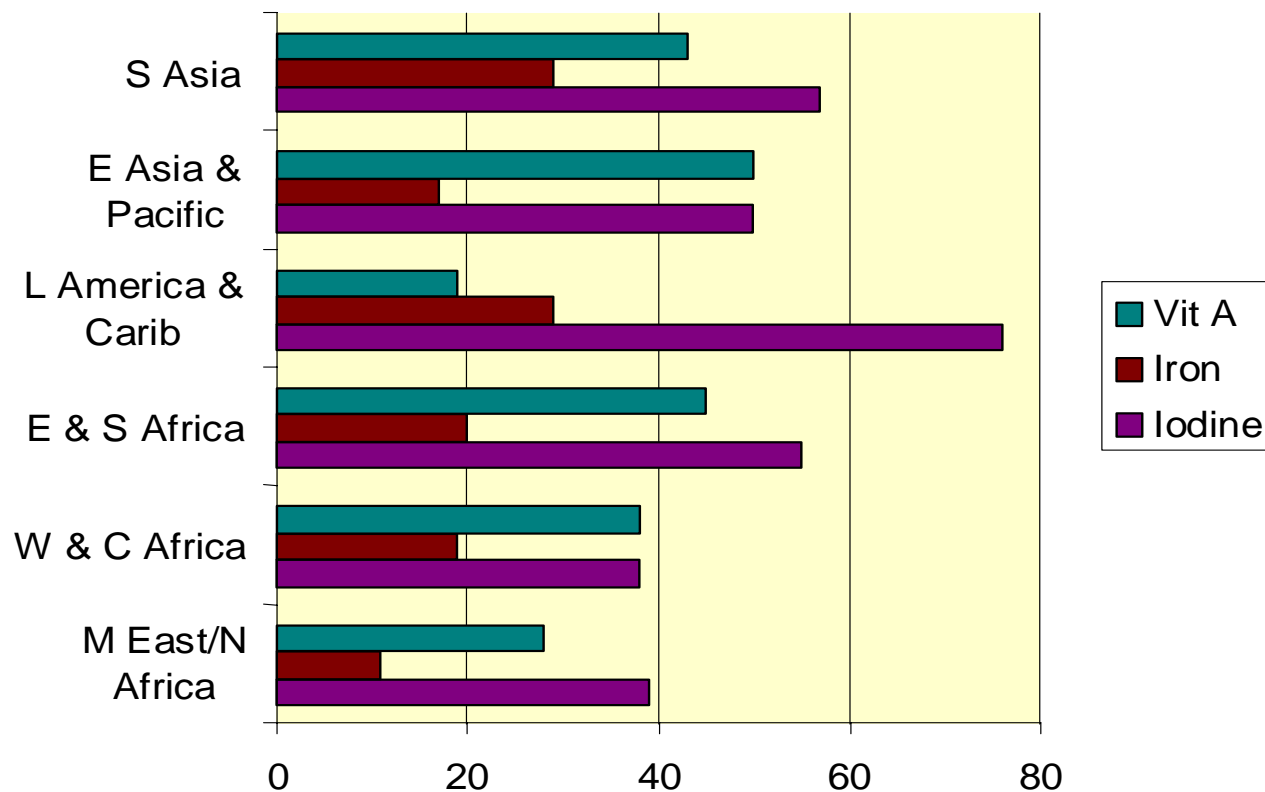
Households getting adequately iodized salt (% \geq 15 ppm) by region, 1995-98



Countries with micronutrient supplementation policies and fortification legislation

		Number of Countries in Region					
		Vitamin A		Iron		Iodine	Multiple
UNICEF Region	Number of Countries in Region	National Policy Adopted for Vitamin A Deficiency (1996-1998)	Legislation Governing Vitamin A Fortification of Foods (1996-1998)	National Policy for Iron Supplementation (1996-1997)	Legislation Governing Fortification of Foods with Iron (1996-1998)	Legislation for Iodized Salt (1998-1999)	Vitamin A Policy, Iron Policy, and Iodine Legislation
South Asia	7	4	1	5	0	4	3 (43%)
East Asia & Pacific	12	8	4	7	0	9	6 (50%)
Latin America & Caribbean	21	12	12	11	10	18	6 (29%)
East & Southern Africa	20	8	0	9	0	15	3 (15%)
West & Central Africa	21	11	0	12	1	15	7 (33%)
Middle East & North Africa	18	6	0	5	0	13	3 (17%)
Total	99	49	17	49	11	74	28 (28%)

Percent of countries reporting high coverage of programmes (>60%), for vitamin A (capsule distribution to children 6-59 months), iron supplementation (coverage of pregnancies), and iodized salt (households with ≥ 15 ppm iodine in salt)

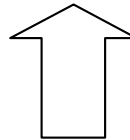


Sequence of intervention development

Large scale programs

Effectiveness m&e, to build improvement and sustainability

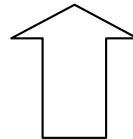
- VAC distribution
- iodized salt



Trial/pilot.

Efficacy and acceptability research

- VA fortification (esp. oil, otherwise with multi)
- multi fortification of commercial foods
- multi 'sprinkles'
- multi supplementation esp. in pregnancy



Research and Development

- iron fortification of staples, esp. rice
- iron in salt



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