SUMMARY REPORT

GENERAL NUTRITION SURVEY 2009-2010



NATIONAL NUTRITION STRATEGY FOR 2011 – 2020, WITH A VISION TOWARD 2030

NATIONAL INSTITUTE OF NUTRITION – MINISTRY OF HEALTH

UNITED NATIONS CHILDREN'S FUND

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2009-2010

HANOI - 2012

SUMMARY

Assessment of nutrition status, food consumption and monitoring of related factors are worldwide paid attention. The progress or problems existing in health-nutrition through nutritional and health indicators recommended by WHO, UNICEF, FAO should be monitored for the purpose of developing early interventions and effective prevention strategies. In Asia, there are still many challenges threaten the nutritional health status of people in some countries. Meanwhile, many countries - including Vietnam - have achieved remarkable success in hunger - poverty reduction and reduce the of malnourished prevalence in children.

Heading into the next decade, the conduction of General Nutrition Survey (GNS) every 10 years is required for the purpose to assess the current nutritional situation and to analysis correlative factors and identify the risk factors. The survey results were used as an evidence bases for development of Action Plan for Nutrition in new period 2011-2020. The objective of this GNS is to assess nutritional status, household food consumption and other nutrition related issues in Vietnamese people, particularly children under 5 years old. This survey has been implemented in 512 randomly selected communes of 432 districts in 64 provinces (the administrative boundaries of provinces and cities in Vietnam before 2008). The data collection method mainly consists of interviewing, anthropometric measurement, 24-hours dietary recall and basic information of the health centres at communal, district and provincial levels. The provincial survey teams were responsible for the data collection and data checking before transferring to NIN for data cleaning and entering. Data analyzed by using Stata 11 with cluster sampling survey correction with the assistance of an international data analysis expert. The anthropometric indicators of children were analyzed based on WHO 2007 standard reference.

SUMMARY OF MAIN FINDINGS OF GENERAL NUTRITION SURVEY and NNS 2011-2020

1. In 2010, the prevalence of underweight (Weight-for-Age Z-score < -2.00) among preschool children was 17.5%. Of which, mild, moderate and severe underweight were 15.4%, 1.8% and 0.3%, respectively. 20 out of 63 provinces/cities had prevalence of underweight higher than 20%, considered at high level by the WHO's classification.

   At present, stunting (Height-for-Age Z-score < -2.00) affects 29.3% of children under 5 years old. The prevalence of stunting in 2 provinces was very high level (≥ 40%) and was high level (30-39%) in 31 provinces. The average rate of reduction was 1.3 percentage points per year from 1995 to 2010. The prevalence of wasting among children under fives (Weight-for-Height Z-score < -2.00) was 7.1%.

   Rate of overweight and obesity among children under fives years old was 5.6% (6.5% and 4.2% for the urban and rural, respectively). The current rate is 6 times higher than that in the year of 2000.

2. Iron Deficiency Anemia affected 29.2% among children under 5. Prevalence of Iron Anemia in non-pregnant women and pregnant women were 28.8% and about 36.5%, respectively.

   Subclinical Vitamin A deficiency (<0.70 µmol/L) in Vietnam is now mainly subclinical which is still prevalent in
   14.2% in children and about 35% in lactating mothers (Result from survey 2008). The Vitamin A capsule coverage rate was 79.5% and 51.4% in children and lactating women after delivery, respectively.

3. The current attained height is reached between 22-26 year of age for both males and females. The average height of
   Vietnamese males was 164 cm and
   154cm in females.

4. Daily household food consumption has had remarkable changes in comparison with previous time. There has been no significant changes of the average energy intake since 1985(1925 kcal in 1981 and 1925.4 kcal in 2010) but the proportion of total energy from protein, lipids, carbohydrate has changed. In the energy composition was made up by the ratio of Protein: Lipids: Carbohydrate as following 11.2: 6.2: 82.6 (1983) and 15.9: 17.8: 66.3 (2010).

   Amongst children 2-5 years old, food consumption provided an average energy intake of 97% compared to the recommended standard of National Institute of Nutrition (NIN). The total protein intake was 49 gram per day and it provided 17% energy intake of food consumption which met the recommended standard of NIN. Dietary iron intake in children between 24-35 months of age currently meets only 56% of dietary reference intake (DRI).

5. The percentage of reproductive aged women with low Body Mass Index (BMI< 18.5) was 18%. Meanwhile, the
   proportion of reproductive aged women with BMI ≥ 25 was 8.2%
   (overweight and obesity).

6. Nationally, 82.1% of consumers have known about food safety knowledge over communication mediums. This prevalence was equivalent among Red River Delta, North Central and South Central Coast, Central Highland and Southeast but lowest in Northern mountainous and Midland and Mekong River Delta (75.1% and 75.6%, respectively).
   69.7%-73.6% people can identify two typical symptoms
   of food poisoning.

7. On February 22, 2012, The Prime Minister of the Socialist Republic of Vietnam signed a Decision No 226QD/TTG to ratify National Nutrition Strategy period 2011-2020 and vision 2030. The Strategy asserts that the duty of improving nutrition is the responsibility of all ministries and all people. The aims of strategy is enhancing totally the physical and intelligence of Vietnamese people as well as improving life condition by ensuring the balancing and appropriate nutrition. The strategy content includes six main objectives: 1. Improving quality and amount of people meal. 2. Improving maternal and child nutrition status. 3. Improving micro-nutrient status. 4. Controlling overweight and obesity situation and chronic diseased elements related to nutrition of adults. 5. Enhancing appropriate nutrition knowledge and practices. 6. Strengthening ability and efficiency of nutrition network at communities and health facilities

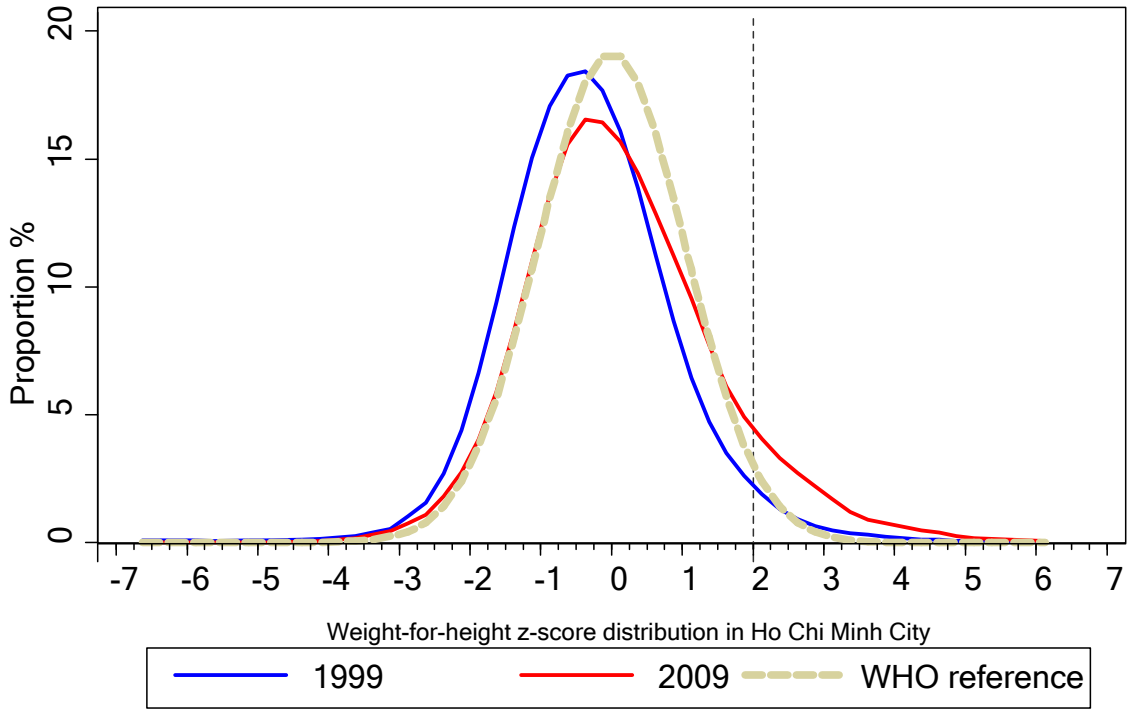
I. Nutritional status of children under 5 years

- The child nutritional status has been improved after 10 years. Vietnam has achieved the Millennium Development Goals (MDG) on the reduction of underweight prevalence. However, the underweight malnutrition remains as average levelof public health significance; the stuntingprevalence still at the boundary between the middle level and high level of public health significance and the wasting prevalence remains in average levelof public health significance.

Anthropometry index	Malnutrition prevalence		
	Male	Female	Total
Underweight	18,4	16,6	17,5
Severe underweight	1,8	2,4	2,1
Stunting	31,5	27,1	29,3
Severe stunting	11,4	9,7	10,5
Wasting	7,3	6,9	7,1
Severe wasting	3,6	4,0	3,8
Overweight and obesity	6,7	5,1	5,6
Obesity	2,8	2,7	2,8

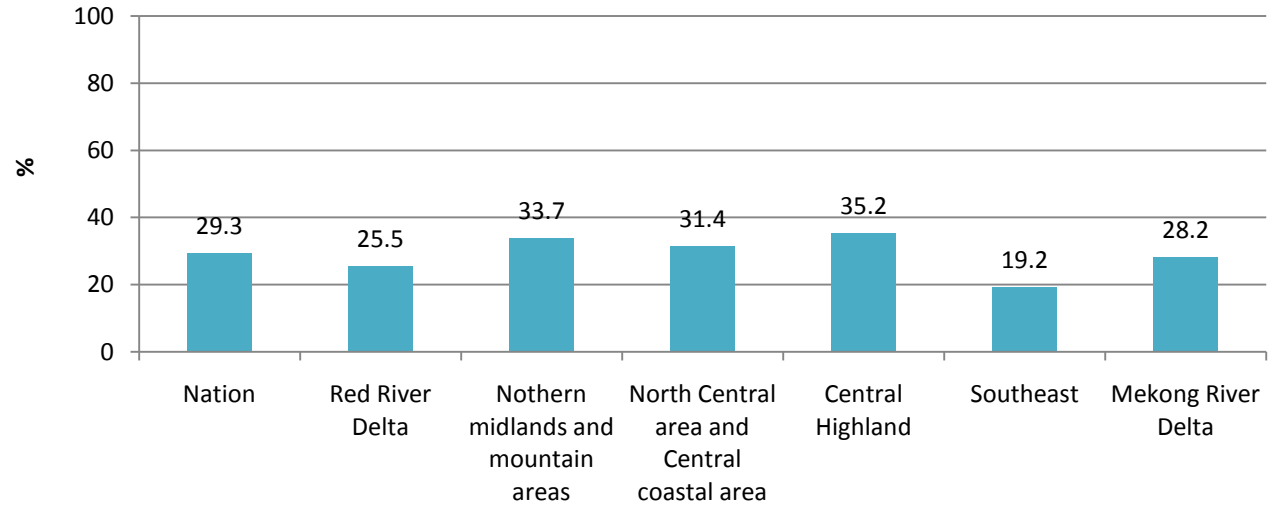
- The prevalence of overweight-obesity among children under 5 years is more than 5% - which is the level set out in the National Strategy on Nutrition for the period 2001-2010. The prevalence of overweight-obesity among children under 5 years old is 5.6%, of which the obesity prevalence is 2.8%. In the urban areas the prevalence of overweight-obesity is 6.5%.
- The percentage of overweight-obesity among children under 5 years old in big cities like Hanoi and Ho Chi Minh tend to increase.

The weight-for-height z-score distribution curves for Ho Chi Minh City in 1999 and 2010.



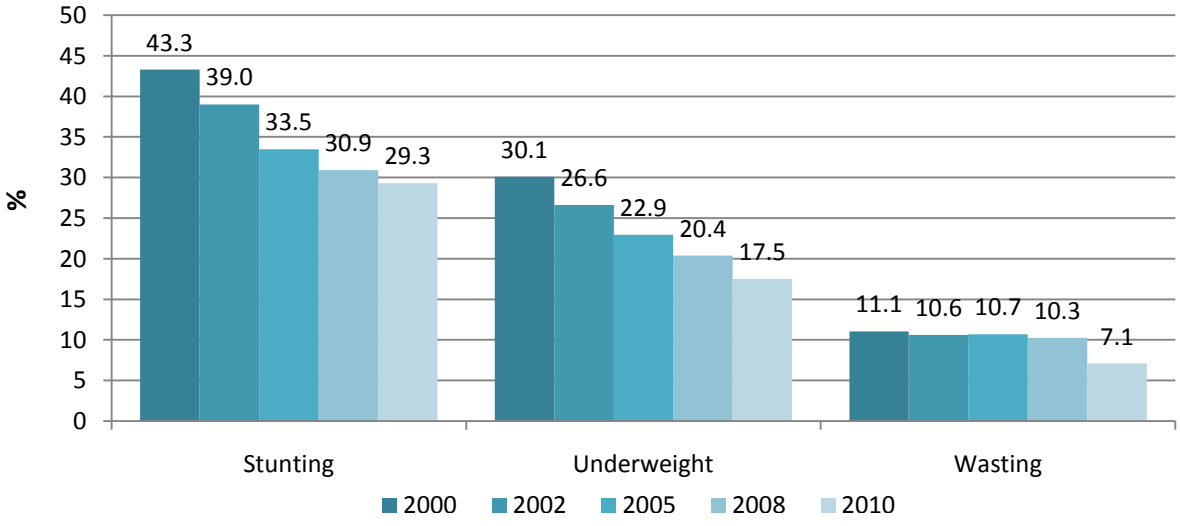
- *The prevalence of stunting are varied by ecoregion*. Stunting prevalence of malnutrition in the Central Highlands, the Northern midland and mountain area, the North-central area and Central Coastal area is still at a high level of public health significance (> 30%).

Stunting prevalence among ubder 5yr children by eco-regions



- *The average reduction rate of underweight malnutrition in 10 years is 1.26% per year and of stunting is 1.4% per year. In 2010, the wasting prevalence has moved down from the average to low level of public health significance.*

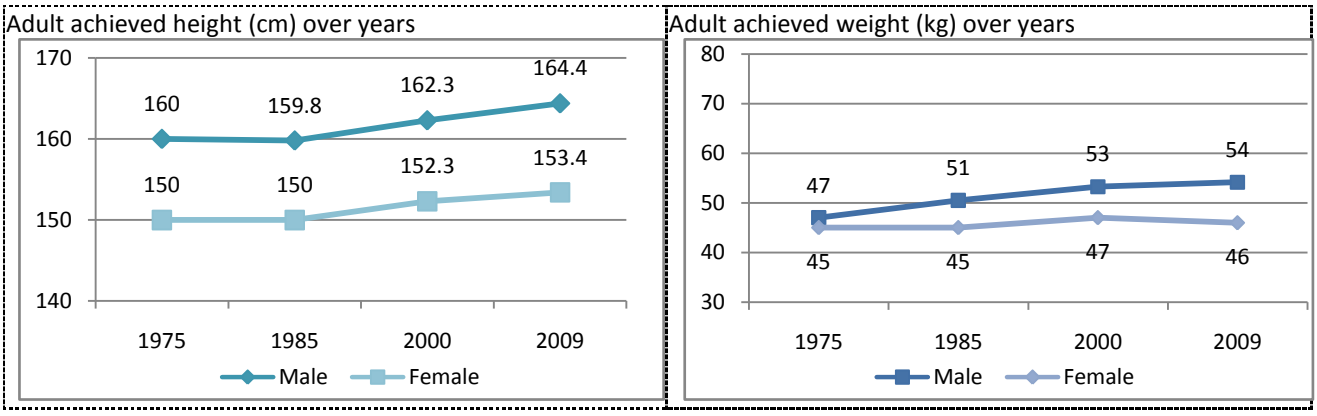
Malnutrition prevalence among children under 5yr by years



II. Nutritional status of adults

- *The height of adults in 2010 is higher than those in 1975 about 4 cm. The 2010 adults also have higher weight 8kg compared to 1975:* The achieved height is coming earlier at the age of 20-24 years for both young men and young women (In 2000 GNS, the achieved height is at the age 26-29 years). The mean height values of

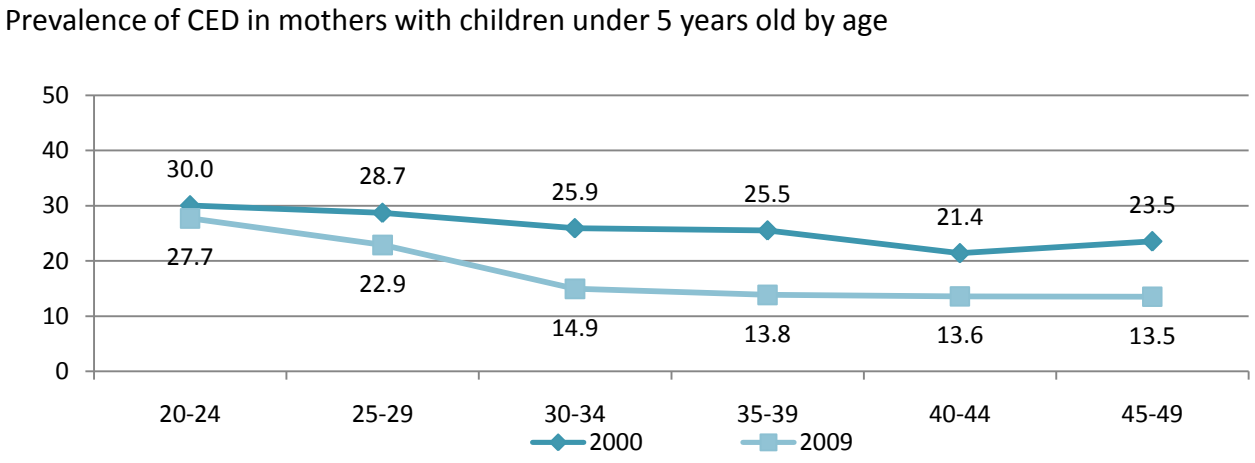
adults in the urban are generally higher than those in rural areas, as well as those from households with higher living conditions.



- *The prevalence of chronic energy deficiency (CED: BMI <18.5 kg.m^2) of adults has fallen below 20%, but the prevalence of overweight and obesity tend to increase, particularly in the age group 50-60 years:* The CED is 15.8% (CI95%: 14.6 - 17.0) in male and is 18.5% (CI95%: 17.4 -19.7) in female. The difference between male's and female's CED prevalences is a statistically significance. The prevalence of CED for both male and female is 17.2% (CI95%: 16.4 - 18.1). The prevalence of overweight and obesity among adult of 20 years and older is 5.6% (CI95%: 4.99 - 6.37), in male is 4.9% (CI95%: 4.25 - 5.73) and in female is 6.3% (CI95%: 5.45 - 7.25). The prevalence of overweight and obesity is the highest at the age 55-59 years for male (7.8%) and 50-55 years for female (10.9%).

III. Nutritional status in mothers with children under 5 years

- *The prevalence of chronic energy deficiency (CED) in mothers with children under 5 years old has reduced remarkly in comparison with those in 10 year ago.* It has decreased from 26.7% in year 2000 to 20.6% in year 2010. The prevalence of CED among mother aged under 30 is higher than those aged 30-49.



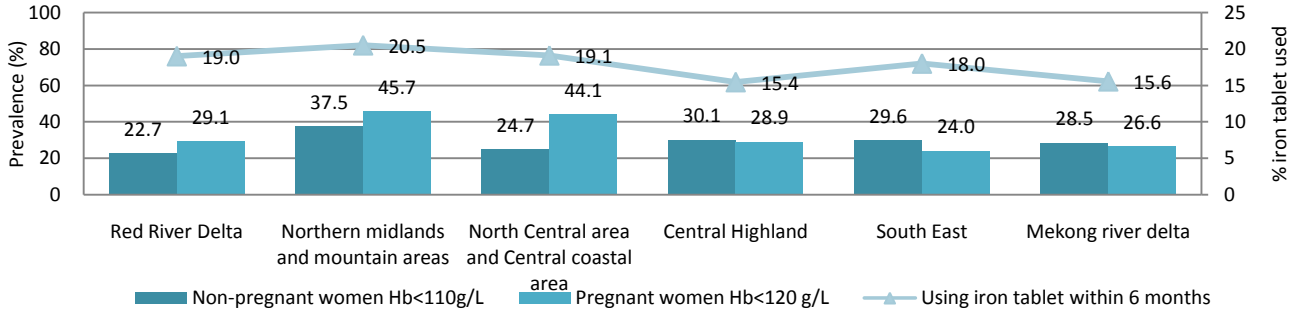
IV. Micronutrient deficiencies

- *The prevalence of iron deficiency anemia and subclinical vitamin A deficiency among children under 5 years old nationwide is 29.2% and 14.2% respectively, which are on mild levelof public health significance*: the prevalence of vitamin A deficiency among children in the Red River Delta was at mild level of public health significance (9.1%). The prevalence of vitamin A deficiency among children in the Highland region was at severe level (20.9%). The prevalence of anaemia and vitamin A deficiency among children in the remaining ecological regions were all ranked at a moderate level of public health significance. The prevalence of anaemia was highest in children between 0 to 23 months old (44-45%). The percentage of anaemia decreases significantly with age, with the lowest prevalence found in children between 48-59 months at 14.2%. The prevalence of vitamin A deficiency was greatest in children less than 12 months old and is considered a severe level of public health significance. The prevalence in children 24-36 months was reduced to a mild level; all others are representing an average level of public health significance.

- *The vitamin A suplementation coverage rate among children 6-36 months is 87.0%. Percentage of mothers after delivery received vitamin A cupsule is 65.2%.*

Percentage of cover	Ecological region						Nation -wide
	Red River Delta	Northern Midlands & Moutains	North Central & Central Coasts	Central Highlands	Southeast	Mekong River Delta	
Consume iron table in monther (last 6 moths)	19,0	20,5	19,1	15,4	18,0	15,6	18,2
Vitamin A use in postpartum mother	62,8	73,0	65,7	54,6	42,6	64,2	61,7
Vitamin A use in children < 60 months	76,0	83,1	81,2	79,7	76,1	80,6	79,3

- *The prevalence of iron deficiency anemia in reproductive age and non- pregnant women is 28.8% and in pregnant women is 36.5%. Only one fifth of mother with children under 5 year taking iron tablet during last 6 months.*



- *The coverage of households used iodized salts has been deacreased, especially in Mekong Delta river area (65.1%) and Red river delta area (82.2%).*

V. Food consumption:

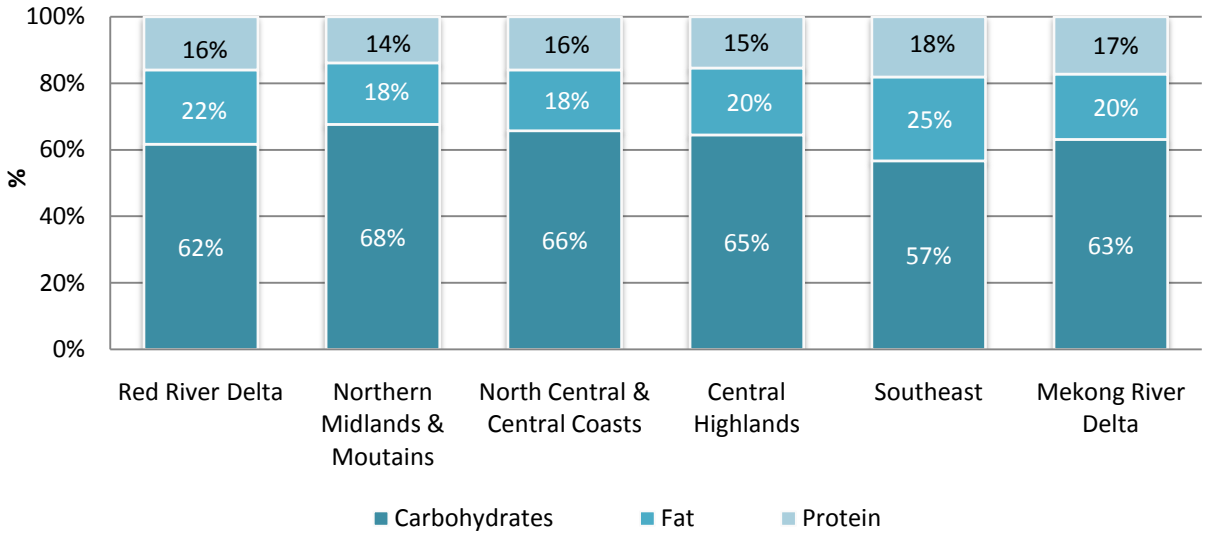
A. Household food consumption

- The daily household food consumption has changed remarkably. The level of total energy consumption from 1985 to present was almost unchanged but the proportion of energy from protein, fat and carbohydrate has changed: The total energy consumption in 2000 and 2010 are 1931 ± 446 kcal and 1925,4 ± 587 kcal respectively.

Household nutrient intake	1985 (n = 773) Mean	1990 (n = 12641) Mean ±SD	2000 (n = 7658) Mean ±SD	2010 (n = 8224) Mean ±SD
Energy (Kcal)	1925	1928 ± 199,0	1931 ± 446,4	1925 ± 587,1
Protein				
Total protein(g)	52,40	57,59 ± 7,31	61,95 ± 18,58	74,31 ± 26,46
Animal protein (g)	10,00	15,39 ± 4,67	20,76 ± 15,62	30,65 ± 21,09
P_{Animal} / P_{Total} (%)	18,00	26,72	33,51	38,48
Fat				
Total fat(g)	12,80	17,48 ± 5,37	24,91 ± 16,98	37,69 ± 23,42
Vegetable fat (g)	7,40	7,23 ± 2,60	9,77 ± 9,43	14,51 ± 12,32
F_{Animal} / F_{Total} (%)	42,19	58,64	60,78	56,8
Minerals				
Calcium (mg)	*541,00*	*488,30 ± 153,90*	*524,53 ± 587,34*	*506,22 ± 301,29*
Calcium/ Phosphorus ratio	0,71	0,66	0,67	0,57
Iron (mg)	12,10	9,53 ± 1,17	11,16 ± 4,26	12,33 ± 4,74
Vitamin				
A (mg)	*0,02*	*0,03 ± 0,06*	*0,09 ± 0,28*	*0,15 ± 0,23*
Carotene (mg)	*2,00*	*2,31 ± 0,93*	*3,11 ± 3,15*	*5,90 ± 5,26*
B1 (mg)	*0,82*	*0,69 ± 0,11*	*0,92 ± 0,45*	*1,09 ± 0,57*
B2 (mg)	*0,45*	*0,36 ± 0,07*	*0,53 ± 0,30*	*0,72 ± 0,38*
PP (mg)	*11,00*	*10,01 ± 1,42*	*11,56 ± 4,56*	*14,33 ± 6,90*
C (mg)	*40,00*	*53,21 ± 17,99*	*72,51 ± 76,99*	*85,12 ± 75,42*
Vitamin B1/1000 Kacl(mg)	*0,42*	*0,39*	*0,48*	0,57
% Energy from:				
Protein	*11,2*	*12,3*	*13,2*	*15,4 ± 3,7*
Fat	*6,2*	*8,4*	*12,0*	*17,6 ± 8,7*
Carbohydrate	*82,6*	*79,3*	*74,8*	*67,0 ± 10,2*

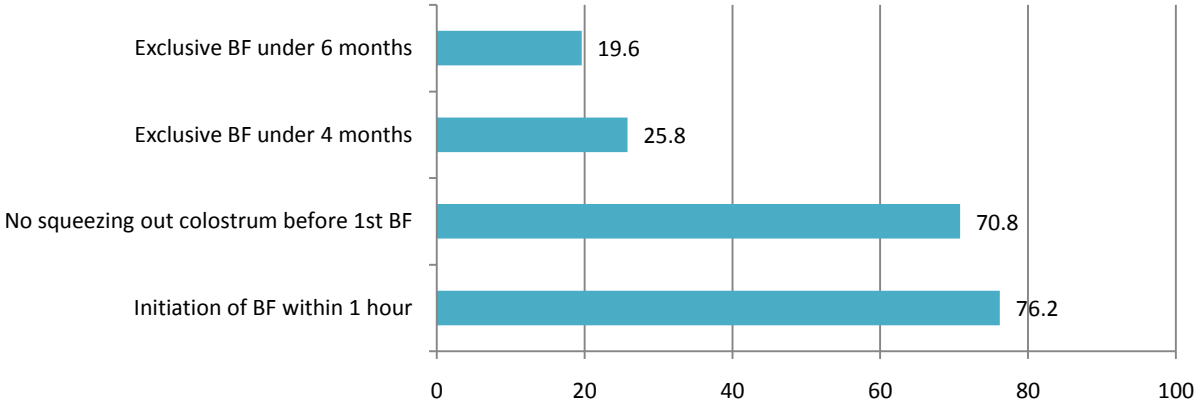
The proportion of energy from protein, fat and carbohydrate (P: F: C) in 2000 was 13,2: 12,0: 74,8, in 2010 is 15.4: 17.6: 67.0 (P: F: C). The variation of energy proportions by ecoregions are reflect their economic development.

The proportion of energy from protein, fat and carbohydrate, household



B. Breastfeeding

- The proportion of infant less than 4 months of age who was exclusively breastfed is still lower than the national target for 2001-2010. This proportion decreased from 31.1% in 2000 to 28.8% in 2010. The proportion of infant less than 6 months of age who was exclusively breastfed is 19.6%.



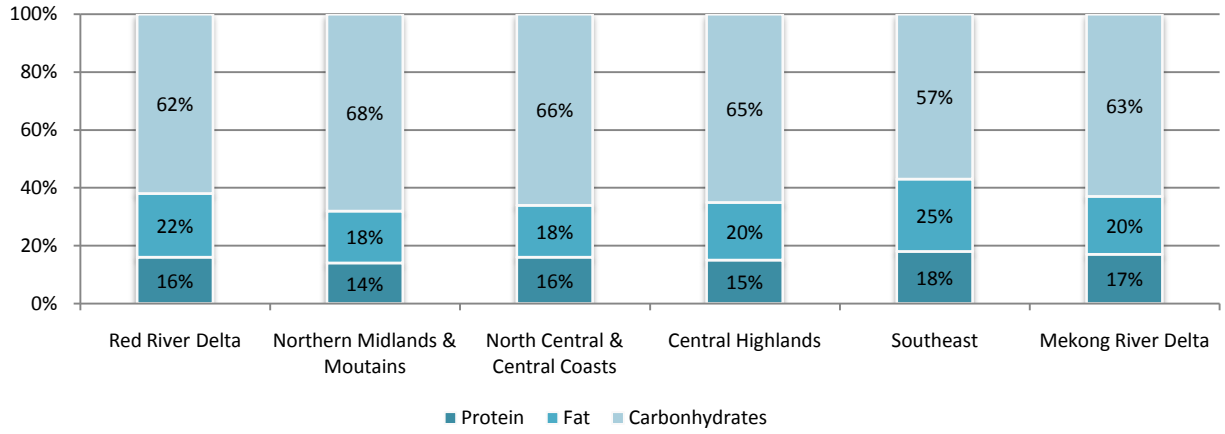
C. Food consumption in children from 2-4 years (Curently breastfed children is not included)

- The energy of children 2-4 year food consumption reached 95% in comparison with the Recommended Dietary Allowance (RDA). The response level in the food consumption of children 2-4 years old to the iron RDA is 70% and to vitamin A RDA is 65%. It is noteworthy that the response level in children 3 years reached only 56% of RDA.

Percentage of recommended dietary allowance intake	Total n = 1673		Age groups 24-35 months n = 610		36-59 months n = 1063	
	%	(95 CI)	%	(95 CI)	%	(95 CI)
Energy	96	*(93; 98)*	95	*(91; 98)*	96	*(92; 100)*
Vitamin A	65	*(56; 75)*	72	*(55; 90)*	62	*(51; 72)*
Vitamin B1	137	*(131; 144)*	144	*(131; 157)*	133	*(126; 141)*
Vitamin B2	153	*(143; 163)*	166	*(150; 183)*	146	*(132; 160)*
Vitamin PP	123	*(115; 130)*	131	*(113; 149)*	118	*(112; 125)*
Vitamin C	129	*(117; 142)*	115	*(97; 132)*	137	*(120; 153)*
Iron	70	*(66%; 74%)*	57	*(53%; 61%)*	77	*(72%; 82%)*

- *The amount of total protein in the diet of children 2-4 years old is 47 g / day, accounting for 16% of dietary energy, which meets the NIN RDA.* However, this propotion in Northern Midland and Mountain areas and the Central Highlands only reach to 14% and 15% respectively.

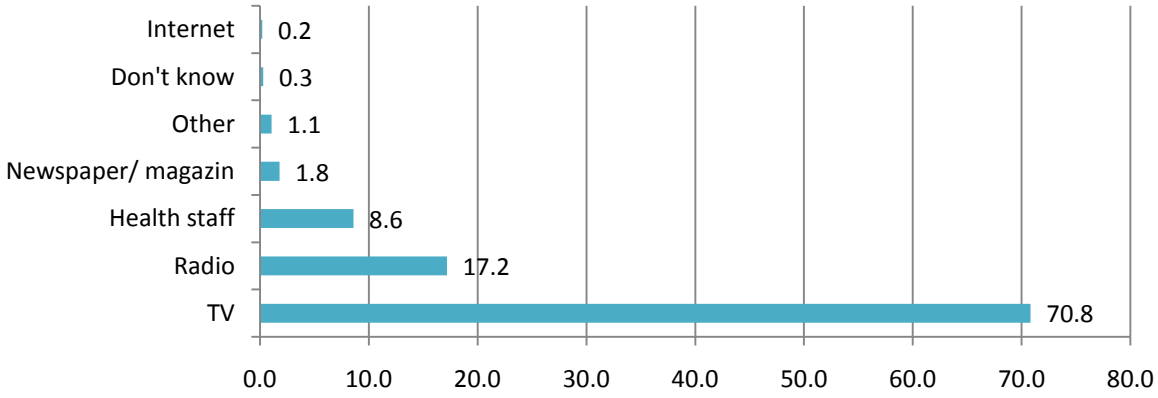
The proportion of energy from protein, fat and carbohydrate, children 2-4yr



VI. Household food safety

- *Nationally, 82.1% of consumers report having seen, heard, or learnt about food safety. About 70% of them receiving this information from TV.*

Source of imass media nformation related to food security

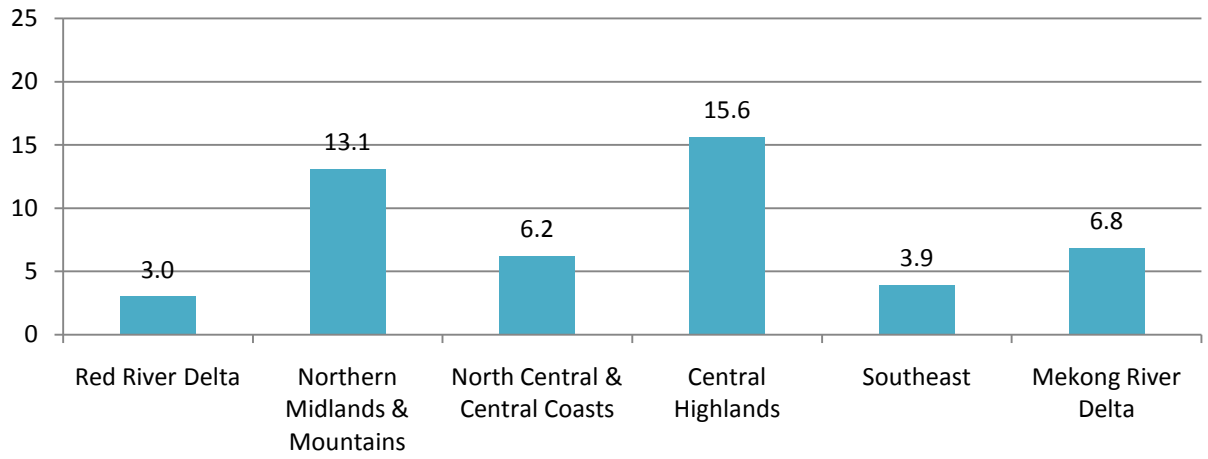


The lowest rates were found in the Northern Midland and Mountain areas and Mekong River Delta (75.1% and 75.6%, respectively). The proportions of people have a habit of eating raw fish meat on the highest (4.7% and 5.2%) in Northern Midland and Mountain areas and Central Highlands is the proportion. However, the highest rates of poisoning cases were reported in Mekong River Delta and North Central and Central Coastal areas (14 and 18 per thousand per month respectively).

VI. Food security

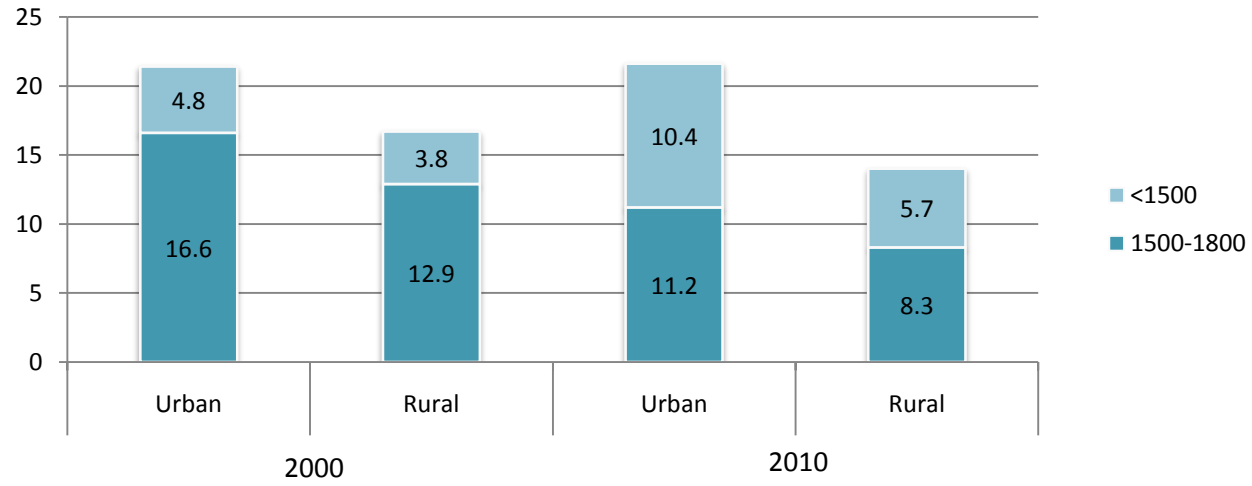
- *Percentage of households experienced a food shortage during the last year is highest in the Northern Midland and Mountain areas and Central Highlands (13.1% and 15.6%).* This percentage among households in disavantaged is nearly 5 times higher than households in plain areas and among very poor households this figure is 3 times higher than the national average (21.5% and 6.6%).

Percentage of households experienced a food shortage by eco-regions



- *The proportion of households with low-energy diets (<1,800 Kcal) in 2010 decreased slightly compared to 2000 while the proportion of households with very low energy of diets (<1500 kcal) in 2010 tended to increase.*

The proportion of households with low-energy diets



RECOMENDATION

1. The monitoring and supervision should be reinforced so that the impacts of the child malnutrition control program can be correctly evaluated at different levels. Interventions for stunting reduction should be strengthened in the first 2 years of life and during pregnancy.

   The program for stunting reduction should target the poor and mothers with poor nutrition status (short and low BMI) and poor education. It should also target specific ecological regions with high stunting rate, such as Northern Midlands and Mountainous areas, Northern Central and Coastal areas, and Central Highlands.

   The program for stunting reduction should ensure that communication is effective to deliver nutrition messages to mother with low educational level.

   High stunting prevalence in children under 6 months old (about 11%) indicates that the prevention should start from pregnancy period.

   There should be counseling services for parents for the improvement of child dietary diversification when the children reach 6 months old.
2. Micronutrient deficiency control should be reinforced, especially for iron and vitamin A deficiency, through different approaches, of which food fortification for food diversification should be considered a key approach to supplement micronutrients in child and population diets.
3. The trend of height growth velocity observed now should be monitored. The phenomenon of 'catch-up' growth that often occurs after wars and economical crisis has been observed in Vietnam and it should be monitored. Counseling on the importance of breastfeeding and dietary micronutrients should be provided for mother before and during pregnancy and in the first 2 years of life.
4. The ratio of P:F:C is now 15.9: 17.8:66.3, which is considered optimal. It reveals that food consumption of the population has been improved remarkably. However, there should be guidance on proper nutrition so that the changes are in good control and will not damage health. In the meantime, food consumption of different target groups and regions should be considered to orient intervention approach specified for them more appropriately.
5. Spot monitoring in the locality should be set up to provide experiences for scaling-up. In the meantime, capacity building in program implementation and evaluation at localities should also be strengthened.

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