

# **Prospects for Improving Nutrition in Eastern Europe and Central Asia**

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**THE WORLD BANK**

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# Prospects for Improving Nutrition in Eastern Europe and Central Asia

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# Foreword

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Investing resources in nutrition is an investment with immeasurable returns, and coincides with the World Bank's goals of alleviating poverty and spurring economic growth. Targeted at vulnerable groups, especially young children and women, these investments can lessen, and in some cases eliminate, the debilitating effects of malnutrition.

Given the growing importance of malnutrition and micronutrient deficiencies in the Eastern European and Central Asian Republics, the ECA Region of the World Bank has produced this report, *Prospects for Improving Nutrition in Eastern Europe and Central Asia*. The objective of the report is to provide an overview of the critical nutrition issues and problems in the region and to suggest strategies for improvement. As expected, nutrition problems were found to be diverse in a region that is large, both in terms of the number of countries it covers and the diversity of its economic, political, and social structures. For example, paradoxically, in some countries obesity exists simultaneously with undernutrition in children. Still, the report shows that, in addition to poverty, lack of basic nutrition knowledge among local populations is also a key determinant of malnutrition in the ECA region. It is hoped that this paper will contribute to raising awareness and help to create a sense of urgency about these issues.

Annette Dixon  
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# Glossary of Terms and Acronyms

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Anemia	A reduction in oxygen-carrying capacity of the blood characterized by low hemoglobin levels. Anemia is usually caused by iron deficiency, which affects capacity to work, birth outcomes (prematurity, stillbirths, low birth weight), and mortality.
Antioxidants	Any substance in food that prevents damage by free radicals which are associated with causing/ contributing to certain types of cancer, cardiovascular disease, and other morbidities.
BMI	Body mass index = $\text{kg/m}^2$ , an indicator for adult nutritional status (< 18.5 is underweight, > 25 is overweight, >30 is obese).
Carotenoids	Yellow, red, and orange pigments in foods (usually fruits and vegetables), some of which have vitamin A activity; that is, they can be converted into vitamin A in the body.
CAS	Country Assistance Strategies of the World Bank.
FAO	Food and Agriculture Organization of the United Nations.
Goiter	Enlargement of the thyroid gland as a result of iodine deficiency. Grade 0 is no palpable or visible goiter. Grade I is palpable enlarged

	thyroid, not visible. Grade II and III, palpable and visible enlarged thyroid. (WHO classification.)
GDP/GNP	Gross domestic product/gross national product.
IDP	Internally displaced persons.
IDD	Iodine deficiency disorders—a number of conditions caused by iodine deficiency including cretinism (a form of irreversible mental retardation), enlargement of the thyroid gland (goiter), stillbirths, premature births, spontaneous abortions, decreased mental capacity, and decreased productivity.
IMCI	Integrated Management of Childhood Illness—a World Health Organization initiative to provide integrated care of sick children to meet all their health and nutrition needs.
IMR	Infant mortality rate (deaths of infants per 1,000 live births).
LBW	Low birth weight (<2,500 grams at birth).
Maturity onset diabetes	Non-insulin dependent diabetes mellitus, which occurs exclusively in overweight adults.
NIDDM	Non-insulin dependent diabetes mellitus—another term for maturity onset diabetes.
NGOs	Non-governmental organizations.
Obesity	Excessive body weight.
Phytochemical	A popular term for any substance in food with positive health benefits.
Serum retinol	A measure of vitamin A deficiency (<20 µg/dL of serum retinol is mild to moderate vitamin A deficiency; <10 µg/dL is severe vitamin A deficiency).

Stunting	Low height for age, a measure of chronic malnutrition.
TGR	Total goiter rate.
Underweight	Low weight for age, the combined indicator of acute and chronic malnutrition.
Undernourishment or undernourished population	Defined by FAO as proportion of population with access to less than 2,300 kcal/capita/day.
UNICEF	United Nations Children's Fund
Vitamin A deficiency	A nutritional deficiency caused by poor intakes of vitamin A (retinol) or foods with vitamin A activity (some of the carotenoids).
Wasting	Low weight for height, a measure of acute malnutrition.
WHO	World Health Organization of the United Nations.

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# Executive Summary

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This report provides an overview of critical nutrition issues and problems in Eastern Europe and Central Asian (ECA) countries. The ECA Region is large in terms of the number of countries it covers and diverse in terms of its economic, political, and social structures. As expected, nutrition problems are also diverse in the region, from countries where undernutrition in children is highly prevalent to countries where overweight and obesity are significant public health problems. Paradoxically, in some countries both overweight and obesity exist simultaneously with undernutrition in children.

Undernutrition in young children, as measured by wasting and stunting, is a public health problem in the Central Asian Republics, Azerbaijan, Turkey, and Albania. In these countries stunting rates range from 20 to 30 percent and wasting rates from 7 to 12 percent. In Tajikistan rates of stunting in children less than five years of age have steadily increased over the last few years to a high of 55 percent.

Rates of undernutrition in women do not appear to be a problem in the ECA Region. Direct measures of undernutrition in women in Kazakhstan, the Kyrgyz Republic, and Uzbekistan show that less than 10 percent fall below the cutoff for being undernourished (body mass index  $<18.5$ ). However, rates of iron deficiency anemia have increased in the region and women, because of their high requirements for iron, are particularly affected, as are young children. Where information is available, anemia prevalence is high, with 25 to 60 percent of women and over 50 percent of children under three years of age with anemia. Iodine deficiency disorders are on the increase in the region. Although salt was iodized and distributed during the Soviet years, the newly independent states have

had difficulty maintaining the infrastructure and systems to produce and distribute iodized salt. Consequently, goiter prevalence is increasing throughout the region, reportedly affecting over 80 percent of the population in some oblasts of Tajikistan and the Kyrgyz Republic. While little is known about actual prevalence of vitamin A deficiency, it is known that the intake of fruits and vegetables, some of which have good vitamin A activity, are limited in the region. High intake of animal products is preferred over more diverse diets that would include fruits and vegetables and which are lower in fat. Consequently, rates of overweight and obesity are high in most countries in the region, with a quarter to one-third of the entire adult population either overweight or obese. This has contributed to increased rates of cardiovascular disease, maturity onset diabetes, and other morbidities associated with being overweight.

Lack of knowledge is the most important determinant of malnutrition in the ECA Region. This lack of knowledge has led to low rates of exclusive breast-feeding and inadequate amounts of complementary foods for young children, particularly those living in Central Asia and the Caucasus. Lack of knowledge about healthy food choices has resulted in high intake of fat and low intake of fruits and vegetables, making rates of overweight and obesity one of the highest worldwide.

Some changes in food intake and nutritional status have resulted from the economic transition of the 1990s, particularly among certain vulnerable groups. A decline in real wages and an increase in unemployment rates have increased the proportion of the family budget spent on food. A decline in the consumption of meat, milk, and fruits and vegetables of 5 to 56 percent across the region has meant that the composition of the family diet has changed. However, because meat and milk intake were excessive prior to economic transition, it appears that this has not compromised the amount of food available to meet the requirements on a per capita basis. In addition, many families were able to produce food at home to compensate for their reduced earning capacity and ability to purchase foods.

However, some vulnerable groups have suffered because of the crisis. World Bank poverty reports identify the following groups as

those at risk for poverty: families with children, young children, the elderly without pensions, and those without land. In addition, certain ethnic groups and displaced persons are more at risk for poverty and undernutrition. Those living in poverty, as seen from one example in Bulgaria, have a much lower intake of food commodities; and the ratio between those living in the wealthiest and poorest deciles increased dramatically due to the economic crisis. It is not known how—or if—rates of malnutrition increased in the region as a result of the economic crisis of the 1990s. Only one country has data on the changing nutritional status of children: in Tajikistan rates of stunting increased from 41 percent in 1994 to 55 percent in 1996.

Iron deficiency anemia and iodine deficiency disorders (IDD) have increased dramatically in the region. For anemia, this may be due to a decrease in meat intake for certain groups, but more important is the lack of commitment to addressing and preventing this deficiency. For iodine deficiency, the availability of iodized salt declined after the breakup of the Soviet Union. Only a few countries have continued to iodize salt in spite of the fact that the populations of the entire region are at high risk for IDD.

To improve the nutrition situation in the ECA Region, recommendations include immediately addressing anemia through fortification of flour with iron and iodine deficiency disorders by iodizing all salt. Since much of the malnutrition in the region is due to lack of knowledge, it is imperative to develop communications for behavior-change strategies. This means educating policymakers and health providers to develop and deliver correct nutrition messages. Countries in Central Asia and the Caucasus need to devote special attention to undernutrition in young children and micronutrient deficiencies. For the entire region, emphasis needs to be put on improving the quality of food intake. Fruit and vegetable intake is extremely low in the entire ECA Region and current information on the importance of these foods for adult morbidity and mortality should be disseminated to consumers throughout the region. These messages need to be combined with those for changing lifestyles with regard to high intake of fat and alcohol.

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# Introduction

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During the past 10 years, massive changes took place in the political and economic structures in Eastern European and Central Asian countries. These changes were marked by declines in real wages and food availability, reduced access to health services, and other determinants of malnutrition. A legitimate concern has been raised that the nutrition situation has deteriorated in the Eastern Europe and Central Asian (ECA) Region, particularly for the vulnerable groups.

As a result of the breakup of the Soviet Union, the entire region suffered from economic deterioration in the 1990s. Some countries were better able to cope with declines in real income and increasing unemployment rates than others, which experienced dramatic increases in poverty. Recovery has been dependent on adherence to sound economic policies and adjustments that not all countries complied with.

The ECA region is large in terms of the number of countries and diverse in terms of its economic, political, and social structures. As expected, nutrition problems in the region also are diverse. In some countries rates of undernutrition in young children are similar to those found in Sub-Saharan Africa and South Asia. In other countries rates of undernutrition in young children are low and on par with those in Europe and North America. Similar to the West, other forms of malnutrition are prevalent in some countries: high rates of

obesity and poor intake of micronutrients have resulted in increased incidence of cardiovascular disease, diabetes, and other diseases associated with lifestyle choices. In yet another group of countries, there exists the paradox of undernutrition in young children and obesity in adults simultaneously.

This report provides an overview of the critical nutrition issues and problems in Eastern European and Central Asian countries. The diversity in the ECA region makes it difficult to draw broad conclusions about the nutrition situation, and thus to make far-reaching policy and program recommendations. In addition, data (particularly trend data) on the nutrition situation is very limited, sometimes of poor quality, and in many cases not nationally representative. However, some conclusions can be made by subregion, based on comparable socioeconomic and child welfare indicators. The report has been structured around such a division (Table 1). Examples are

**Table 1.** Eastern and Central European Country Divisions

SUB-REGION	COUNTRIES INCLUDED
Central Asian Republics (CAR) and Turkey <sup>a</sup> and the Caucasus	Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan, Turkey, Armenia, Azerbaijan, and Georgia
Western countries of the former Soviet Union (W.FSU)	Belarus, Moldova, the Russian Federation, and Ukraine
South Eastern Europe (SEE) and the Balkans	Albania, Bulgaria, Romania and Bosnia-Herzegovina, Macedonia, Croatia, and the former Republic of Yugoslavia
Central Europe (CE)	Czech Republic, Hungary, Poland, Slovakia, and Slovenia
Baltic States	Estonia, Latvia, and Lithuania

*Note:* Divisions based on World Bank regions.

a. Turkey has been included in the CAR and Caucasus region based on the rural stunting rates, which are comparable to other countries in the region.

presented from certain countries to emphasize points regarding the causes of undernutrition and micronutrient malnutrition that the authors think are relevant to the region. However, these examples may in fact only be relevant to the country or the within-country group to which these data apply.

Chapter 2 of this report reviews what is known about the causes and consequences of malnutrition worldwide. The prevalence and change in prevalence of malnutrition in the region are discussed in Chapter 3. An overview of the probable causes of malnutrition is presented in Chapter 4. The effects of the economic crisis on nutritional status are discussed in Chapter 5. A brief section on the policy environment and the state of current programs to address malnutrition in Chapter 6 is followed, in Chapter 7, by conclusions and recommendations to improve nutrition through policy and program support. Given the diversity of the region and in order to maximize information for selected countries, detailed information sheets with prevalence statistics and program facts relevant to nutrition are included in the Annex.

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## CHAPTER 2

# The Causes and Consequences of Malnutrition Worldwide

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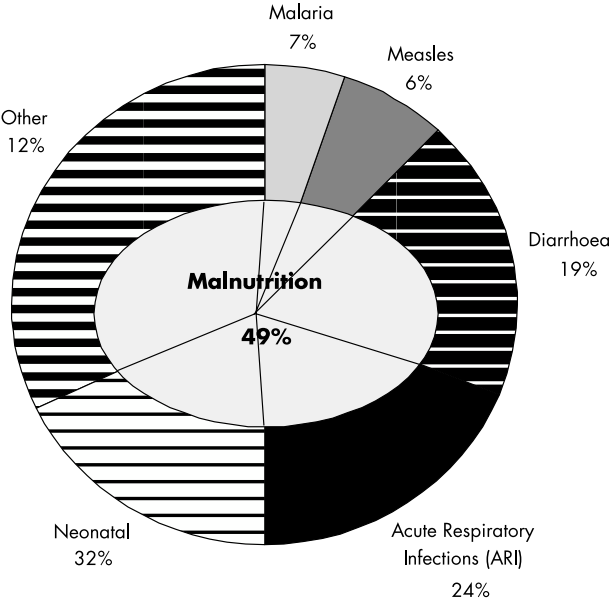
While malnutrition is typically thought of as undernutrition, it should be defined as undernutrition, micronutrient deficiencies, and overweight/obesity, the latter usually accompanied by high fat intake.

### **Undernutrition**

Undernutrition is an outcome of insufficient food intake (in both quality and quantity) and disease. In fact, there is a cyclic relationship between malnutrition and infections. Many of the children in developing countries dying from childhood diseases would not die if they were well nourished. It is estimated that malnutrition is an underlying cause in 49 percent of deaths of children under five years old (Figure 1).

While it is accepted that concurrent severe malnutrition and disease increase the risk of premature death in young children, a recent analysis shows that mild to moderate malnutrition also contributes significantly to mortality. In fact, Pelletier (1994) concludes that in developing countries mild to moderate malnutrition makes up a greater

**Figure 1.** Relative Causes of Child Mortality

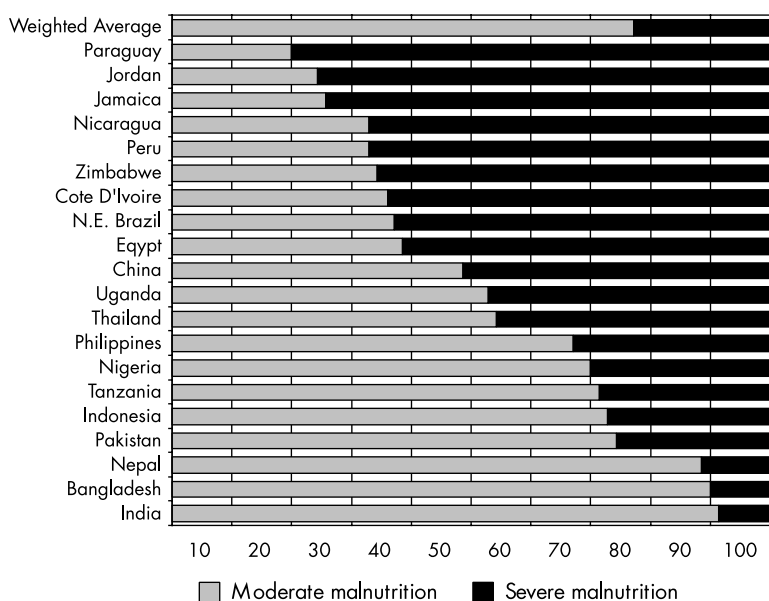


Source: WHO, 1998.

proportion of child deaths caused by malnutrition—about four-fifths—compared to severe malnutrition—about one-fifth (Figure 2)

At the same time, nutritional status is compromised by childhood diseases such as diarrhea, acute respiratory infections, and measles. Requirements for nutrients are higher during illness and children become anorexic during episodes of infection, resulting in reduced food intakes. One study found that vitamin A and protein levels deteriorated even in well-nourished children when they contracted measles (West, 2000). Factors affecting food intake and disease are multifaceted in nature. Underlying factors include lack of knowledge and education, poor maternal and child care practices, family

**Figure 2.** Proportion of Deaths of Children Due to Effects of Severe and Mild/Moderate Malnutrition on Infectious Diseases

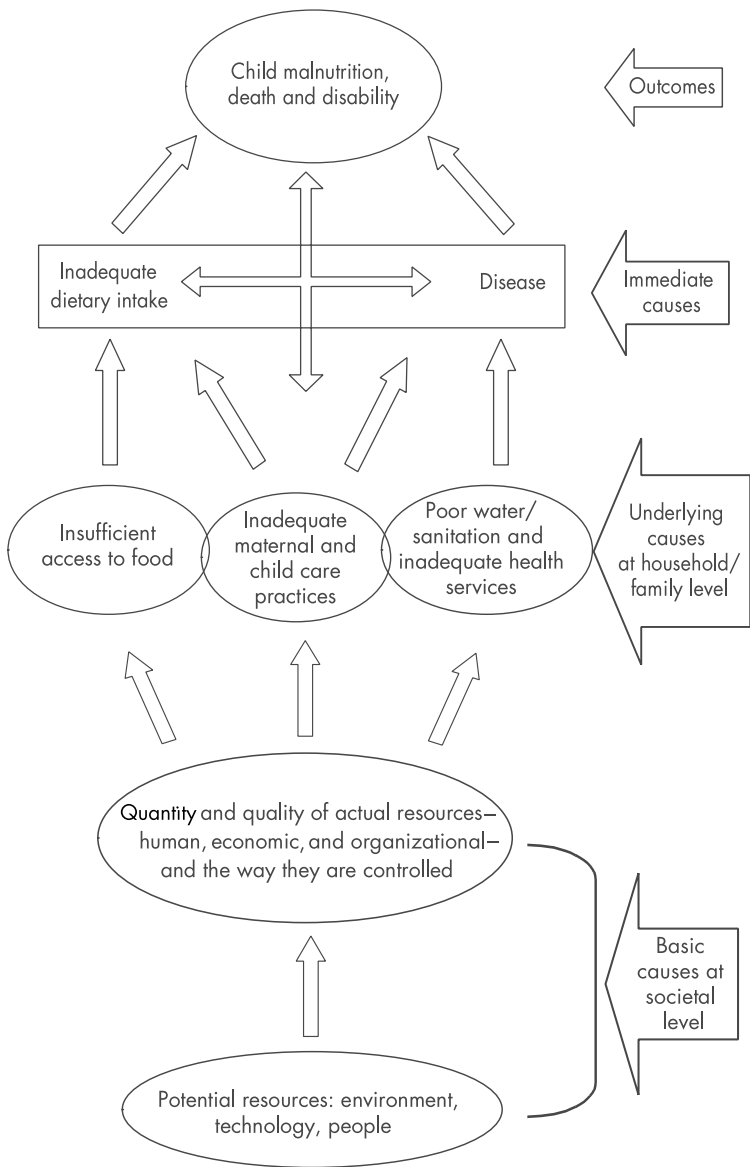


Source: Pelletier et al., 1995.

food insecurity, and poor intrafamily food distribution. Poor access to health, water, and sanitation services at the household level and societal causes such as lack of human, economic, and organizational resources are among the structural causes of malnutrition. Figure 3 shows this multisectoral model for the causes of malnutrition.

Besides being the cause of premature death in young children, malnutrition, as measured by stunting, has a wide range of health, economic, and social consequences for children and adults. Poor educational achievement and reduced capacity to work are known consequences (McGuire, 1996). In addition, recent research shows that fetal malnutrition not only has important immediate and long-term

**Figure 3.** Multisectoral Causes of Malnutrition



Source: UNICEF, 1990.

consequences for survival, growth, and development in childhood and productivity throughout life, but also affects adult health and survival (Barker, 1998). Unfortunately, stunting in children under two years of age, when most stunting occurs, is not reversible later in childhood or in adulthood, resulting in adults of short stature (Ruel et al., 1995). From data in the Philippines, it has been estimated that with every 1 percent decrease in height there is an associated 1.4 percent decrease in productivity (Pinstrup-Andersen et al., 1993). The effects of malnutrition on development and learning in children and adult productivity are particularly relevant and important to areas where infant mortality rates are not high, such as in the ECA region. The economic costs of undernutrition are shown in Box 1.

### **Box 1. Economic Cost of Undernutrition to Society**

Undernutrition has serious functional consequences for the affected individuals, households, and nations. Undernutrition in children inhibits their growth, increases their risk of morbidity, affects their cognitive development, and reduces their subsequent school performance and labor productivity. The relationships between malnutrition and mortality, morbidity, educational performance, and work performance have been documented (McGuire, 1996). Stunting in childhood continues into adulthood, resulting in adults of short stature (Ruel et al., 1995). Haddad and Bouis found a linear relationship between physical stature and productivity in adult laborers in the Philippines (Haddad and Bouis, 1990) and calculated that a 1 percent decrease in height is associated with a 1.4 percent decrease in productivity.

In a population such as in Uzbekistan, a simple calculation can show that stunting will cause enormous losses in future productivity. The number of preschool children (0–3 years) is 1,892,000, of which 31 percent are stunted by the age of 3 years, with 14 percent severely stunted. After the age of about 22 months, severely stunted children are about 10 centimeters shorter than

*(Box continued on next page)*

**Box 1. (continued)**

normal children and moderately stunted children 7 centimeters shorter. Stunting during childhood translates to equal height deficits in adulthood. Assuming an average height of 1.60 meters, 7 to 10 centimeters corresponds with a 4.38 to 6.25 percent reduction in height due to impaired growth during childhood, which is estimated to yield losses in labor productivity of 6.04 percent for the moderately stunted and 8.6 percent for the severely stunted. Assuming an annual current wage of US\$870, the loss of productivity of these children will result in about US\$33 million in economic losses.

In addition to the economic costs of lost educational attainment and productivity, household incomes and national economic growth are negatively influenced by undernutrition through lower benefits from investments in education and higher health care costs.

Maternal undernutrition affects the nutritional status of the fetus and is the main cause of low birth weight (<2,500 grams at birth) in developing countries. Low birth-weight infants are 40 times more likely to die in the neonatal period and those who survive infancy have a 50 percent greater risk of developmental problems. As adults, low birth-weight infants are at greater risk of premature death due to cardiovascular disease, diabetes, and hypertension.

**Micronutrient Deficiencies**

Low intake of vitamins and minerals, usually referred to as micronutrients, results in a number of poor health outcomes. For example, compromised growth and immune function is associated with vitamin A deficiency. Reduced mental development, educational achievement, and work and reproductive capacity have been linked to iron and iodine deficiencies. These three micronutrients, iron, iodine and vitamin A, receive the most international attention at present

because of their life-threatening and quality of life consequences; and because programs exist to address these deficiencies successfully at low cost.

Children 6 to 24 months of age and pregnant women are most at risk for anemia, followed by all women of reproductive age and older children. All individuals in endemic areas are affected by insufficient intakes of iodine and are at risk for reduced intellectual capacity and enlargement of the thyroid (i.e., goiter). However, pregnant women are most at risk because of the tragic effects of iodine deficiency on the developing fetus (i.e., severe mental retardation). Vitamin A deficiency has long been associated with blindness. Young children are usually the target group for vitamin A supplementation not only because they are most at risk for blindness, but also because of the association between even subclinical vitamin A deficiency and increased mortality. Moreover, a recent study in Nepal found that maternal mortality rates decreased when women took vitamin A before and during pregnancy (West et al., 1999). The causes and consequences of deficiencies in these three micronutrients are reviewed in Table 2.

**Table 2.** Causes and Consequences of Iron, Iodine, and Vitamin A Deficiencies

NUTRIENT	CAUSES	CONSEQUENCES
<b>Iron</b>	Low intake; increased physiological requirements (e.g., pregnancy, growth), parasitic infections (e.g., malaria, hookworm), blood loss (e.g., IUDs, postpartum hemorrhage)	Premature births, low birth weight, increased risk of morbidity and mortality, decreased capacity to work and cognitive function
<b>Iodine</b>	Low intake due to iodine deficient soils	Severe mental retardation (cretinism), average reduction of IQ by 11 points with iodine deficiency, premature births, stillbirths, spontaneous abortions
<b>Vitamin A</b>	Low intake of foods with vitamin A activity	Increased morbidity and mortality in children and possibly women

Source: Levin et al., 1993.

Economic costs of micronutrient malnutrition are high. For iron, productivity losses have been estimated at 17 percent for heavy labor and 5 percent for moderate to mild labor. Cognitive losses for iron and iodine deficiencies range from 4 to 10 percent (Horton, 2001).

In addition to deficiencies in these three micronutrients, intakes of other micronutrients are also low in most developing countries. Like iron, the best sources of zinc are animal products, which most people in developing countries cannot afford. Zinc supplementation has recently been found to reduce the duration of diarrhea and improve growth in young children (Lira, 1998). In addition, the benefits of consuming foods rich in other micronutrients and other substances, popularly called “phytochemicals,” found mainly in fruits and vegetables, are coming to light and include reducing risk of cardiovascular disease, cancer, maturity onset diabetes, cataracts, and other diseases and health conditions associated with industrial countries in the West (Box 2).

### **Box 2. New Research on Meeting Requirements for Micronutrients**

The importance of adequate intake of vitamins and minerals is coming to light with new research about the antioxidant effects of many vitamins (vitamin C, vitamin E, folic acid, etc.) and the benefits of certain types of fats found in olive oil and fish. In addition, the pigments and other “phytochemicals” found in fruits and vegetables have been shown to reduce risk for certain kinds of cancer, cardiovascular disease, cataracts, and certain birth defects. Countries in the Mediterranean that have diets high in vegetables, fruits, olive oil, and fish have lower adult mortality rates than other areas of Europe where intake of these foods is lower. Albania, for example, has one of the highest infant mortality rates in the region but one of the lowest adult mortality rates (half the adult mortality rate of the UK but similar to Italy). Adult mortality rates are particularly low in the southern part of the country where most of the olive oil, fruits, and vegetables are produced and consumed (Gjonca and Bobak, 1997).

## Overweight and Obesity

Another type of malnutrition is overweight and obesity, caused by excessive energy intake and a sedentary lifestyle. Because overweight and obese individuals generally have poor diets, they also may be deficient in all or some of the micronutrients. Indicators for overweight and obesity and the health risks and economic costs for both these conditions are outlined in Boxes 3 and 4. This type of malnutrition is usually associated with the wealthy in Western and developing countries, although in many countries obesity is associated with the poor. For example, in Brazil, degenerative diseases and their risk factors such as obesity and hypertension are most prevalent among the poor (Popkin, 1993) and these conditions coexist in households where there are undernourished children. This is particularly true of residents of urban areas where activity levels have decreased (Doak et al., 2000).

### Box 3. Body Mass Index and Related Health Risks

Willett (1999) has recently shown the relationship between body mass index (BMI) and the incidence of several common conditions caused by excess body fat, such as maturity-onset diabetes, hypertension, and coronary heart disease (CHD) for the United States. In a woman with a BMI of 26 the risk of CHD is about twice the risk of a woman with a BMI of less than 21. The risk for a man with a BMI of 26 was about 1.5 times the risk of a man with a BMI of 21. The risk of diabetes was four times higher in obese men and eight times higher in obese women; and the risk of hypertension was two to three times higher in obese individuals. With a BMI of 29 and higher, these risks are further increased. It has been estimated that about 64 percent of male and 77 percent of female cases of maturity-onset diabetes (or NIDDM—non-insulin dependent diabetes mellitus) could theoretically be prevented if no person had a BMI over 25. In 25- to 35-year-olds, severe obesity is associated with a 12-fold increase in mortality compared to lean individuals.

**Box 4. Economic Costs of Overweight and Obesity**

The economic costs of overweight and obesity are important issues for health care providers and policymakers alike. To date, only a few studies attempt to quantify the economic burden of obesity-related morbidity and mortality. Most recent are the Wolf and Colditz (1998) estimates for the United States. Economic cost assessments for developing countries range from 2 to 7 percent of total health care costs. These are conservative estimates, but they nevertheless confirm that obesity represents one of the largest expenditures in national health care budgets. Most probably the cost in developing countries exceeds the estimates for the developed countries because of the extra burden associated with expensive equipment, scarce foreign exchange, and need for specialized training for staff. Preliminary data also suggest that a large proportion of the economic costs of obesity can be saved by efficient prevention or intervention strategies. Approximately 63 percent of the direct cost associated with obesity is from maturity-onset diabetes or NIDDM (Wolf and Colditz, 1998). The authors conclude that obesity represents a major avoidable contribution to the cost of illness in the United States (and probably in the rest of the world). Unfortunately, very little information is available on the economic benefits of treating obesity, although some extrapolations can be made from a large-scale Swedish intervention SOS study. The treated group's quality of life markedly improved and several cardiovascular risk factors decreased. The prevalence of NIDDM decreased by 68 percent in the treatment group. In other words, two-thirds of the NIDDM prevalence was cured by the obesity intervention. Segal et al. (1995) attempted to model potential cost-effectiveness of a range of interventions for the prevention and treatment of NIDDM in Australia. The study estimated that the most cost-effective interventions were a commercial 6-week group session program for men and the mass-media lifestyle modification program. Both interventions were estimated to result in cost savings from reduced incidence of NIDDM, and savings were greater than program costs. Behavior change to reduce cardiovascular disease costs less than US\$1 per capita per year in targeted populations. Analyses have shown that prevention is a more cost-effective strategy than treatment once the disease has been diagnosed (WHO, 1997a).

In a study in the Baltic states, levels of education and income were positively associated with the belief that different types of fats put people at greater risk of cardiovascular disease. For example, in Estonia the odds ratio for this belief in men was 1.00 at the lowest level of income and 2.5 at the highest level of income (Pomerleau et al., 1999).

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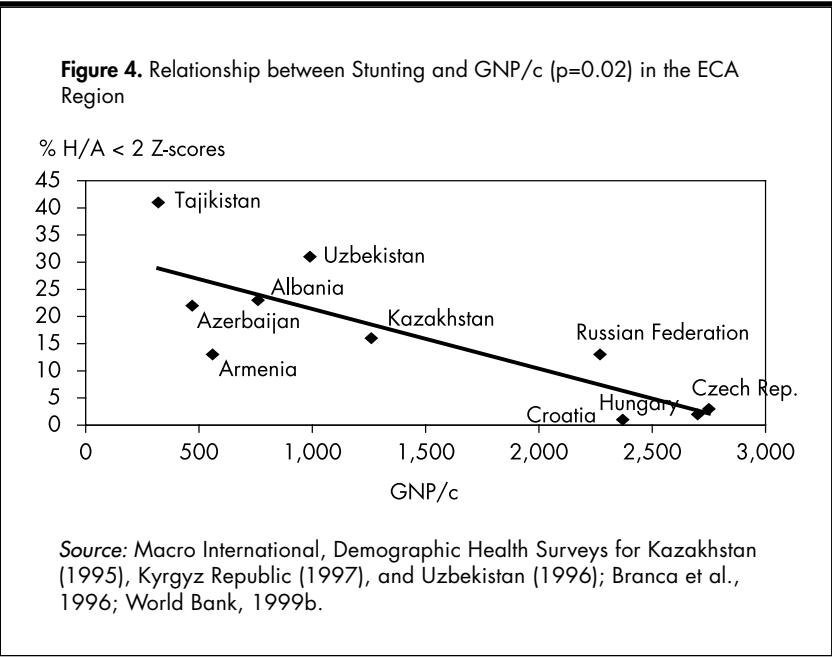
# Prevalence Rates of Malnutrition in the ECA Region

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## Undernutrition and Growth Failure

Undernutrition in children under five years of age is one of the commonest forms of food deprivation worldwide. Acute undernutrition or wasting is usually caused by a recent reduction in food intake or a bout with an infectious disease or diarrhea. The cyclic nature of food intake and disease also comes into play. Most episodes of infection in young children are accompanied by reduced food intake due to the anorexia that often accompanies illness and in turn prolongs recovery from disease. Reducing food intake during illness also is exacerbated by erroneous beliefs that food deprivation aids recovery (e.g., the common saying “drown a cold and starve a fever”). Chronic undernutrition, or stunting, is the best measure of the overall nutritional status of the child and is caused by a repeated and long-term cycle of food deprivation or recurrent infections. Stunting also is a sensitive measure of poverty as rates of stunting decrease when gross national product (GNP) per capita increases (Figure 4).

National rates of undernutrition are not widely available in the ECA region. Shown in Table 3 are rates that are considered public health concerns.



**Table 3.** Wasting and Stunting Prevalence<sup>a</sup> in the ECA Region

SUB-REGION AND NATION	CHILDREN WITH WASTING <sup>A,B</sup> (%)	CHILDREN WITH STUNTING <sup>B</sup> (%)
<b>Central Asian Republics and Turkey</b>		
Kazakhstan (1995) (0–35 months of age)		21.8 (rural only)
Kyrgyz Republic (1993) (0–35 months of age)	10.4 (1–2 years of age)	
Tajikistan (1996) (6–59 months of age)	7.0	55.0
Uzbekistan (1996) (0–35 months of age)	11.6	31.3
Turkey (1993) (0–59 months of age)		21.0 (rural only)
<b>Caucasian Republics</b>		
Azerbaijan (1996) (0–59 months of age)		22.2
<b>South Eastern Europe</b>		
Albania (1997) (0–59 months of age)	7.4 22.7	

a. Wasting prevalence above 5% and stunting above 20% are considered to be of public health concerns, so only prevalence rates above these cutoffs are shown.  
b. The proportion of children falling below minus two Z-scores of the WHO/NCHS standard.  
Source: Macro International; Branca et al., 1996.

## Maternal Nutrition and Low Birth Weight

There is little documented information on the prevalence of underweight in women in the ECA region. In Uzbekistan, Kazakhstan, and the Kyrgyz Republic, where rates of malnutrition in children are high, only 10, 8, and 7 percent of women, respectively, are underweight—<18.5 for Body Mass Index (Macro International). Low birth-weight (LBW) prevalence is a marker for intrauterine growth retardation or fetal malnutrition and prematurity caused by infections. High rates of low birth weight in developing countries are indicative of undernutrition in women. In the ECA region prevalence of LBW is low (Table 4) and comparable to rates in West European countries, confirming that there is little underweight in

**Table 4.** Prevalence of Low Birth Weight in the ECA Region

REGION AND COUNTRIES	PERCENT OF LBW <2,500 GRAMS
<b>CAR, Turkey, and Caucasus</b>	
Kazakhstan	9
Kyrgyz Republic	6
Turkey	8
Azerbaijan	6
<b>W.FSU</b>	
Belarus	5
Ukraine	8
<b>SEE</b>	
Albania	7
Bulgaria	7
Macedonia	8
Croatia	8
<b>CE</b>	
Czech Republic	6
Hungary	9
Poland	9
Slovakia	6
Slovenia	6
<b>Baltic States</b>	
Latvia	4
Lithuania	4

Source: World Bank, 1999b.

women. LBW is considered a public health problem if rates are greater than 15 to 20 percent (ACC/SCN, 1997).

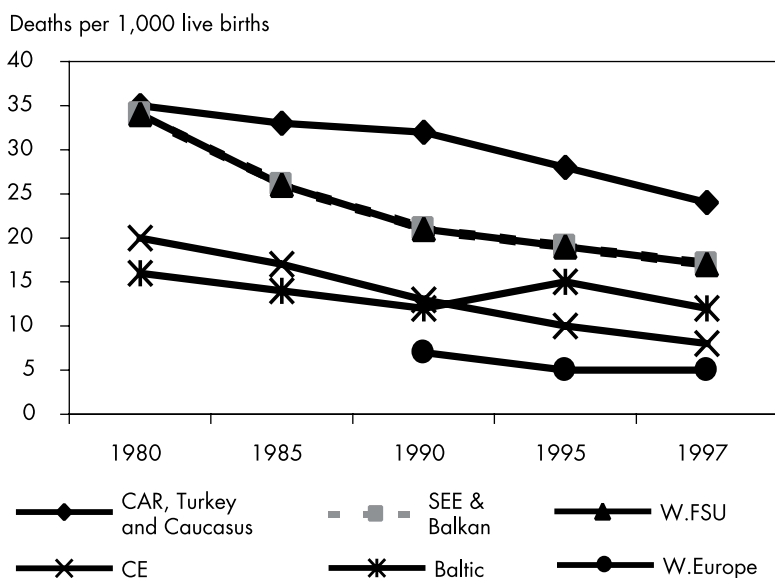
At the same time, there is some evidence that low birth-weight rates are increasing in the region. In Armenia, low birth-weight rates have increased since the 1980s (Michaelson et al., 1999); and slight increases have been recorded for Albania and the Ukraine (World Bank, 1999b). However, these increases probably do not reflect changes in maternal undernutrition. Increasing rates of low birth weight can also be caused by rising rates of obesity, as is seen in Western Europe, the United States, and Canada. It is not known if rates of above-average birth weights, often associated with gestational diabetes, have been increasing in the region.

### **Infant Mortality Rates**

While malnutrition rates are high in several countries, subregional trends in infant mortality rates (IMR) show an overall decrease since the 1980s and even during and after the economic transition period (Figure 5). Further evidence for these low rates can be seen by comparing ECA with other middle-income countries: only 6 of 24 middle-income countries from other regions have IMR below 25. In the ECA region 21 of 27 countries have infant mortality rates below 25 (World Bank, 1999b).<sup>1</sup> Adequate access to health services may explain why children, although malnourished, are less likely to die in their first year of life. However, access to health services has declined due to the economic crisis (Goldstein et al., 1996), in particular in the CAR and Caucasus where malnutrition rates are high. This may have a negative impact on infant mortality rates in the near future.

While infant mortality rates are not high in ECA compared to similar regions worldwide, the consequences of undernutrition and micronutrient malnutrition are still relevant and important to child development, learning, and adult productivity in ECA.

**Figure 5.** Changes in Infant Mortality Rates 1980–1997  
(deaths per 1,000 live births)



Source: TransMONEE, 1997.

## Micronutrient Deficiencies

Anemia prevalence, both in young children and women of child-bearing age, is high in the ECA region. For countries where these data exist, prevalence rates are shown in Table 5.

Studies in Kazakhstan, the Kyrgyz Republic, and Uzbekistan (Macro International) show that prevalence of anemia is highest in children 6 to 23 months of age, when the most rapid periods of growth are occurring and requirements are highest. In women prevalence is

**Table 5.** Prevalence of Rates of Anemia in the ECA Region in Selected Countries

SUB-REGION AND NATION	ANEMIA PREVALENCE
<b>CAR and Turkey</b>	
Kazakhstan	49% in women; 69% in children <3 years
Kyrgyz Republic	38% in women; 50% children <3 years
Uzbekistan	60% in women 15–49 years; 61% in children <3 years
<b>Caucasus</b>	
Azerbaijan	30% in all women; 46% of internally displaced (ID) children 12-59 months; 40.7% of non-pregnant ID women
Georgia	40% of newborns; 52% of children <5 years and 64% attending kindergarten
<b>W.FSU</b>	
Belarus	25% in women 15–49 years; 66% in children <5 anemia
Russian Federation	34% in pregnant women
<b>SEE and Balkan</b>	
Bosnia/Herzegovina	58% in children
Ukraine	27% in pregnant women
<b>Central Europe</b>	n.a
<b>Baltic States</b>	n.a.

n.a. Not applicable  
*Sources:* Macro International; Gotdzde (1999); UNICEF, 1998b; Goskomstat, 1996; Government of Ukraine, 1997.

highest in the age group 30 to 39 years and is probably due to frequent, poorly spaced pregnancies and unsafe abortions.

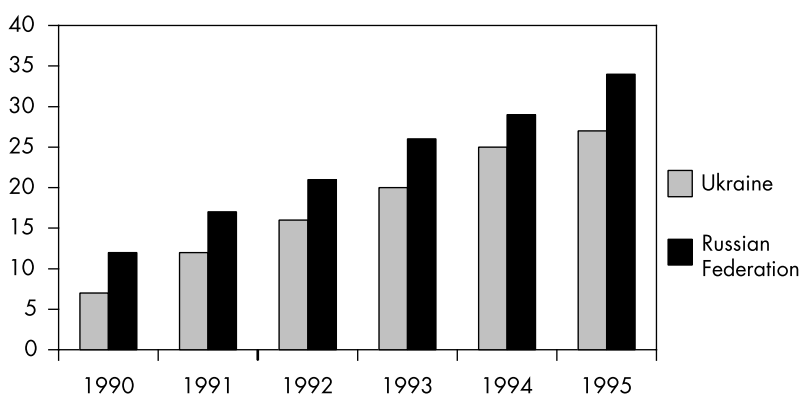
High prevalence rates of anemia are seen not only at different points in the life cycle but also in special groups in the region. For example, a study in Azerbaijan found that anemia rates were consistently higher in the internally displaced populations (Branca et al., 1996). In Kazakhstan, the Kazak ethnic group had higher rates of anemia than the Russian ethnic group (Sharmanov, 1998). Regional differences also exist. Anemia prevalence is extremely high in the Aral Sea region of Kazakhstan and Uzbekistan, where people are poor and there are problems with agrochemical pollution, food and water shortages, and economic stability.

There is evidence that anemia prevalence has increased in many countries over the last 10 years and has dovetailed with economic

hardships in the region. For example, in the Russian Federation, anemia prevalence in pregnant women increased from 12 percent in 1990 to 34 percent in 1995, and in Ukraine from 7 percent in 1990 to 27 percent in 1995 (Figure 6).

Iodine deficiency disorders (IDD) are prevalent in the ECA region. Turkey has one of the highest rates of goiter<sup>2</sup> in the region, with 36 percent of school children affected. Rates are also high in Central Russia with 15 to 25 percent of children and women affected and in other regions of the Russian Federation with up to 40 percent affected (UNICEF, 1998c). In Bosnia-Herzegovina goiter rates of 25 percent have recently been reported (UNICEF, 1998b). In Georgia, goiter rates of 54 to 78 percent have been reported. Many of the countries in the region are probably affected more severely in certain areas or pockets of each country. For example in the Khatlon region of Tajikistan, goiter prevalence is as high as 80 percent (Zarrabi, 1999). A similar level is reported for certain oblasts in the Kyrgyz Republic (Hunt, 2000). In Ukraine in 1994, it was

**Figure 6.** Proportion of Pregnant Women, at Term, with Anemia in the Russian Federation and Ukraine, 1990–1995 (per 100 live births)



Sources: Goskomstat, 1996; Government of Ukraine, 1997.

estimated that consumption of iodine was two times less than physiological requirements. In 1995 1,340 cases of children with endemic goiter (grade III) were reported—an increase from 1994 levels of 928 cases (Government of Ukraine, 1997). Special populations may be more vulnerable to IDD. For example in Azerbaijan, goiter prevalence is higher for internally displaced populations (23 percent) than the regular population (10 percent). Goiter is more common in women (14 percent) than men (6 percent) because physiological requirements are higher for women (Branca et al., 1996).

Little is known about vitamin A deficiency in the region. WHO reports that in the Aral Sea region of Uzbekistan, vitamin A deficiency has been identified in 40 to 60 percent of children under five years of age (serum retinol <10 g/dL) (Michaelson et al., 1999). Turkey, Romania, and Uzbekistan are three countries where vitamin A deficiency exists but is mild (WHO, 1997b.) Vitamin A deficiency may vary throughout the ECA region. In one study in Armenia only 0.8 percent of children had low serum retinol values but in Macedonia clinical cases of vitamin A deficiency are reported in children with severe infections.

In 1983 to 1991 a large-scale vitamin A survey was conducted for the Russian Federation, Ukraine, Belarus, and the Baltic States. In general, vitamin A intake was adequate; however, 6 percent of adults in the Mogiliev and Gomel regions had mild vitamin A deficiency, and intakes of vitamin A were even lower in children. Deficiencies in carotenoids, many of which are precursors to vitamin A and as such are important in the human diet, occurred in 39 percent of adults and 28 percent of children. Pregnant women had the lowest intake of carotenoids (Spirichev et al., 1995). It was estimated that 18- to 25-year-olds in this region consume only one-fourth of their requirements for vitamin A and beta-carotene (the carotenoid with the greatest vitamin A activity).

In a comparative analysis of nutrition policies in the region, Albania, Armenia, Hungary, the Republic of Moldova, Romania, and Turkey identified vitamin A deficiency as a problem. Other micronutrient deficiencies were also mentioned as problems including

vitamin C (Hungary), vitamin D (Romania), calcium (Czech Republic, Hungary, Poland, the Slovak Republic, Turkey), riboflavin (Turkey, Hungary), vitamin B-6 (Turkey), thiamin (Hungary), and folic acid (Poland) (WHO/EURO, 1998).

## Overweight and Obesity

The most comprehensive data on global overweight and obesity was collected between 1983 and 1986 in the MONICA study.<sup>3</sup> In most of the countries studied, many of which now make up the ECA region, between 50 to 70 percent of adults were overweight or obese.<sup>4</sup> Lithuania had the highest prevalence of obesity—22 percent in men and 45 percent in women. Current available data for the ECA region reveal that obesity and overweight are a problem, with 25 to 50 percent of the population overweight and between 6 and 25 percent obese (Table 6). Where children have been examined, there appears to be low prevalence of overweight and obesity at this time, except in the Russian Federation, where 21 percent of children under five are overweight. High rates of overweight and obesity in adults have made ischemic heart disease the most important cause of death throughout the ECA region (Klugman and Schieber, 1999), and given Eastern and Central Europe the dubious first place in the world for mortality due to cardiovascular disease. According to a recent report, based on the Russian CINDI study (1999), the contribution of cardiovascular disease to the overall death rate varied from 28 to 32 percent for Russian men and from 24 to 36 percent for Russian women in areas surveyed. In Kazakhstan, 50 percent of mortality is attributed to cardiovascular disease (Ministry of Education, Culture, and Health, 1998). Excessive body mass and hyper-cholesterolemia are leading risk factors for the development of cardiovascular disease. Levels of these risk factors are extremely high in the CINDI populations in the Russian Federation, where hyper-cholesterolemia is found in 19 percent of men and 10 percent of women. Percentages would be much higher if the WHO standard of 200 mg% or

**Table 6.** Overweight and Obesity Prevalence Data in the ECA Region in Selected Countries

SUB-REGION AND COUNTRY	PERCENT OVERWEIGHT/ PRE-OBESITY PREVALENCE (BMI 25–29.9)		PERCENT OBESITY PREVALENCE PERCENT OBESITY PREVALENCE (BMI > 30)	
<b>CAR and Turkey</b>				
Kazakhstan (1996)	All:	27	All:	15
	Women:	27	Women:	20
	Men:	26	Men:	8
<b>Caucasus</b>				
Armenia (1998)	Women:	36	Women:	11
Azerbaijan (1996)	All:	30		—
<b>W.FSU</b>				
Russian Federation (1999)	All:	28	All:	24
<b>SEE and the Balkan</b>				
		—		
<b>Central Europe</b>				
Czech Republic (1988)	All:	—	Men:	16
			Women:	20
Hungary (1992-1994)	All:	34	All:	21
<b>Baltic States</b>				
Estonia (1997)	Women:	30	Women:	6
Latvia (1997)	Women:	50	Women:	17
Lithuania (1997)	Women:	60	Women:	18

— Not available.

Sources: National surveys and Russian CINDI report, 1999.

more for hyper-cholesterolemia were used instead of the Russian standard of 250 mg% or more. Excessive body mass index is found in one-third of men and half of women in the CINDI population in the Russian Federation.

**Notes**

1. Some distortion of the data can be due to the difference in the definition of live births used by WHO and the former Soviet Union. The latter classified infants born before 28 weeks of gestation age or less than 1,000 grams as late miscarriage, instead of the WHO classification of a live birth.
2. Enlargement of the thyroid gland as a result of iodine deficiency. Grade 0 is no palpable or visible goiter. Grade I is palpable enlarged thyroid, not visible.

Grade II and III is palpable and visible enlarged thyroid. (WHO classification). (Hetzel and Clugston, 1999).

3. The MONICA project is a multicenter international collaborative project coordinated by the World Health Organization with the objective to measure trends in cardiovascular mortality and morbidity and to assess the relation to risk factors, measured at the same time in different countries (WHO 1989a, 1989b, 1990).

4. The Czech Republic, former Eastern Germany, Hungary, former Yugoslavia, Poland, and the former USSR, including a population in what is now Lithuania.

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## CHAPTER 4

# Causes of Malnutrition in the ECA Region

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As mentioned in Chapter 2, malnutrition includes both undernutrition or inadequate intake of energy and micronutrients, and excessive intakes of energy resulting in obesity. Malnutrition can be the result of any number or combination of factors (as seen in Figure 3). Inadequate dietary intake and disease are the most significant immediate causes of undernutrition in most developing countries. The major underlying causes include poor maternal and child care practices, lack of awareness and education, family food insecurity and poor intrafamily food distribution, poor access to good quality health and sanitation services, and societal causes such as lack of human, economic, and organizational resources. Another model for the causes of malnutrition is configured around food availability, access, and utilization. Because malnutrition in the ECA region appears to be largely caused by lack of knowledge rather than inadequate resources, this report will begin with behaviors as the primary cause of undernutrition, obesity and overweight, and micronutrient malnutrition. Some of the causes of malnutrition presented here have always existed, such as low rates of exclusive breastfeeding and lack of awareness about the importance of consuming fruits and vegetables. However, other causes of malnutrition have been triggered by the economic crisis in the region.

## Behaviors Affecting Nutritional Status

One cause of undernutrition, obesity, and micronutrient malnutrition is inadequate intake of food, both in quantity and quality. Paradoxically, in some ECA countries undernutrition rates in young children are high together with rates of overweight and obesity in adults, suggesting that nutrition problems are due to lack of education and proper utilization of food rather than lack of food. Dietary inadequacies may be caused by poor choices in buying the right food or by mothers having too little time to prepare food and feed their children. Lack of knowledge about healthy nutrition behaviors and practices is a major cause of poor nutrition in the ECA region.

In the Central Asian Republics (CAR) and the Caucasus where malnutrition is highest, inadequate feeding of young children preceded economic hardship. Poor feeding is caused by nonexclusive breastfeeding, the early introduction of foods other than breastmilk, and inadequate amounts of complementary foods starting at about six months. Most of these are related to poor child care practices (Box 5).

Because resources to buy adequate quantities of high-quality foods have declined for some families, feeding practices have deteriorated further. Several factors have played a role: food shortages; lack of appropriate coping mechanisms such as access to land to produce food for home consumption; or the caregiver's involvement in other activities to make ends meet rather than caring for the young children.

In adults, lack of knowledge, leading to poor food choices, is the cause of high rates of overweight and obesity in the region. As one example, a study in the Baltics found that most residents did not know that certain types of fat (i.e., saturated fats) put people more at risk for cardiovascular disease than other types of fats (Pomerleau et al., 1999). In the past, beliefs that high fat and meat intakes are healthy were translated into national policies to subsidize these foods.

Other poor health behaviors also are associated with malnutrition. Smoking, alcohol, and lack of exercise are important determinants of certain conditions linked with overweight and obesity, and generally poor nutritional status. Smoking and excessive alcohol

### **Box 5. Poor Feeding Practices Induce Growth Faltering in Young Children**

Not only do poverty and food insecurity influence malnutrition rates, but infant and child feeding practices also have a strong influence on child morbidity and mortality. Extensive evidence exists of the health advantages of breastfeeding, and more so exclusive breastfeeding for about 6 months, as indicated by lower infant morbidity and mortality than for bottlefed infants. Only 4 to 17 percent of infants (0-6 months) are exclusively breastfed in the ECA region. Early introduction of weaning foods interferes with the production of breastmilk and can be a source of contamination resulting in infectious disease. Early introduction of weaning foods such as cow's milk is associated with potential gastrointestinal blood loss. Tea, common in parts of the region, impairs iron absorption from meals by 40 percent, and in children under two years of age tea contributes to iron deficiency when iron requirements are highest. In consultative research in Kazakhstan, for example, infants who were not breastfed were given tea.

Children are exposed to the highest risk of growth faltering during the weaning period from the age of 6 to 24 months. Data from nutrition surveys in the Kyrgyz Republic and Tajikistan confirm this: at 24 months, wasting or acute malnutrition peaked in the Kyrgyz Republic (at 10.4 percent) and in Tajikistan at 12 months of age. Both the Kyrgyz Republic and Tajikistan have high breastfeeding rates, 96 percent at 6 months; however, exclusive breastfeeding rates are low, and the introduction of complementary foods is neither timely nor adequate.

*Source:* Michaelsen, et al. 1999; Griffiths and Cheetham, 1998.

consumption increase requirements for certain micronutrients and can displace food so that intakes do not meet requirements. A cross-sectional comparison of cardiovascular disease risk factors across European populations, including 15 former communist countries, found that cardiovascular disease mortality was highly associated with hypertension and smoking in men and hypertension and overweight

in women. The study advocated greater emphasis on increased consumption of foods containing antioxidants, such as fruits and vegetables, which decrease the risk of cardiovascular disease and certain types of cancer (Ginter, 1995).

**Disease, Access to Health Services, and Water and Sanitation**

Disease, in particular infectious disease, affects dietary intake and nutrient utilization. In most cases, malnutrition is the combined result of inadequate dietary intake and disease. Malnutrition may also result from a combination of causes, such as the lack or low utilization of health services, poor quality of health services, including health professionals who are poorly trained and motivated, inadequate water supplies and sanitary facilities, poor food hygiene, and inadequate child care.

Because childhood diseases and infections increase the risk of malnutrition, it is useful to look at immunization coverage rates for the region. As mentioned earlier, immunization coverage, based on available information, is high in most of the region. In the CAR, however, where rates of malnutrition are high, coverage rates for immunization, based on community surveys, need improving in several countries. Diarrhea is also still prevalent in these areas (Table 7).

**Table 7.** Coverage for Immunizations and Prevalence of Diarrhea in Selected Countries

	THIRD DOSE DPT (%)	MEASLES (%)	DIARRHEA IN LAST TWO WEEKS (%)
Kazakhstan	51.2	71.9	15.7
Kyrgyz Republic	95.3	85.4	17.6
Uzbekistan	94.4	91.5	5.2
Turkey	77.1	77.8	24.8

Source: Macro International (Kazakhstan 1995; Kyrgyz Republic 1997; Turkey 1993; and Uzbekistan 1996).

Governments typically inherited large and inefficient health care systems, most of which were plagued by serious problems even prior to the transition period. Since that time, economic growth across the region has generally been slow or negative and limited public resources have been available for health care. The transition period brought about a decline in health care systems in the region, both in terms of access and quality. Decline of immunization services can be a useful indicator for deterioration of nutritional status; however, it is unknown if immunization services have deteriorated since 1991. Immunization rates were overreported in the former Soviet Union because children who were not immunized due to contraindications and overexaggerated fears of vaccines, weakness of infants, and complacency about immunization were not included in coverage calculations. This problem persists. In Armenia, for example, coverage of the third dose of diphtheria-pertussis-tetanus toxoid (DPT3) was reported to be 82 percent in 1998; but a national immunization coverage survey, in which all children were accounted for, found that only 62 percent of children had been immunized (Steinglass, 2000). Similarly, in 1999 in Azerbaijan, coverage for DPT3 was reported to be 87 to 97 percent, depending on the area, but a community-based survey that same year found that only 57 to 70 percent were in fact immunized. In at least one country, Kazakhstan, the incidence of infectious and parasitic disease increased by 95 percent between 1990 and 1994 (Economist Intelligence Report, 1998–1999), but generalizations cannot be made that the same is true elsewhere.

The lack of access to water and poor environmental sanitation are important underlying causes of malnutrition. The collapse of the Soviet Union left the CAR governments with major infrastructural constraints regarding drinking water and sewage. According to one report, less than half of the rural population of the CAR had access to safe water; and in many urban settings, the water is contaminated due to corrosion of pipes and mixing of sewage and drinking water (“Looming crisis...,” cited in ACC/SCN, 2000). In 1992 Central Asian sanitary facilities were in general unsatisfactory with open latrines and untreated sewage discharge leaking into open waterways.

Because of the Aral Sea environmental disaster, about three million Kazaks and Uzbeks living in the proximity of the Aral Sea are at risk for consequent health problems as reflected in increases in mortality from tuberculosis and hepatitis. A reduction in the availability of food has compromised nutritional status in that area. The high incidence of respiratory disease and neurological and congenital disorders is frequently attributed to chemical pollution. Independence and the subsequent decline in health and nutrition standards and access to basic services have created a situation conducive to a rise of infectious and preventable disease. Lack of safe drinking water has resulted in an increase in waterborne disease such as diarrhea, hepatitis, and typhoid (“Looming crisis...,” cited in ACC/SCN, 2000).

## **Problems with Access to Food**

Food security is often defined as access by all people at all times to sufficient food, in terms of quantity, quality, and diversity, for an active and healthy life. Declining food subsidies and increasing poverty rates, resulting from the transition in the 1980s, have affected the availability of food for some groups. Changes in welfare provision have impacted on the availability of certain foods given as part of the welfare provision. These changes have affected the health and nutrition situation, particularly for the poor.

## **Rising Food Prices**

The postindependence era is characterized by sharp increases in food prices across Eastern Europe and Central Asia. Food shortages, high inflation, and price liberalization pushed prices up, while incomes could not keep up the same pace. This is particularly true for the Central Asian Republics. In Kazakhstan for example, the January 1992 price liberalization increased food prices 5 to 10 times, from already doubled food prices in 1991 (Center for International Health

Information – USAID, 1992). In Uzbekistan, families had to spend almost their entire family income on food as prices of basic foods increased by 2 to 10 times, despite local production of fruit and vegetables (Center for International Health Information – USAID, 1992). Unfortunately, these changes in food prices were not accompanied by nutrition education programs that could have informed people to make correct food choices with what resources they had.

## **Removal and Reduction of Food Subsidies**

An important factor affecting access to food is the removal of producer and consumer subsidies. In the former USSR subsidies were intensively used as instruments of social policy. Among other objectives, state subsidies on food stuffs had important social functions: to keep remote rural areas, as well as farms with lower than average productivity, alive, and to guarantee employment opportunities. The average consumer subsidy rate in the USSR in 1988 for meat was 230 percent, for butter 240 percent, and for milk 170 percent. Accordingly, high availability and accessibility levels of meat and milk were seen in that period (Kuddo, 1998). However, removal of these subsidies may have improved the nutrition situation for some groups by decreasing high intake of certain types of high-fat foods.

All the countries in transition started their reforms by removing most state producer and consumer subsidies. Removal of subsidies took different routes, depending on the country but in most cases the poor were most affected. Evidence indicates that the declines in food consumption were highest for those defined as living in poverty.

The price of bread in Poland increased more rapidly than that of meat and milk due to different prereform subsidy levels. Hence meat consumption actually increased in Poland between 1989 and 1991, while bread consumption remained relatively constant and milk consumption declined. For the poorest in Poland (income below 70 percent of ultra poverty line), energy and protein intakes fell around 20 percent between 1989 and 1992 (Cornia, 1994). This is

of concern given that both fell below Poland's recommended minimum intake levels, at 2,101 kcal for energy and 55 grams per day for protein. Among the ultra poor, energy intake fell by 11 percent and protein by 13 percent, and were below minimum recommended intake levels. These two groups accounted for about 20 percent of the Polish population by 1992, having been just 10 percent in 1989.

In Hungary the price of milk and bread rose much quicker than that of meat due to the higher prereform subsidies. Energy intake of the ultra poor also fell by 9 percent, and protein by 6 percent resulting in energy intakes below recommended levels at 2,127 kcal, and protein only marginally adequate at 66 grams per day. Those with inadequate intakes in the population rose from 6 to 10 percent between 1989 and 1992 (Cornia, 1994), but it is not known if these figures have continued to rise.

### Changes in Real Wages, Food Shares, and Unemployment

Economic changes were marked in many countries by a decline in real wages, and an increase in the food share of the family budget being spent on food (Table 8).

As shown, there was a significant decline in real wages across the entire ECA region between 1989 and 1995. Declines were most severe in the CAR and Caucasus where undernutrition rates are

**Table 8.** Percentage Change in Real Wages and Food Share from 1989–1995 by Subregion.

SUBREGION AVERAGE CHANGE (%)	CAR	CAUCASUS	W. FSU	SEE	CE	BALTIC
Real wage	–65.3	–76.6	–58.8	–52.2	–22.8	–48.6
Food share pretransition						
proportion	n.a.	40–50	30–40	40–50	30–40	30–40
change (%)	n.a.	27.7	22.1	6.4	–1	12.1

n.a. Not available.

Sources: UNICEF–ICDC 1995; TransMONEE database, 1997. No data is available for Turkey and the Balkans.

highest. Some improvements have been made in certain countries of the CAR and Caucasus, but recent data (UNICEF-ICDC, 1999) show that real wage levels remain at less than 37 percent of the 1991 level for Kazakhstan, less than 50 percent of the 1990 level for the Kyrgyz Republic, and less than 31 percent of the 1993 level for Turkmenistan.

Decreasing real wages and other factors have resulted in a greater proportion of the family budget being spent on food. The food budget share, often used as a measure of poverty, increased in each sub-region after the transition, except in Central Europe, where real wage declines were smaller than the rest of the region. In the Caucasus after the transition, families are spending 50 to 65 percent of their income on food. In Albania, Romania, Lithuania, Belarus, Ukraine, and Azerbaijan families are spending 55 percent of their incomes on food. This proportion of the family budget spent on food is similar to those seen in Sub-Saharan Africa and South Asia, where malnutrition rates are the highest in the world.

Prior to the economic transition, unemployment rates were close to zero. Since the transition, unemployment rates have increased. Rates of unemployment are 10 percent in the Central European countries (Slovakia, Poland, and Hungary—men only) and in Bulgaria, Latvia, and the Russian Federation (men only) (TransMONEE database, 1997). Rates are higher in Central Asia but may be underreported there because many people do not feel it worth their while to collect limited benefits available.

## **Changes in the Availability of Food in the General Population**

Based on food availability data, which is not indicative of actual intake, all but the CAR and Caucasus regions had access to sufficient food, even during economic crisis. The FAO established minimum requirements of 2,300 kcal per capita per day which ensures sufficient food availability for a population. Although the availability of energy in the region decreased by 8 to 18 percent overall, energy availability did not fall below minimum requirements in the western former Soviet Union, South Eastern Europe, Central

Europe, and the Baltic States. In these subregions energy availability was high before the crisis. For example, daily energy availability in Albania decreased from 3,049 kcal per capita per day to 2,550 kcal, which is still adequate to meet the energy requirements of the population. However, vulnerable groups, in particular poor children and women, may not have adequate energy intakes because they are marginalized both within society, a situation that existed prior to the economic crisis, and because of the economic crisis itself.

The two subregions where energy intakes were compromised are the Caucasus and the CAR. In the Caucasus energy intake decreased by 28 percent from 2,100 kcal per capita per day to only 1,860 kcal, below the requirements for the population. In fact, 1990 energy intakes in the Caucasus can be compared with energy intakes in the poorest countries in Africa (i.e., Niger, Mali, and Togo) and Asia (Bangladesh). Food availability has changed for many food items in all regions as shown in Table 9.

As shown in Table 9, dramatic changes in the availability of meat, milk, and dairy products were experienced in all regions. However, because of high intake before the crisis, the availability of these foods is still adequate for the populations living in the western former Soviet Union, South Eastern Europe, Central Europe, and the Baltic States. Precrisis intakes were excessive due to high meat and milk subsidies, particularly in the western former Soviet Union and Central Europe, as mentioned previously.

The decrease in energy intake from animal products was not compensated, as would be expected, by an increase in cereal, bread, or potato consumption, except in the Caucasus where the availability of potatoes increased by 20 percent. Increased home production of foods has been used as a coping mechanism during the crisis, but not enough is known about what and how much is produced at home to draw any conclusions about how this food compensates for food previously purchased.

Even though the availability of foods is adequate, this does not necessarily reflect that all nutrients were adequate. A troubling figure for the region is the low availability of vegetables and melons, a popular fruit across the region that can be used as a proxy for fruit consumption. In the regions for which there are data, the availability of fruits

**Table 9.** Percentage Change in Food Availability Indicators from 1988–1995 by Subregion

	CAR	CAUCASUS	W. FSU	SEE	CE	BALTIC
<b>Average per capita daily meat availability</b>						
change (%)	–23	–57	–25	–5	–12	–44
g meat/d (1995)	93 g	79 g	137 g	110 g	189 g	145 g
g protein/d	19 g	16 g	27 g	22 g	37 g	29 g
<b>Average per capita daily milk and dairy availability</b>						
change (%)	–21	–56	–31	–20	–24	–31
g milk and dairy/d (1995)	482	427	701	290	405	871
g protein/d (2 oz of cheese)	18	18	18	18	18	18
g protein/d (from milk)	14	11	20	7	11	25
mg calcium/d (2 oz of cheese)	510	510	510	510	510	510
mg calcium/d (from milk)	480	417	730	261	392	512
<b>Average per capita daily bread and cereal availability</b>						
change (%)	—	–6	—	–1	4	16
g/d (1994)	—	425 g	—	430 g	340 g	301 g
<b>Average per capita daily vegetables and melons availability</b>						
change (%)	–11	–16	–22	—	—	—
g/d (1995)	230 g	236 g	233 g	—	—	—
<b>Average per capita daily potato availability</b>						
change (%)	–7	+20	–7	—	—	—
g/d (1995)	121 g	132 g	299 g	—	—	—

— Not available.

Sources: Heleniak and Dunlop, 1991; National Statistics, the Russian Federation, 1999; UNICEF/ICDC, 1997.

and vegetables has decreased by 10 to 20 percent and most countries, except Azerbaijan and Moldova, had to import fruits and vegetables to meet their needs (Zhogoleva, 1998). Before the crisis, the

average availability of fruits and vegetables was never higher than 200 to 300 grams per capita per day (recommended intake: five servings per day or 500 to 600 grams per day).

Iron intake has been affected in the region causing increased rates of anemia in certain vulnerable groups. For example, in Bulgaria prevalence of anemia in pregnant women increased by 19 percent between 1989 and 1992. As stated previously, in the Russian Federation, anemia in pregnant women increased from 12 percent in 1990 to 34 percent in 1995 (Goskomstat USSR, 1996). A reason for the increase in anemia may be a decrease in meat intake, the best source of absorbable iron, for some groups. In the Russian Federation grain products contribute most of the iron to the diet, but most of this iron is not well absorbed because of the presence of inhibitors of iron absorption. In Ukraine, the daily iron intake for a family of three is reportedly only 6.5 mg/day from meat and fish (The World Bank and Kiev International Institute of Sociology, 1995), which represents only 13 percent of the family's requirement for iron. Iron intake is greatly dependent on income, with the lowest decile consuming less than half the iron of the highest decile. Based on the availability of meat, iron intakes are lowest in the CAR and Caucasus where rates of anemia are known to be high in women and children (30 to 50 percent in women and 50 to 70 percent in young children, see Table 5). A change in the use or quality of health services also may be a reason for the increase in anemia prevalence. In addition, unsafe abortions are a cause of blood loss and anemia in many developing countries and where prevalence is high, unsafe abortions should be investigated as a cause of anemia in women.

Data from some small studies show that micronutrient intakes are either borderline or inadequate in a number of countries. In Hungary, diets of adults were found to be low in vitamin E, thiamin, riboflavin, and pyridoxine (vitamin B-6) and deficient in calcium, iron, and zinc (Biro et al., 1996; Anta et al., 1997). Schoolchildren in Moscow had inadequate intake of calcium, vitamin A, vitamin C, folic acid, thiamin, niacin, and riboflavin (Martinchik et al., 1997; Istomin and Mikhilov, 1997).

In a few countries in the region, fruit and vegetable consumption has increased. In Poland, for example, consumption of exotic fruits has increased almost three-fold from 1983 to 1994 with most of those increases occurring after 1991. Of interest in Poland is that mortality from cardiovascular disease declined during the same period (by 25 percent in the 20 to 44 age group and 15 percent in the 45 to 64 age group). Improvements in the medical system, health education, or a reduction in stress were not significant enough during this period to have caused this decrease; declines may have been due to changes in diet (Zatoński et al, 1996).

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## CHAPTER 5

# The Effects of the Economic Crisis on Nutritional Status

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### **Coping Mechanisms**

Households in the ECA region have responded to income and relative food price changes by increasing subsistence farming where land is available. One reason why increases in rates of malnutrition are not commensurate with decreases in real income may be because the shift to home production was rapid. From World Bank poverty reports for the region, it is evident that the poor are characterized by their inability to produce food. Those with access to land have been better able to cope during times of economic stress (World Bank Poverty Reports: Albania, 1997; Armenia, 1999; Belarus, 1996; Kazakhstan, 1998; the Russian Federation, 1995; and Ukraine, 1996). Lack of access to land is a key determinant of poverty in both urban and rural households. People in rural areas usually are better able to make this adjustment and maintain a more diversified diet because they have access to land, making it likely that deterioration in nutritional status was more serious in urban areas. For example, in Georgia, soup, bread, and tea are standard fare for poor urban families but rural families have a more varied diet because they have land to grow food on (Robertson, 1995.)

In several republics of the USSR, 60 percent of the families possess land. Gardening is especially common in the European part of the former USSR. In the Russian Federation, for example, people living in cities and towns were found to produce 88 percent of their potatoes, 43 percent of their meat, 39 percent of their milk, and 28 percent of their eggs on urban household plots (NRC, 1997). In Kazakhstan, one-third of food is produced at home, which might explain low rates of malnutrition in that country compared to other countries in Central Asia (World Bank Poverty Report: Kazakhstan, 1996).

In Romania the proportion of the family diet produced at home increased from 21 percent in 1990 to 31 percent in 1992 for families with at least one family member working, and from 68 to 80 percent for peasant families. Bulgarians rely heavily on the food they produce at home—40 percent of vegetables, 67 percent of fruit, and 30 percent of meat and dairy products are produced at home (UNICEF-ICDC, 1997). Data from Ukraine show that as many vegetables are produced as are purchased, and four times as many fruits are produced as purchased.

However, homegrown foods do not necessarily ensure food security for micronutrients. For example, Lithuanians produced more food at home than people in other countries (29 percent compared to 13 and 14 percent for Latvia and Estonia, respectively) but their fruit and vegetable consumption is lowest in the Baltic region (Nutrition and Health Surveys in the Baltic Region, 1999.) Throughout the region seasonal variation may limit the supply of fruits and vegetables and other foods, either produced at home or purchased. A study in Kazakhstan, for example, found that undernutrition and anemia rates were highest in June and July in children but not adults (Ismail and Hill, 1997).

## **Malnutrition in Vulnerable Groups**

Looking at food availability for a country or region can be deceiving because it represents what intake is possible for the total population but does not reflect what different groups are actually consuming.

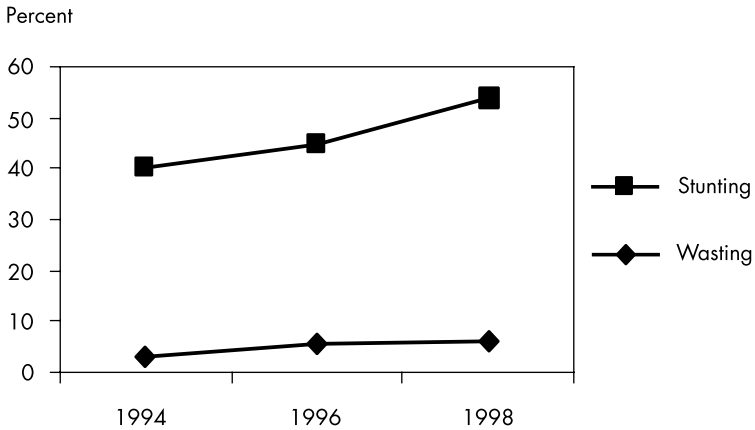
National food security means adequate food supplies through local production and imports, but this does not take into account inequitable distribution of food among households, household members, or even communities and regions. In the ECA region some groups have not been able to cope during economic crisis and transition.

World Bank poverty assessments for countries in the ECA region conclude that households with more children; young children, in particular institutionalized and street children; the elderly without pensions; and ethnic minorities are the poorest groups (World Bank Poverty Reports, various). Families with children have been enormously affected by the transition. Children represent the group with the highest probability of being poor, and each extra child in a family increases the household's probability of falling below the poverty line. A clear correlation exists between the number of children and the probability of living in poverty. Households with two children are twice as likely to be poor, households with three children are four times more likely, and households with more than three children are six to seven times more likely (Paniccia, 1997). In the Russian Federation, 37 percent of households with two children, 50 percent of households with three children, and 72 percent of families with four children fell below the poverty line in 1997. Given this trend it is not surprising that the proportion of Russian children aged 0 to 3 years in institutional care increased by almost 70 percent between 1989 and 1997 as parents found it increasingly difficult to care for all their children. There has been a 40 percent increase in children living in institutions in the western region of the former Soviet Union.

Tajikistan is the only country for which there are data on nutrition trends for the period of economic crisis and civil war. Both wasting and stunting in Tajikistan increased during that period (Figure 7). The deterioration happened in spite of relief and development activities of the government assisted by the Aga Khan development network.

Also, the most dramatic declines in meat intake in the region have been seen in Tajikistan. While meat intakes were low in 1988—only 82 grams or 2.90 oz. per capita per day—they declined even further to 38 grams or 1.34 oz. per capita per day, providing only 6 grams of

**Figure 7.** Wasting and Stunting in Children 6–59 Months Old in Gorno-Badakhshan Autonomous Oblast, Tajikistan



Source: Union of Journalists (GBAO), Tajikistan, various years.

protein from meat per capita per day. This decline in the availability of meat, along with a 20 percent decrease in the consumption of milk products, both of which are energy- and micronutrient-dense foods for young children, may have contributed to increased under-nutrition and iron deficiency in that country and possibly the rest of the CAR. Lack of knowledge about replacing animal products with other appropriate foods exacerbated the situation.

Malnutrition is clearly related to income in the region so that the poor are more at risk for malnutrition. In Bulgaria, food availability data show that people living at the lowest decile level have substantially less access to meat and milk products. However, this gap has increased from 1992 to 1997 (Box 6).

The lowest quintile of the population in Bulgaria obtains 57 percent of their energy needs from cereals compared to 36 percent for the highest quintile, and less than 5 percent of their energy from meat compared to the highest quintile who obtain 10 percent of

**Box 6. Food Consumption Changes in Bulgaria**

Following price liberalization in 1991, per capita consumption of milk, yogurt, and meat—protein and micronutrient dense foods—began to decline, particularly among the poor.

**Per capita consumption (kgs) of meat, milk, and yogurt in low and high income groups 1992–1997**

	1992	1993	1994	1995	1996	1997
<i>Meat</i>						
Lowest decile	19.0	16.9	14.0	12.6	12.0	7.4
Highest decile	55.5	54.7	44.4	45.4	45.6	36.8
Ratio	2.9	3.2	3.2	3.6	3.8	5.0
<i>Milk and yogurt</i>						
Lowest decile	61.7	43.0	40.1	30.5	32.1	22.4
Highest decile	96.0	94.0	101.0	98.4	93.5	87.1
Ratio	1.6	2.2	2.5	3.2	2.9	3.9

*Source:* UNICEF 1999a and 1999b; World Bank 1999a.

The table above shows that the disparity between rich and poor in the consumption of protein and micronutrient-dense foods has increased markedly between 1992 and 1997. In 1992 the wealthiest 10 percent of the population consumed almost three times more meat than the poorest 10 percent of the population. By 1997 the wealthiest 10 percent of the population were consuming more than five times the quantity consumed by the poorest. The change in milk and yogurt consumption, more relevant for the nutrition of small children, is even more marked. In 1992 the rich consumed just over one and one-half times more than the poor, but by 1997 were consuming almost four times as much. Yet there are three times more children, on average in the poorest group than the wealthiest. The Bulgarians show a good deal of reliance on their own production for food: almost 40 percent of vegetables, two thirds of fruit consumption, and around 30 percent of meat and dairy consumption.

their energy from meat. In addition to the effects on food intake, an analysis of health problems and utilization by the poor in the Kyrgyz Republic shows that children living in the poorest quintiles have higher malnutrition, infant and child mortality rates, and prevalence of diarrhea and acute respiratory infection than children living in the richest quintile (Gwatkin, et al, 2000).

## **Overconsumption**

As shown previously, while there have been changes in the availability of food, it is still adequate to meet requirements (on a per capita basis) in most countries. This is probably because food intake for many countries in the ECA regions has always been considerably higher than in other middle-income countries. In fact, the reduction in the availability of meat and dairy products, and thus in animal fat, may have been a positive trend in a region where obesity and cardiovascular disease, associated with high fat and energy intake, are prevalent. Food balance sheets, although not indicative of actual intake, show that the average availability per capita for energy, fat, and protein over the period 1961 to 1988, exceeded recommended levels suggested by WHO and FAO (Popkin, 1993).

Sedentary lifestyles of many increased in the region. High intake of fat and energy and lack of exercise are believed to be the major contributors to obesity, which increased in adults by 10 to 40 percent in East and Western Europe during the period 1987 to 1997, even though much of this period was during the economic crisis (WHO, 1997a). The ideal diet, as proposed by the American Heart Association, should contain no more than 30 percent of total energy from fat, and only one-third of that from animal fat; however, in many of the WFSU nations over 25 percent of energy in diets is obtained from animal fat (Popkin, 1993).

High consumption of animal products and fat are linked. Of the three Baltic States, Estonia has the lowest overweight and obesity rates and meat intake—30 percent lower (109 grams per capita per day) than in Latvia and Lithuania (164 grams of meat per capita per

day). During the period 1983 to 1986, Lithuania, with 22 percent of men and 45 percent of women obese, had the highest prevalence of obesity found during the MONICA study (Russian CINDI Report, 1999; WHO, 1997a). According to the national health and nutrition survey conducted in 1997, obesity has decreased impressively in that country to 18 percent for women, but it is unknown if this decline is due to targeted health promotion campaigns or removal of food subsidies, many of which subsidized high-fat foods such as meat and dairy products.

High levels of alcohol consumption are known in the region, and the additional energy to the diet contributes to overweight and obesity. In a study on behaviors, one-third to one-half of all women and men either did not know or did not think alcohol was high in energy (Pomerleau et al, 1999). In spite of decreases in other foods consumed for countries in the Central Asian Republics and Caucasus, alcohol consumption did not decrease from 1990 to 1994 (Falkingham et al., 1997).

## **A Closer Look at the Central Asian Republics**

The Central Asian Republics were the least developed and poorest region in the former Soviet Union. Two years before the fall of the Soviet Union, over 33 percent of the CAR population lived below the poverty line, in comparison to 5 to 7 percent in the rest of the region (Falkingham, et al., 1997). After independence, the CAR faced enormous challenges largely caused by their inheritance from the Soviet era.

As a welfare state, the Soviet Union ensured the necessary health services and adequate food for all Soviet citizens, including Central Asians, through centrally controlled, financed, and supplied health care and food distribution systems. Despite its shortcomings, including low quality services, the Soviet health care system met the basic needs of the Soviet people. However, even before independence, because of broader economic problems in the Soviet Union, the system started deteriorating and finally collapsed after

independence. The food system suffered from economic problems and lack of hard currency, since it had relied heavily on imports since the 1980s.

Before independence, the Soviet Union guaranteed full employment, basic services for all, and affordability of food for all its citizens, largely through cash transfers and substantial subsidies on all major food staples. Direct food subsidies, according to one publication, exceeded government expenditure on health and education (Food and agriculture reform in the former USSR, 1999). The depth of dependence on Moscow is clearly evident in the case of Tajikistan. At the time of independence Tajikistan relied on the Soviet Union for 80 percent of its fuel and 75 percent of its food (Aga Kahn Foundation, 1995). Uzbekistan received 19.5 percent of its GDP in assistance from Moscow in 1991. Understandably, independence, and subsequent removal or reduction of cash transfers and subsidies and cuts in many basic services, devastated the already poor republics. Particularly hard hit were the vulnerable groups: low-income groups; households with a large number of children; working, pregnant, nursing, and single mothers; and children. The elderly lost their guarantee to an adequate standard of living.

After independence the CAR suffered rapid, enormous inflation, massive unemployment, rising prices, and food shortages. Inflation rates in the first year of independence ranged from 840 percent in Uzbekistan to 1,760 percent in the Kyrgyz Republic (Dannreuther, 1994). The effect of this worsening situation was devastating to living standards. A general lack of savings and low preindependence salaries drastically decreased purchasing power and made coping difficult.

Unlike for many other former Soviet Republics, foreign donors and investors showed little interest in helping the CAR, with the bulk of foreign assistance going mainly to Eastern Europe (UNRISD, 2000).



## CHAPTER 6

# The Policy Environment and Existing Programs

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### **The Policy Environment**

Formal and informal institutions play an important role as the interface between underlying and basic causes to malnutrition. They provide basic services or promote improved practices regarding food production and child care. The economic stresses of the transition not only affected households, but it also affected institutions. For example, the quality control and monitoring of iodized salt and the purchase of essential micronutrients to produce enriched foods declined after the transition (Box 7).

### **Existing Programs**

An exhaustive review of programs in the ECA region was not conducted for this paper. Documentation of known programs and activities in selected countries can be found in the country information sheets in the Annex.

To date, most efforts to address malnutrition have been only on a small scale. Although behavior change should be a key component

### **Box 7. Decline in the Availability of Iodized Salt**

The former Soviet Union began iodizing salt in the 1950. By 1970 most of the IDD had been eliminated. However, due to poor and relaxed monitoring and the fact that the newly independent states were less able to purchase the sodium thiosulphate needed to iodate salt, it started to appear in non-iodized forms, increasing IDD prevalence in the region. For example, cases of goiter in certain oblasts in Ukraine increased by 100 percent between 1980 and 1990, and in Belarus there was a 300 percent increase in goiter prevalence in some oblasts after 1986. To exacerbate the situation, the consumption of fish, a rich source of iodine, declined in the region because people could no longer afford to eat it regularly coupled with reduced availability due to the demise of the Soviet fishing fleet. Only Slovakia and the Czech Republic have continued their iodization programs throughout this period, although Bulgaria reintroduced the program in 1995, and Poland, Armenia, and Ukraine revived their programs in 1997. Turkmenistan started producing iodized salt in 1996 and a monitoring and evaluation system will be introduced in 1999 with technical assistance from UNICEF.

*Source:* Gerasimov, 1999; UNICEF, undated.

for programs to address all types of malnutrition (undernutrition, obesity, or micronutrient malnutrition), the emphasis on behavior change has varied by program. The World Bank collaborates with WHO on their program called the Integrated Management of Childhood Illness (IMCI), which is being implemented in the Central Asian Republics. The program focuses mainly on the training of general practitioners to introduce a less traditional approach to child health. Nutrition management is part of the IMCI package, and currently child feeding recommendations are being developed to be used in the counseling component of that program. Counseling the mother on exclusive breastfeeding and appropriate weaning

practices is crucial in all countries of the ECA region; and the IMCI program provides a vehicle for reaching the mother and child. However, counseling on nutrition under IMCI needs to be closely supervised to ensure the quality.

Some work has been conducted in countries to improve specific breastfeeding practices. Activities have largely centered on making hospitals more supportive of breastfeeding (e.g., under the Baby Friendly initiative), and increasing community support of breastfeeding. Some educational and training materials have been developed to support these activities, but the impact of these efforts is unknown. The program Support for Breastfeeding, part of the Healthy Nutrition Policy in the Russian Federation that was implemented in the Elektrosal region, was very successful in increasing breastfeeding rates to 90 percent at three months and 85 percent at six months, in comparison to 50 percent and 30 percent, respectively, in the control regions. No data are available on exclusive breastfeeding rates.

Some policy work is being conducted in the Russian Federation by the Ministry of Health with the active support of WHO/EURO and UNICEF. A Russian Regional Healthy Nutrition Policy is being developed, research is being conducted, and small-scale programs are being tested in several regions of the Russian Federation. The Support for Breastfeeding program, mentioned above, is one example of those pilots.

As in most areas of the world, few programs address anemia prevalence. While iron supplements are recommended for pregnant women, only anemic women usually receive iron tablets. To reduce high levels of anemia adequately, a shift in the paradigm from curing anemia to preventing it is needed. Presently there appears to be little appreciation of the importance of preventing anemia in the region (Gerasimov and Baturin, undated), and the cause of anemia is usually defined as repeated and excessive blood loss. A curative approach to controlling anemia has led to policies that stress a medical approach. No large-scale programs to fortify foods with iron are known of, although the president of Turkmenistan has recently asked that all flour in that country be fortified with iron (Abramov, 1999).

A major problem in the region is the lack of access to iodized salt. Only 35 percent of the available food-grade salt is currently iodized in the region (see Table 10). As mentioned previously (Box 7) only Slovakia and the Czech Republic continued their programs to iodize salt throughout the last decade. Other countries have revived their programs and have made progress in making iodized food-grade salt available. Of note, 7 of 18 countries are either producing or importing only iodized salt (more than 92 percent of available food-grade salt is iodized in these countries) (Kiwanis International, 2000). Improvement in the availability of iodized salt has occurred through partnerships formed by UNICEF, with the help of Kiwanis International and other organizations, to support salt iodization activities. However, two major salt producers in the region, the Russian Federation and Ukraine, have been much slower in reaching universal salt iodization, only 12 and 37 percent, respectively, of salt is iodized in these countries. In several other countries only 50 to 70 percent of available food-grade salt is iodized. Overall, only 35 percent of the food-grade salt available in the region is currently iodized (see Table 10). Major challenges in the region include reintroducing the iodization technology to private salt producers, organizing and involving small salt producers, introducing and enforcing existing regulations, and controlling the trade of illegal salt.

The Health Promoting Schools project, a partnership between WHO, the European Union, and the European Commission, is active in 40 European countries including several in Eastern Europe. The project seeks to integrate health into all aspects of life through encouraging school-aged children and adolescents to adopt lifelong good-health behaviors. In Eastern Europe, the project seeks collaboration with the World Bank to expand the program to the other ECA region countries.

**Table 10.** Availability of Food-Grade Iodized Salt in 12 ECA Countries  
(all figures in metric tons)

COUNTRY	ESTIMATED QUARTERLY USE OF FOOD- GRADE SALT @ 3.5 KG/PER/YR	TOTAL FOOD- GRADE SALT AVAILABLE FROM PRODUCTION AND IMPORT	TOTAL IODIZED FOOD-GRADE SALT AVAILABLE FROM PRODUCTION AND IMPORT	IODIZED (%)
Armenia	2,946	2,816	2,816	100
Azerbaijan <sup>a</sup>	6,339	1,287	645	50
Belarus	9,196	79,393	8,948	11
Boznia and Herzegovina	4,107	7,135	7,135	100
Bulgaria	7,357	10,244	5,286	52
Croatia	4,196	3,567	3,567	100
Georgia <sup>a</sup>	4,821	2,471	1,396	56
Kazakhstan	14,286	11,306	5,986	53
Macedonia	2,411	2,338	2,338	100
Moldova <sup>a</sup>	4,018	826	438	53
Poland <sup>b</sup>	34,375	20,000	20,000	100
Romania	20,714	18,423	15,000	81
Russian Federation <sup>a</sup>	32,679	187,827	22,624	12
Tajikistan	4,821	9,650	7,618	79
Turkey <sup>a</sup>	58,036	11,969	9,206	77
Turkmenistan	3,750	9,100	8,400	92
Ukraine <sup>c</sup>	46,250	22,500	8,405	37
FR Yugoslavia	9,554	14,652	14,652	100
TOTAL	369,856	415,504	144,460	35

a. Data possibly incomplete in terms of total national production/import of food-grade salt.

b. Estimated production figures for table salt only.

c. Figures cover production of table salt only and only for domestic sales, not export.

Source: Kiwanis, 2000.

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# Recommendations and Conclusions

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## General Recommendations

Several recommendations can be made for improving the nutrition situation in the ECA region.

First, countries in the region should have nutrition policies with a set of nutrition goals that can guide programs. WHO-EURO (1998) has assisted countries since 1997 with the development of national nutrition plans. Many countries have or are in the process of developing their strategies. While national surveys are useful, these data are rarely used at the local level to identify problems, for planning, or to implement programs. Instead, a nutrition monitoring system should be developed for each country so that child growth and nutritional status are monitored and the information used in program planning. Nutritional status can and should be an indicator of poverty in the region. It is both a sensitive short-term and long-term indicator of economic change, and a means for evaluating program effectiveness.

Second, because much of the undernutrition in children and overweight and obesity in adults is due to lack of knowledge about what constitutes an adequate and healthy diet, in both quantity and quality,

improving communications for behavior change is urgently needed. Also important is behavior change for health professionals so they can deliver correct nutrition messages. An important area of assistance will be in developing institutional capacity in the medical profession for nutrition. In addition to policy development, upgrades in training programs, refresher courses in nutrition for all health staff, and building community capacity are crucial to reducing malnutrition in young children and adults. Qualitative research is needed to better understand why people select diets high in fat and low in micronutrients, and to identify those who can help disseminate important messages on these subjects. For example, a study in the Ukraine found that media influenced beliefs less than relatives and friends. Moreover, cost was identified as an influence on healthy food choices so it was recommended that strategies involving peer education and focusing on low-cost but healthy foods be designed (Oleg and Virginia, undated).

Third, nutrition should be integrated into a variety of sectors. Since access to health care and coverage of health services is good, much of the effort to address nutrition problems can be made through the health sector. However, other sectors, such as agriculture and education, also may play important roles, and nutrition should be integrated into these activities where appropriate. The private sector also may play a role in improving nutrition status in the region. For example, private sector salt producers and processors, along with the health sector, need to be part of the solution for reducing iodine deficiencies in the region.

Fourth, while economic policies to increase employment and incomes in families should continue to be a focus, these efforts alone will not improve the nutritional status of vulnerable groups throughout the region. Continuing efforts to alleviate poverty should be targeted to the groups identified as the very poor, such as families with several children. However, some assurance is needed that vulnerable groups will receive and consume any food or benefit from food subsidies or income transfers targeted for their benefit. Communications for behavior change within the family would help in this regard and should accompany efforts in this area. Care also should

be given to target programs to institutionalized children who might be in need of special programs to improve their nutritional status.

Fifth, certain areas of the ECA region are particularly vulnerable and should receive top priority. Nutritional status is very poor in Tajikistan, Uzbekistan, and in the rural areas of Kazakhstan, Azerbaijan, and Turkey. It is not recommended to give food to families in these countries but rather to target the vulnerable through food stamps or income transfers. Efforts should also be made to introduce programs that can prevent undernutrition through community-based programs such as growth monitoring and promotion.

Sixth, immediate action is required to reduce micronutrient malnutrition in the region. To reduce anemia prevalence in the region, greater attention needs to be placed on ensuring that all pregnant women and children 6 to 24 months old receive iron supplements. This might require a policy change in how anemia control is viewed. As stated previously, reducing anemia prevalence is only cost-effective when preventive measures are used to make sure all vulnerable groups are receiving supplements or eating iron-fortified foods. The feasibility of fortifying foods with iron should be investigated throughout the region. This will require identifying a food that is readily consumed by vulnerable groups. Flour is the most likely candidate. In the short-term, before fortification is in place, it may be feasible to give certain groups (e.g., schoolchildren, adolescents, and nonpregnant women) a daily or weekly dose of iron to reduce the high prevalence of iron deficiency in those segments of the population. In a supervised setting, the weekly dose is almost as effective as the daily dose and can be particularly effective where anemia is mild to moderately severe. However, because of their high requirements, women need to take a daily dose of iron during pregnancy, even after fortification programs are in place.

For iodine, countries need assistance in developing viable strategies and implementing them. The private salt industry will need help in upgrading equipment to iodize and package salt. Making the commodities needed to iodize salt affordably is important. The major salt producers and exporters of the former Soviet Union are in the Russian Federation, Ukraine, and Belarus and should be targeted

to ensure that they are iodizing salt for local consumption and export. At present, with a 3 to 7 percent price differential for iodized salt in these three countries, many consumers find they cannot afford to buy it. Iodized salt should be priced so all consumers can afford to purchase it.

Increasing the intake of all micronutrients is important to the region. Steps to be taken include reserving land for home production of fruits and vegetables, improving the production of micronutrient-rich foods, improving the technology in the region so that foods can be fortified, and educating consumers in order to increase demand for micronutrient supplements, fortified foods, and fruits and vegetables. However, cold food storage capacity during transport needs to be solved so that fruits and vegetables can be moved to areas where they are not now readily available.

Finally, efforts to improve intake for fruits and vegetables should be linked to campaigns to reduce energy and fat intake in adults across the region. Given the alarming increase in cardiovascular disease, diabetes, and hypertension, immediate attention to the adult diet and adult health behaviors, including smoking and alcohol consumption, is needed. Health projects should not only work to support curative care for these diseases and conditions, but work actively to prevent them in the first place. The challenge lies in educating and convincing governments to invest scarce resources in prevention.

## **Central Asian Republics and Caucasus**

As nutrition problems differ greatly among the subregions, different strategies are needed. The Central Asian Republics and the Caucasus suffer from high rates of undernutrition in children and micronutrient deficiencies in the population at large. In fact, it may be that nutritional status in the CAR is deteriorating even further due to declines in access to health services, education for women, safe water, and low immunization rates. Even though economic growth is picking up and prospects for future economic growth are positive, according to the Country Assistance Strategies for most

of the CAR countries, resource distribution is unequal and poverty remains a major problem. Malnutrition rates are closely linked to poverty, and nutrition interventions are crucial to stop further deterioration of the nutritional status. To address the nutrition problems in each country, nutrition should be a significant component of health and education projects or campaigns. Other sectors or programs, such as early childhood development and IMCI, should also be involved. Strategies here will include food fortification, particularly for iron and iodine and possibly for vitamin A, iron supplementation for pregnant women and children 6 to 24 months old, vitamin A supplementation, and education on breastfeeding and complementary feeding. Communications for behavior change are essential to improving nutritional status in young children and also adults suffering from cardiovascular disease, diabetes, and hypertension.

### **South and Eastern Europe and Western Former Soviet Union**

Micronutrient deficiencies remain a major problem in most of the countries in these subregions. Increased rates of anemia, and a breakdown in the salt iodization industry resulting in increased rates of goiter, are symptoms of the deterioration. High deficiency prevalence rates of two micronutrients (iron and iodine) are indeed troubling, yet can easily be rectified in countries where the food industry is well developed. The capacity to iodize salt needs improving in most countries; and education programs are needed to introduce and promote the consumption of foods fortified with iron for vulnerable groups.

In addition, obesity and related health problems are of major concern in most of the Eastern European and the western former Soviet Union countries. A cross-sectoral strategy is needed that includes a behavior change strategy to divert consumption from high fat/high energy foods to those rich in micronutrients, as well as agricultural policies that would help diversify food production and make fruits and vegetables more available and easily accessible.

Although not a concern nationally, there are pockets of undernourished children in these countries, and programs should be

targeted at specific groups (e.g., families at risk of poverty and displaced populations). Breastfeeding rates are extremely low, and efforts should be made to increase the practice of exclusive breastfeeding for infants under six months old. Poor feeding practices need attention and policies regarding feeding should be improved.

## Conclusions

The nutrition situation, like the economic, political, and social situation, is complex in the ECA region. As shown in this book, some countries have undernutrition rates similar to those found in Sub-Saharan Africa, while others have overweight and obesity problems similar to those found in the United States and Western Europe. In particular, vulnerable groups—including certain ethnic groups, women, and children—need special attention.

Thanks to relatively high educational levels throughout the region and some remnants of a food industry, it is likely that low levels of investment in food fortification and collaboration with other donors would yield high returns in the region. Undernutrition and micronutrient malnutrition could be greatly reduced by strengthening and promoting growth-monitoring activities and by supplementation and fortification of foods with micronutrients, together with nutrition education programs. By putting in place policies and programs to reduce rates of overweight and obesity, cardiovascular disease and diabetes could be largely prevented.

As discussed, many countries in the ECA region have some experience and are in the process of initiating programs, rehabilitating others (such as salt iodization), and strengthening existing programs. Donors can provide valuable technical assistance to countries in the development and strengthening of new and existing policies and institutions.



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ANNEX

# Detailed Information Sheets in Selected Countries

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This annex presents detailed nutrition information for selected countries in the ECA region. The purpose is to provide more detailed information on the nutritional status, existing policies, and ongoing programs for each country, since the diversity of the countries did not allow for this detail in the paper itself. It should be noted that this is not an exhaustive or complete review of all existing policies and programs, and additional research at the country level is needed. It does, however, provide a quick overview on nutrition.

The data sources used for the country sheets include:

- national statistics, TransMONEE, DHS, and WHO global databases for nutrition and child mortality indicators and micro-nutrients;
- national survey data and UNICEF data for child and maternal practices
- national statistics, DHS, and Goldstein, et al. (1996), World Bank Technical paper no. 348 for health and sanitation data;
- household budget surveys and poverty assessments for access to food data; and

- World Bank *World Development Indicators* for the economic context.

The program data are taken from national information made available by the country offices and WHO/EURO. The program data box only mentions existing programs and committees, but does not provide information regarding their quality or functioning.

The information on ongoing and pipeline portfolio is taken from World Bank databases. Pipeline information is subject to change.

**List of selected countries:**

Albania  
 Armenia  
 Azerbaijan  
 Georgia  
 Kazakhstan  
 The Kyrgyz Republic  
 Lithuania  
 Moldova  
 Romania  
 The Russian Federation  
 Tajikistan  
 Turkey  
 Uzbekistan

## ALBANIA

### Nutrition at a Glance

#### Basic data

CHILD MALNUTRITION, <sup>a</sup> DEATH, AND DISABILITY	ALBANIA	AVERAGE EUROPE AND CENTRAL ASIA
Stunting (chronic malnutrition) (1997)	23% (33% rural)	
Wasting (acute malnutrition)	7.4%	
Underweight	17.6%	
Overweight and obesity	—	
Low birth weight	5.4%	
Infant mortality rate (IMR)	26	23
Under five mortality rate (UM5R)	31	
Iron deficiency anemia (1997)	36%	22% children < 4, 24% pregnant women
Iodine deficiency in (prevalence of goiter in school-aged children)	—	
Vitamin A deficiency	—	
<b>Child care practices</b>		
Breastfeeding	—	
Weaning	—	
<b>Health and sanitation</b>		
Immunization rate (measles), proxy for access to health services	95%	
Access to safe water	—	
Births attended by trained health personnel	—	
"Baby friendly" health services	—	
Incidence of tuberculosis	8.8%	
Cardiovascular disease prevalence	—	
Alcohol consumption (annual liters/person)	—	
Nonsmokers in population	70%	
<b>Access to food</b>		
Daily energy supply per capita (1994)	2,550 kcal (estimate)	2, 850 kcal
Population below income poverty line	25% relative poverty, 30% rural poverty	

*(Table continued on next page)*

Nutrition at a Glance (continued)

CHILD MALNUTRITION, <sup>a</sup> DEATH, AND DISABILITY	ALBANIA	AVERAGE EUROPE AND CENTRAL ASIA
Land holdings/household plots	—	
<b>Economic context</b>		
Human Development Index	100	
GNP per capita (US\$ 1998)	810	2,310
Life expectancy at birth (male-female)	69–75	69
Adult literacy rate	—	

a. These data are from small studies that cover only certain time periods and districts. They are not national data.

b. Total goiter rate.

Sources: National statistics; WHO Global Malnutrition Database, 2000; TransMONEE, 1997; UNICEF, 1997; World Bank CAS, 1998; World Bank Poverty Reports, 1997; Goldstein et al., 1996; World Bank, 1999b.

## Existing Nutrition Programs, Policies, and Capacity

FOOD AND NUTRITION POLICIES	CURRENT PROGRAMS THAT ADDRESS UNDERNUTRITION	CURRENT PROGRAMS THAT ADDRESS MICRONUTRIENT MALNUTRITION	INFORMATION, EDUCATION, AND COMMUNICATION PROGRAMS	INSTITUTIONAL CAPACITY
<p>Action plan for IDD adopted in 1993.</p> <p>International Code<sup>a</sup> would be implemented in 1996, unknown status.</p>	<p>Lactation management training of health personnel.</p>	<p>Iodized salt production started in 1996, all imported. Price of iodized salt is higher than non-iodized salt.</p>	<p>Breastfeeding promotion via radio and TV since 1996.</p>	<p>National coordinating committee for IDD, since 1994 (MOH).</p> <p>National breastfeeding committee.</p> <p>NGOs working on breast-feeding.</p>
<b>World Bank portfolio</b>	<p>Health Recovery, 1998;</p> <p>Community Works, 1999;</p> <p>Recovery Program, 1999.</p>			
<b>CAS objectives related to nutrition</b>	<p>One of the three main objectives is to promote human development and poverty alleviation. Emphasis on working with NGOs and civil society.</p>			

a. International code on marketing breast-milk substitutes, prohibits the provision of free samples and publicity on breast-milk substitutes by health professionals.

Sources: World Bank CAS, 1998; WHO/EURO, 1998; WHO, 1999a; WHO, 1999b.

## **Nutrition Priority Problems and Existing Programs**

A Rapid Nutrition Assessment was conducted, with support from UNICEF, on a sample of Albanian children living in urban, rural, and mountains areas in 1997. While not nationally representative data, the results of the study show high levels of stunting, 23 percent, and wasting, 7.4 percent, both of public health concern. The highest stunting rates were found in the rural and plain areas, 33.3 percent and 28.5 percent respectively. Acute malnutrition or wasting was highest in mountainous areas, 10.4 percent.

In addition to undernutrition reflected in stunting and wasting indicators, micronutrient deficiencies, in particular iron and iodine, are of public health concern. Although an iodine deficiency plan of action was developed and adopted in 1993 and a national IDD committee has been established, goiter rates are still reported to be high (over 30 percent in some school-aged children), although no national figures exist.

In its favor, Albania has the lowest adult mortality rates in the region, which is attributed to its healthy Mediterranean diet, particularly in the Southern parts of the country. Programs to sustain healthy intakes of fish, olive oil, and fruits and vegetables are needed along with campaigns to improve infant feeding practices. Programs that target micronutrient deficiencies are important. Immediate attention should be given to ensuring that all salt in the country is iodized. Programs to prevent and reduce the prevalence of iron deficiency anemia also are needed.

## ARMENIA

### Nutrition at a Glance

#### Basic data

CHILD MALNUTRITION, DEATH, AND DISABILITY	ARMENIA	AVERAGE EUROPE AND CENTRAL ASIA
Stunting (chronic malnutrition)	13%	
Wasting (acute malnutrition)	4%	
Underweight	4%	
Overweight and obesity	3 6% overweight 11% obese women	12.1% (adults BMI > 30)
Low birth weight	7%	
Infant mortality rate (IMR)	15	23
Under-five mortality rate (UM5R)	20	
Iron deficiency anemia	30% children 15% women	22% children < 4, 24% pregnant women
Iodine deficiency (prevalence of goiter in school-aged children)	40%	18% (TGR <sup>a</sup> in population)
Vitamin A deficiency	—	
<b>Child care practices</b>		
Breastfeeding (1997)	21% exclusively breastfed 80% breastfed 0–6 months 40% 6–12 months	
Weaning	Tea at 3 months, cow's milk at 4 months	
<b>Health and sanitation</b>		
Immunization rate (measles), proxy for access to health services	92%	
Access to safe water	—	
Births attended by trained health personnel	93%	
"Baby friendly" health services	—	
Incidence of tuberculosis	—	
Cardiovascular disease prevalence	—	
Alcohol consumption (annual liters/person)	—	

*(Table continued on next page)*

Nutrition at a Glance (continued)

CHILD MALNUTRITION DEATH, AND DISABILITY	ARMENIA	AVERAGE EUROPE , AND CENTRAL ASIA
Nonsmokers in population	—	
<b>Access to food</b>		
Daily energy supply per capita	1,690 kcal (1993)	2,850 kcal
Population below income poverty line	55% in poverty, 28% under food line	
Land holdings/household plots	—	
<b>Economic context</b>		
Human Development Index	87	
GNP per capita (1998\$)	480	2,310
Life expectancy at birth (male-female)	70 (male)– 77 (female)	69 (male + female)
Adult literacy rate	—	

a. Total goiter rate.  
Sources: National statistics; Branca, 1998; WHO, 2000; TransMONEE, 1997; World Bank CAS, 1997; World Bank Poverty Reports, 1999.

## Existing Nutrition Programs, Policies, and Capacity

FOOD AND NUTRITION POLICIES	CURRENT PROGRAMS THAT ADDRESS UNDERNUTRITION	CURRENT PROGRAMS THAT ADDRESS MICRONUTRIENT MALNUTRITION	INFORMATION, EDUCATION, AND COMMUNICATION PROGRAMS	INSTITUTIONAL CAPACITY
Developed a National plan for nutrition in 1997.	Training of health staff in lactation management.	Iodization program with UNICEF support.	Public health education on breast-feeding consists of mass media campaigns.	Intersectoral committee on nutrition established in 1997.
National breast-feeding plan exists. The International Code <sup>a</sup> is not implemented but all hospitals have ended free distribution of breastmilk substitutes.				National breastfeeding committee.
<b>World Bank portfolio</b>	Health project, 1997.			
<b>CAS objectives related to nutrition</b>	Support social sustainability and poverty alleviation through strengthening of safety nets and improvements in access and quality to health and education.			

a. International code on marketing breast-milk substitutes prohibits the provision of free samples and publicity on breast-milk substitutes by health professionals.

Sources: World Bank CAS, 1997; WHO/EURO, 1998; WHO, 1999a; WHO, 1999b.

## Nutrition Priority Problems and Existing Programs

Poverty is a major problem in Armenia, in particular in the urban areas where the majority of Armenians live. However, poverty is deeper in the rural areas. Lack of access to land and unemployment are strong indicators of poverty: 70 percent of the poor do not have access to land and 38 percent of the unemployed are food poor. Fifty-nine percent of children under five are poor, 42 percent of women and 59 percent of the elderly.

Malnutrition rates are not considered of public health concern (according to WHO standards), but considering high poverty incidence, vulnerable groups may be at nutritional risk. Monitoring of child growth is crucial to prevent malnutrition from increasing. Since Armenia already has good child health services, with pediatricians visiting children at home until one year of age, growth monitoring and counseling during these visits should be emphasized.

Micronutrient deficiencies are of national concern in Armenia. UNICEF is already assisting with the iodization of salt, in particular to strengthen implementation. A recent study by the National Institute of Nutrition (1998) found that only 70 percent of households use iodized salt so there is much room for improvement. Iron deficiency is equally important; and fortification of a staple food, such as bread, which is consumed with every meal, should be considered. Despite successful breastfeeding campaigns (Hekimian, 1993), only 10 percent of children are breastfed exclusively and 20 percent are not breastfed at all. Exclusive breastfeeding up to six months, breastfeeding up to 24 months, and appropriate weaning practices should be promoted through training of health staff and growth promotion counseling. Antenatal care is practiced by most women and provides a channel for iron supplementation of pregnant women and education on exclusive breastfeeding and weaning. Training and strengthening of health staff should be considered.

Refugees, making up one-sixth of the population in Armenia, form a particularly vulnerable group. A study on the nutrition status of residents and refugees in Armenia—an estimated 500,000 in a total population of 3.3 million—was conducted in May 1998. Large re-

gional differences were found in stunting rates among children under five. In particular, high rates were found in the rural areas, both among residents and refugees. Private donations of food among friends and neighbors are common in Armenia, and most of the rural population (including refugees) have small garden plots. Refugees in general were found to have less varied diets than residents.

Overweight and obesity rates in Armenia are of public health concern. Thirty-six percent of women are overweight and 11 percent are obese, putting them at higher risk for cardiovascular disease, hypertension, and diabetes.

To reduce high rates of overweight and obesity in Armenia, more attention is needed on educating adults to make the right food choices. Improving breastfeeding and weaning practices should also be a priority, being careful to reinforce good practices in the country. Educational campaigns and strengthening of the private sector are needed to reduce micronutrient deficiencies.

**AZERBAIJAN**  
**Nutrition at a Glance**

**Basic data**

CHILD MALNUTRITION, DEATH, AND DISABILITY	AZERBAIJAN	AVERAGE EUROPE AND CENTRAL ASIA
Stunting (chronic malnutrition)	19.6% (21.7% rural)	
Wasting (acute malnutrition)	7.9%	
Underweight	16.8%	
Overweight and obesity	30 adults overweight	12.1% (adults BMI > 30)
Low birth-weight	4.5–9.5%	
Infant mortality rate (IMR)	12.8–79	23
Under-five mortality rate (UM5R)	102	
Iron deficiency anemia	40% newborns 52% under-fives 36% pregnant women	22% children < 4, 24% pregnant women
Iodine deficiency (prevalence of goiter in school-aged children)	20–29% (moderate)	18% (TGR <sup>a</sup> in population)
Vitamin A deficiency	—	
<b>Child care practices</b>		
Breastfeeding (1997)	9.4% exclusive at 2 months 39% at 6–9 months	
Weaning	Water and tea before 4 weeks, cow's milk before 3 months	
<b>Health and sanitation</b>		
Immunization rate (measles), proxy for access to health services	97%	
Access to safe water	76.3%	
Births attended by trained health personnel	99%	
"Baby friendly" health services	25%	
Incidence of tuberculosis	58.4/10,000 (1999)	
Cardiovascular disease prevalence	124.3/10,000	

*(Table continued on next page)*

## Nutrition at a Glance (continued)

CHILD MALNUTRITION, DEATH, AND DISABILITY	AZERBAIJAN	AVERAGE EUROPE AND CENTRAL ASIA
Alcohol consumption (annual liters/person)	—	
Nonsmokers in population	—	
<b>Access to food</b>		
Daily energy supply per capita	1,973 kcal (1994)	2,850 kcal
Population below income poverty line	60	
Land holdings/household plots	—	
<b>Economic context</b>		
Human Development Index	79	
GNP per capita (US\$ 1998)	350	2,310
Life expectancy at birth (male-female)	68.1% (male)– 75.1% (female)	69
Adult literacy rate	97.8% male 92.6% female	96%

a. Total goiter rate.

SSC: Health Care Statistical Yearbook, State Statistical Committee 2001.

MICS: Multiple Indicator Cluster Survey, UNICEF 2000.

UNDP: Human Development Report, UNDP 2001.

WHO/UNICEF: Joint Reporting Form, WHO/UNICEF 2001.

NIPE: National Immigration Programme Evaluation, MOH/UNICEF 1999.

Sources: National statistics; WHO, 2000; TransMONEE, 1997; UNICEF, 1998a;  
World Bank Poverty Report, 1999.

**Existing Nutrition Programs,  
Policies, and Capacity**

FOOD AND NUTRITION POLICIES	CURRENT PROGRAMS THAT ADDRESS UNDERNUTRITION	CURRENT PROGRAMS THAT ADDRESS MICRONUTRIENT MALNUTRITION	INFORMATION, EDUCATION, AND COMMUNICATION PROGRAMS	INSTITUTIONAL CAPACITY
No national policy, but coordination body is being established (1998).  Minimum consumer budget ratified in 1992.	25% of health services are baby-friendly.  Active program on breast-feeding in Baku.	Limited import of iodized salt.  National salt production 2,500 tons/year (opportunity to iodize).  A salt iodization law is being prepared with UNICEF assistance (1998).		National survey carried out in 1996 with assistance from CDC, UNICEF, and WHO.  The MOH is responsible for food safety. MOH provides training in dietetics.
<b>World Bank portfolio</b>	Water supply project, 1995; Agriculture Development Credit, 1999; Health project .			
<b>CAS objectives related to nutrition</b>	Alleviating poverty, promoting better nutrition and health and specific focus on IDP.			

Sources: WHO/EURO, 1998; World Bank CAS, 1999.

## Nutrition Priority Problems and Existing Programs

Azerbaijan has one of the highest chronic malnutrition rates in the region, in particular in the rural areas where more than one of every four children is too small for its age. Micronutrient deficiencies have a negative impact on overall health status and quality of life, and also reduce learning capacity and productivity in later life. Poor child care practices, such as low rates of exclusive breastfeeding and inadequate weaning practices, and insufficient access to food are the main causes of malnutrition. Sixty percent of the population cannot afford to purchase the minimum food basket, and the overall energy supply deficit is 14 percent. Other important determinants of nutritional status are more positive. For example, access to health services is good with 97 percent of children immunized and 99 percent of all births attended by trained health personnel.

Two programs currently address malnutrition problems: a breastfeeding program and a salt iodization program, although the latter is not active. The breastfeeding program is, according to available information, only active in the capital.

The internally displaced persons (IDP) form a large group in Azerbaijan and are among the poorest (25 percent of the poor are IDP). They also are at the highest risk of malnutrition. In fact, a recent nutrition survey (Branca et al., 1996) found a stunting rate of 31 percent among IDP, compared to 22 percent for residents. Another vulnerable group in Azerbaijan is the elderly, with 12 percent of them malnourished.

Paradoxically, in addition to Azerbaijan's large undernutrition problem, over consumption of high-energy foods is a public health concern, with 30 percent of adults overweight.

Like many other countries in the ECA region, undernutrition in young children and overweight in adults exist simultaneously. Communications for behavior change are needed to improve infant feeding, reduce micronutrient deficiencies, and decrease overweight in adults. Special attention is needed for IDP and programs need to be tailored for their situation. Immediate attention needs to be given

to iodizing salt by assisting producers and processors to ensure that only iodized salt is sold. Assistance may be needed to monitor the content of iodized salt and ensure that packaging protects its stability.

## GEORGIA

### Nutrition at a glance

#### Basic Data

CHILD MALNUTRITION, DEATH, AND DISABILITY	GEORGIA	AVERAGE EUROPE AND CENTRAL ASIA
Stunting (chronic malnutrition)	11.7% (IDP)	
Wasting (acute malnutrition)	2.3% (IDP)	
Underweight	3.1%	
Overweight and obesity	—	
Low birth-weight	4% (year 1999) (MOH)	
Infant mortality rate (IMR)	17	23
Under-five mortality rate (UM5R)	19	
Iron deficiency anemia	30-40% of pregnant women	22% children < 4, 24% pregnant women
Iodine deficiency (prevalence of goiter in school-aged children)	49% (of all screened children)	18% (TGR <sup>a</sup> % in population)
Vitamin A deficiency	—	
<b>Child care practices</b>		
Breastfeeding (1997)	83.8% ever breastfed (< 5 years old) 17.9% exclusive (4 months) 12.2% timely complementary (6–9 months) 12% continued breast- feeding (12–23.9 months)	
Weaning	—	
<b>Health and sanitation</b>		
Immunization rate (measles), proxy for access to health services <sup>b</sup>	73% measles 42.6% fully immunized (< 12 months of age)	
Access to safe water <sup>b</sup>	89.4% urban 61.2% rural 75.6% country	

(Table continued on next page)

Nutrition at a Glance (continued)

CHILD MALNUTRITION, DEATH, AND DISABILITY	GEORGIA	AVERAGE EUROPE AND CENTRAL ASIA
Births attended by trained health personnel	98.5% urban 94.2% rural 96.4% country	
"Baby friendly" health services	15%	
Incidence of tuberculosis	—	
Cardiovascular disease prevalence	—	
Alcohol consumption (annual liters/person)	—	
Nonsmokers in population	53% of male and 15% of females aged 10 to 74 smoke in Georgia 65% non-smokers	
<b>Access to food</b>		
Daily energy supply ) per capita (household budget survey, 1995	1,940 kcal	2,850 kcal
Population below income poverty line	—	
Land holdings / household plots	—	
<b>Economic Context</b>		
Human Development Index	85	
GNP per capita (1998\$)	930	2,310
Life expectancy at birth (male-female)	69–77	69
Adult literacy rate	98.8%	96%

a. Total goiter rate.  
b. UNICEF – Multiple Indicator Cluster Survey, 2000.  
Sources: National statistics; WHO, 2000; TransMONEE, 1997; UNICEF, 1999a and 1999b; World Bank CAS, 1997; World Bank, 1999b.

## Existing Nutrition Programs, Policies, and Capacity

FOOD AND NUTRITION POLICIES	CURRENT PROGRAMS THAT ADDRESS UNDERNUTRITION	CURRENT PROGRAMS THAT ADDRESS MICRONUTRIENT MALNUTRITION	INFORMATION, EDUCATION, AND COMMUNICATION PROGRAMS	INSTITUTIONAL CAPACITY
<p>National action plan for IDD adopted in 1996.</p> <p>Breastfeeding policy in place, but the International Code<sup>a</sup> is not implemented.</p>	<p>Lactation training management for health staff.</p> <p>Wellstart breastfeeding program since 1995.</p>	<p>Iodized salt imported.</p>	<p>Breastfeeding week, media coverage, “medical students for breastfeeding.”</p>	<p>National coordinating committee for IDD, since 1996 (MOH, Ag., Ed.)</p> <p>National committee on breastfeeding.</p> <p>NGOs working on breastfeeding promotion.</p>
<b>World Bank portfolio</b>	<p>Health I, 1996; Agriculture Dev., 1997; Social Investment Fund, 1997; Health II (pipeline).</p>			
<b>CAS objectives related to nutrition</b>	<p>One of four main CAS objectives is poverty alleviation aiming at preventing a deterioration of human capital and strengthening of social safety nets.</p>			

a. International code on marketing breastmilk substitutes prohibits the provision of free samples and publicity on breastmilk substitutes by health professionals.

Sources: World Bank, CAS 1997; WHO/EURO, 1998; WHO, 1999a and 1999b.

## Nutrition Priority Problems and Existing Programs

Very limited data are available on child malnutrition in Georgia, but small studies conducted in 1998 provide some insights. The Institute of Pediatrics evaluated the nutritional status of children under five and concluded that malnutrition was not prevalent. The second study targeted IDP, and the results show 25 percent stunting and 3 percent wasting. Although food supplies have decreased, there is no immediate nutrition or food crisis. The situation, however, might become difficult for the vulnerable groups, the internally displaced persons and the poor, in particular the urban unemployed poor without access to land.

Regarding micronutrient deficiencies, according to Ministry of Health (MOH) reports, 40 percent of newborns are iron deficient, reflecting maternal anemia. The routine reporting of incidence of anemia by the MOH shows 30 to 40 percent of pregnant women are anemic. In 4 percent of the cases, anemia contributed to the complications of delivery (more than a two-fold increase since 1990 from 1.9 to 4.2 percent in 1998). The Institute of Pediatrics found 52 percent of children raised at home and 64 percent of those attending kindergarten were suffering from moderate to mild anemia. Iodine deficiency remains a problem in Georgia. According to MOH information, iodine deficiency recorded in medical institutions in 1997 affected 58 percent of children under five. A survey commissioned by UNICEF among school-aged children showed 64 percent goiter prevalence.

Priority nutrition problems in Georgia are iodine and iron deficiencies. Even though there is a national committee on IDD and a national plan for control of IDD, iodine deficiency remains a major problem. Changes in the environment, as well as the disruption of iodized salt imports from 1992 to 1995, have contributed to the increased prevalence. Iron deficiency is clearly increasing and is of public health concern. Effective measures to fortify staple foods such as wheat flour with iron are widely known, and should be considered together with immediate action to rebuild the salt iodization system.

More information is needed about rates of undernutrition in the country. However, like the rest of the ECA region, attention should be focused on counseling mothers to improve breastfeeding and weaning practices. Growth monitoring, and its promotion, should be piloted in the country to see if this type of intervention is effective in improving the nutritional status of young children.

## KAZAKHSTAN

### Nutrition at a glance

#### Basic data

CHILD MALNUTRITION, DEATH, AND DISABILITY	KAZAKHSTAN	AVERAGE EUROPE AND CENTRAL ASIA
Stunting (chronic malnutrition)	21.8% rural (31% poor), 7.5% urban	
Wasting (acute malnutrition)	3% rural, 3.7% urban	
Underweight	3.8% rural, 4.9% urban	
Overweight and obesity	47% women, 34% men overweight, 20% women, 8% men obese	12.1% (adults BMI > 30)
Low birth weight	6%	
Infant mortality rate (IMR)	41	23
Under-five mortality rate (UM5R)	48	
Iron deficiency anemia	69% of children < 5, 30% mild, 34% moderate and 5% severe. 49% women (15–49), 37% mild, 11% moderate	22% children < 4, 24% pregnant women
Iodine deficiency (prevalence of goiter in school-aged children)	20%	18% (TGR <sup>a</sup> % in population)
Vitamin A deficiency	—	
<b>Child care practices</b>		
Breastfeeding (1997)	10% exclusively breastfed 4 months 70% at 6 months	
Weaning	Water, tea, and sugar at 1 month, cow's milk at 3 months	
<b>Health and sanitation</b>		
Immunization rate (measles), proxy for access to health services	72%	

*(Table continued on next page)*

## Nutrition at a Glance (continued)

CHILD MALNUTRITION, DEATH, AND DISABILITY	KAZAKHSTAN	AVERAGE EUROPE AND CENTRAL ASIA
Access to safe water	71%	
Births attended by trained health personnel	100%	
"Baby friendly" health services	Less than 1 %	
Incidence of tuberculosis	—	
Cardiovascular disease prevalence	—	
Alcohol consumption (annual liters/person)	—	
Nonsmokers in population	—	
<b>Access to food</b>		
Daily energy supply per capita	—	
Population below income poverty line	35%	
Land holdings/household plots	—	
<b>Economic Context</b>		
Human Development Index	76	
GNP per capita (1998\$)	1,310	2,310
Life expectancy at birth (male-female)	60 (male)– 70 (female)	69
Adult literacy rate	—	

a. Total goiter rate.

Sources: National statistics; Macro International 1995; WHO, 2000; TransMONEE; UNICEF 1999a and 1999b; World Bank CAS, 1997; World Bank, 1999b.

Existing Nutrition Programs,  
Policies, and Capacity

FOOD AND NUTRITION POLICIES	CURRENT PROGRAMS THAT ADDRESS UNDERNUTRITION	CURRENT PROGRAMS THAT ADDRESS MICRONUTRIENT MALNUTRITION	INFORMATION, EDUCATION, AND COMMUNICATION PROGRAMS	INSTITUTIONAL CAPACITY
A national nutrition policy is being developed.	Training on lactation management for health staff.	Mother care Basics.	Since 1997, breastfeeding week. TV campaigns.	A nutrition council was formed in 1995. National assessments have been conducted, basic data exist.
A national breastfeeding policy is established.	Integrated Management of Childhood Illness program with nutrition component.		Healthy Lifestyle program.	Experienced national institute for nutrition.
International Code <sup>a</sup> not implemented.				A national breastfeeding committee exists.
				NGOs promote breastfeeding.
				The Healthy Lifestyle program laid grounds for partnerships in the field of health promotion.
World Bank portfolio	Health project, 1999; Social Protection, 1995.			
CAS objectives related to nutrition	Social issues remain high on the agenda, including improvement of social safety nets.			

a. International code on marketing breastmilk substitutes prohibits the provision of free samples and publicity on breastmilk substitutes by health professionals.

Sources: World Bank CAS, 1997; WHO/EURO, 1998; WHO, 1999a and 1999b.

## Nutrition Priority Problems and Existing Programs

Malnutrition rates in Kazakhstan are high, particularly in the rural areas and among the poor (31.4 percent compared to a national average of 15.8 percent). Poverty is deeper in the rural areas, and especially in households with many children. However, the rural poor have more access to land than the urban poor, and one-third of all food consumed in 1996 was produced at home (World Bank Poverty Report, 1998).

In addition to undernutrition and micronutrient deficiencies, overweight and obesity are major problems in Kazakhstan, and cardiovascular disease is believed to cause up to 50 percent of all mortality (Healthy Lifestyle Program Report, 1999). Recent data from the Healthy Lifestyle program reports 47 percent of the women are overweight and 34 percent of men, with about 15 percent suffering from obesity. Only 8 of 100 people exercise regularly, and the common diet includes high-fat and high-carbohydrate foods and few fruits and vegetables. Although there are no national data, smoking rates in one oblast are 62 percent for men and 9 percent for women. In 1997 more than 200,000 patients were registered for alcohol abuse.

Priority issues for Kazakhstan include micronutrient supplementation and fortification of staple foods. Improving knowledge of healthy nutrition is another important area, not only to prevent overweight and obesity, but also undernutrition due to incorrect beliefs and inadequate knowledge. For example, the Ministry of Health reports that 32 percent of women suffer from hypogalactia, a term used when women cannot produce breastmilk. It is, however, well recognized that this not a medical condition but a syndrome created by uninformed health professionals, strict breastfeeding schedules, separating mothers from their children, and early introduction of weaning foods. Tea is often given to infants at a very early age, reducing iron absorption. Training of health providers on good nutrition practices and consulting techniques is needed to ensure that breastfeeding and weaning practices are optimized in the country.

THE KYRGYZ REPUBLIC  
Nutrition at a Glance

Basic data

CHILD MALNUTRITION, DEATH, AND DISABILITY	KYRGYZ REPUBLIC	AVERAGE EUROPE AND CENTRAL ASIA
Stunting (chronic malnutrition)	24.8% (33.9% lowest quintile, 14.3% highest quintile)	
Wasting (acute malnutrition)	3.4 %	
Underweight	11%	
Overweight and obesity	8.6% women (15-49)	12.1% (adults BMI > 30)
Low birth weight	6.3%	
Infant mortality rate (IMR)	66	23
Under five-mortality rate (UM5R)	76	
Iron deficiency anemia	50% of children < 3 are mildly to severely anemic 38% of women, 15–49	22% children < 4, 24% pregnant women
Iodine deficiency (prevalence of goiter in school-aged children)	20% (recent data indicates rising rates, with pockets of 90%)	18% (TGR <sup>a</sup> % in population)
Vitamin A deficiency	—	
<b>Child care practices</b>		
Breastfeeding (1997)	98% 0–3 months of which 31% exclusive, 81% 8–11 months	
Weaning	Median age of introduction of weaning foods is 5 months	
<b>Health and sanitation</b>		
Immunization rate (measles), proxy for access to health services	85%	
Access to safe water	75%	
Births attended by trained health personnel	98%	
“Baby friendly” health services	0%	

(Table continued on next page)

**Nutrition at a Glance (continued)**

CHILD MALNUTRITION DEATH, AND DISABILITY	KYRGYZ REPUBLIC	AVERAGE EUROPE AND CENTRAL ASIA
Incidence of tuberculosis	—	
Cardiovascular disease prevalence	—	
Alcohol consumption (annual liters/person)	—	
Nonsmokers in population	—	
<b>Access to food</b>		
Daily energy supply per capita	2,069 kcal (1994)	2,850 kcal
Population below income poverty line	40%	
Land holdings/household plots	—	
<b>Economic context</b>		
Human Development Index	97	33 highest– 108 lowest
GNP per capita (1998\$)	350	2,310
Life expectancy at birth (male-female)	63 (male)– 71 (female)	69
Adult literacy rate	97%	96%

a. Total goiter rate.

Sources: National statistics; Macro International, 1997; WHO, 2000; TransMONEE, 1997; UNICEF, 1999a and 1999b; World Bank CAS, 1998; World Bank 1999b.

**Existing Nutrition Programs,  
Policies, and Capacity**

FOOD AND NUTRITION POLICIES	CURRENT PROGRAMS THAT ADDRESS UNDERNUTRITION	CURRENT PROGRAMS THAT ADDRESS MICRONUTRIENT MALNUTRITION	INFORMATION, EDUCATION, AND COMMUNICATION PROGRAMS	INSTITUTIONAL CAPACITY
A national breastfeeding policy and a plan of action exists, although the International Code <sup>a</sup> has not been implemented. A law is being drafted.	Training on lactation management.  The Asian Development Bank is preparing an ECD project.  Integrated Management of Childhood Illness Program with nutrition component.		Public health education on breastfeeding.	National breastfeeding commission exists and NGOs are promoting breastfeeding.  The MOH has established a well- functioning network to train health workers.  The Sanitary-Epidemiological Surveillance System is responsible for food safety and food handling activities. It does not have a function in health promotion or disease prevention.
<b>World Bank portfolio</b>	Social Safety Net project, 1994; Agriculture support services, 1998; Health project, 1996; Social Sector Adjustment, 1998; Health project, 2000.			
<b>CAS objectives related to nutrition</b>	Alleviating poverty through improving basic social services.			

a. International code on marketing breastmilk substitutes prohibits the provision of free samples and publicity on breastmilk substitutes by health professionals.  
Sources: World Bank CAS, 1998; WHO/EURO, 1998; WHO, 1999a and 1999b.

## Nutrition Priority Problems and Existing Programs

As in most of the CAR, nutrition and health indicators have deteriorated since independence. Malnutrition rates among children (0 to 6 years) increased by 25 percent between 1993 and 1996 (World Bank CAS–Kyrgyz Republic, 1998). Life expectancy declined in the early 1990s; and although it has improved since 1995, it has not reached the pre-1990 levels. Mortality from circulatory disease is the leading cause of death in the Republic (World Bank CAS–Kyrgyz Republic, 1998). Major risk factors for these high levels are excessive consumption of high-fat foods, tobacco, and alcohol. Equally worrying are the trends in communicable diseases. WHO data indicate that the Kyrgyz Republic has the highest level of respiratory disease in the NIS countries, and infectious and parasitic diseases are considerably higher in 1998 than in 1990. Mortality and ill health are greater among the poor. A World Bank analysis of 1997 DHS data found that infant mortality is 1.8 times greater among the poor than among the higher quintiles, and malnutrition rates (stunting) are 2.4 times as high among the poor than the rich. Anemia rates are very high, both among young children and women of childbearing age. Iodine deficiency is alarmingly high, with some oblasts reporting total goiter rates of 90 percent. Breastfeeding is almost universal, but rates of exclusive breastfeeding are very low and weaning practices are inadequate.

Despite an impressive track record of macrostabilization and policy reform, poverty has increased in the Kyrgyz Republic. Real wages and consumption are about 40 percent below the former levels. In particular agricultural growth is constrained by land scarcity and low productivity. Even before independence one-third of the Kyrgyz population lived below the poverty line. After independence this increased to half of the population. Rural households are 1.6 times more likely to be poor than urban households. Households with young household heads or many children are most likely to be poor.

The institutional setting of nutrition is limited and mainly under the Ministry of Health (MOH). Public health services are provided through the Sanitary-Epidemiological Surveillance System (SES) under this ministry, including food safety and food handling activities

control. It does not have a function in health promotion or disease prevention. The MOH, however, did establish an impressive network of health providers trained in basic nutrition, but the training is based on obsolete principles (ADB, 2000). For rural populations, the primary care providers are midwifery posts and rural physician centers. For the urban population, primary care is provided in polyclinics and outpatient departments.

Immediate attention is needed to address the most pressing nutrition problems in the country. There needs to be a commitment by the government to iodize all salt and support for the private sector to ensure not only that salt is iodized but also that the levels of iodine are constantly monitored in the country. Fortification of flour or other staples with iron should be investigated to reduce high rates of anemia. Educational campaigns should be implemented to address other problems such as poor infant feeding practices and high fat intakes.

## LITHUANIA

### Nutrition at a Glance

#### Basic data

CHILD MALNUTRITION, DEATH, AND DISABILITY	LITHUANIA	AVERAGE EUROPE AND CENTRAL ASIA
Stunting (chronic malnutrition)	—	
Wasting (acute malnutrition)	—	
Underweight	14% boys (7–18 years) and 29% girls (7–18 years), 1995	
Overweight and obesity	60% women overweight 18% women obese	12.1% (adults BMI > 30)
Low birth weight	—	
Infant mortality rate (IMR)	10	23
Under-five mortality rate (UM5R)	13	
Iron deficiency anemia	—	22% children < 4, 24% pregnant women
Iodine deficiency (prevalence of goiter in school-aged children)	5–19%	18% (TGR <sup>a</sup> % in population)
Vitamin A deficiency	—	
<b>Child care practices</b>		
Breastfeeding (1997)	23% until 4 months 10% until 6 months	
Weaning	—	
<b>Health and sanitation</b>		
Immunization rate (measles), proxy for access to health services	96%	
Access to safe water	—	
Births attended by trained health personnel	—	
“Baby friendly” health services	—	
Incidence of tuberculosis	54.3 (70% increase from 1989)	
Cardiovascular disease prevalence	—	
Alcohol consumption (annual liters/person)	4.6	

*(Table continued on next page)*

**Nutrition at a Glance (continued)**

CHILD MALNUTRITION, DEATH, AND DISABILITY	LITHUANIA	AVERAGE EUROPE AND CENTRAL ASIA
Nonsmokers in population, or annual cigarette consumption/person	1,312 annual cigarette consumption	
<b>Access to food</b>		
Daily energy supply per capita	—	
Population below income poverty line	—	
Land holdings/household plots	—	
<b>Economic context</b>		
Human Development Index	62	
GNP per capita (1998\$)	2,440	2,310
Life expectancy at birth (male-female)	66 (male)– 77 (female)	69
Adult literacy rate	99%	96%

a. Total goiter rate.  
*Sources:* National statistics; WHO, 2000; TransMONEE, 1997; UNICEF, 1999a and 1999b; World Bank CAS 1999; World Bank, 1999b.

## Existing Nutrition Programs, Policies, and Capacity

FOOD AND NUTRITION POLICIES	CURRENT PROGRAMS THAT ADDRESS UNDERNUTRITION	CURRENT PROGRAMS THAT ADDRESS MICRONUTRIENT MALNUTRITION	INFORMATION, EDUCATION, AND COMMUNICATION PROGRAMS	INSTITUTIONAL CAPACITY
<p>A national plan of action for nutrition is developed jointly by the Ministries of Health and Agriculture in a interdepartmental commission.</p> <p>No national breastfeeding policy exists and the International Code<sup>a</sup> is not implemented.</p>	<p>Training of health personnel on breastfeeding. Healthy Nutrition and Weight program, ongoing.</p> <p>School breakfast and lunch programs stopped due to financing problems.</p>	<p>Lithuania imports salt, the consumer pays leaflets, and iodized salt, which is more expensive.</p>	<p>Public education on breastfeeding (TV programs, and NGOs newspaper articles).</p>	<p>National breastfeeding committee exists promoting breastfeeding.</p> <p>National nutrition center exists and runs a food monitoring program.</p>
<b>World Bank portfolio</b>	Health project ongoing plus ongoing Social Policy and Community Services.			
<b>CAS objectives related to nutrition</b>	Designing cost-effective social safety net and human development programs to reduce short-term and structural poverty.			

a. International code on marketing breastmilk substitutes prohibits the provision of free samples and publicity on breastmilk substitutes by health professionals.

Sources: World Bank CAS 1999; WHO/EURO, 1998; WHO, 1999a and 1999b.

## **Nutrition Priority Problems and Existing Programs**

The Ministry of Health, jointly with the Ministry of Agriculture, analyzed the nutrition and health situation in 1996 and identified the following priority problems:

- low levels of breastfeeding;
- lack of nutrition and food policies;
- high fat intake and micronutrient deficiencies; and
- lack of safe drinking water.

According to the MONICA study data and the latest WHO data on overweight, Lithuania's obesity rates decreased significantly from 40 to 18 percent during the period. It is difficult to make a causal link to healthy eating campaigns, but most probably it has supported improved knowledge on food and dietary behavior. However, much more remains to be done, not only regarding overweight and obesity, but also breastfeeding promotion, weaning practices, and micronutrients.

Very limited data are available on micronutrient deficiencies. However, one small study in 1994 in 28 secondary schools showed an alarming 53 percent goiter rate among the schoolchildren. More data collection and analysis is recommended. However, until that information is available, the country should ensure that all salt is iodized. Instituting of monitoring of iodine levels in salt is needed. Ways should be found to address high rates of anemia, particularly in pregnant women and children under two years of age. Fortifying flour or other staples with iron should be considered. Education campaigns should be designed and implemented to improve breastfeeding and weaning practices and healthy food choices.

## MOLDOVA

### Nutrition at a Glance

#### Basic data

CHILD MALNUTRITION, DEATH, AND DISABILITY	MOLDOVA	AVERAGE EUROPE AND CENTRAL ASIA
Stunting (chronic malnutrition)	—	
Wasting (acute malnutrition)	—	
Underweight	—	
Overweight and obesity	—	
Low birth weight	6%	
Infant mortality rate (IMR)	20	23
Under-five mortality rate (UM5R)	26	
Iron deficiency anemia	28% among children 20% among women	22% children < 4, 24% pregnant women
Iodine deficiency (prevalence of goiter in school-aged children)	5–20%	18% (TGR <sup>a</sup> % in population)
Vitamin A deficiency	—	
<b>Child care practices</b>		
Breastfeeding (1997)	75% at 3 months 55% at 6 months	
Weaning	—	
<b>Health and sanitation</b>		
Immunization rate (measles), proxy for access to health services	99%	
Access to safe water	62%	
Births attended by trained health personnel	—	
"Baby friendly" health services	—	
Incidence of tuberculosis	—	
Cardiovascular disease prevalence	—	
Alcohol consumption (annual liters/person)	—	
Nonsmokers in population	—	

*(Table continued on next page)*

**Nutrition at a Glance (continued)**

CHILD MALNUTRITION, DEATH, AND DISABILITY	MOLDOVA	AVERAGE EUROPE AND CENTRAL ASIA
<b>Access to food</b>		
Daily energy supply per capita (1995)	2,226 kcal	2,850 kcal
Population below income poverty line	—	
Land holdings/household plots	—	
<b>Economic context</b>		
Human Development Index	104	
GNP per capita (1998\$)	410	2,310
Life expectancy at birth (male-female)	63 (male)– 70 (female)	69
Adult literacy rate	—	96%

a. Total goiter rate.  
*Sources:* National statistics; WHO, 2000; TransMONEE, 1997; UNICEF, 1999a and 1999b; World Bank CAS, 1999; World Bank, 1999b.

## Existing Nutrition Programs, Policies, and Capacity

FOOD AND NUTRITION POLICIES	CURRENT PROGRAMS THAT ADDRESS UNDERNUTRITION	CURRENT PROGRAMS THAT ADDRESS MICRONUTRIENT MALNUTRITION	INFORMATION, EDUCATION, AND COMMUNICATION PROGRAMS	INSTITUTIONAL CAPACITY
National Plan of Action for IDD adopted in 1998.	Lactation management training for health staff.	Salt iodization started in 1994 and iodized salt is imported. A 1999 report shows 60% of salt is iodized, covering 50% of the population.	Newsletter on breastfeeding.	National Committee on IDD control since 1998 (MOH, Ag., Ed.).
National breastfeeding policy in place, International Code <sup>a</sup> implemented since 1984, by law. Monitoring in effect, but no enforcement.				A study on vitamin A is conducted with support from UNICEF.
<b>World Bank portfolio</b>	Social Investment Fund, 1999; Social Protection, 1999; Health Investment Fund, 1998; Health reform (pipeline).			National breast-feeding committee exists.
<b>CAS objectives related to nutrition</b>	Poverty reduction.			

a. International code on marketing breastmilk substitutes prohibits the provision of free samples and publicity on breastmilk substitutes by health professionals.

Sources: World Bank CAS 1999; WHO/EURO, 1998; WHO, 1999a and 1999b.

## Nutrition Priority Problems and Existing Programs

According to the 1996 report on the situation of the mother and child in the Republic of Moldova, the nutritional status of mothers and children has suffered from the economic crisis. Low birth weight increased by 26 percent from 1994 to 1995. Anemia among pregnant women increased from 12.4 percent in 1984 to 41.1 percent in 1995. Maternal mortality, after falling to 26 per 100,000 live births in 1994, increased to 41 in 1995. According to the report, the principle causes for this increase are abortions, hemorrhages, and infections; but contributing to that mortality are the high rates of iron deficiency in pregnant women, with 50 percent affected (UNICEF, 1996). Moldova has seen a sharp decline in specialized food stores for pregnant women, where future mothers were offered special food at low prices or for free.

Anemia prevalence is high in children, with 28 percent anemic, and women, with 20 percent anemic. Goiter prevalence was 37 percent, with higher rates in the central and northern provinces—39 percent and 42 percent, respectively. At the same time preventive measures such as salt iodization and iodized bread are not being implemented. There were no data available on vitamin A deficiency at the time of the report.

At the same time alcoholism has become a problem is national concern; 20 percent of alcoholics are women and alcoholism is increasing among youth.

Moldova is one of the poorest countries in Europe. In 1997 almost 80 percent of the population consumed less than Moldova's minimum food basket, valued at US\$44 per month. Children are the most vulnerable group. Larger households, those with more than five children, are more likely to be poor.

Moldova is a country where nutrition activity has been low, both in gathering information and implementing programs. It is clear from information on anemia prevalence that the country would benefit from fortifying flour with iron. Improving the coverage of iodized salt is essential since only 50 percent of the population have access to it now. As in all countries in the ECA region, targeting the poor

may help to rapidly reduce national rates of undernutrition; but attention should be paid to improving breastfeeding and weaning practices in general. Reducing nutrition-related causes of adult mortality, such as high consumption of fat, should be a top priority.

# **ROMANIA** **Nutrition at a Glance**

**Basic data**

CHILD MALNUTRITION, DEATH, AND DISABILITY	ROMANIA	AVERAGE EUROPE AND CENTRAL ASIA
Stunting (chronic malnutrition)	8%	
Wasting (acute malnutrition)	2.5%	
Underweight	5.7%	
Overweight and obesity	—	12.1% (adults BMI > 30)
Low birth weight	9%	
Infant mortality rate (IMR)	22	23
Under-five mortality rate (UM5R)	26.4	
Iron deficiency anemia	—	22% children < 4, 24% pregnant women
Iodine deficiency (prevalence of goiter in school-aged children)	20–29%	18% (TGR <sup>a</sup> % in population)
Vitamin A deficiency	—	
<b>Child care practices</b>		
Breastfeeding (1997)	—	
Weaning	—	
<b>Health and sanitation</b>		
Immunization rate (measles), proxy for access to health services	—	
Access to safe water	62%	
Births attended by trained health personnel	—	
"Baby friendly" health services	—	
Incidence of tuberculosis/100,000	87.3	
Cardiovascular disease prevalence	—	
Alcohol consumption (annual liters/person)	6.4 (1991)	
Nonsmokers in population	72% (1994)	

*(Table continued on next page)*

## Nutrition at a Glance (continued)

CHILD MALNUTRITION, DEATH, AND DISABILITY	ROMANIA	AVERAGE EUROPE AND CENTRAL ASIA
<b>Access to food</b>		
Daily energy supply per capita	2872 kcal (1994)	2,850
Population below income poverty line	21.5% (1994)	
Land holdings/household plots	—	
<b>Economic context</b>		
Human Development Index	68	
GNP per capita (1998\$)	1,390	2,310
Life expectancy at birth (male-female)	65 (male)– 73 (female)	69
Adult literacy rate	98%	96%

a. Total goiter rate.

Sources: National statistics; WHO, 2000; TransMONEE, 1997; UNICEF, 1999a and 1999b; World Bank CAS, 1997; World Bank, 1999b.

**Existing Nutrition Programs,  
Policies, and Capacity**

FOOD AND NUTRITION POLICIES	CURRENT PROGRAMS THAT ADDRESS UNDERNUTRITION	CURRENT PROGRAMS THAT ADDRESS MICRONUTRIENT MALNUTRITION	INFORMATION, EDUCATION, AND COMMUNICATION PROGRAMS	INSTITUTIONAL CAPACITY
Romania's Children, a program launched by the president of Romania.		Iodized salt production for human use (40–50 ppm). Not imported. It is easily available countrywide and there is a monitoring system under the food hygiene program. According to data 48% of salt is iodized and 64% of all households use it.		National coordinating committee for IDD.
<b>World Bank portfolio</b>	Child welfare project, 1998; Social Development Fund, 1999; Health sector reform (pipeline).			
<b>CAS objectives related to nutrition</b>	Fight poverty and increase human capital.			

Source: World Bank CAS, 1997; WHO/EURO, 1998; UNICEF, 1999a and 1999b.

## Nutrition Priority Problems and Existing Programs

Although not immediately visible from the above aggregate data, malnutrition is expected to be prevalent in pockets of the population in Romania due to inaccessibility to food caused by poverty. Poverty is deep, and the number of people living below the poverty line has increased four-fold, from 1 million before the transition to 5 million in 1994. The average income of the poor is 26 percent below the poverty line, and two-thirds live in the rural areas. The poverty assessment for Romania estimated a daily energy intake among the poorest of only 1,500 kcal, 35 percent under the minimum needs. As in most countries, children, the elderly, rural women, female-headed households, and those with more dependents suffer most from nutrition problems and have poor health status overall.

Child institutionalization is a particular problem in Romania. Almost 1 percent of all children are institutionalized (a 60 percent increase between 1990 and 1997). Romania's Children, a program launched by the president of Romania, focuses on children and in particular on those who are institutionalized. The Bank devoted Institutional Development Funds to strengthen this initiative. The Bank, together with the European Union, WHO, and UNICEF, supported the Ministry of Health and the government in the development of a Health Sector Strategy. This strategy highlights the importance of behavioral change (smoking, alcohol, and diet) to improving health in Romania.

## THE RUSSIAN FEDERATION

### Nutrition at a Glance

**Basic data**

CHILD MALNUTRITION, DEATH, AND DISABILITY	RUSSIAN FEDERATION	AVERAGE EUROPE AND CENTRAL ASIA
Stunting (chronic malnutrition)	13%	
Wasting (acute malnutrition)	4%	
Underweight	4%	
Overweight and obesity	28% adults overweight 24% adults obese 21% children < 5 (1993) > 2 S.D.	12.1% (adults BMI > 30)
Low birth weight	6%	
Infant mortality rate (IMR)	17.2	23
Under five mortality rate (UM5R)	21.7	
Iron deficiency anemia	34% pregnant women	
Iodine deficiency (prevalence of goiter in school-aged children)	20–29%	18% (TGR <sup>a</sup> % in population)
Vitamin A deficiency	—	
<b>Child care practices</b>		
Breastfeeding (1997)	45% at 3 months 32% at 6 months	
Weaning	Early introduction	
<b>Health and sanitation</b>		
Immunization rate (measles), proxy for access to health services	91%	
Access to safe water	—	
Births attended by trained health personnel	—	
"Baby friendly" health services	—	
Incidence of tuberculosis/100,000	Increasing, 16.7/100,000 death rate from TB	
Cardiovascular disease prevalence	—	
Alcohol consumption (annual liters/person)	—	

*(Table continued on next page)*

**Nutrition at a Glance (continued)**

CHILD MALNUTRITION, DEATH, AND DISABILITY	RUSSIAN FEDERATION	AVERAGE EUROPE AND CENTRAL ASIA
Nonsmokers in population	—	
<b>Access to food</b>		
Daily energy supply per capita	2,427 kcal (1994)	2,850 kcal
Population below income poverty line	50%	
Land holdings/household plots	—	
<b>Economic context</b>		
Human Development Index	71	
GNP per capita (1998\$)	2,300	2,310
Life expectancy at birth (male-female)	61 (male)– 73 (female)	69
Adult literacy rate	99%	96%

a. Total goiter rate.

Sources: National statistics; WHO, 2000; TransMONEE, 1997; UNICEF, 1999a and 1999; World Bank CAS, 1999.

**Existing Nutrition Programs,  
Policies, and Capacity**

FOOD AND NUTRITION POLICIES	CURRENT PROGRAMS THAT ADDRESS UNDERNUTRITION	CURRENT PROGRAMS THAT ADDRESS MICRONUTRIENT MALNUTRITION	INFORMATION, EDUCATION, AND COMMUNICATION PROGRAMS	INSTITUTIONAL CAPACITY
National breast-feeding policy is in place.	Breastfeeding activities take place.		Booklets and newsletters are used to inform public about breastfeeding.	National breast-feeding committee and NGOs working on breastfeeding.
A Russian Regional Healthy Nutrition Policy is being developed, studies conducted and small programs tested.	Support for breastfeeding program is tested in Elektrosal region.			
<b>World Bank portfolio</b>	Community Social Investment Funds, 1996; Social Protection, 1997.			
<b>CAS objectives related to nutrition</b>	Improved targeting of social safety nets.			

Sources: World Bank CAS, 1999; WHO/EURO, 1998; UNICEF, 1999a and 1999b.

## Nutrition Priority Problems and Existing Programs

Beginning in the 1960s, food and nutrition policies in the FSU promoted a diet high in meat and dairy products, for which there were substantial subsidies. The resulting diet was high in fat, particularly saturated fat, energy, and iron. Recent social and economic changes have resulted in declines in food subsidies and higher meat and dairy prices, with consequent changes in dietary consumption. The proportion of fat in the diet is still higher than recommended by WHO, but at the same time there is concern that disadvantaged groups of the population may be undernourished. Recent survey data does not provide evidence of undernutrition, or at least not on a level to be of public health concern; but the data on overweight and obesity are of public health concern in the Russian Federation. Overweight and obesity are important risk factors for cardiovascular disease, one of the leading causes of death. Micronutrient deficiencies are widespread in the Russian Federation. Iodine deficiency rates are moderately high, which is of concern since 20 years ago this problem was almost eliminated. Anemia prevalence has increased during the economic transition.

Underlying factors contributing to malnutrition in the Russian Federation have to be reviewed for each of the different malnutrition problems. For undernutrition, likely a problem among the poorest in the nation, short duration and non-exclusivity of breastfeeding, as well as early introduction to weaning, are likely to play an important role. The median duration of breastfeeding was found to be only three months in 1993, and early introduction of solids is very high.<sup>1</sup> Campaigns to improve breastfeeding and weaning practices need to be designed and implemented.

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1. Breastfeeding and weaning recommendations do not concur with the latest WHO recommendations: breastfeed until 10–11 months, exclusively during the first month and the main food during the next 4 to 4.5 months. In the Russian Federation it is recommended that complementary feeding start very early in life in the first month; after 3 weeks begin fruit or vegetable water, add mashed fruit at 1.5–2 months, and egg yolk at 3 months. Breastmilk becomes a complement at 4 months, meat at 7 months, and cow's milk at 7.5 months.

Poverty has increased during the 1990s in the Russian Federation with 39 percent of the population and 56 percent of children under six living under the poverty line. However, the percentage of people living in extreme poverty decreased from 20 to 17 percent. Rural areas are harder hit, especially those families with no access to land for household production of food, and those with more than three children under age six. Female-headed households also are more likely to be poor.

Underlying factors to overconsumption are behavioral and traditional. High consumption of meat and dairy, both contributors to a high-saturated-fat diet and risk factors for cardiovascular disease, has been promoted in the Russian Federation. Adults over 50, in particular women, but more recently also children under five, are among the vulnerable groups. Traditional dietary patterns and beliefs play an important role in the perception of diet. A study in the Baltic Republics shows, for example, that more than half of the population believes that meat is an essential component of a healthy diet.

Communications for behavior change are needed to address nutrition problems related to adult health, including unhealthy food choices, that lead to high-fat diets.

## TAJIKISTAN

### Nutrition at a Glance

#### Basic data

CHILD MALNUTRITION, DEATH, AND DISABILITY	TAJIKISTAN	AVERAGE EUROPE AND CENTRAL ASIA
Stunting (chronic malnutrition)	41%	
Wasting (acute malnutrition)	10%	
Underweight	28%	
Overweight and obesity	—	12.1% (adults BMI > 30)
Low birth-weight	8%	
Infant mortality rate (IMR)	28	23
Under-five mortality rate (UM5R)	82 (1993)	
Iron deficiency anemia	20% pregnant women 60% women 15–49	22% children < 4, 24% pregnant women
Iodine deficiency (prevalence of goiter in school-aged children)	> 30% (severe)	18% (TGR <sup>a</sup> % in population)
Vitamin A deficiency	—	

#### Child care practices

Breastfeeding (1997)	75% exclusive breastfed up to 4 months 74% at 6 months
Weaning	48% of children weaned at 4 months; tea is given very early.

#### Health and sanitation

Immunization rate (measles), proxy for access to health services	96% (1995)
Access to safe water	69%
Births attended by trained health personnel	Most births are attended by trained personnel
"Baby friendly" health services	—
Incidence of tuberculosis	—
Cardiovascular disease prevalence	—
Alcohol consumption (annual liters/person)	—
Nonsmokers in population	—

*(Table continued on next page)*

**Nutrition at a Glance (continued)**

CHILD MALNUTRITION, DEATH, AND DISABILITY	TAJIKISTAN	AVERAGE EUROPE AND CENTRAL ASIA
<b>Access to food</b>		
Daily energy supply per capita	—	
Population below income poverty line	80% (estimate)	
Land holdings/household plots	—	
<b>Economic Context</b>		
Human Development Index	108	
GNP per capita (1998\$)	350	2,310
Life expectancy at birth (male-female)	66 (male)– 71 (female)	69
Adult literacy rate	99%	96%

a. Total goiter rate.  
*Sources:* National statistics; WHO, 2000; TransMONEE, 1997; UNICEF, 1999a and 1999b; World Bank CAS, 1998.

## Existing Nutrition Programs, Policies, and Capacity

FOOD AND NUTRITION POLICIES	CURRENT PROGRAMS THAT ADDRESS UNDERNUTRITION	CURRENT PROGRAMS THAT ADDRESS MICRONUTRIENT MALNUTRITION	INFORMATION, EDUCATION, AND COMMUNICATION PROGRAMS	INSTITUTIONAL CAPACITY
National breastfeeding policy exists but the International Code <sup>a</sup> of marketing substitutes has not been implemented.	Free distribution of breast-milk substitutes has been ended. Health and poverty alleviation program, including food distribution, implemented by the Aga Khan Foundation and GTZ in 2 of 3 oblasts.	Micronutrient distribution in 2 of 3 oblasts by Aga Khan Foundation and GTZ. MOH protocol prescribes provision of iron/folate, iodine, and vitamin D to women; 35% of pregnant women reported receiving iron; 44% received iodine; 65% of children < 5 reported receiving vitamin A, 72% received vitamin D, and 66% received iron folate.	Micronutrient campaigns are carried out, but communities do not comply.	National breastfeeding committee exists but capacity is unclear.
<b>World Bank portfolio</b>	Pilot poverty alleviation ,1997; Primary Health Care, 1999; Primary Health Services (pipeline).			
<b>CAS objectives related to nutrition</b>	Improving health and education services and promotion of community-based projects.			

a. International code on marketing breastmilk substitutes prohibits the provision of free samples and publicity on breastmilk substitutes by health professionals.

Sources: Department of Health and Aga Khan Foundation, Gorno-Badakhshan Autonomous Oblast, 1998.

## Nutrition Priority Problems and Existing Programs

Both chronic and acute malnutrition rates and micronutrient deficiencies are high in Tajikistan (Schumacher, 1998). They are higher than the global average for developing countries and higher than some of the poorest nations in Sub-Saharan Africa. Three consecutive nutrition surveys have been conducted over the last six years to monitor the situation. Despite relief efforts, nutritional status continues to deteriorate. It appears that child-rearing practices, apart from early introduction of tea, are adequate and are not likely contributors to the high rates of malnutrition, as much as in other countries. Breastfeeding rates are reasonably high; but the six-month exclusive breastfeeding rate could be improved. Weaning practices, such as early introduction of tea, have negative consequences for iron levels.

A recent study conducted in one oblast (Mission Ost, 1997) measured risk factors for stunting and found “household not part of MSDSP agriculture program,” “household with no electricity,” low birth weight, “vitamin A not received,” and less than six months of breastfeeding significant. Factors associated with wasting and not getting enough food included receiving vitamins and households with a single parent. Overall poverty and inaccessibility of food appear to be the major determining factors for malnutrition.

Poverty is extremely high, with an estimated 80 percent of the population living below the poverty line, and about 20 percent of those in extreme poverty. Already before the dissolution of the FSU, Tajikistan was one of the poorest areas in Central Asia. During the Soviet era, the population of the oblast Gorno-Badakhshan received subsidies, fortified food, and micronutrients. Tajikistan depended largely on subsidies. The war created a large number of female-headed households who experience a higher incidence of poverty. Since the collapse they have had to rely on local production and humanitarian assistance. Local production of wheat and potatoes has increased; and while 52 percent of households produced food for themselves, it remains unclear how much this contributes to daily energy intake and what the quality of the food is. Water and sanitation

are significant constraints to health. Eighty-two percent of households store their drinking water in buckets, and only 9 percent have a tap in the house.

Reasonably high numbers of people are reported to have received vitamins and minerals, indicating a reasonably well-functioning distribution system. Compliance however, appears to be low, indicating the need for better counseling and education.

Targeting nutrition assistance, either in counseling and income transfers, to the poor will help improve the nutrition situation in the country. Ensuring that all salt is iodized and that a commonly consumed food staple is fortified with iron will help address the major micronutrient deficiencies. Overweight and obesity rates are quite low compared to other ECA countries. Improving knowledge of a healthy diet should be considered as a strategy to improve health status in general and to prevent the high rates of overweight and obesity that are occurring elsewhere in the region.

# **TURKEY** **Nutrition at a Glance**

**Basic data**

CHILD MALNUTRITION, DEATH, AND DISABILITY	TURKEY	AVERAGE EUROPE AND CENTRAL ASIA
Stunting (chronic malnutrition) (DHS 1993)	21%, 27% (rural)	
Wasting (acute malnutrition)	3%	
Underweight	10%	
Overweight and obesity (1993)	18.7% of women 15–49	12.1% (adults BMI > 30)
Low birth weight	—	
Infant mortality rate (IMR)	44	23
Under-five mortality rate (UM5R)	—	
Iron deficiency anemia	—	
Iodine deficiency (prevalence of goiter in school-aged children)	20–30%	18% (TGR <sup>a</sup> % in population) WHO 2000
Vitamin A deficiency	—	
<b>Child care practices</b>		
Breastfeeding (1993)	10% exclusive breastfed at 3 months 81% breastfed at 6 months	
Weaning	—	
<b>Health and sanitation</b>		
Immunization rate (measles), proxy for access to health services	—	
Access to safe water	—	
Births attended by trained health personnel	—	
“Baby friendly” health services	65%	
Incidence of tuberculosis	—	
Cardiovascular disease prevalence	—	
Alcohol consumption (annual liters/person)	—	
Nonsmokers in population	—	

*(Table continued on next page)*

## Nutrition at a Glance (continued)

CHILD MALNUTRITION, DEATH, AND DISABILITY	TURKEY	AVERAGE EUROPE AND CENTRAL ASIA
<b>Access to food</b>		
Daily energy supply per capita	—	
Population below income poverty line	—	
Land holdings/household plots	—	
Economic context		
Human Development Index	86	
GNP per capita (US\$ 1998)	3,160	2,310
Life expectancy at birth (male-female)	67 (male)– 72 (female)	69
Adult literacy rate	—	

a. Total goiter rate.

Source: National statistics; Macro International, 1993; WHO, 2000; TransMONEE, 1997; UNICEF, 1999a and 1999b; World Bank CAS, 1997, World Bank, 1999b.

**Existing Nutrition Programs,  
Policies, and Capacity**

FOOD AND NUTRITION POLICIES	CURRENT PROGRAMS THAT ADDRESS UNDERNUTRITION	CURRENT PROGRAMS THAT ADDRESS MICRONUTRIENT MALNUTRITION	INFORMATION, EDUCATION, AND COMMUNICATION PROGRAMS	INSTITUTIONAL CAPACITY
<p>A National Plan of Action for Nutrition is developed and implemented.</p> <p>National breastfeeding policy exists and the International Code<sup>a</sup> has been implemented since 1992 (agreement with infant food industry) and is monitored and enforced.</p>	<p>Growth monitoring started in 1994.</p> <p>Lactation management training for health personnel.</p>	<p>IDD program and salt iodization started in 1994. A 1999 report shows 26% of salt is iodized, covering 18% of population. Iodized salt same price as noniodized salt and is easily available.</p>	<p>Breastfeeding week, health and education TV and radio programs, meeting mothers, and posters.</p>	<p>National coordinating committee for IDD control (MOH and Ag.).</p> <p>National breastfeeding committee exists.</p>
<b>World Bank portfolio</b>	Primary Health Care Services, 1997.			
<b>CAS objectives related to nutrition</b>	<p>One of the CAS goals is to increase resources for poverty alleviation and focus on the poorer regions. Rural development and poverty are a new priority area.</p> <p>The CAS itself in its social development section mentions the malnutrition rates of a magnitude to be of public concern, in particular in the rural areas of Turkey. However, no specific mention is made of projects in the portfolio to address this concern.</p>			

a. International code on marketing breastmilk substitutes prohibits the provision of free samples and publicity on breastmilk substitutes by health professionals.  
Sources: World Bank CAS, 1997; WHO/EURO, 1998; UNICEF, 1999a and 1999b.

## Nutrition Priority Problems and Existing Programs

Although Turkey's social development indicators have improved significantly over the last 10 years, they are still well behind those of countries with comparable economies (World Bank CAS, Turkey, 1997, Table 1.2). Education levels are low, especially for girls. Twenty-eight percent of females are illiterate, and the number of years of schooling for women is half that of men. Female school attendance is heavily influenced by traditional customs. Regarding health indicators, Turkey is doing worse than would be expected from a middle-income country. Infant and maternal mortality are 44/1,000 and 183/100,000 live births respectively.

Malnutrition in Turkey is of public health concern, with 21 percent of all children stunted in 1993. Although this information is rather outdated, there is no indication that the situation has improved, particularly in the rural areas. However, more research and updated data are needed. On the positive side, breastfeeding practices are almost universal, with 95 percent of all children breastfed for some period of time. However, only 10 percent are exclusively breastfed up to three months of age (exclusive breastfeeding is recommended for about six months; so there is room for improvement). Thirty percent of children one month of age are already given supplements, indicating a need for better information on weaning practices.

There is a very strong link between the mother's education and the child's nutritional status. Of children with mothers that have no education, 33.6 percent are stunted; 15.7 percent of those whose mothers have only primary education are stunted, while only 4.3 percent of those whose mothers have secondary and higher education are.

Improving school enrollment for girls and including nutrition in the curriculum in schools is essential to reducing malnutrition in Turkey. However, targeted nutrition programs are also needed to improve breastfeeding and weaning practices and to improve the quality of the entire diet. These programs are particularly needed in rural areas where rates of malnutrition are highest. Iodizing all salt should be a priority activity, given the high rates of goiter in the country.

# **UZBEKISTAN** **Nutrition at a Glance**

**Basic data**

CHILD MALNUTRITION, DEATH, AND DISABILITY	UZBEKISTAN	AVERAGE EUROPE AND CENTRAL ASIA
Stunting (chronic malnutrition)	31%	
Wasting (acute malnutrition)	12%	
Underweight	19%	
Overweight and obesity	5.4% women (15–49)	12.1% (adults BMI > 30)
Low birth weight	—	
Infant mortality rate (IMR)	26	23
Under-five mortality rate (UM5R)	55	
Iron deficiency anemia	61% children < 3 years 60% women 15–49	22% children < 4, 24% pregnant women
Iodine deficiency (prevalence of goiter in school-aged children)	18%	18% (TGR <sup>a</sup> % in population)
Vitamin A deficiency	—	
<b>Child care practices</b>		
Breastfeeding (1997)	2% exclusively breastfed 96% breastfed	
Weaning	Tea and cow's milk at 3 months	

**Health and sanitation**

Immunization rate (measles), proxy for access to health services	78%
Access to safe water	—
Births attended by trained health personnel	—
“Baby friendly” health services	—
Incidence of tuberculosis	—
Cardiovascular disease prevalence	—
Alcohol consumption (annual liters/person)	—
Nonsmokers in population	—

*(Table continued on next page)*

## Nutrition at a Glance (continued)

CHILD MALNUTRITION, DEATH, AND DISABILITY	UZBEKISTAN	AVERAGE EUROPE AND CENTRAL ASIA
<b>Access to food</b>		
Daily energy supply per capita	—	
Population below income poverty line	44%	
Land holdings/household plots	—	
<b>Economic context</b>		
Human Development Index	92	
GNP per capita (1998\$)	870	2,310
Life expectancy at birth (male-female)	66 (male)– 72 (female)	69
Adult literacy rate	—	

a. Total goiter rate.

Sources: National statistics; Macro International, 1996; WHO, 2000; TransMONEE, 1997; UNICEF, 1999a and 1999b; World Bank CAS, 1998, World Bank 1999b.

**Existing Nutrition Programs,  
Policies, and Capacity**

FOOD AND NUTRITION POLICIES	CURRENT PROGRAMS THAT ADDRESS UNDERNUTRITION	CURRENT PROGRAMS THAT ADDRESS MICRONUTRIENT MALNUTRITION	INFORMATION, EDUCATION, AND COMMUNICATION PROGRAMS	INSTITUTIONAL CAPACITY
National Food Program developed in 1992.	Training of health staff on lactation management.	Production and iodization of salt (15% of salt iodized). Iodized salt is easily available but at a higher cost.	Public health education on breastfeeding.	Breastfeeding coordinator.
Breastfeeding policy. No implementation of International Code. <sup>a</sup>				
National Plan for IDD since 1971.				
<b>World Bank portfolio</b>	Rural water and Sanitation, 1997; Health project, 1998; Health (pipeline).			
<b>CAS objectives related to nutrition</b>				

a. International code on marketing breastmilk substitutes prohibits the provision of free samples and publicity on breastmilk substitutes by health professionals.  
*Sources:* World Bank CAS, 1998; WHO/EURO, 1998; UNICEF, 1999a and 1999b).

## Nutrition Priority Problems and Existing Programs

Although other human development indicators are good (life expectancy of 70 years, adult literacy of 98 percent and maternal mortality of 17/100,000), malnutrition rates, both acute and chronic, are high. In fact, Uzbekistan is the only country in the region where acute malnutrition is higher than 10 percent. Levels of 10 percent are considered high to severe by WHO standards. Iron deficiency is another malnutrition problem of severe public health concern; 61 percent of children and 60 percent of women are iron deficient. Although breastfeeding is almost universal, exclusive breastfeeding is very limited. Weaning foods are given very early. The extent and nature of poverty in Uzbekistan remains incomplete, but a survey conducted in the late 1980s indicates a 44 percent poverty level with a strong rural bias.

Inadequate care practices, together with the high poverty levels, probably explain part of the malnutrition problem in Uzbekistan.

Much can and should be done to improve the nutrition situation in Uzbekistan. Iodizing all salt should be a top priority, as should addressing the high prevalence of anemia by fortifying a commonly consumed staple with iron. However, supplementing vulnerable groups such as pregnant women and children under two years of age with iron is also needed. Breastfeeding should be increased and weaning practices improved by encouragement of behavior change.