

# **Globalization and Food and Nutrition Security in the Russian Federation, Ukraine and Belarus**

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**ESA Working Paper No. 03-04**

May 2003

**Agriculture and Economic Development Analysis Division**

The Food and Agriculture Organization  
of the United Nations

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***Abstract***

Despite falling per capita incomes in these countries, globalization has probably not led to a deterioration of food security in Russia, Ukraine and Belarus. Measures of food inadequacy in these countries are significantly lower than in developing countries. The majority of the most severe nutritional problems in the Russian Federation—overweight and obesity in adults and various micronutrient deficiencies in both adults and children—are the same as they were during the Soviet era and are linked to diets. For children, these are low rates of breast feeding, possible deficiencies in weaning practices, a lack of vitamin C and iron deficiencies. For adults, the most severe problems are caused by a high-fat, high cholesterol, low fiber diet. This includes low consumption of fruits and vegetables, high consumption of dairy and meat and sugar and higher than recommended alcohol (for males) consumption.

***Key Words: Food Security, Russia, Ukraine, Belarus, Nutrition, Globalization, Transition, Agricultural Trade, Child Malnutrition, Obesity***  
***JEL: I31, Q18, P31.***

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## **1. Introduction**

1.1 Globalization came to the ex-Soviet republics of Russia, Ukraine and Belarus quite suddenly at the end of 1991 with the disintegration of the Soviet political and economic system, the opening of these economies to world trade and first efforts toward building market economies. Compared with the sizeable changes brought by the transition in the countries generally, the effects of globalization on food and nutrition security have been surprisingly small. While agricultural production, livestock inventories and per capita incomes have plunged and then partially recovered over the past 10 years, food consumption in terms of calories has remained comparatively steady and indicators of food inadequacy are quite moderate. For the countries for which information is available, anthropometric and dietary indicators show that the preeminent problems in these countries are not inadequate food intake, but stunting in children, micronutrient deficiencies and a high prevalence of overweight and obesity.

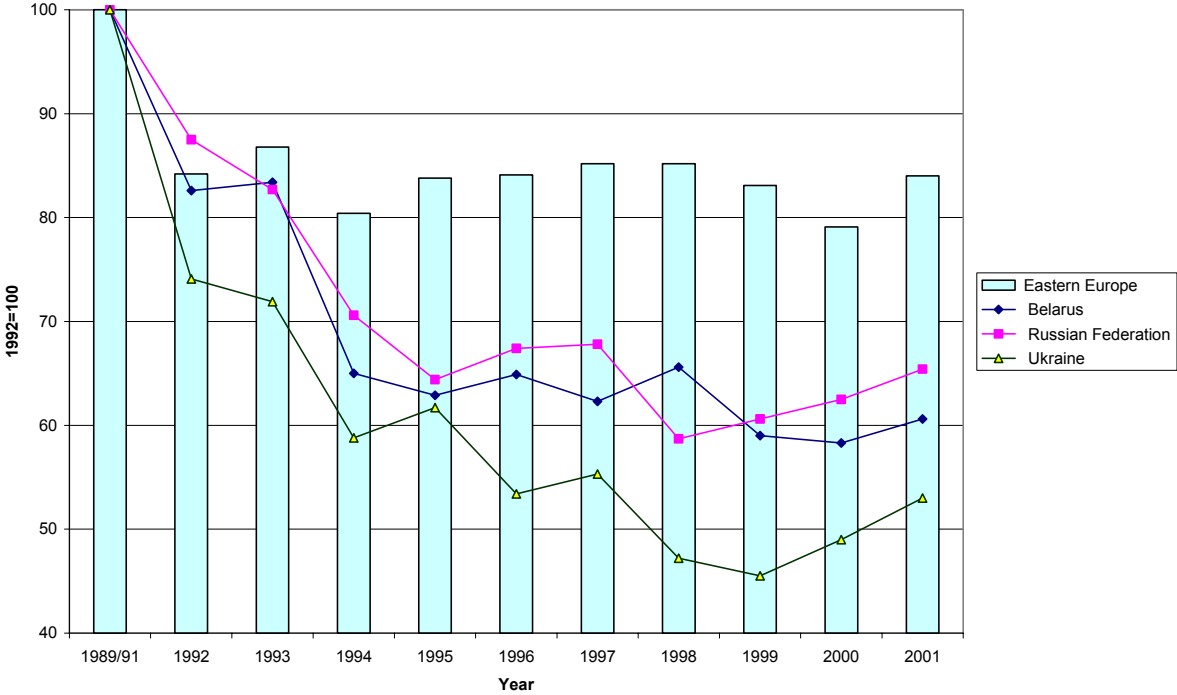
1.2 Although globalization has not seriously threatened food security in these countries, it has nevertheless been responsible for changes in food production and consumption that have caused political opposition to further reform. The decline in per capita income and increased reliance on home produced food changed consumption patterns away from meat and dairy products toward potatoes, vegetables and bread. Though this is perhaps a positive development from the public health point of view, public opinion in these countries, shaped by past Soviet consumption norms, usually does not see it this way. The decline in food production has spurred the agricultural establishment in these countries to be decidedly anti-reformist. For this reason, agricultural reform in these three countries has been much more limited than in the Central and East European countries.

## **2. Globalization and Food Production in Russia, Ukraine and Belarus**

2.1 The most immediate impact of globalization on food production in these countries was a sharp decline in production, particularly of livestock products and feed grains (Figure 1). This fall is characteristic of all transition countries in the Commonwealth of Independent States (CIS) and Central and Eastern Europe (CEE), but the decline was more severe in Russia, Ukraine and Belarus. Globalization also caused a sharp drop in grain imports (which were primarily utilized for animal feed) and a rise in imports of meat (Figure 2). These production and trade changes were caused by sudden reductions in producer and consumer

subsidies, primarily for livestock products, which characterized Soviet agriculture.<sup>1</sup> With the removal of these subsidies, producers and consumers adjusted output and trade to become more consistent with the underlying comparative advantage of agriculture in these countries (Liefert 2002).

**Figure 1 Agricultural Production in Eastern Europe, Russia, Ukraine and Belarus, 1989/91-2001**



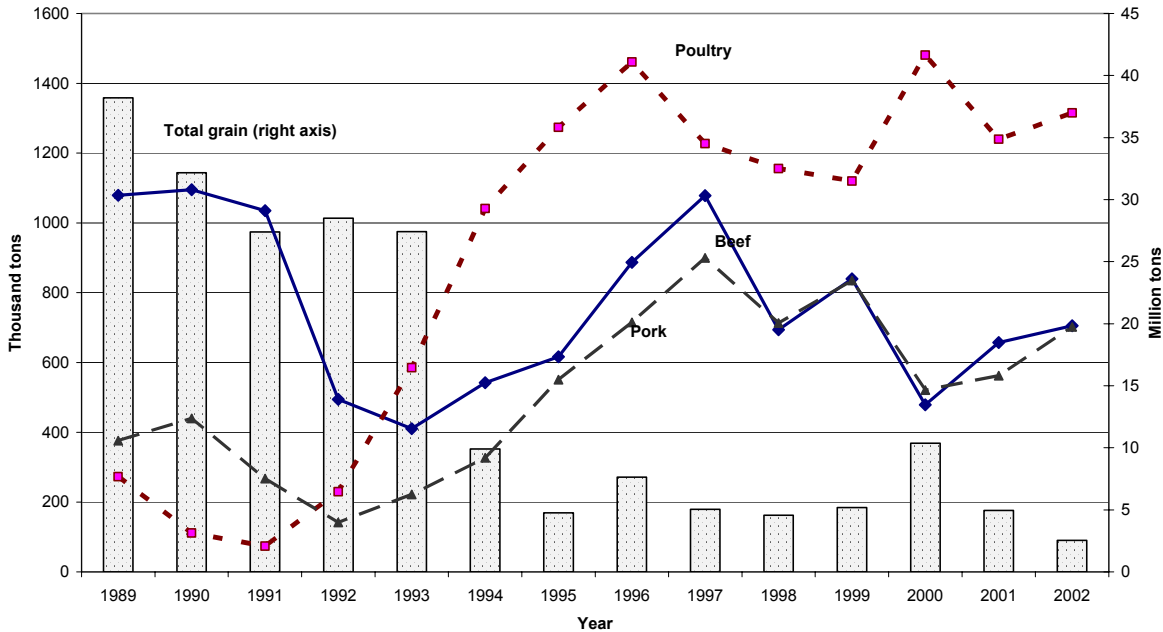
Source: FAOSTAT (2002).

2.2 Despite these falls in agricultural production, average food use of agricultural commodities remained comparatively stable in Russia, though less so in Ukraine and Belarus (Figure 3). Moreover, average food consumption in each of these countries started from levels which were as high or higher than in developed countries and far higher than in developing countries. From 1992 to 2000, agricultural production fell by 29 percent in Belarus, 29 percent in Russia and 34 percent in Ukraine. However, during the same period per capita caloric consumption fell by only 8 percent in Belarus, 0 percent in Russia and 15 percent in Ukraine. The stability of food consumption in Russia and Ukraine is even more surprising if one considers that per capita GDP there fell by 22 and 45 percent during this

<sup>1</sup> Retail and food subsidies in the former USSR were 20 percent of total state expenditures in 1990, and explicit food and agricultural subsidies in the Russian Republic were 10 percent of GDP (World Bank, 1992, p. 218).

period.<sup>2</sup> Average consumption in Russia and Ukraine appears to have reached its nadir in 1996 at about 2,800 calories per capita per day, after which it began to grow again.

**Figure 2 Import of Grain and Meat in Russia, Ukraine and Belarus, 1989-2002**



Source: US Department of Agriculture, Production, Supply and Distribution Online Database (2002).

2.3 Three main coping mechanisms have allowed consumers to maintain food consumption levels in the face of falling agricultural production and per capita incomes (Table 1). First, both rural and urban households have increased own production of food on private garden plots as a buffer against falls in income. Thus, the portion of agricultural production on personal land plots has increased greatly. Much of this is for own consumption and nearly every urban and rural family in these countries has access to such land.<sup>3</sup>

<sup>2</sup> Per capita GDP in Belarus in constant prices rose by 9 percent from 1992 to 2000 (IMF, 2002). Because the government of Belarus has had such a cautious approach to reform, it is uncertain that this trend reflects the actual path of consumer welfare in the country.

<sup>3</sup> The near universal access to a personal land plot is a critical buffer mechanism that sets the CIS countries apart from many countries of the developing world. There is virtually no landless poor in these 3 countries.

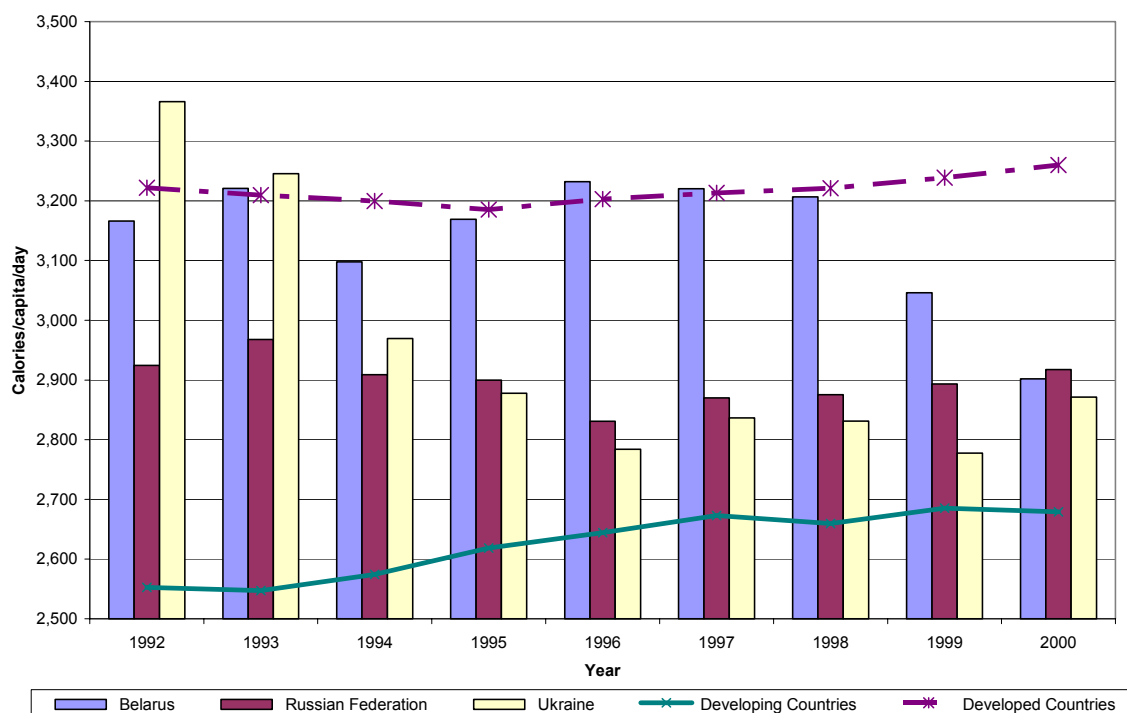
**Table 1 Consumer Coping Mechanisms to Ensure Food Security in Belarus, Russia and Ukraine**

Indicator	Belarus	Russia	Ukraine
<i>1991</i>			
Private plot and farm production (% of total)	33	31	36
Expenditures on food (% of total expenditures)	36	38	42
Fat from livestock products (% of total fat available)	76	72	63
<i>2000</i>			
Private plot and farm production (% of total)	50	57	64
Expenditures on food (% of total expenditures)	60	50	64
Fat from livestock products (% of total fat available)	61	57	57

Interstate Statistical Committee of the Commonwealth of Independent States, 2001, pp. 133, 267, 519, 699; FAOSTAT (2002).

2.4 Second, households have increased the portion of their expenditures on food in this period. Third, households have changed the mix of food consumed away from expensive (and fatty) livestock and dairy products toward less expensive and home-grown potatoes, vegetables and bread. Fat derived from animal products as a portion of total fat available declined over this period.

**Figure 3 Average Food Use of Agricultural Commodities in Russia, Ukraine, Belarus, Developed and Developing Countries, 1992-2001**



Source: FAOSTAT (2002).

2.5 The maintenance of average levels of caloric consumption in these countries is all very well. But food security, like poverty, is more a question of access to and thus distribution of food. The large role in household budgets of food from personal land plots and the relatively high calorie diet in these counties to begin with have meant that the incidence of food

inadequacy in these countries remains quite low, even compared to other transition countries (Table 2).

**Table 2 Percent of Food Inadequate Population, by Country and Region, 1998-2000**

Country	Percent of Food Inadequate
Russian Federation	5
Ukraine	5
Belarus	under 2.5
Countries in Transition	7
Sub-Saharan Africa	33
Near East and North Africa	10
Latin America and Caribbean	11
Asia and Pacific	16

Source: (FAO, 2002).

2.6 These figures are subject to a margin of error, because they are based on imperfect estimates of commodity balances and income distributions. However, the comparable estimation methodology used should ensure that they accurately reflect relative levels of food inadequacy in these countries.

2.7 Globalization has brought a significant change in the structure of food trade in these countries (Figure 2). The growth of meat imports in Russia and Ukraine has prompted the agricultural establishments in these countries to advocate successfully for protection of domestic producers. But import dependency ratios for the three countries are largely less than for the countries of Western Europe and Ukrainian dependence on food imports is even less than in Eastern European countries (Table 3).

**Table 3 Import Dependency Ratios in European Countries, 1992, 2000**

Country	Oilcrops	Grains	Meat
		<i>1992</i>	
Russia	9	31	10
Ukraine	4	9	0
Belarus	29	45	0
Eastern Europe	12	6	4
EU-15	56	26	22
		<i>2000</i>	
Russia	4	9	22
Ukraine	1	5	2
Belarus	20	36	7
Eastern Europe	11	7	7
EU-15	56	25	26

Source: FAOSTAT (2002).

### 3. Globalization and Nutrition in Russia, Ukraine and Belarus

3.1 Per capita incomes in these countries fell sharply during the decade of the 1990s, particularly in Russia and Ukraine, and have only begun to recover in the past few years. As a result, poverty grew faster in the transition economies in this period than in any other region of the world, though it is still low by standards of the developing world (Table 4). Despite these negative developments, anthropometric and dietary indicators for Russia and Ukraine indicate that the preeminent problems of these countries are stunting in children, micronutrient deficiencies and a high prevalence of overweight and obesity, rather than inadequate food intake.<sup>4</sup> Moreover, though there is evidence of some further deterioration in the micronutrient status of the Russian population, the major nutritional problems in these countries have remained very much the same as they were before 1992. Information on the nutritional state of adults and children in Russia comes from three main sources—the Russian Longitudinal Monitoring Survey (RLMS) of the University of North Carolina, data collected by UNICEF and WHO and from Russian language sources.<sup>5</sup> For Ukraine, data on child nutritional state comes from UNICEF and WHO. There is currently no widely available nutritional information on Belarus.

**Table 4 Percent of the Population Living Below \$1 and \$2 per Day: 1987, 1990 and 1998**

Region	Under	Percent		
		1987	1990	1998
East Asia and the Pacific	\$1	26.6	27.6	14.7
	\$2	67.0	66.1	48.7
Latin America and the Caribbean	\$1	15.3	16.8	12.1
	\$2	35.5	38.1	31.7
Middle East and North Africa	\$1	4.3	2.4	2.1
	\$2	30.0	24.8	29.9
Sub-Saharan Africa	\$1	46.6	47.7	48.1
	\$2	76.5	76.4	78.0
South Asia	\$1	44.9	44.0	40.0
	\$2	86.3	86.8	83.9
Eastern Europe and Central Asia	\$1	0.2	1.6	3.7
	\$2	3.6	9.6	20.7
<i>Russian Federation</i>	\$2			18.8
<i>Ukraine</i>	\$2			3.0*
<i>Belarus</i>	\$2			1.0*

\* 1999.

Source: World Bank (2001); World Bank (2000: 35).

<sup>4</sup> For a more extensive treatment of food and nutrition insecurity in the Russian Federation, see Sedik, et al., forthcoming 2003.

<sup>5</sup> Information on the RLMS project managed by the Carolina Population Center at North Carolina University, sampling strategy, survey schedule and the evaluation of samples is posted at <http://www.cpc.unc.edu/projects/rlms/project.html>.



3.2 An important indicator of child malnutrition is the proportion of babies born with low birth weight. A high proportion of such babies can indicate nutritional deficiencies during pregnancy. The proportion of such births (below 2,500 g) in Russia, Ukraine and Belarus in 1999 was relatively low at 7.0, 5.7 and 5.1 percent (UNICEF End Decade Database 2002). For comparison, the share of low birthrate babies in the European Union ranges from 4 to 7 percent (UNICEF 1999).

**Table 5 Child Malnutrition in Russia and Ukraine (%), 1995, 2000**

Country	Underweight	Stunting	Wasting	Survey	Age
Russia	3	12.7	3.9	1995	0-5 yrs
Ukraine	3	15.4	6.4	2000	0-5 yrs

Figures indicate portion of surveyed population less than 2 standard deviations below the median.

Source: UNICEF Global Database on Child Malnutrition (2002).

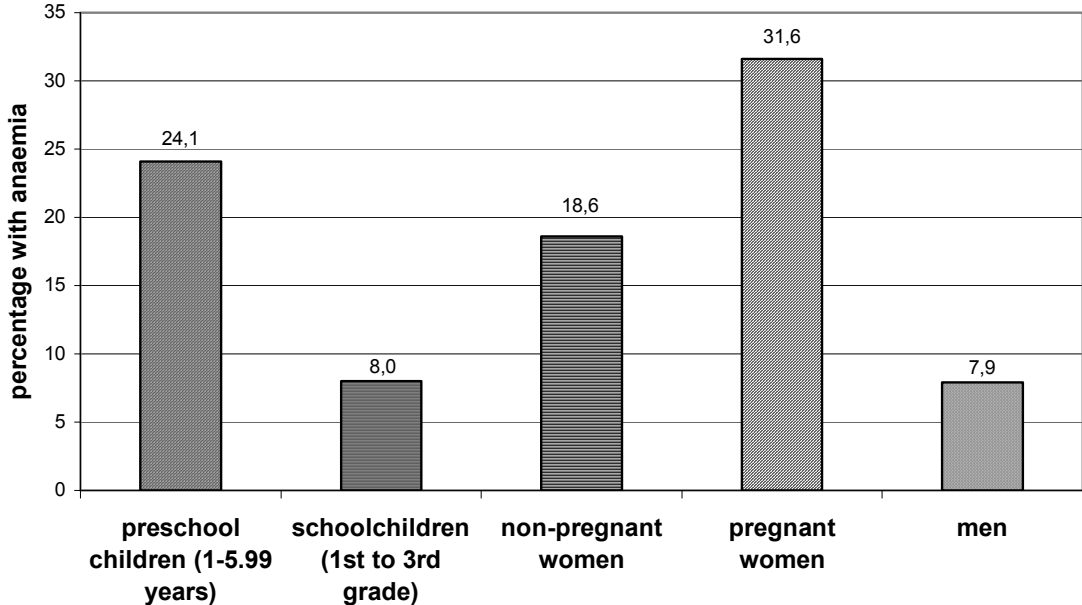
3.3 For Russian and Ukrainian children malnutrition seems to manifest itself in a low height for age (stunting). In Russia, this seems to be accompanied by overweight (Popkin 1996). Stunting among children in the Russian Federation was relatively high throughout the period 1992 to 2000 based on RLMS data (Zooohori, et al. 2001), averaging 8 to 15 percent for children 0-2 years of age, and 6 to 12 percent for those 3-6 years old. Stunting is usually seen as an indicator of a sustained past episode of undernutrition. However, there is no evidence to suggest deficiencies in the dietary energy intakes of young children in Russia or Ukraine. In fact, the fact that both newborns and older children are overweight points to another explanation. The cause of the pattern of stunting and overweight in Russia may be a lack of micronutrients essential for growth and/or frequent infections followed by weight gain during infancy. Such a “weaning crisis” is an outcome of improper complementary feeding during infancy and associated health problems. The same may be true of Ukraine, though this is not certain, because of a lack of survey data on overweight in children. The high prevalence of stunting in Russia and Ukraine suggests weaknesses in feeding practices in young children in these countries. In fact, Soviet recommendations for breastfeeding from 1982 underestimate the importance of breastfeeding in the early months of a child’s life. Observed complementary feeding practices in Russia also are seen to introduce cow milk and other solid foods when WHO guidelines recommend breast milk. These practices could be responsible for iron deficiencies in young children, as well as for stunting (Fleischer Michaelsen, et al. 2000).

3.4 Nationally representative data of micronutrient deficiencies are scarce, and these countries are no exception in this respect. Recent studies indicate that the majority of the Russian

population (adults and children) is deficient in iodine (up to 70 percent), fluoride and selenium. The prevalence of synergetic polyhypovitaminosis is high (Baturin 2001).

3.5 Data on micronutrient deficiencies among children are available only for the Russian Federation. Comprehensive data collected about iron deficiency anemia indicate that it is quite prevalent in infants aged six to twelve months and in young women. In surveys conducted in Moscow, Moscow Oblast, St. Petersburg and Sverdlovsk Oblast, iron deficiency anemia was diagnosed in 15-47 percent of 6-12 month old children. In Ivanovo Oblast, a relatively high prevalence of anemia according to the hemoglobin level in the blood was found among children aged one to six years (Figure 4) (Baturin 2001). In addition to young children, pregnant and lactating women are very vulnerable to iron deficiency. According to official statistics released by the Ministry of Health, anemia in pregnant women and women in labor increased significantly in recent years. In 1996, anemia was diagnosed in 25 percent of pregnant women and over 30 percent of pregnant women in the third trimester of pregnancy<sup>6</sup>. There has also been a marked increase of women in maternity clinics treated for anemia as a postnatal complication. A slight rise from 2.7 percent to 6.5 percent took place between 1985 and 1990, followed by a dramatic increase to 23.1 percent in 1996 (Baturin 2001).

**Figure 4 Prevalence of Iron Deficiency Anemia in Ivanovo Oblast, Russian Federation, 1998**



Source: Sedik, et al. (2003).

<sup>6</sup> In general, the prevalence of anemia peaks in the third trimester of pregnancy.

3.6 The results of surveys conducted among schoolchildren, teenagers and industrial workers in selected regions of the Russian Federation indicate a deterioration of the vitamin status during the reform period.<sup>7</sup> Whereas the percentage of schoolchildren in Yekaterinburg, Ufa, Norilsk and Yoshkar-Ola with Vitamin C deficiency amounted to 48 percent in 1983-88, it increased to 63 percent in 1990-93. During the same period, the share of schoolchildren with severe Vitamin C deficiency rose from 2 percent to 23 percent. The percentage of children with a deficiency of vitamin B1, B2, B6 and B12 in these regions doubled. Surveys carried out among children in Moscow reveal that the prevalence of various vitamin deficiencies was still high towards the end of the nineties (Table 6). The situation was even worse for students of vocational schools in Yoshkar-Ola in December 1991. 90 percent of the students suffered from a lack of Vitamin C, with 33 percent having a severe deficiency. 70-75 percent of students were deficient in vitamin B1, B2 and carotene (Baturin 2001).

**Table 6 Vitamin Deficiencies of Moscow Children**

Vitamin	% Individuals with vitamin deficiencies among:	
	Preschool children in kindergarten 1998-99	Schoolchildren in hospitals 1996-98
A	--	11
Carotene	--	75
E	--	25
B <sub>1</sub>	64	--
B <sub>2</sub>	38	42
B <sub>6</sub>	80	65
C	56	8

Source: Baturin (2001).

3.7 The main nutritional problems in the Russian Federation for adults are overweight and obesity. Over 50 percent of adults are overweight or obese. There are differences in the incidence of underweight and obesity by sex, according to RLMS data (Table 7). The incidence of underweight in young women is quite high and that of obesity is quite a bit higher in women. But the most striking overall impression is that the incidence of overweight and obesity in adults is high and increases with age. This is hardly a result of globalization. Rather, this trend was established in the Soviet era and continues. Soviet consumption norms and policies based on them which emphasized a high meat, high protein, high calorie diet, were probably partially responsible for these trends (Popkin, et al. 1997). These norms have probably also shaped the populations' attitudes towards food consumption and toward the change in the mix of food that has occurred in the past 10 years.

<sup>7</sup> The figures presented are based on the measurement of vitamin levels in the blood, not on dietary intakes of micronutrients.

**Table 7 Russian Nutritional State in 1996, by Age and Sex**

Age	Sex	Underweight (BMI<18.5)	Normal weight BMI 18.5-25.0	Overweight BMI 25.1-30.0	Obese BMI>30.0
18-29 years	F	8.1	66.2	17.0	8.7
	M	1.8	76.9	17.8	3.5
30-59 years	F	1.6	33.9	34.0	30.5
	M	1.0	51.5	36.3	11.2
60+ years	F	1.9	24.6	37.9	35.9
	M	2.5	43.6	39.3	14.5

Source: Baturin (2001) (based on RLMS data).

#### **4. Conclusion**

4.1 Despite falling per capita incomes in these countries, globalization has probably not led to a deterioration of food security in Russia, Ukraine and Belarus. Measures of food inadequacy in these countries are significantly lower than in developing countries. The majority of the most severe nutritional problems in the Russian Federation--overweight and obesity in adults and various micronutrient deficiencies in both adults and children--are the same as they were during the Soviet era and are linked to diets. For children, these are low rates of breast feeding, possible deficiencies in weaning practices, a lack of vitamin C and iron deficiencies. For adults, the most severe problems are caused by a high-fat, high-cholesterol, low fiber diet. This includes low consumption of fruits and vegetables, high consumption of meat and meat products (with a high fat content), higher than recommended alcohol (for males) and sugar consumption and higher than recommended egg consumption.

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