

## SPECIFIC DEVELOPMENT OF THE BAKING INDUSTRY IN KEMEROVO OBLAST

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**Abstract:** The article shows the dynamics of the output of baked goods over the past five years in Russia and in the Siberian Federal District. The main trends in the development of the baking branch of the food industry of Kemerovo oblast are specified. Factors that determine the dynamics of baked goods production in the Kuznetsk Basin are considered. Practices of transfer from administrative bread price regulation to targeted subsidies for the least protected strata are shown. Analytical results of the dynamics and structure of the assortment of bread baked by large and medium-sized bakeries of the oblast are presented. Ways of improving the current efficiency of the baking branch of the food industry of Kemerovo oblast are determined.

**Key words:** baking industry, baked products, production output, «social» bread, assortment

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### INTRODUCTION

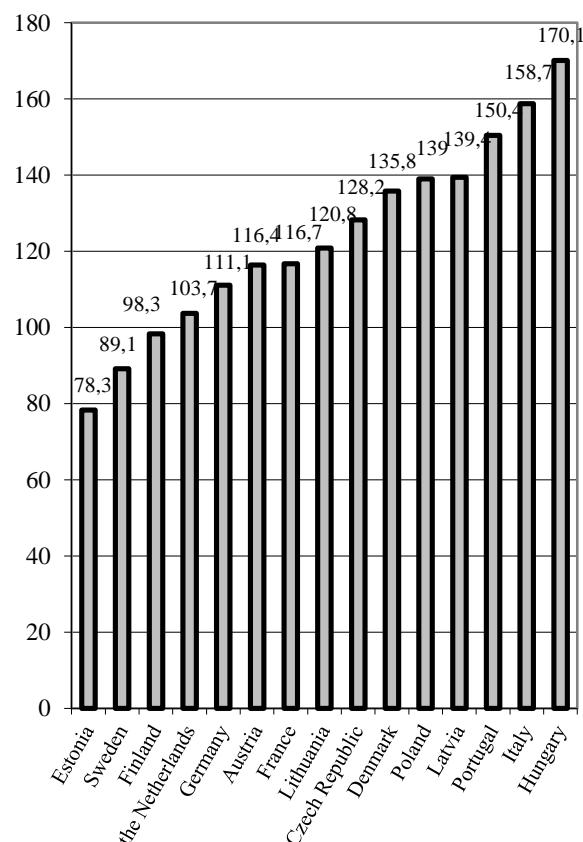
Bread is a brilliant invention of humankind. Breadstuffs are major human food products, regularly bought by everyone and everywhere. The supply of the most affordable foodstuff to all strata depends on how efficiently this branch functions and develops.

Daily bread consumption in various countries varies from 150 to 500 g per capita. In Russia the average bread consumption rate is up to 330 g a day. The diagram of breadstuff consumption in some countries of the European Union is given in Fig. 1. [Consumption of certain foodstuffs per inhabitant. Eurostat. Search database. <http://www.eurostat.ee.europa.eu>]

According to the Russian Federal Statistics Service (RFSS), the average bread consumption in Russia in 2007–2011 stayed at 119 kg/yr per capita; i.e., we are close to countries with average consumption in this respect (Austria, France, and Lithuania, 116.4, 116.7, and 120.8 kg/yr, respectively).

As for the number of businesses, production output, and importance of product output, the baking branch is one of the most crucial areas in Russia's food industry. The special literature and mass media regularly publish analytical materials on Russia's bread market, its characteristics, problems, and trends in its development.

The activity reports of President of the Russian Union of Bakers A.P. Kosovan periodically contain the assessment of the state of affairs in the industry. The Russian baking industry is notable for the leadership of large units, companies, and holding companies, whose share in the total output of baked goods is about 80%.



**Fig. 1.** Consumption of breadstuffs in EU countries in 2006–2009 (kg/yr per capita).

Among the industry's most serious problems are its obsolete physical infrastructure, low financial stability, shortage of skilled personnel due low labor remuneration, the constant growth of fuel and energy tariffs, and unpredictable fluctuations in flour prices. The lasting practice of administrative intervention in economic activities aggravates the financial position of bakeries. The stand of the Russian Union of Bakers is that low-income strata must have targeted government support. Thus far the economy of bakeries is forced to be guided by the income level of the poorest strata, scaffolding the excessive financial load of the unalterably low incomes of its employees and turning Russia's bread baking into the «face of the country's poverty» [1].

The situation in the bread market was described in a number of articles by N.T. Chubenko, the chief specialist of the State Research Institute of the Baking

Industry, Russian Academy of Agricultural Sciences, published in the industrial journal *Khlebopechenie Rossii* (Russia's Bread Baking). The author cited data that, in 2010, large bakeries used only 40% of their capacity. At the same time, they produced more than 70% of saleable products. Only 882 such units remained in 2010 (out of the total 12 300 active bakeries); in ten years the number of operating bakeries decreased by more than 1.5 times [2].

The output of baked goods in the country is steadily decreasing. According to expert forecasts, this market will lose 2% in natural units on average a year and by 2014 it will not exceed 6.5 mln. t. The official statistical data in Table 1, which characterize the change in the output of baked goods in Russia and in the Siberian Federal District (SFD), show that the production dynamics of bakeries in Kemerovo oblast has a trajectory different from the overall vector in Russia and in the Siberian Federal District.

**Table 1** Dynamics of the output of baked goods

Regions	Output, thou. tons					Growth rate, %			
	2007	2008	2009	2010	2011	2008/2007	2009/2008	2010/2009	2011/2010
<b>Russia</b>	7759	7483.3	7191.4	7119	6977	96.4	96.1	99.0	98.3
Siberian FD	1031	978.8	928.6	896.3	877.5	94.9	94.9	96.5	97.9
Altai Republic	6.8	6.5	6.8	7.2	6.9	95.6	104.6	105.9	96.3
Buryat Republic	39.8	38.3	34.7	28.9	32.2	96.2	90.6	83.3	111.5
Tyva Republic	27.3	27.5	27.7	27.8	27.8	100.7	100.7	100.4	100.0
Khakassia	19.1	25.2	19.4	18.2	18.9	131.9	77.0	93.8	104.3
Altai krai	118.3	120.3	120.1	122.0	116.6	101.7	99.8	101.6	95.8
Transbaikal krai	78.3	52.2	46.6	39.7	38.3	66.7	89.3	85.2	96.4
Krasnoyarsk krai	113.9	108.3	93.1	100.2	93.0	95.1	86.0	107.6	92.8
Irkutsk oblast	117.7	105.9	96.0	90.5	84.2	90.0	90.7	94.3	93.1
Kemerovo oblast	183.3	181.4	185.2	184.7	185	99.0	102.1	99.7	100.2
Novosibirsk oblast	181.1	169.0	158.8	134.1	140.3	93.3	94.0	84.4	104.7
Omsk oblast	113.9	115.8	115.0	114.7	110.4	101.7	99.3	99.7	96.2
Tomsk oblast	31.7	28.2	25.3	28.4	23.6	89.0	89.7	112.3	83.4

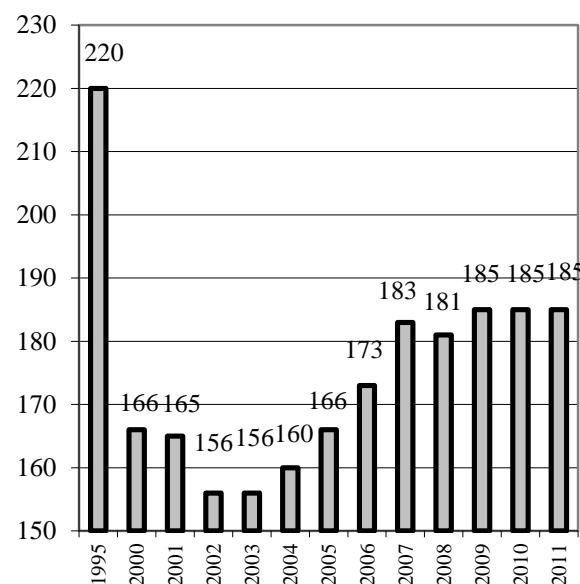
Among the constituent members of the Siberian Federal District, Kemerovo oblast holds the first place in the output of bread and baked goods, followed, respectively, by Novosibirsk oblast and Altai krai. Despite the overall decrease in production in the Siberian Federal District, the output of baked goods in Kemerovo oblast increased to 185 000 t/yr between 2007 and 2011.

**Research objective.** To identify factors that affect the output dynamics of baked goods in Kemerovo oblast.

**Research subject and methods.** The subject of research in this article is large and medium-sized bread-baking units in Kemerovo oblast. The research was conducted using the traditional methods of economic analysis: abstract-logical, statistical, comparative, graphic, economic-mathematical, etc., as well as statistical and analytical materials of the RFSS, the RFSS branch for Kemerovo oblast, the financial statements and annual reports of large and medium-sized baking units of Kemerovo oblast, and the statistical data of various Russian and foreign web sites.

**Results and discussion.** The transformation of the Russian economy has led to great changes in the output of the baking industry both in the Russian Federation and in Kemerovo oblast. According to the RFSS data for Kemerovo oblast, in the early 2000s the baking in-

dustry of the Kuznetsk Basin witnessed a sharp decline in the output of baked products (Fig. 2).



**Fig. 2.** Production of bread and baked goods in Kemerovo oblast (thou. tons).

The situation started to improve in 2004, and already in 2005 the output reached the level of 2000. Then we can trace the annual growth of this indicator: the output was 166 000 t in 2005, 173 000 t in 2006, and 183 000 t in 2007 (i.e., the growth rate was more than 10% in three years) with an upward trend in the subsequent years, whereas the production of bread and baked goods in Russia in 2005–2009 dropped to the level of 1998. In 2009 the production of bread and baked goods in Kemerovo oblast rose to 185 000 t, reaching 119% of the 2003 level. Between 2010 and 2011 the output remained at the 2009 level.

The baking branch holds a key place in providing the people of Kemerovo oblast with staple foodstuffs. Its share in the structure of the oblast's food industry is 38% of the total food output (Fig. 3).

In 2011 the baking branch was 67% bread and baked goods, whose share in the total output continued to increase annually unlike candy and pasta manufacture (Table 2).

**Table 2** Structure of the baking branch of Kemerovo oblast

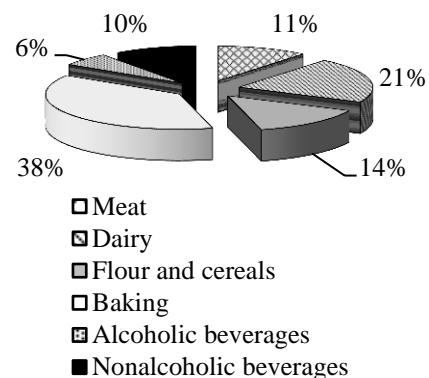
Indices	Unit.	2007	2008	2009	2010	2011	Growth rate, %			
							2008/2007	2009/2008	2010/2009	2011/2010
Bread and baked goods	thou. t	183.3	181.4	185.2	184.7	185.0	99.0	102.1	99.7	100.2
% of the total		63.1	63.4	66.2	66.8	67.3	100.5	104.4	100.9	100.7
Confectionery products	thou. t	101	99.1	89.2	87.2	86.1	98.1	90.0	97.8	98.7
% of the total		34.7	34.6	31.9	31.6	31.3	99.7	92.2	99.1	99.1
Pasta	thou. t	6.4	5.6	5.4	4.4	3.9	87.5	96.4	81.5	88.6
% of the total		2.2	2.0	1.9	1.6	1.4	90.9	95.0	84.2	87.5
Total	thou. t	290.7	286.1	279.8	276.3	275.0	98.4	97.8	98.7	99.5

The main industrial potential of the baking branch in Kemerovo oblast is concentrated in the cities of Kemerovo, Novokuznetsk, Leninsk-Kuznetsk, Yurga, Prokopyevsk, and Mezhdurechensk. At present there are 10 large and medium-sized bakeries and more than 370 small-sized units. Over the past years, we have seen a reduction in the output of baked goods at large and medium-sized units (Fig. 4).

In 2011 large and medium-sized bakeries produced about 57% of the total bread output in the oblast (Table 3), which was decreasing with each year. Consequently, small businesses, whose share is about 43% of the total output of baked goods, are playing an increasingly important role in providing the people of Kemerovo oblast with various freshly baked goods.

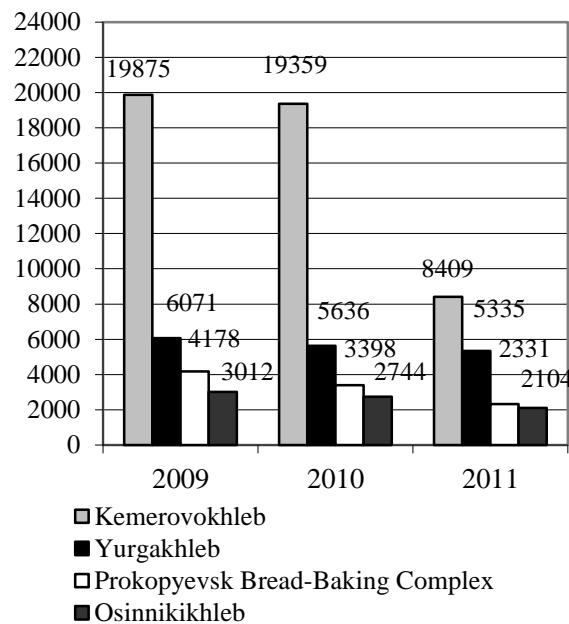
**Table 3** Baked goods output by Kemerovo oblast's bakeries in 2011

Bakeries	Output, tons	Percentage of the total, %
Total, including	185 000	100.0
large and medium-sized	105 820	57.2
small	79 180	42.8



\* Liquid volumes were converted to weight indices taking into account the beverage density gradations according to the density table.

**Fig. 3.** Structure of the food industry of Kemerovo oblast.

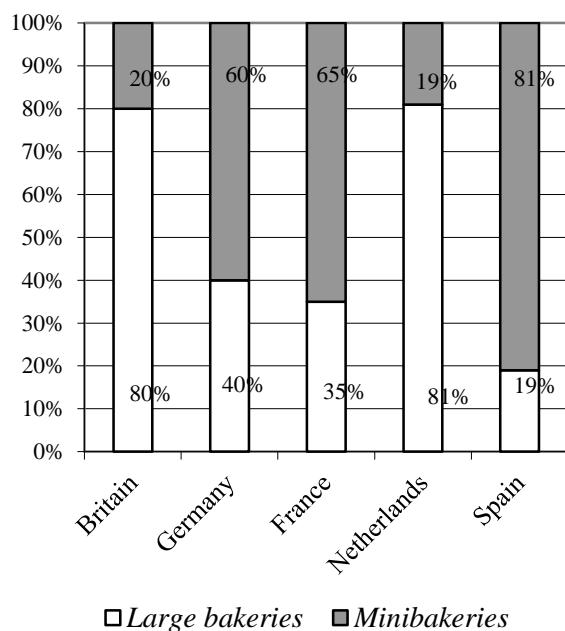


**Fig. 4.** Bread and baked goods output dynamics (by the example of individual units in Kemerovo oblast), tons.

Small businesses are not at all inferior to large bakeries in their quality of baked goods, since they run new equipment, although their share of manual labor is higher. The main advantages of such units are mobility, considerable room for private orders, and always fresh products. The number of minibakeries in Kemerovo oblast is growing mainly due to the increased number of hypermarkets, supermarkets, and chain stores, almost each of which has its own bakery.

By the results of the financial and economic analysis of the existing bakeries and trends in the Kuznetsk Basin's bread market, we may conclude that in recent years the increased output of baked goods in Kemerovo oblast has been maintained by small businesses.

Referring to the baking practices in Europe, we may note that state-of-the-art minibakeries play a significant role there, providing certain countries with up to 80% of the baked goods consumed (Fig. 5).



**Fig. 5.** Production of baked goods by large and small businesses in some European countries.

Minibakeries that produce bread and confectionery products locally are the main players in the national markets of such countries as Germany, France, and Spain. In Britain and the Netherlands, the share of small businesses in the bread market does not exceed 20%. On average, the bread market in Europe in 2010, according to the International Association of Plant Bakers (AIBI), was represented by large bakeries (45%) and minibakeries (55%) [<http://www.bakersfederation.org.uk/the-bread-industry/industry-facts/european-bread-market.html>].

In European countries, minibakeries are also in high demand among the owners of supermarkets, hypermarkets, restaurants, and cafes. For example, in Britain out of the 20% of the bread market served by minibakeries, 17% are minibakeries at retail outlets (Table 4) [<http://www.bakersfederation.org.uk/the-bread-industry/about-the-bread-industry.html>].

**Table 4** Shares of various producers in the British bread market

Units	% of output In monetary terms	% of output in natural units
Large bakeries	78	80
Minibakeries	22	20
Including minibakeries at retail outlets	17	17
Total	100	100

In addition to the above factor (serious competition on the part of minibakeries), a significant drop in bread output by large and medium-sized units in 2011 was preconditioned by retracting the production of «social» bread in Kemerovo oblast, which was baked from 1999 through May 1, 2011. This measure of social support was necessary for the majority of people under the unstable conditions of the oblast's socioeconomic development, such as significant price growth, unpaid wages, and the stingy pensions of the overwhelming majority of retirees. Within this program, the oblast administration subsidized bread producers with flour from the governor's grain reserve fund. The difference between purchasing and subsidized prices was finally compensated for from the oblast budget. The producers, in turn, set underrated prices on more than 60% of their bread products. The activity of the grain reserve fund, which is formed of grain bought from the local farmers at the highest prices in Siberia, is regulated by Kemerovo oblast's Law no. 23-OZ of April 8, 2008, which says that the governor's grain fund was created for the stable provision of the people of Kemerovo oblast with baked goods in line with the food security policy of our region [3]. This instrument charged bakeries with the production of «social» bread, i.e., first-quality wheat bread weighing 500 g at a selling price of 7.27 rubles. Trade networks could impose only a 10% markup. Therefore, bread produced in the Kuznetsk Basin was the cheapest compared with other regions of Russia (8 rubles a loaf for several years).

By 2011 the level of personal incomes rose, and the economic situation improved, but the bakeries were still under the administrative pressure. A situation began to form in which bread was baked for the needy but consumed by all. Numerous resolutions were issued to increase the output of «social» bread to avoid the shortage of this product among the needy. As a result, the share of «social» bread baked at the oblast's large bakeries reached 70% in their total output.

Surveys conducted in November 2010 by OOO Sotsioservis showed that «social» bread was increasingly misused: 10% of the oblast population used it to feed livestock and poultry; 13% of the population said that they witnessed such misuses; and 23% of the people witnessed such cases several times. People who really needed cheap bread were often left without this support. All this drew indignation in the majority of people [<http://www.kuzzbas.ru/more.php?UID=16980>].

The estimation of the demand for this product, based on the number of the needy citizens, for whom this «so-

cial» bread was produced, and the rational norms of daily bread consumption [4] showed that its amount necessary for the people of Kemerovo oblast was 3800 t a year (Table 5).

**Table 5** Estimation of the necessary amount of «social» bread (2010)

Indices	Value
Population of Kemerovo, thou. people	521.2
Share of the needy, %	12.1
Number of the needy, thou. people	63.06
Bread consumption norm per capita, g/day	330
including wheat bread	165
rye bread	165
Necessary wheat bread output, t/day	10.4
Necessary rye bread output, t/yr	3798.1

However, OAO Kemerovokhleb alone produced 10 700 t of «social» bread in 2010 on the condition that this product was not profitable. In addition, the financial support of bakeries as quotas to purchase 70% of their flour demand at preferential prices did not solve the existing problem. Estimations based on the calculation for this product showed that increased quotas would reduce the production cost insignificantly, and even the use of 100% of the reserve fund flour would not allow the bakers to have a positive financial result from the production of «social» bread.

Such measures incessantly required additional costs and affected very negatively the size of the oblast budget. Therefore, in April 2011, the administration of Kemerovo oblast made a decision to render a targeted cash aid of 60 rubles a month per capita from the oblast budget starting from May 1, instead of subsidizing the bakers for «social» bread, to the following categories of citizens:

- nonworking pensioners with incomes below the minimum subsistence level (4013 rubles);
- families with children under 16 years with incomes below the minimum subsistence level for each family member (5335 rubles);
- large needy families that bring up three and more children, including those from 16 to 18 years of age, with incomes below the minimum subsistence level (5335 rubles);
- students of higher educational establishments and technical colleges from needy families (with incomes below the minimum subsistence level of 5335 rubles for each family member); and
- Students of elementary vocational schools from needy families.

Overall, from May 1, 2011, almost 180 000 people in the oblast started to receive additional cash payments. The amount of the payment was determined on the basis of the medical consumption rate (10 loaves per capita), the average bread price in Russia (14 rubles), and the cost of «social» bread in the Kuznetsk Basin (8 rubles). The difference in prices (6 rubles) multiplied by the consumption rate amounted to the additional payment of 60 rubles a month per capita [<http://kemerovo.edinros.ru/theme/450.html>].

In our opinion, this approach to the solution of the

«social» bread problem, first, affected positively the oblast budget. In 2010, 390 million rubles were allocated from the oblast budget to produce «social» bread and in 2011, on the basis of the targeted aid (60 rubles a month per capita) and the number of people who qualified for it (180 000), 129.6 million rubles; i.e., the economic effect of this measure was significant. Second, this approach made it possible to increase the size of profit received by the bakeries (Table 6) and contributed to the improvement of the industry's competitiveness. Thus, first-quality wheat bread became a profitable product for large bakeries for the first time in many years. However, the oblast administration put this bread on the list of socially crucial products so that bakers do not raise its price to the limit in their chase for profit.

Comparing the average consumer price for the group «First- and second-quality bread and baked goods from wheat flour», the lion's share of which is first-quality wheat bread, we see that in Kemerovo oblast it is still the lowest among the constituent members of the Siberian Federal District (Table 7) [<http://www.gks.ru>.].

**Table 6** Financial results of first-quality wheat bread production (by the example of the Prokopyevsk Bread-Baking Complex)

Indices	Before May 01, 2011		From May 01, 2011	
	per 1 t	per 1 loaf	per 1 t	per 1 loaf
Production cost, rubles	16850.1	8.41	20165.3	10.08
Including reserve fund flour, rubles	2382.8	1.19	-	-
flour at market prices, rubles	2442.0	1.22	8140	4.07
Wholesale price, rubles	13261.0	6.63	23120.0	11.56
Gross profit, rubles	- 3589.1	- 1.78	2954.7	1.48
Profitability, %	-	-	14.7	14.7
Output	3692 t	7 384 000 loafs	3692 t	7 384 000 loafs
Gross profit, thou. rubles	- 13 205.9		10 908.7	

**Table 7** Average consumer prices of bread and goods baked from first- and second-quality wheat flour, rubles/kg

SFD constituent members	April 2011	April 2012
Siberian Federal District:	28.75	30.19
Altai Republic	28.03	27.66
Buryat republic	30.8	31.42
Tyva Republic	29.44	29.26
Republic of Khakassia	26.79	26.03
Altai krai	28.5	28.38
Transbaikal krai	32.95	34.62
Krasnoyarsk krai	30.36	30.72
Irkutsk oblast	34.29	34.83
Kemerovo oblast	16.21	24.18
Omsk oblast	26.87	26.35
Novosibirsk oblast	37.2	37.62
Tomsk oblast	29.14	27.72

The positive result of this decision was also the reduction of cheap bread purchases for misuse, which

guaranteed to the needy strata the use of this affordable product. Overall, this approach has led to the increased efficiency of the existing system; it was opportune and popular among the market players; and it had never been used by other constituent members of the Russian Federation; therefore, the practice of shifting to subsidies for the needy from bread price regulation should be adopted by other regions of Russia.

In recent years, significant changes have occurred in the assortment structure of baked goods produced by the

large and medium-sized units of Kemerovo oblast. The assortment structure and dynamics in 2009–2011 are given in Table 8. A positive trend in the assortment development is a stable decrease in the output of wheat bread varieties, including top-quality flour, most poor in micronutrients, while the output share of rye breads has started to increase, which is in line with the directions of assortment development and the norms of healthy diet.

**Table 8** Output structure of baked goods (by the example of individual units of Kemerovo oblast)

Name	2009		2010		2011		2009		2010		2011	
	t	%	t	%	t	%	t	%	t	%	t	%
	Prokopyevsk Bread-Baking Complex						Leninsk-Kuznetsk Bakery					
1) rye and rye-wheat bread	489.5	11.7	467.2	13.7	456	19.6	2555	17.5	3084	21.7	4391	30.5
2) wheat bread of all varieties	3299.5	79.0	2526.8	74.4	1568	67.3	7636	52.3	7813	55.0	6898	48.0
3) baked products	326.1	7.8	276.5	8.1	255.8	10.9	2942	20.2	2770	19.5	2791	19.4
4) other products	63.2	1.5	127.5	3.8	51.2	2.2	1458	10.0	543	3.8	299	2.1
Total	4178.3	100.0	3398	100.0	2331	100	14591	100.0	14210	100.0	14379	100.0

At present the oblast's bakeries put great efforts in the production of bread and baked goods enriched with vitamins and minerals, i.e., dietary and preventive products. New varieties of bread and baked goods are being developed and introduced. Along with the production of the usual varieties, the bakeries of Kemerovo oblast have mastered breads with various additives: walnut, sesame, cereal flakes, laminaria, dry green mixes, vegetables, etc. (more than 50 new bread varieties). A lot of attention is paid to the production of so-called «healthy bread.» Doctor's crisp breads and crisp breads with walnuts, onions, and greens. More often than not you can find products in special packaging.

New bread recipes have been developed by local technologists jointly with associates of the Kemerovo Institute of Food Science and Technology and the Kemerovo State Medical Academy. Branded bread varieties such as Prazhskii, Boyarskii, Venskii, Fitness with Raisins from Sprouted Seeds, Finnish Wheat Crusts, Golden with Coriander, Flax Seed, Village Bread, and Russian Bread have already gained acceptance from authoritative world-scale specialists and have become laureates of multiple exhibitions and competitions.

The bakers of Kemerovo oblast produce bread prepared on yeast, nonyeasted bread, bread on hoppy starters, bread with seed additives, and bread with malt extracts. There are also bread varieties that do not harm even people who suffer from diabetes or obesity, for example, coarse-grained bread. It is slowly digested by the organism and does not increase the blood sugar level; therefore, the pancreas has no need to work to the maximum (the varieties Otrubnoi, Izobilie, and Linga). Bread from kibbled grain is even more useful: it contains all the valuable ingredients that whole grain has, like coarse fiber that inhibits diabetes.

The above indicates that the bakers of the Kuznetsk Basin are actively developing enriched bread varieties for dietary nutrition and for functional purposes envisaged in the Food Security Doctrine, approved by a de-

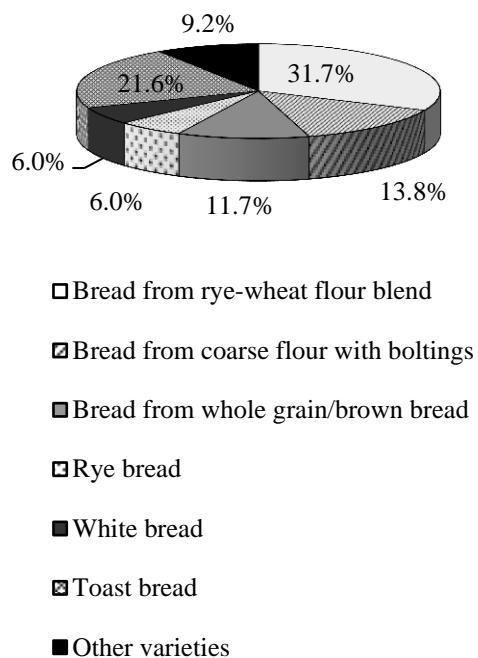
cree of the Russian president. This is confirmed by the output of diabetic bread varieties, and Kemerovo oblast is the leader among the Russian regions in their production (Table 9) [5].

**Table 9** Output of diabetic breads in Russia

Regions	Produced in 2009, tons
Russia's total, including federal districts:	1058
Central FD	179
Northwestern FD	164
Southern FD	37
Northern Caucasus FD	10
Volga FD	240
Ural FD	103
Siberian FD, including:	325
- Transbaikal krai	35
- Irkutsk oblast	4
- Kemerovo oblast	286

At present, the production of functional foodstuffs is a major and dynamically developing branch of the food industry in countries that uphold a healthy life style. European bread-baking experience shows that European countries have been able to reach a stable situation in the consumption of baked goods by making the consumer consider bread as an element of healthy nutrition and not just as a source of calories. Since the 1990s Europeans have been displaying the growing demand for products with improved taste properties, which leads to considerable shifts in the assortment of foodstuffs: the reduction of the share of traditional mass bread varieties and the increase in functional and premium breads. New bread varieties appear whose recipes include wheat, rye, or oat boltings, whole unground grain, oat and buckwheat flour, vegetable and fruit additives, and other components. As a result, the share of healthy bread in the total bread output has increased by 68% in Britain and by two times in Germany in recent years [6]. Figure 6 shows the assortment structure of the German bread

market, and we can see that the share of healthy bread in its total supply reached 63% in 2010 [*The German Bakery Industry. Facts and Figures 2011. http://www.iba.de/*].



**Fig. 6.** Assortment structure of Germany's bread market.

The government policies of European countries aimed at increasing consumer awareness of the composition of foodstuffs contributes to the increased consumption of functional baked goods. Printing this information on packaging, the producer informs the consumer of the effects of the raw materials of which products are made and prevents the development of certain diseases. The approvals of their products by various medical associations and societies (of endocrinologists, cardiologists, and other medical specialists) become important for European producers. In particular, the special Food Information Regulation to inform people about the ingredients of foodstuffs is in effect in the

European Union (). Using this information, each consumer can choose products taking into account individual preferences [7].

Today fewer and fewer consumers buy what they are offered, and more and more of them seek and buy products that meet their preferences. A survey conducted in the United States to reveal the consumer behavior of the generation born in 1980–2000 has shown that people consciously choose what they buy; they are very sensitive to advanced brands, value highly the freedom of choice on the retention of requirements on healthy food-stuffs, and pay great attention to the format of presentation of product information, including the Internet [*Generation Y is driving food trends, says report. Food navigator-USA.com. 19.01.2009*].

Taking into account the current negative operating conditions (reduced production output and profitability, operating losses) and the European experience, the large and medium-sized bakeries in Kemerovo oblast must base their current activities on constant concern for the stable quality of products and for the renewal of their assortment in line with the requirements of the science of nutrition. In choosing their assortments, the bakeries must be geared to marketing research and, more importantly, to scientific recommendations. To enhance the food ration and to prevent diseases, the oblast's bakery plants must continue to increase the output of rye bread varieties, master the output of special dietary varieties with bread-enriching additives. Competent control of quality and assortment as the chief factors of production increase will affect positively the sales and competitiveness of the bakeries of the Kuznetsk Basin.

Taking into account the opinion of many specialists of the baking industry that, to improve the efficiency of this industry, urgent measures such as the elimination of administrative regulation of bread prices, the transfer to the targeted subsidizing of the least protected strata, the increased output of dietary and functional baked goods, and the production of bread from rye flour, as well as the development of the infrastructure and interaction between science, higher educational establishments, and business are necessary, we may state that today the baking branch of the food industry of Kemerovo oblast is developing in the right direction.

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