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SPATIAL FEATURES  
OF SECTORAL DEVELOPMENT

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## Socio-Economic Challenges to the Timber Industry in the North-European Part of Russia (Case Study of Kostroma Oblast)<sup>1</sup>

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**Abstract**—This article defines the framework for identifying social and economic challenges that the timber industry currently faces in the regions of Northern European Russia. The analysis of identified problems on a regional and local scale for the case of Kostroma oblast is presented. The main institutional shifts during the 1990s–2000s are discussed, along with economic problems of regional timber industry systems and their social implications, as well as how companies and rural communities of Kostroma oblast have adapted to the challenges of the ongoing economic recession in 2009.

**Keywords:** Russia, Kostroma oblast, timber industry, institutional shifts, social implications.

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### INTRODUCTION

Regions rich in forest resources and having timber industry as the dominant actor in their economies face a number of inherent challenges, of which the major ones are the following: (1) spatially dispersed resources; (2) extreme dependence upon state forestry regulations; (3) significant role of transportation costs and, consequently, of resources, processing facilities, and infrastructure collocation; (4) peripheral and isolated location of timber harvesting communities, as well as a dispersed pattern of rural settlement. The social security of the whole population of a forest region may strongly depend on the profitability of a few forest processing enterprises. So, social strain develops in isolated localities and is attached mainly to single-industry, and especially to single-enterprise, communities.

The purpose of this article is to show the interdependence of institutional and economic changes in the timber industry and to track the social consequences of these changes in forest-dependent North European regions of Russia, with Kostroma oblast as a case study. As A.N. Pilyasov put it, “where the main values are set by spatially extended, dispersed natural resources (instead of human-built assets localized in cities), it is especially dangerous there to ignore spatial factors.” [14] Therefore, spatial patterns of the timber industry in sparsely populated eastern parts of Kostroma oblast are examined here in more detail. These areas can be

described as *double periphery*, because they border upon underdeveloped parts of other regions.

### SHIFTS IN THE NATIONAL TIMBER INDUSTRY DURING THE 1990s–2000s: GENERAL TRENDS

The Russian timber industry is a significant component of the national economy, providing more than one million jobs. According to the statistics of annual allowable cut use (less than 30% of the allowed volume is cut nationally), the timber industry could drastically increase its production.

The bottleneck of Russian timber industry, which was inherited from the Soviet era, is a lack of advanced forest processing facilities [19] and, therefore, the necessity to export rough logs (having low added value), or to decrease cutting volumes (which inevitably leads to lowering the cost-effectiveness of the forestry infrastructure and to termination of jobs).

The Soviet Union consistently could not catch up with the United States in providing forest harvesting with appropriate processing facilities. Path dependency is tangible in the industry. Thus, the trend of higher growth rates of papermaking as opposed to pulp production is still unsteady in modern Russia, while in the United States it is well-established. Low and balanced growth of both industries in Russia implies that post-Soviet shifts in the timber industry have not been regressive and have not destroyed high-tech factories, as opposed to trends in some other industries, such as machine building.

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<sup>1</sup> This article was translated by the author.

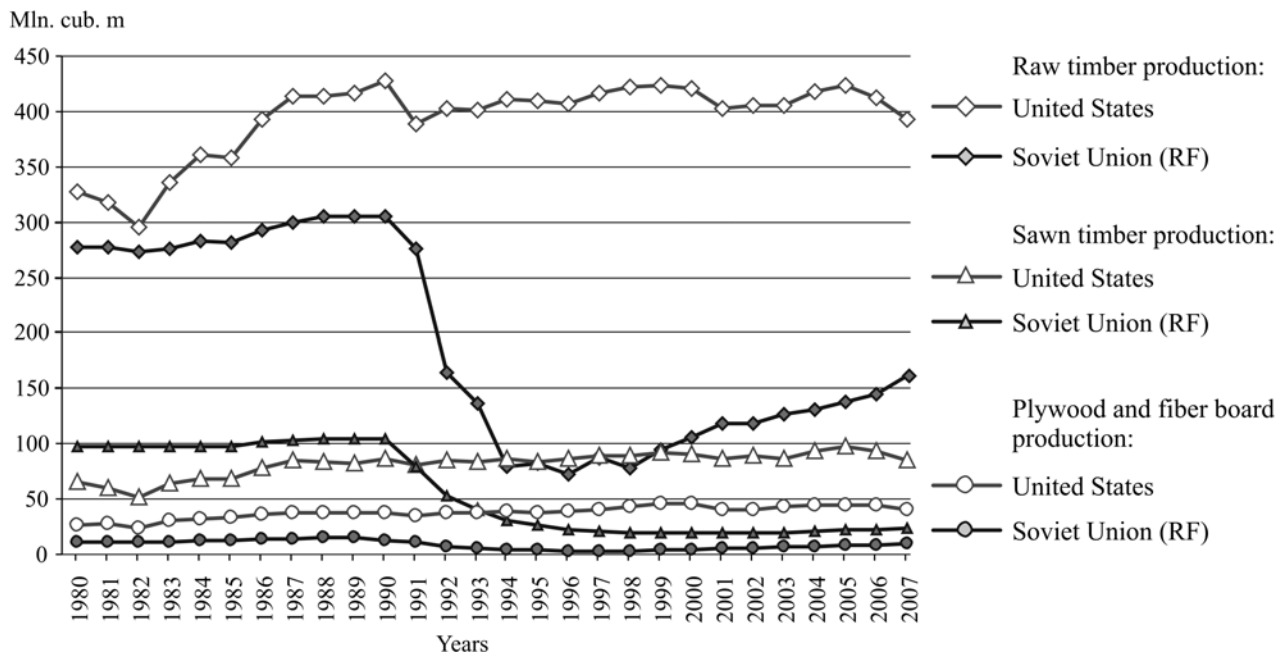


Fig. 1. Main features of the timber industries of the United States and the Soviet Union (Russia) in 1980–2007, according to FAO.

Figure 1 shows the dynamics of harvesting and of crude and advanced processing proportions in the two biggest timber complexes of the world, the United States and the Soviet Union (Russian).<sup>2</sup> The figure makes it clear that crude processing dominated in Russian timber industry long before the Soviet Union's collapse. The imbalance in Soviet forest harvesting and timber processing has been significantly alleviated in post-Soviet Russia because of a slump in forest harvesting, with concentration of all harvesting in the most advantageous regions (see Fig. 1).

The complex economic crisis of the early and mid-1990s and compensatory growth of the late 1990s and the early 2000s have had various impacts on different forest-related industries. By 1998 (bottom of crisis) maximum damage was done to logging and lumbering (25 and 19% of 1990 production level, respectively) (see Fig. 1). Since the late 1990s, a major part of capital investments in timber processing has flown to the pulp and paper industry, mostly to reequip existing facilities [3], never to build new plants.

During growth of the late 1990s and the early 2000s, the following two conditions were the main success factors for regional timber industries [4]: the scale of the pulp and paper industry and the availability of transport infrastructure for exporting rough logs and proximity of the region to importers' borders (see Fig. 2).

<sup>2</sup> Continuous usage of USSR and then, since 1991, Russian timber industry indices within one trend is valid because most forests and forest processing facilities of the Soviet Union were concentrated within Russia.

#### INSTITUTIONAL SHIFTS OF THE 1990s–2000s AND ADAPTATION EFFORTS OF ENTERPRISES

In post-Soviet Russia, frequent radical changes in industrial regulation have been a formidable challenge to the timber industry.

Privatization of production facilities was the first and the most destructive change for Soviet timber industry. Those enterprises which have not been privatized showed, in general, low efficiency because, on the one hand, the most successful enterprises were privatized first; on the other hand, privatized enterprises could raise funds for investments through sale of shares, which was not feasible for state-owned enterprises [18].

Processing facilities integrated into production strings, which were built thoroughly within Soviet production associations, were often handed over to different owners. This resulted in miscoordination of price-formation policy and delivery schedule, which led to breakdowns in functioning of whole production clusters, such as Bratsk-Ust'-Ilimskii in 1994 [19].

Faster degradation of timber industry facilities during the 1990s was caused by liberalization of exports. Decentralization of export activity led not only to undesirable shifts in its structure (growth of share of the most valuable coniferous timber logs in exports) but also damaged the domestic timber processing industry by creating an opportunity for commercial companies to buy raw timber from lespromkhozy at a higher price than domestic processing enterprises could afford [18].

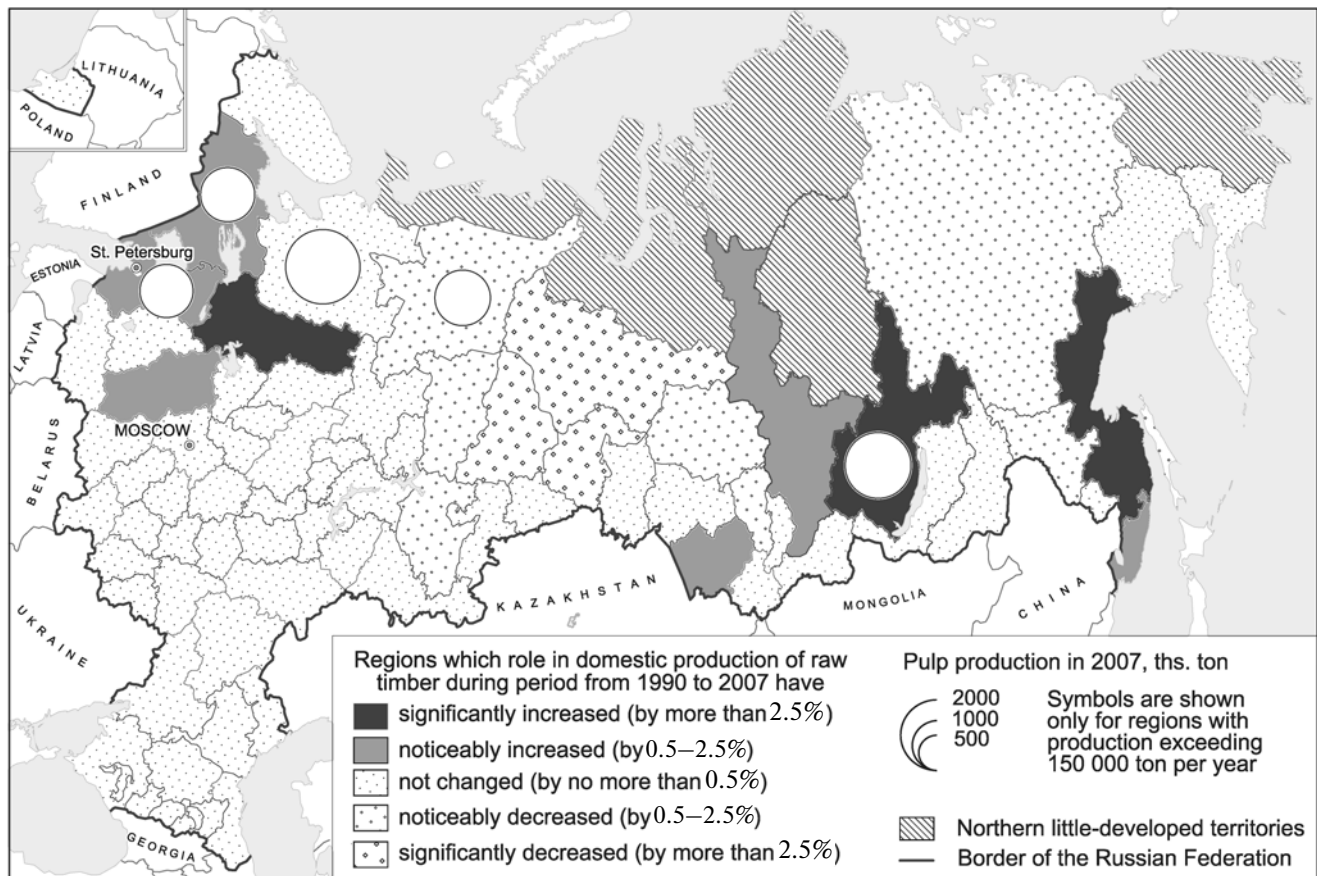


Fig. 2. Changes in significance of certain Russian regions for overall domestic raw wood production during 1990–2007.

Against the background of privatization, a radical reform of forest legislation took place [11]. Lespromkhozy, which had facilities of harvesting and crude processing of timber, were divested of the long-term right to use wood lots in 1993 that had previously been secured for them. Hence, they could get forest reserves only by direct negotiations and tenders. So, the right to manage forest reserves was delegated to municipalities (the lowest level of authority), and local authorities gained large powers without any obligations to supply the national economy and population with timber. As a result, commercial companies began taking forest resource bases away from lespromkhozy, enticing workers from them, and using their machinery through leasing or buying it.

The Forestry Code (FC) enacted in 1997 [7] refined the previous legislation in the field, while the new Forest Code enacted January 1, 2007, has changed the forest management system radically [6, 21]. The main changes are as follows below.

Though federal ownership of forest lands and forest plots has been preserved, forest management authority and almost all state forest controls were delegated to Russian regions (federal subjects).

The state also handed leskhozoy with their property over to regions and ordered for them to be reformed by dividing the economic and managing functions. Leskhozoy had previously been state institutions for forest management; control of timber harvesting; imposing fines; implementing care of stands, including improvement cutting; and selling logs harvested in that way. Such a combination of competences led to abuses, including commercial cutting under the disguise of improvement cutting in which, contrary to the law, the most valuable trees are felled, instead of poor ones. As a result of the reform, leskhozoy ceased to exist, and institutions have emerged which have no authority to conduct forestry activities and to impose fines. Care of stands on rented wood lots became the duty of leaseholders (with termination of the rent contract by the state in case of failure to comply). Care of stands on other wood lands was assigned to newly established state enterprises working under state contracts. The majority of employees of former leskhozoy were transferred to these new companies.

The new FC introduced a new system of getting the right to cut stands. It became application-driven instead of permission-driven. The previous order was based on issuing “wood cutting tickets” which permit

cutting a certain volume of timber within a certain wood lot. The newly introduced order stipulates that lessees submit applications delineating their plans of harvesting, and bidders take part in state organized tenders.

The necessity to adapt to new regulations damaged small companies most of all, while large companies having expensive, though competent staff, have gained a new opportunity to conduct improper activity (finding flaws in the legislation).

The new method of allocating forest reserves and the way of conducting auctions and tenders make it possible to get rent even for those who have no facilities to harvest timber. These persons and entities get wood lots to sublease them, or they can rent a significant area of forest around a large processing enterprise to block its supply as a method of unfair competition.

Amendments to the current FC enacted in the beginning of 2009 [21] prohibit selling and buying stands for economic purposes. These amendments have impacted mostly small enterprises and private entrepreneurs. Leasing of forest land has become the only available mechanism of getting raw timber for cutting since Spring 2009 in Russia. As the leasing contract stipulates also concessional duties of lessees to protect forests, which is unaffordable for small companies, the new law created a dilemma for small businesses: either terminate activities or conduct illegal harvesting. Therefore, the new law aggravated the difficulties of running small business in the timber industry, which had been originally caused by the finance and economic crisis.

Abolition of the 1997 FC led to economic difficulties for many agricultural production cooperatives (former kolkhozy) and relieved regional and municipal authorities of powerful controls over these farms. As agriculture is mostly unprofitable in forest regions, harvesting timber from wood lots given them for free use was the only way for the farms to survive. By allocating them wood for felling, regional authorities could stimulate them to maintain desirable agriculture production levels.

Transfer of wide powers in the area of forest management to regional authorities according to the new FC led to *regionalization of forest management* in Russia [5].

**The primary current problems of regional timber industries in Russia.** Problems of regional timber industries are caused by a variety of factors. The poly-scale approach [20] requires identification of three separate groups of factors, which have different geographic scopes.

The sectoral factors, typical for forestry of all northern wooded countries, are the following:

(1) The location of forest harvesting facilities, which is most often disperse and drawn towards

periphery, effects, through the workforce location pattern, the population settlement pattern and the location of housing services and of small timber processing facilities.

(2) The distance of profitable transportation of raw timber is rather limited because of areal distribution of the resource and capillary pattern of its flows.

(3) Seasonality of jobs in timber harvesting requires spatial redundancy of machinery and makes it necessary for timber harvesting companies either to attract an expensive workforce from outside the locality or to operate in areas of sustainably high unemployment.

(4) The necessity to maintain timber harvesting capacity on the same level by continual expansion to new wood lots and building relevant transporting infrastructure leads to spatial deconcentration of investments, which is undesirable for business and could be afforded only by the state.

(5) The ups and downs of international timber and paper markets have grave effects upon isolated single-industry forest settlements.

National factors (specific for post-Soviet Russia) are the following:

(1) Privatization of processing facilities often destroyed the harmonized cooperation within timber industry complexes (clusters).

(2) Radical shifts in forest legislation, which happened in 1993 and 2007, have undermined functioning of enterprises dependent on long-term resource bases and made lease of wood lots possible for entities located outside a region and having no timber processing facilities.

(3) Frequent reforms of forest management cause organizational tumult.

(4) Continual lack of investment in the forestry infrastructure (first of all, in building forestry roads) has resulted in shrinking of developed space in forest regions.

The factors of these two groups impact timber industries in all of Russia's regions. At the same time, a number of factors are presented specifically in Kostroma oblast. Finding that the same factors are significant for other regions would serve as a basis for indentifying likenesses and differences of the timber industry environment in these regions and in Kostroma oblast as a model.

Regional factors (for Kostroma oblast):

(1) Failure of the regional economy to incorporate all the workforce available after the post-Soviet decline in timber harvesting, which is caused by underdevelopment of other industries in the region, by the lack of large cities, and by the spatially deconcentrated location pattern of the workforce.

(2) The discrepancy between species structure of stands and the structure of processing enterprises'

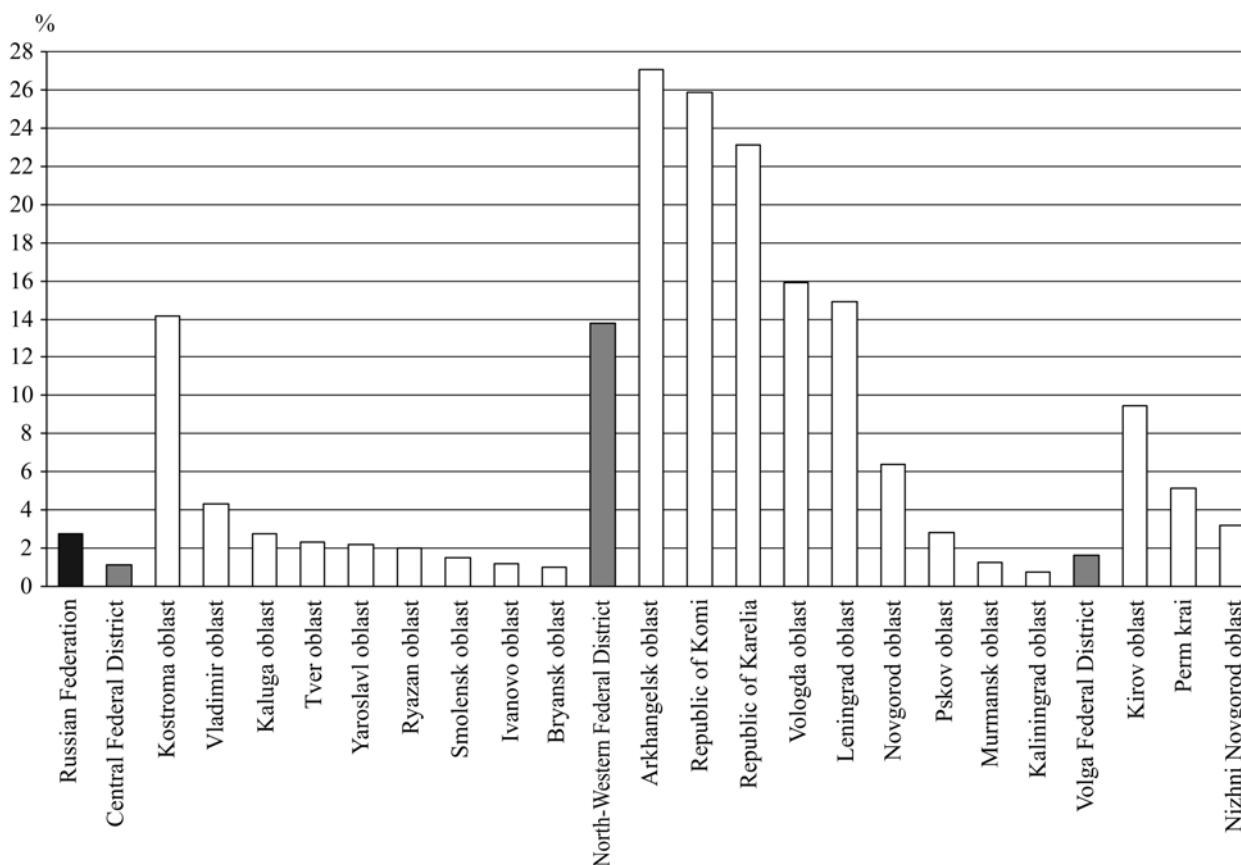


Fig. 3. Proportion of employed in lumbering in average yearly number of employed in activities classified as “Agriculture, hunting, fisheries, fish breeding” in forest regions of the Central, Northwestern, and Volga Federal Districts in 2008. Source: [17].

demand (deciduous stands are dominant, while coniferous are in deficit), which emerged as a result of large-scale, often exceeding allowable cut levels, harvesting of the Soviet times.

(3) The remoteness of region’s timber resources from large timber processing centers that are able to process a variety of sorts of raw timber.

(4) The remoteness from the border with countries—importers of raw timber.

**Specifics of northern territories specializing in the timber industry.** The northern periphery, which includes northeastern parts of Kostroma oblast as well, faces a number of specific problems. They include “lack of entrepreneurs and business activity,” “lack of competent workers,” “high business costs” [15], etc. They can be more or less severe from region to region, while factors of dynamics of local peripheral communities during post-Soviet transformation remain the same. In addition to the economic–geographical location, they include success or failure of locality-forming [9] enterprises, social rootedness of the main economic activity, and degradation of the social environment [15]. The last of these can easily be seen in large forestry villages of Kostroma oblast. Their popu-

lation was already significantly declining during the second half of the 20th century, but some of them are still as large as 500–1000 people or even more. Timber processing facilities of these settlements are often owned by external businesses that do not take into account the interests of municipalities. Workers of these enterprises suffer from bad labor conditions, but due to social apathy they cannot unite to defend their interests and would not participate in initiatives of municipal authorities. Communities smaller in size often enjoy local processing facilities being owned by a local entrepreneur. Even though social degradation there is also visible, as a result of continual out-migration and abuse of alcohol [10], mutual aid is present between the business and the authorities there.

So, when assessing the population’s ability to adapt to economic difficulties, analysis on both regional and municipal levels is insufficient. Assessment should be implemented differentially for entities of the second level of municipal hierarchy and, in some cases, differentially for separate settlements.

**Timber industry of Kostroma oblast.** Kostroma oblast is the most forest-dependent region of Central Russia, both in terms of the forest cover rate (74% of

the territory) and in terms of employment in timber harvesting (see Fig. 3).<sup>3</sup>

However, Kostroma oblast's timber industry is significantly smaller than timber industries of regions within the Northwestern and Volga Federal Districts (see Fig. 4). Kostroma oblast was unique for the Central Economic Region in terms of timber harvesting volumes during the Soviet times, but now it is not.

Figure 4 demonstrates several vectors of growth of the difference between the indices of 2008 and those of 1990. The first of them is increase in the difference between the 2008 and 1990 indices from the border to the inner regions. The second vector is directed from regions with dense infrastructure to peripheral regions. The third direction is from regions still having large forest resources to regions where these resources have already depleted. From this point of view, Kostroma oblast's location could hardly be considered as advantageous. The timber industry of Kostroma oblast, which is of a great value for the region's economy, has no competitive advantages compared to industries of other regions. Kostroma oblast is remote from border with importers; it has no significant mineral deposits; its main resource (coniferous wood stands) is close to depletion; it suffers from low population density; and its central places system is very uneven [1]. All in all, it is a region unattractive for investment. However, in spite of all these negative factors, one of the Russian biggest fiberboard production plants was built in the region by a foreign investor. In 2002, the international corporation Krono Swiss Group deployed its fiberboard plant in the eastern part of the region (city of Shar'ya) because no companies were interested in leasing forest land there, so the price of extensive wood lots was not high.

The timber production dynamics of Kostroma oblast is compliant with the national tendency of an abrupt slump in the beginning and slow growth afterwards with advanced processing enterprises recovering first. Fiberboard production growth in Kostroma oblast during the 2000s shows the great importance of establishing the new large Kronostar plant in Shar'ya for this weak region's industry (see Fig. 5). Shar'ya has returned to life after the facility was put into operation. It is the only large settlement in the region in which population has grown in recent years. In spite of its small size (only 38600 people), it is tending toward becoming a subregional center for the whole eastern

part of the region. Taking into account the excessive concentration of the population and of economic activity in the western part of the region, this trend is positive for the region's spatial balance. Rural depopulation will continue regardless of Shar'ya's development trend. But growth of the city can lead to emergence of suburban, much more cost-effective agriculture, analogous to that which has developed around the city of Kostroma [9].

Kronostar, several other large timber processing facilities (plywood plants in Kostroma and Manturovo, a large timber mill in Shar'ya), and some medium-sized plants (a timber mill in Makar'ev) are exceptional cases of success against the background of weak timber harvesting and small timber processing enterprises, which are highly interdependent.

**Current economic crisis and challenges to forestry of Kostroma oblast.** The timber harvesting subindustry's problems have been rendered much more severe by the current recession. These problems can be divided into several groups.

*1. Economic and technological problems of the timber harvesting subindustry are caused by the extreme seasonality of hauling felled timber out of wood lots and aggravated by the poor condition of forestry roads.* In post-Soviet Russia, construction of year-round available forestry roads has nearly collapsed. Maintenance of existing forestry roads has also grown worse. As a result, plank roads (full-length logs used as a road surface) have decayed, while dirt roads without log cover are impassable for logging trucks every year from April till November, in the worst cases from March till December. This necessitates 3–5 months of hauling to cover the yearly demand of processing facilities. So, timber harvesting companies need to maintain redundant motor pools, which raises the cost-price for raw timber. A workforce deficit problem is not typical for the region because of high unemployment. Timber processing companies face technological problems because of seasonality. Cut timber must be processed within 6 months, or its quality deteriorates. Therefore, companies choose between quality loss (which means loss of income) and processing within a short period of time (which means rise in costs). The third alternative is building preservation pools or backwaters on rivers to keep timber underwater during the summer.

*2. Problems related to higher costs of timber transportation from wood lots to processing facilities which are not caused by seasonality.* Increased transportation costs are caused by a number of factors. First, processing facilities are *threaded* on railway, along which the timber harvesting developed first, so that resources have been already depleted. Second, railway transportation is not a sound alternative to using trucks, because of organizational problems of contracting the railroad company, which is a Russian state-owned monopoly. So, using railroads to transport timber is really cheaper than using trucks only if very large amounts of timber are transported. Third, road cover

<sup>3</sup> Figure 3 requires additional comment. First, timber harvesting is conducted, in contrast to higher technological phases of the timber industry, not only by large enterprises, but also by small businesses and individual entrepreneurs. These small entities often use nontransparent schemes of employees accounting. Therefore, the official number of employed in timber harvesting is likely to be underestimated for all forest regions of Russia. Second, timber harvesting is an extremely seasonal activity, so the average yearly number does not indicate peak demands for the workforce usually taking place during the period from November till March.

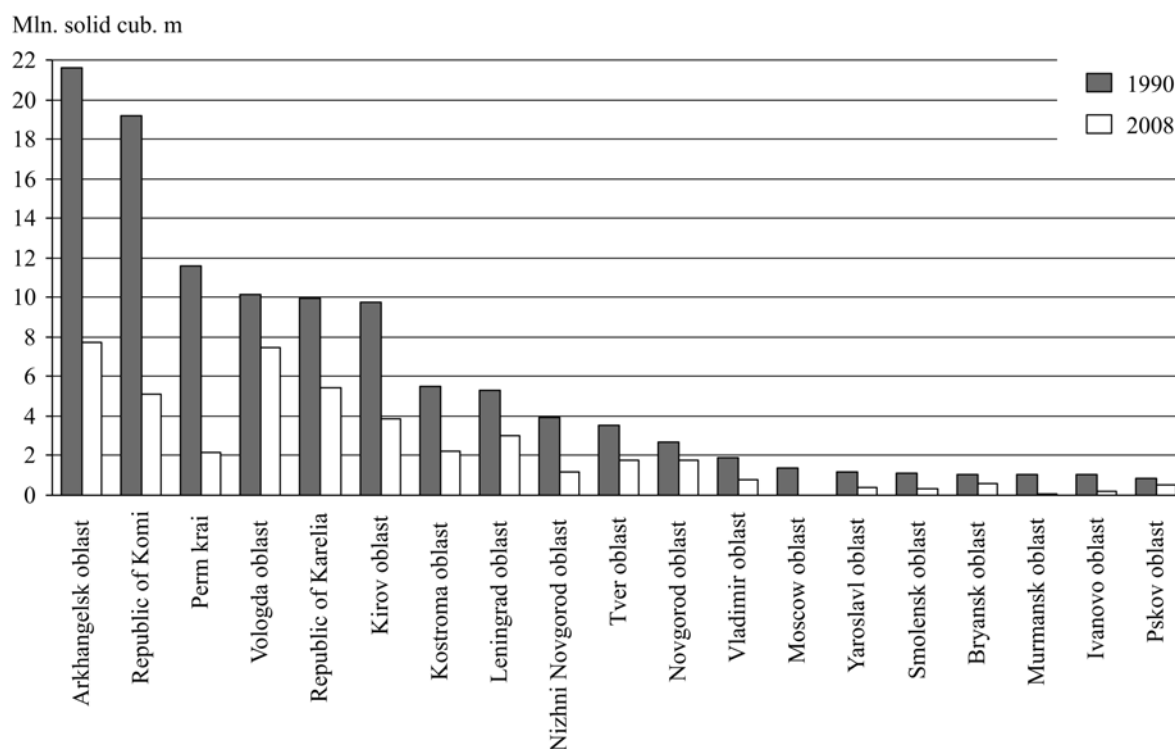


Fig. 4. Volumes of raw timber production in the main forestry regions of European Russia in 1990 and 2008. Source: [17]. Data on southern regions of the Central Federal District are given for comparison.

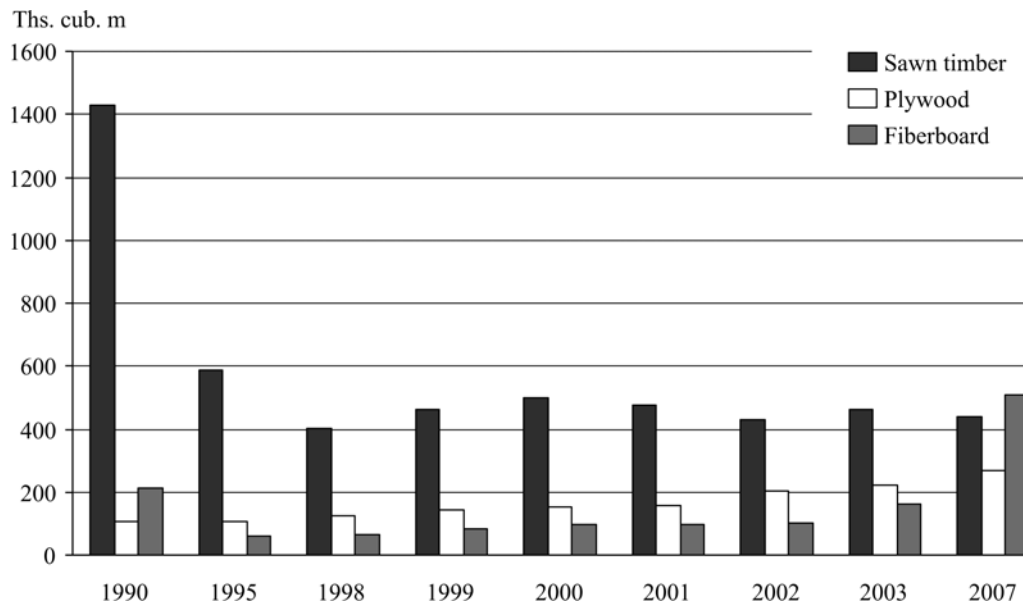
on regional highways has not been designed to endure the weight of large trucks that could make automobile transportation less expensive. Fourth, the low quality of forestry roads makes it necessary to include a costly additional link into the transportation chain, namely reloading of timber from all-terrain trucks to highway trucks. Having no capacity to invest in constructing the infrastructure and desiring to adapt to the current circumstances, timber harvesting companies seek resource bases located near good roads. Throughout the post-Soviet period, *timber harvesting activity has continually shrunk relocating towards populated areas with developed transport infrastructure*, which leads to inaccessibility of valuable wood stands and total depletion of those available.

3. *Problems related to the availability of valuable and not valuable forest lands for industrial use.* Large-scale exploitation of a region's forests during the late-Soviet period resulted in proliferation of deciduous stands (composed of birch and aspen), which are not natural for juvenile woods of the Southern Taiga zone. By the mid-2000s, the proportion of deciduous stands to coniferous stands in Kostroma region by territory is 53 : 47, while it is as much as 72 : 28 by the annual allowable cut (according to the Forest plan of Kostroma oblast issued in 2008).

From this point of view, Kostroma oblast is a typical forested region of European Russia with an explicit tendency of concentration of low value deciduous

stands in transport accessible areas and of excess of technically inaccessible ripe and overripe coniferous wood on the periphery. Many wood lots have become inaccessible because of the near-cessation of forestry road construction, destruction of the previously built roads, extinction of narrow-gauge railroads, and closure of most timber rafting ports on rivers. On the territories where cuttings took place in the middle of the 20th century, coniferous stands are ripening; so, they will be of great value after one or two forest surveying periods (10–20 years). Those of these wood lots that are located near regional or federal highways will, likely, undergo transportation development and will be exploited. Others will unlikely be harvested again because the demand for timber is volatile, while infrastructural projects are too costly and slow to serve as adaptation activities, not the cause of changes in prices.

The composition and spatial distribution of the raw timber determine the timber processing industry profile. Plywood production of the region totaling 180000 m<sup>3</sup> per year [16] demonstrated sustainability during the crisis transformation of Russia's timber industry due to abundance of specific raw materials (birch veneer logs). Reinstallation of fiberboard production in Shar'ya with a production capacity of 500000 m<sup>3</sup> per year [16] became possible due to the ability to use all kinds of raw timber.



**Fig. 5.** Dynamics of production volumes of the main timber products in Kostroma oblast during the period of 1990–2007. Source: [16].

Regional authorities stated a new ambitious initiative of a green-field project in the east of the region. They plan to attract an investor who will build a large (800 000 tons per year) pulp and paper plant near the city of Manturovo. In the first version of the project, there was a term unacceptable for the regional authorities [13], namely specialization of the future plant with coniferous timber. The present version of the project, endorsed by authorities, features two significant changes: a new investor, domestic instead of foreign, and specialization changed to using deciduous timber. The new project was included into the list of Russia' timber industry investment projects of high priority [12], but its implementation is postponed for an undefined period because of the current economic crisis.

Transport as an inhibiting factor of timber harvesting in Kostroma oblast (and in a number of other regions of European Russia) should be considered differentially for harvesting of softwood stands (which are in deficit) and of hardwood ones. For the latter the significance of the transport factor is much lower because deciduous forests are located everywhere: in the first place, in areas of the most active harvesting in the past, which means areas with good transport availability.

*4. Problems caused by combined effects of the economic recession and of new forest management policies in regions, development of which had not been possible before enactment of the new Forestry Code of the Russian Federation.* Kostroma oblast of 2007–2009 is a region where the new forest policy (which became rather independent after enactment of the new FC) has aggravated the crisis in the forest sector. After regional

authorities gained powers to dictate upset prices for both types of auctions available according to the new FC (auctions of buying timber contained in wood stands from the state, and auctions for gaining the right to lease wood stands), they set upset prices several times higher than the minimal federal prices. As demand for timber and paper products continued to grow during most of 2008, timber harvesting companies' demand for wood stands was rather inelastic, so the budgetary income of the region grew significantly. The crisis hit the timber industry of the region in the beginning of 2009 (delivery contracts are yearly in almost all processes in timber industry). Lessees' demand quickly became very elastic, but the price policy of regional authorities remained inflexible. Therefore, a wave of lease contract terminations by large companies hit forestry of the region in the first quarter of 2009. At the same time, medium and small companies began to abstain from participating in auctions of buying timber contained in wood stands (this form of transactions was legally prohibited a few months later), while timber processing companies without timber harvesting subsidiaries began to seek for raw timber contractors in neighboring regions. As a result, regional budget and municipal budgets lost an important income item: payments for forest use. Income by this item for the first half of 2009 dropped three to ten times against the relevant period of 2008, depending on circumstances in the municipalities [23]. The slump was the deepest in those municipalities where the major timber harvesting companies (OOO Kronosprom, OOO LPK) had leased large wood lots previously (Shar'ya, Pavino, Vokhma municipalities). Those territories were least affected where no interests



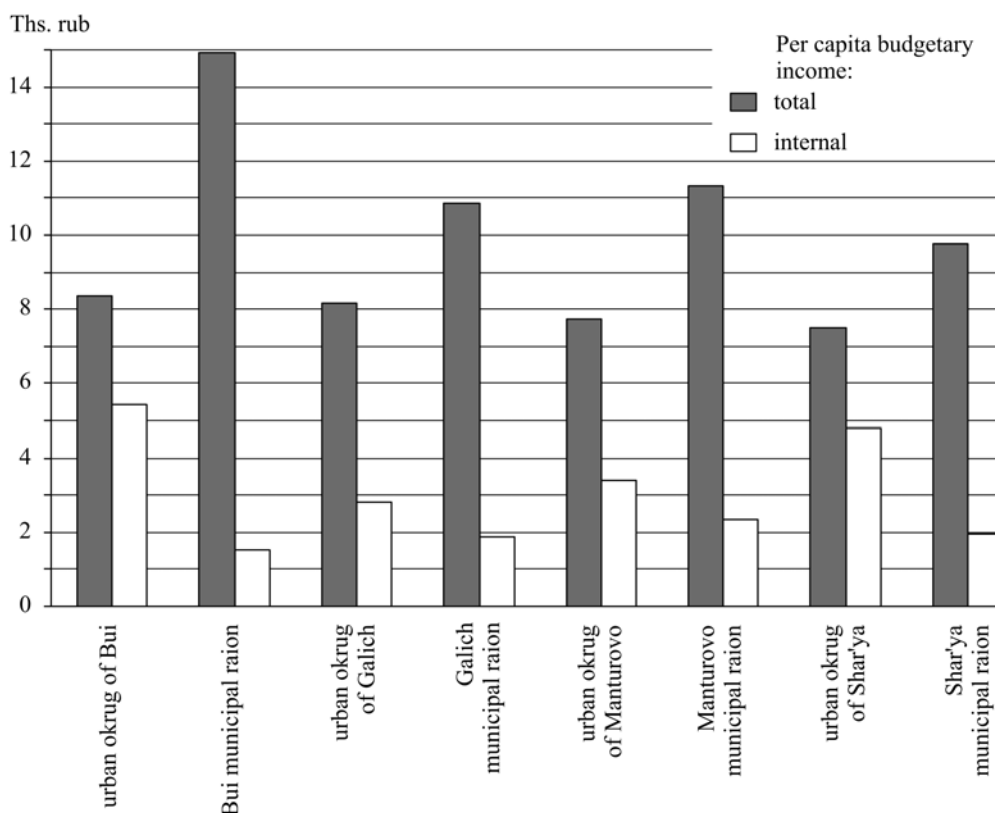


Fig. 6. Per capita budgetary income (internal and total) in urban okrugs and municipal raions of Kostroma oblast.

of major harvesters had previously been present and, therefore, the composition of the forest lease by entities had been irregular (e.g., Makar'ev municipality).

While many negative factors affect the industry during the current recession, the main factors are different for companies of various sizes. The largest enterprises have suffered directly from crisis consequences (decline in demand for timber from the building sector which is its primary consumer). Medium enterprises have suffered primarily from new regional forest policy (changes in prices for wood stands harvesting licenses). Small businesses, for example, little individual sawmills specializing in cheap articles of popular consumption and firewood were not affected by the crisis but suffered severely from prohibition of auctions of buying timber contained in wood stands, which were introduced by amendments to the FC enacted March 14, 2009 [22; amendment to p. 8 art. 29 FC of RF].

Thus, because of competitive disadvantages of the timber harvesting subindustry of Kostroma oblast, the region's enterprises supplying high-tech export-oriented processing facilities (plywood, fiber board) are highly susceptible to fluctuations of timber product prices on international markets, while enterprises supplying sawmills are susceptible to fluctuations on internal markets.

#### Local specificities of the socio-economic adaptation of timber-industry-dependent problem municipalities.

The impacts of technical-economic problems and transportation deficiencies are significantly aggravated by social problems in Kostroma oblast's settlements.

First of all, these are problems of vulnerable—in socio-economic terms—single-industry rural settlements specializing in forest harvesting, which emerged during the Soviet period as attached to *lespromkhozy* and *lesopunkt* (large logging terminals). These communities are remote from municipal centers and regional highways, by their nature. The remoteness determines persistent unemployment years after the workforce had been released from timber harvesting. The settlements are too large to eliminate them by relocating the population, and at the same time they are too small for self-development processes to emerge and for new jobs to emerge as a result of the multiplicative effect. These settlements showed the highest rate of citizens' applications to municipal centers for support of the unemployed in 2009. Social problems are not so grave in communities located near highways. Such a location provides a sustainable market for small timber processing businesses, gives the population the possibility of commuting to the municipal center and to sell nontimber forest products (berries, mushrooms) individually and unofficially to drivers

passing the highway, instead of trading through resellers dictating low prices. Deeply peripheral communities suffer much more.

**Social problems of underdeveloped rural settlements** are caused mostly by low entrepreneurial initiative of local citizens and by the new wood lot allocation policy obstructing access of small businesses to legal timber harvesting. The situation was aggravated in many settlements when local farms throughout the country lost privileges in timber harvesting, because these farms are the main employers in rural areas.

In general, the main social result of the region's timber industry vulnerability since January 2009 is soaring unemployment, which is caused by timber processing companies seeking for new suppliers in neighboring regions. High unemployment is sustained, to some extent, by the federal policy to heavily subsidize the unemployed. High allowances do not provide incentives for the unemployed to get employed, so unemployment can become stagnant, if state policy does not change.

The main aggravating factor of social problems in eastern parts of Kostroma oblast is the transport–geographical location of settlements. Along with single-industry forest communities, peripheral agricultural communities with weak farms suffer very much. The social problems of these settlements are often not explicit because the population has almost no initiative to participate, and, therefore, to register, in federal and regional employment programs. The low level of initiative has three causes: (1) high transportation costs of reaching the municipal center, (2) informational isolation, and (3) population composition (increased share of old and marginalized people because of longstanding out-migration and negative social selection) [9].

In settlements located near large highways, social conditions are better even if they are remote from centers, because a highway is an excellent market for individual agricultural products and nontimber forest products. The situation is even better if a settlement is near both a municipal center and a regional highway. Unemployment statistics falsely indicate the highest unemployment rates in these relatively successful settlements because their residents actively submit applications for subsidies. After securing subsidies, these people often intentionally evade getting employed during the summer to use all their time for harvesting nontimber forest products, less often during the winter to illegally cut timber and hunt for commercial purposes.

Taking this factor into account, the social hardships of a number of settlements of the northeastern part of the region can easily be explained. These territories are remote from a federal railway and regional highway (Pavino, Vokhma, Oktyabr'skii, and, to a lesser extent, Pyshchugskii and Ponazyrevskii municipalities).

Subsidies from the region's budget are the main source of life-support for peripheral territories [15]. Federal and regional budget policies have the main priority of eliminating spatial imbalances [2]. Equalizing tends to take the form of excessive subsidies for outsiders. The per capita budgetary incomes of the least developed municipalities are higher than those with relatively strong economies. Moreover, per capita budgetary incomes are higher in municipal *raions* than in urban okrugs. Meanwhile, the latter have much higher per capita internal budgetary income (all income which is collected locally and not transferred from the higher budget level in form of subsidies) (see Fig. 6).

Field studies conducted by the author in six municipal *raions* and two urban okrugs, as well as interviews in centers for support of the unemployed, have shown that fiscal policy measures can be ineffective regardless of the scale of funding. Thus, extremely high unemployment subsidies of about 5000 rubles a month practiced since 2009 (granted only for the discharged on the ground of redundancy and for some other reasons) led to a large number of jobs becoming unattractive. These relatively low paying jobs include those in timber processing; thus, state subsidizing policy has hit the competitiveness of the timber industry.

## CONCLUSIONS

Kostroma oblast's timber industry, having few competitive advantages per se, was hit in 2007–2009 by the combined effects of three new conditions: (1) changes in forest legislation, (2) shifts in the region's forest policy, and (3) consequences of the global financial crisis. The major social effect of these problems is soaring unemployment; there is danger for a number of localities that unemployment will persist.

Cities functioning as hubs and industrial centers suffered less than timber harvesting settlements at the periphery. The current recession has shown again that single-industry settlements established and heavily subsidized in the framework of a planned economy during the Soviet period to promote certain industries are very vulnerable.

The research conducted leads to the conclusion that social problems of forest-dependent regions require the usual fiscal-economic regulation instruments to be applied carefully. Otherwise, undesirable side effects occur, which, however, can be explained if the transport-geographical location and other geographic specificities of a particular place are taken into account.

In Kostroma oblast, as well as in other regions located between regions with sufficient transport infrastructure concentrating the main processing facilities and peripheral regions concentrating timber resources, there is evident need of improving the social climate in rural areas, in the first place. Only then would it be reasonable to build the region's competi-

tiveness in the national market of wood stands. Ignoring rural settlements' problems will lead to terminal depopulation of rural territories, to shrinking of developed space towards few cities, highways, and the regional center's suburbia, to further destruction of the infrastructure, and, therefore, to ultimate uncompetitiveness of the region's timber resources. Support of municipal unitary agricultural enterprises and agricultural production cooperatives should be the first line of social measures. The reason for this is that these farms play an important role in organizing the social life of local communities regardless of profitability. Preferences for local farms in distributing wood stands for timber harvesting could become the main instrument of support because forests growing on *lands of prescribed agricultural use*, which had been granted to farms previously, were their only stable income item during the hard post-Soviet times.

## REFERENCES

1. Baburin, V.L., Microgeographic Analysis of Socio-Economic Dynamics of the Peripheral Rural Territories (Case-Study of Kologriv Raion of Kostroma oblast), *Regional'nye Issledovaniya*, 2006, No. 4.
2. Zubarevich, N.V., Strategies of Spatial Development during the Period of Economic Growth, *Vestn. Mosk. Univ.*, 2008, Ser. 5 (Geography), No. 1.
3. Kozhukhova, L.I., *Sotsial'no-ekonomicheskie problemy ustoychivogo razvitiya lesnogo khozyaistva rossiiskikh regionov* (Socio-Economic Problems of Sustainable Development of the Forestry in Russia's Regions), Moscow, MGUL (Moscow State University of Forest), 2003.
4. Kondratyuk, V.A., *Sovremennoe sostoyanie lesopromyshlennogo kompleksa Rossii* (Current State of the Russia's Timber Industry), Moscow, 2002.
5. Kuz'minov, I.F., Kostroma Oblast's Periphery: Socio-Economic Consequences of Forest Management Transformation, in *Bližhnii Sever mezhdru proshlym i budushchim* (Middle North in between the Past and the Future), Moscow, Soobshchestvo Professional'nykh Sotsiologov, 2010.
6. *Lesnoi kodeks Rossiyskoi Federatsii* (Forest Code of the Russian Federation), No. 200-FZ enacted Dec. 4, 2006.
7. *Lesnoi kodeks Rossiiskoy Federatsii* (Forest Code of the Russian Federation) No. 22-FZ enacted Jan. 29, 1997, abolished Jan. 1, 2007.
8. Nefedova, T.G., Past, Present and Future of Old-Developed Peripheral Territories of Nechernozem'e (Case-Study of Kostroma Oblast), *Vopr. Gosudarstvennogo i Munitsipal'nogo Upravleniya*, 2008, No. 1, pp. 166–183.
9. Nefedova, T.G., Socio-Economic and Spatial Self-Organization of the Countryside, *Mir Rossii*, 2003, vol. 12, No. 3, pp. 35–61.
10. Nefedova, T.G., Social Limitations of Russia's Agricultural Sector Development, *Elektronnyi Zhurnal SPERO*, 2008, No. 9, pp. 37–53.
11. *Osnovy lesnogo zakonodatel'stva Rossiiskoi Federatsii* (Fundamentals of Forest Legislation of the Russian Federation), endorsed by *Verkhovnyi Sovet RF* on Mar. 6, 1993, No. 4613-1.
12. The official web-site of the Ministry of Industry and Trade of Russia (minprom.gov.ru). Order of the Ministry enacted Jan. 28, 2009.
13. The official web-site of the Federal Agency of Forestry (rosleshoz.gov.ru), monitoring of paper and electronic media, issue dated Mar. 31, 2008.
14. Pilyasov, A.N., Regional Property in Russia: Friends and Foes, *Otechestvennye Zapiski*, 2005, No. 1, pp. 84–112.
15. Pilyasov, A.N., Communities in Northern Periphery during Industrial Transformation, in *Sever: problemy periferiinykh territorii* (The North: Problems of Peripheral Areas), Syktyvkar, 2007, pp. 35–56.
16. *Proekt lesnogo plana Kostromskoi oblasti* (Draft of the Forest Plan of Kostroma Oblast), Federal Agency of Forestry, FGUP ROSLESINFORG, Tsentrlesproekt, Kostroma, 2008.
17. *Regiony Rossii. 2008* (Russia's Regions 2008), Federal State Statistics Service, 2009.
18. Tatsyun, M.V., *Sovershenstvovanie sistemy upravleniya lesopromyshlennym kompleksom Rossii* (Refining the System of Timber Industry Management in Russia), St. Petersburg, 1996.
19. Tatsyun, M.V., *Lesopromyshlennyy kompleks Rossii v usloviyakh perekhoda k rynochnoi ekonomike* (Russia's Timber Industry in the Context of Transition towards Market Economy), Moscow, 1995.
20. Treivish, A.I., *Gorod, raion, strana i mir. Razvitie Rossii glazami stranoveda* (City, Region, Country and the World: Geographer's Vision on the Development of Russia), Moscow, Novyi Khronograf, 2009.
21. *Federal'nyi zakon Rossiiskoi Federatsii ot 04.12.2006 g. No. 201-FZ "O vvedenii v deistvie Lesnogo kodeksa Rossiiskoi Federatsii"* (Federal Law of the Russian Federation No. 201-FZ enacted Dec. 4, 2006: On introduction of the Forest Code of the Russian Federation).
22. *Federal'nyi zakon Rossiiskoi Federatsii ot 14.03.2009 no. 32-FZ "O vnesenii izmenenii v Lesnoi kodeks Rossiiskoi Federatsii i odel'nye zakonodatel'nye akty Rossiiskoi Federatsii"* (Federal Law of the Russian Federation No. 32-FZ enacted Mar. 14, 2009: On Amendments to the Forest Code of the Russian Federation and to Certain laws of the Russian Federation).
23. Financial reports of municipalities of Kostroma Oblast for 2008 and the First Half of 2009.