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of the Chief Engineer of the Irkutsk Subrepair plant. Later, he worked at the Irkutsk branch of the Central Scientific Research Institute of Mechanization and Power Engineering in the Timber Industry (TsNIIME), which is where he became a Candidate of Engineering Sciences.

The subsequent course of his career was as follows: Deputy-Head of the "Irkutsklesprom" (Irkutsk Timber Industry) Association, Director of the Experimental Engineering Plant of TsNIIME, a five-year term as General Director of "Soyuznauchplitprom" (All-Union Scientific Association for the Board Producing Industry), and most recently, Head of "Soyuzorgleskhozmontazh". "As you see, I am an experienced machine-builder", said Kopyev, with a smile.

Q. "Ivan Vasil'evich, you have a difficult job on your hands. Mechanization in the timber industry remains at a low level."

TIMBER AND WOODWORKING

Under-Mechanization and Currency Scarcity Spawns New Chief Directorate in the Timber Industry

At the USSR Ministry of the Timber Industry a Chief Directorate of Machine-Building has been formed to meet the needs of our sector. It is to be headed by Ivan Vasil'evich Kopaev. He graduated from the Borisoglebskii Forestry Engineering Technical School, and later from the Voronezh Institute of Forestry Engineering. He took up a position as senior engineer at the Dobchurskii logging enterprise of the "Bratskles" Combine. In 1962 he was appointed Chief Engineer of the Bratsk Autorepair plant. Later, he worked at the Irkutsk branch of the Central Scientific Research Institute of Mechanization and Power Engineering in the Timber Industry (TsNIIME), which is where he became a Candidate of Engineering Sciences.

The subsequent course of his career was as follows: Deputy-Head of the "Irkutsklesprom" (Irkutsk Timber Industry) Association, Director of the Experimental Engineering Plant of TsNIIME, a five-year term as General Director of "Soyuznauchplitprom" (All-Union Scientific Association for the Board Producing Industry), and most recently, Head of "Soyuzorglestekhmontazh". "As you see, I am an experienced machine-builder", said Kopaev, with a smile.

* * *

Q. "Ivan Vasil'evich, you have a difficult job on your hands. Mechanization in the timber industry remains at a low level".

A. "Agreed. To put it bluntly, the continued existence of the Ministry is on account of the highly profitable furniture, paper and match producing industries. The remaining sub-sectors - logging, wood processing, wood chemistry and the rest - are as depressed as ever. Manual labour is everywhere predominant.

"For a long time now the skidding tractors have been virtually obsolete. They have already been in production for more than 15 years without any special design modifications introduced. The USSR Ministry for the Manufacture of Construction and Road Machinery (Minstroidormash) is supplying us with machinery which is two to three times inferior to world prototypes on every count. And to be honest, we have only half as much as we need of it. The incoming machines are being used mainly as replacements for those being discarded. The level of mechanization at the logging sites is about 45 per cent, with some 200,000 workers in the sub-sector engaged in manual labour."

Q. "How has the sector managed to survive in this way?"

A. "It's necessary to look back at the past. Immediately after the war, steps were taken to organize a machine-building base for the sector. In the fifties it had already furnished us with skidding tractors, winches, mobile electric power plants, motorized pole-trailers, chain conveyors, ships for timber floating and much else. This was before the advent of the Sovnarkhozy (Regional Economic Councils).

"Later, after a number of reorganizations, the sector's machine-building plants were transferred

to other ministries. In particular, to the Ministry for the Manufacture of Construction and Road Machinery, the Ministry of Agriculture, the Ministry of the Automobile Industry, the Ministry of the Machine Tools Industry, etc. We were left without our own machinery supply base and were forced to go over to "underground" machine building, without receiving any financial or material resources for this."

Q. "But, after your plants were transferred to the other ministries, did you not receive from them the requisite modern production technology?"

A. "One fact alone is sufficient. In order for the operator of an LP-19 feller-buncher, for example, to complete the shift norm, he must activate the various levers 4,000 times, expending a great deal of effort in the process. Is this what you mean by modern technology? Formerly we had no equipment for the production of wood fibreboard and wood particle board, plywood, parquet, and furniture that was competitive in terms of world standards.

"Last year, the Ministry of the Machine Tools Industry (the main supplier of wood processing equipment) sold us 40 million roubles worth of machinery, but the annual requirement is 430 million roubles worth! And what sort of equipment are we talking about? In the main, positioning machines with manual feed and low reliability.

"Of the 15 ministries manufacturing machines for the forest complex, not one is producing unitized high-capacity equipment for the pulp-and-paper industry. The sector is forced to purchase it through imports. In this year alone we are having to

fork out hundreds of millions of roubles worth of foreign currency."

Q. "But what if the factories of the ministries working for the forest complex were to return to their own sphere of activity, that is, to come under the roof of the USSR Ministry of the Timber Industry?"

A. "We have already submitted a proposal along these lines to the USSR Council of Ministers. To date, no definite decision has been reached."

Q. "What if the fate suffered by the Ministry of the Coal Industry were to be visited upon you! At one time the miners also decided to form a machine-building arm for their sector. Their former partners handed over to them what could be called a bare industrial shell, buildings, but not until they had removed the "filling" - consisting of the finest production equipment and machines."

A. "We are hoping that nothing of the sort will happen. The measures we are proposing with regard to the transfer of the machine-building plants serving the forest products sector to the Ministry of the Timber Industry will make it possible to move quickly in the direction of specialisation and cooperative arrangements and ensure optimization of nomenclature, bearing in mind an increase in the output of advanced technology to replace what has become obsolete, and a reorientation of currency funds away from the purchase of equipment in favour of the development of our own machine-building capacities. I estimate that this will give us the capability for a 2- to 2.5-fold increase in the output of machinery, and enable us more efficiently to organize its repairs and in-house servicing. The concentrating in one department of the research and development and design

resources will enable the time frames for the devising and phasing in of plant to be shortened by two to three years on the average (at present, 8 to 10 years elapse before this is achieved)."

Q. "Ivan Vasil'evich, could you say a few words about the steps already taken to establish a machine-building capacity for the sector?"

A. "A total of 108 plants are currently concentrated in the machine-building aspect of our sector, with 36,000 people employed in them. The potential number of R and D workers is also quite large, being about 11,000.

"Things have already begun to move a little. In place of the TT-4 skidding tractor, which destroys everything living in the forest, we are building a tractor based on the K-700. It is called the ML-30. This is a wheeled vehicle with widened tires. Its productivity is two and a half times greater than the former, and what is more, it is much lighter. Such tractors are already in operation in the logging enterprises of the Ust'-Ilimskii timber industry complex and elsewhere. They are being built at the "Lesmash" Scientific-Production Association. Modifications are also being made in other machines designed for felling trees, pruning, cross-cutting into logs, and transporting wood."

Q. "It is common knowledge that in forestry, more than half of the work in sowing and tree planting operations and almost two-thirds of the work volume in tending fellings are done by hand. Nothing has been achieved by way of introducing machines for the procurement of marketable timber in tending fellings, while the available scientific designs are

not finding an application. Are you saying that all this denotes progress?"

A. "I would say yes. A mechanized unit for the preparation of the soil, planting of saplings and tending fellings in which the wood is converted into chips has already been devised. We intend to manufacture during the current year 370 tractor-mounted units for silvicultural operations."

Q. "What is happening in the sawmilling industry?"

A. "This is where one of the main problems exists, namely the introduction of automated flows and small capacity unitised sawmills (up to 100,000 cubic metres of output per year) based on the use of band saws, together with sophisticated equipment providing for complete utilization of raw material and sawmilling wastes. It is difficult for us to cope with this ourselves. Accordingly, discussions were held in February with representatives of the Japanese firms "Tairiku Trading" and "Tanaka". We are planning to initiate joint production at the Irkutsk experimental mechanical plant. Beginning in approximately 1990 the enterprise will manufacture three to five of these unitised assemblies per year.

"In the board and furniture industry the emphasis will be on imported equipment. The combined Soviet-West German-Swiss firm "SB-Engineering" which was founded in 1988 will be delivering wood fibreboard production lines (dry method) to the Novovyatsk and Novoyeniseiskii woodworking combines. Contracts are about to be signed for deliveries of machinery for the reprofiling of the Voloshskoye pulp-and-paper mill. We are planning a further eight proposals for the purchase of wood fibreboard and

wood particle board production lines. The proportion of Soviet-made machinery in the first two assemblies currently amounts to 10 per cent of the total cost of the imports. Eventually, it will rise to 50 per cent."

Q. "Which subject area is being given priority in the development of machine-building for pulp and paper production?"

A. "Here we are working hand in hand with the Ministry of Chemical Machine-Building. The goal is to create ecologically clean machinery. I have in mind oxygen-alkaline bleaching of pulp. The next area of investigation is the manufacture of spherical and other headbox fittings, as well as equipment for the production of thermomechanical and chemical-thermomechanical wood pulp and beater accessories. These tasks are exceedingly complex."

Q. "Shall we again be approaching foreign firms?"

A. "We already tried that. But neither the British, the Finns nor the Swedes want to invest their capital in our machine-building for the papermaking industry. They are promising to sell only the licence and the technology..."

Q. "Without wearying the readers with figures, tell us nevertheless to what extent the requirement of our sectors for machines and equipment is being satisfied."

A. "This year, the requirement in monetary terms amounts to 1,600,000,000 roubles. Only 60 per cent of it is covered. Of this, 40 per cent will come from the other ministries and imports, and 20

per cent from our own resources. By the year 2000 the overall volume of machine-building output must increase 3.1-fold, production of microprocessor systems 7.1-fold, equipment for use in forestry - 6.5-fold, pulp-and-papermaking machinery - 4.2-fold, and machinery for the plywood and board industry - 4-fold. The output of spare parts will have to keep step with this.

Lesnaya Promyshlennost'

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Draft Concept of the Development of the Timber Industry up to the Year 2005

Note: The reader may wish to compare this article with the Draft Concept of the Effects of Perestroika in Soviet Forestry Up to the Year 2005, published in the December 1988 - January 1989 edition of these Extracts (INI F11/88)

Strategy for Development of the Sector

Although it has access to vast areas of forests and the largest timber stocks in the world, the Soviet timber industry is only partly meeting the demands of the economy and the public for paper and other types of forest products. The share of the forest-based industries in the gross national product is only 2.8 per cent and in earnings of currency, only 3.4 per cent.

In the output of forest products, especially of paper and paper board, the USSR lags far behind the USA, Canada and other countries. From every thousand cubic metres of harvested timber we are producing 4 to 6 times less pulp and 2 to 7 times less plywood and other commodities than Sweden, Finland, the USA or Canada.

A contributing factor in the slow pace of development of the timber industry has been the inadequacy of funds for capital investment. During the last two Five-Year Plans not a single start has been made on the building of a pulp-and-paper combine, besides which there has been a slowing in the commissioning of new logging capacities. Depreciation of fixed assets reached 46 per cent in 1986.

The development of the country's timber industry is also being held back by the highly unsatisfactory state of the social infrastructure, which is greatly inferior to that in other sectors of the economy. Only 30 per cent of the living space in the camps is supplied with water mains and only 23 per cent with sewers.

The overall approach to solving the problem of meeting the burgeoning demands of the economy for paper and other forest-products must take the form of a more rapid intensification of production - this to be achieved through a radical alteration of its structure and outstripping rates of development of the secondary conversion of timber - and the fuller utilization of the enormous potential of the sector.

The main line of approach must be the accelerated development of chemical and chemical-mechanical processing of wood, first and

foremost in pulp-and-paper production. By 2005 the per capita consumption of paper and paperboard must show a 2.4-fold increase over the 1985 figure. It is planned to increase the production of pulp 2.7 times, and of paper and paperboard, 2.9 times.

The building of such major enterprises as the Eniseiskii and Kodinskii pulp-and-paper combines in Siberia is foreseen, as well as the modernisation of existing enterprises which are concentrating on the use of local timber resources in the European part of the country, chiefly the wood from shade-intolerant hardwood species, wood wastes and waste paper, with due regard for ecological requirements.

Increases are foreseen in the output of effective substitutes for timber: 2.8-fold for wood particle board, 2.3-fold for wood fibreboard, 2.6-fold for plywood, more than 3-fold for industrial chips, and 4.2-fold for container board.

There is to be a substantial rise in the production of consumer goods, especially furniture, the output of which is to increase 2.5-fold. Notwithstanding these scales of development of the wood processing industries, there is to be only a 1.3-fold increase in the volume of logging activity.

Another task that has been set is to more than triple the earnings of currency from timber exports by effecting major alterations in their structure.

By 2005 the gross output of the timber industry complex is to increase 2.3-fold over the 1985 level. It is anticipated that the entire

increment in output will be achieved solely through an increase in labour productivity.

In forestry development, priority will be given to forest regeneration, protection and conservation, the transition to inexhaustible and sustained forest use, preservation of the understorey and of young stands of silviculturally valuable species, the establishment of forest cultures on genetic selection principles, the cultivation of stands with preassigned properties, conversion of silvicultural production to large-dimensional planting material, and the formulation of effective measures for protecting the forest cultures.

The scientists and machine-builders of the sector are faced with the task of building more sophisticated automated lines for the conversion of small-diameter and low-grade timber of coniferous and broad-leaved species, and of introducing designs for high yield workshops for the production of biological material from the crown, advanced multifunctional machinery for use in the tending of young stands and doing intermediate felling, and integrated mechanization of forest nurseries and silvicultural production.

The management of the forest industrial sector is to be radically improved.

Pursuant to decree No. 342 of the CC CPSU and the USSR Council of Ministers dated March 10, 1988, integrated forestry enterprises carrying out all the reforestation, logging and timber conversion operations are to become the main type of enterprise in the timber industry. They will also be responsible for forest protection, tending the forest and the harvesting of minor products. These

enterprises must base their work on the principle of inexhaustible and sustained use, which means that they must operate continuously.

In 28 oblasts, krajs and autonomous republics of the RSFSR such enterprises will be formed from existing logging enterprises and from forestry organizations being brought under the jurisdiction of the USSR Ministry of the Timber Industry.

The intensification of production will call for the integrated use of raw material and all available resources, with maximum commercial use of ligneous waste products. It is expected that by 2005, about 112 million cubic metres of wastes from logging, sawmilling and woodworking operations will be recycled, with 76 million cubic metres of this total used industrially, thus exceeding the current level by a factor of 2.5. The use of fuelwood for industrial purposes will almost triple and that of wood from shade intolerant hardwood species is to increase 1.6 times.

The more extensive involvement of waste paper in the raw material balance of paper production constitutes a major potential resource in the economy of wood. It is proposed to increased consumption of this material to the point where it is almost tripled and will reach 8 million tonnes, as against the 2.9 million tonnes used in 1985.

Overall, the level of chemical and chemical-mechanical processing of wood resulting from the integrated use of ligneous raw material and the perfecting of structural shifts in the sector will increase by 2005 to 57.4 per cent as against 36 per cent in 1985.

Scientific and Technical Progress.

In the logging industry, the extensive introduction of advanced technological processes is foreseen, together with highly efficient machines, equipment, transport facilities, automated lines, instruments and other scientific and technical developments. Between now and the year 2000 the industry has been tasked with the responsibility of completely replacing logging machines and equipment, the engineering and economic parameters of which do not meet modern standards. The intention is to provide for the extensive introduction of light-duty felling-and-packaging machines designed for operating in coupes of limited size containing stands of small diameter, and the use of wheeled tractors and machinery which will make it possible to protect the environment. It is also intended to design and introduce machines for the opening up of forests in group 1 and carrying out tending fellings and other operations in the forest and cut-over areas, with due regard for the requirements of forest management.

It is intended that by 2005 the annual construction volumes of timber-transport roads with year-round operating capacities will reach 23-25 thousand kilometres.

In the pulp-and-paper industry the main emphasis will be on the search for new methods of secondary and integrated chemical and chemical-mechanical processing of the timber of any species, and also of waste paper. There will be more extensive introduction of cooking in the course of which anthraquinoline and its analogues are added, and of the polysulphite method of cooking. A technology will be developed for manufacturing semi-fabricated products without the use of sulphur

and chlorine, thus putting a stop to this source of environmental degradation. Advanced types of semi-fabricated products (thermomechanical and chemical-thermomechanical pulp) and also of waste paper will find an application in the production of newsprint, magazine, book, printing, and other types of paper.

Overall, the structure of pulp production will be brought into line with world practice, with curtailment of the method of cooking sulphite pulp. The phasing-in of the production of thermomechanical and chemical-thermomechanical pulp will make it possible, with minimal capital investment, to reduce the consumption of spruce and fir timber and eliminate pollution from mill effluents. The share of the new technologies in the gross output of products will reach 55-60 per cent by 2005.

In the wood chemistry industry the introduction of secondary processing of the resin from larch, cedar and fir to obtain powerful new products in the form of repellants, hormonal and cosmetic preparations that cannot be extracted from other types of raw material will be a new direction. Also envisaged is an expansion of the integrated recovery of sulphate (sic) waste liquours, including those from hardwood, so as to obtain liquid rosin and other valuable products.

In the woodworking industry it is planned to introduce resource-saving technologies and mechanized systems based on unitized, streamlined methods using preprogrammed automated equipment; technology and instrumentation for the gluing of sawn timber; waste-free sawmill production, including the devising of methods of sawdust-free division of timber; and

new technologies for producing plywood and wood particle board that are waste-free or almost so.

In the production of wood-based board, new technological processes and plant providing for an expansion of the resource base and product range, and a decrease in labour intensiveness, raw material consumption and energy intensiveness, will find a wide application. The product-range of wood-based board will be radically altered. It is expected that arrangements will be made for the production of wood particle boards that are less toxic. In 2005 the proportion of these should exceed 95 per cent of the total output, which will greatly extend their range of application in building activity. The proportion of boards finished by the lamination and Kashirovanie method will increase to 20 per cent, as compared with 9 per cent in 1985.

An extended range of wood fibreboards will be achieved through the development of new types of special purpose boards, and also through their surface finishing and improved physical and mechanical properties.

In plywood production, through the introduction of low-waste technologies and equipment, especially for technical plywood, reductions will be achieved in the consumption of raw material and labour intensiveness, together with an enhanced level of mechanization. The product range will change significantly. By 2005, almost a third of the total output will consist of large-format plywood, the proportion of which is currently no more than 7 per cent. Fireproof, multicomponent and other new types of plywood will appear.

In the production of consumer goods also,

the introduction of resource-saving technologies and further improvements in machines and technology are envisaged. This will make it possible to greatly expand the assortment of end product. The output of furniture bearing the index "N" will more than double by 2005.

The programme that has been mapped out for the development of the forest-based complex could not be implemented without the help of other sectors of the economy, chief among which is machine building. In the forest, reliable, high-performance machinery is needed, which must be capable of manoeuvring in large and small stands alike. It is especially important to build machines with small overall dimensions for work in forests of group 1 as well as special machinery for tending and sanitary fellings and for the opening up of montane forests, more than 80 per cent of which are situate in the eastern part of the country. About a quarter of the logging machinery must be adapted for use in the North, since timber extraction will advance into those regions also. A most important problem is the design of technology and machinery that will facilitate the exploitation of larch forests. In the European part of the country there is a need to expand the chemical conversion of hardwood, including aspen, of which there are currently no consumers.

Equally weighty problems confront the designers of equipment for the sawmilling, board production, plywood and furniture industries.

The opening up of new forest massifs in Siberia and the Far East will necessitate the building of new railways.

Ecological Problems

The transition to inexhaustible forest use will generate a need for effective measures relating to the cultivation of planting material, especially of the most valuable coniferous species, and for broadening the scope of silvicultural activity to ensure that greater care is exercised when doing tending fellings and forest protection work.

It is expected that by 2005, up to 86 per cent of the water used in pulp and paper production will be recycled, as against 64 per cent in 1985, and that specific water consumption will drop from 152 to 73 cubic metres, with the result that consumption of fresh water will increase by only 25 per cent despite a tripling of the chemical processing of wood. The introduction of advanced technologies is a decisive factor in the process of bringing the sector into a state of harmony with the ecology.

By effecting improvements in pulp and paper production processes, equipping all mills with purification plants and increasing their operating efficiency, emissions of pollutants will be brought to the minimum level achieved in world practice. The equipping of all mills with highly efficient gas and dust trapping devices will enable an 8-fold reduction to be achieved in unit solid particulate emissions, as well as a 4-fold reduction in gasiform emissions from present levels.

Exports of Forest Products

Our country's share in world exports of forest products amounted to only 11.3 per cent in

1985. The pulp and paper products component of this figure amounted to only 3.2 per cent.

A radical change in the structure of timber exports is being proposed. This will be achieved by drastically curtailing exports of unconverted roundwood and greatly increasing exports of pulp and paper products, lumber, plywood, furniture and other products.

According to estimates, earnings of currency from exports of pulp and paper products should more than triple by 2005 in comparison with the present level. This must be facilitated by establishing production capacities that are based on international collaboration, chiefly on the development of those of its forms such as joint enterprises, compensatory agreements and industrial cooperation.

Capital Construction

The realization of the measures being proposed for development of the timber industry during the period up to 2005 will call for heavy investments, both in the establishment of new production capacities and in the rebuilding, expansion and reequipping of currently operating mills. In the 13th Five-Year Plan for the sector it is already becoming necessary to approximately double them in comparison with the current FYP, with about 42 per cent of the funds directed into the development of the pulp and paper industry. In the process, the investment potentialities of the sector, operating under conditions of full profit-and-loss accounting, self-financing and paying its own way, will be capable of substantial growth through the

channelling of a portion of the profits into a production development fund.

Building activity using an enterprise's own labour resources, especially in the expansion, rebuilding and modernization of presently operating mills, and the development of its own building industry, will find an extensive application.

The implementation of the proposed programme of capital construction will make it possible to approximately double the industrial engineering potential of the sector by 2005, and to almost triple that of the pulp and paper industry. The capital renewal factor will increase from 27.8 per cent in the 12th FYP to 37.5 per cent thereafter.

Improving the Infrastructure of Social Welfare

The unconditional fulfillment of the directives issued at the 27th Congress of the CPSU with respect to providing each family with an individual dwelling prior to 2000 will necessitate the building of more than 40 million square metres of living space at enterprises of the USSR Ministry of the Timber Industry. For this, at least 11 billion roubles in capital investments will be needed. There is already a need for at least a 1.5-fold increase in the volume of housing construction during the current FYP, for a twofold increase during the 13th and for not less than a threefold increase during the 14th - in relation to the volumes presently achieved.

According to the most modest estimates, in addition to housing, there is a requirement in the sector to build preschool establishments for 76,000

children, general educational schools for 40,000 pupils, clubs to meet the needs of 35,000 people, hospitals with a capacity of almost 7,000 beds and polyclinics providing for 21,000 visits per shift. About 12.5 billion roubles will be required in order to carry out this construction work.

The overall standard of the provision of public services and amenities must be substantially improved and the camps belonging to the enterprises made externally pleasing in appearance. Access to water mains and engineering services in houses and communal buildings must be upgraded to 70 per cent and 90 per cent respectively. Reconstruction and capital repairs are in store for all intra-camp roads, and regular passenger transportation links must be established between them and the district centres.

Perfecting the Administrative Machinery

The transfer of the sector to new conditions of management opens up broad opportunities for increasing the efficiency of production and intensifying it, and for improving the socioeconomic conditions in the enterprises.

Special emphasis will be placed on developing and implementing concrete administrative and technological measures to be directed towards increasing the efficiency of those of the sector's enterprises (associations) which are expected to incur a loss, in order that by as early as 1990 unprofitableness in the sector will have been largely eliminated. One of the ways to achieve this goal is the introduction of the leasing form of management.

It is also intended to further develop industrial specialization and cooperation by establishing direct links between the Ministry's enterprises (associations) and enterprises and organizations of COMECON member countries, and to make more extensive use of such progressive forms of cooperation as joint ventures, and international associations and organizations.

The Economic Efficiency of Sector Development

The economic efficiency of the timber industry complex will be assured above all else by radical structural changes in the production and consumption of forest products. According to projections, the proportion of effective substitutes for timber will be 36 per cent in 2005 as against 20 per cent in 1985 and they will have almost tripled in volume. This increment will be achieved in the main through the extensive involvement of secondary resources, hardwood and low-grade timber in the economic turnover.

In 2005 the proportion of paperboard in the structure of container and packaging material will have risen to 59 per cent from 30 per cent in 1985.

The perfecting of structural shifts in the production and consumption of forest products will make it possible to preserve from felling about a million hectares of forested area, or 150 million cubic metres of timber, and to save not less than 9 billion roubles in capital investments.

The output of merchantable goods from a cubic metre of harvested timber will increase 1.8-fold throughout the sector.

A very important factor influencing the efficiency of production in the timber industry is the improvement of territorial ratios.

Today, three-quarters of the consumers of pulp and paper products are concentrated in the European part of the country, but the volume of timber extracted in that region amounts to only 60 per cent of the total. In order to meet the demand for timber, more than 5 million cubic metres of roundwood has to be shipped there from Siberia and the Far East.

In the interests of future improvements in the territorial ratios of the timber industry complex we are faced with the challenge of utilising more fully and efficiently the resources of the European Urals zone and establishing a stable timber resource base there for presently operating and future timber processing enterprises.

Parallel with this, the Siberian and Far Eastern regions are to undergo major development. The total output of merchantable goods there will increase 2.5-fold by 2005.

By 2005 the overall volume of interregional shipments of roundwood will be halved.

(Draft concept prepared by the All-Union Scientific Research Institute of Economy, Management, Production and Information in the Timber, Pulp and Paper, and Woodworking Industries (VNIPIEIllesprom), under the supervision of its Director, Professor N.A. Burdin, Doctor of Economic Sciences, together with the Central Scientific Research and Planning Institute of the Wood Chemistry Industry (TsNILKhI) and five other planning institutes. Readers are

invited to submit comments and proposed amendments and to actively participate in the discussion sessions).

Lesnaya promyshlennost'

April 11, 1989

Page 2 (Full text)

New Invention: A Triboelectric Hygrometer for Monitoring Wood shavings

The existing method of determining the moisture content of a wood shaving on the production line by means of a VDS-201 hygrometer is proving expensive for the enterprises. This is because of the intricate optical and electronic equipment embodied in it. Also, instances occur when its measurements are not consistently precise.

Why not develop a fundamentally new testing method for this type of production?

Such a method has in fact been developed at the Voronezh Institute of Wood Technology. It is based on a well known phenomenon in physics: the triboelectric effect. The effect is due to the generation of electric charges when friction is created between two dissimilar bodies. A triboelectric hygrometer developed by scientists provides for continuous monitoring of the moisture content of a wood shaving, without interfering with the production process.

The first comparative trials of the hygrometer were assayed in the Yermolovo branch of the Checheno-Ingushskaya "Terek" Furniture and

Woodworking Association. Various kinds of wood shavings were used: birch, aspen and oak.

The hygrometers currently employed in the enterprises allow for a 28 per cent error in determining moisture content. The new hygrometer does not exceed ten per cent.

Moreover, in the woodworking industry, by using the automatic hygrometer developed by the Voronezh people it is possible to markedly reduce the labour intensiveness of a determination, substantially economise on raw material, enhance the quality of the product and increase labour productivity.

The new procedure has been registered as an invention at the USSR State Committee for Inventions and Discoveries.

Lesnaya promyshlennost'

April 15, 1989

Page 2 (Full text)

Appointment

The Council of Ministers of the Ukrainian SSR has appointed Vasilii Fedorovich Kostenko Minister of the Timber Industry of the Ukrainian SSR.

Lesnaya promyshlennost'

April 20, 1989

Page 3

Soviet-Finnish Joint Enterprise to be Formed for
Production of Wheeled Tractors

Yesterday a symposium of the firm "Rauma-Repol" was convened at the headquarters of the Finnish-Soviet Chamber of Commerce. Representatives of the firm familiarized Soviet specialists with the latest achievements of the daughter enterprise "Lokomo-Forest", which is specialising in the production of forest machinery.

During the recent visit to Finland of the Minister of the USSR Timber Industry M. I. Busygin a memorandum was signed with "Rauma-Repol" in which it was agreed to draw up, by the summer of 1989, a plan of action leading to the formation of a joint enterprise for the production of wheeled tractors for use in the forests.

The capabilities of the Lokomo 990 harvester and the Lokomo 910 forwarder were studied during the symposium.

Lesnaya promyshlennost'
April 20, 1989
Page 3 (Full text)

Fuller Utilization of Waste Products Seen as the
Solution to Financial Losses

(Letter to the Editor)

The long awaited Draft Concept, or in any event, that part of it which was published in the newspaper, is, to put it mildly, disappointing. It looks painfully like the highly familiar "Control

Figures" for Five-Year Plans. Certainly it is interesting to discover that by 2005 it is proposed to increase the output of wood particle board 2.8 times, of wood fibreboard - 2.3 times, and of container board - 4.2 times. The projected growth, as we see, is by no means inconsequential. But where is it to be obtained? At the expense of what? In which regions and from what sources? For these are basic issues. Yet nothing has come forth in the way of a reply.

To us who work in enterprises situated far from the major wood processing centres the line in the Draft Concept that says "By the year 2005 it is expected that about 112 million cubic metres of logging, sawmilling and woodworking wastes will be utilised" is very meaningful.

In 1988, despite having fulfilled the quantitative indices for production, commodity output and labour productivity, our enterprise posted losses totalling 832,000 roubles. The wholesale price of a cubic metre of wood proved to be 66 kopecks below the planned figure and amounted to 15 roubles. Above-plan expenditures per cubic metre of product exceeded one rouble (notwithstanding the fact that for 1988 no losses were planned for the enterprise). The logging enterprise is no longer considered creditworthy and does not have the requisite funds to purchase allocated machinery and necessary materials.

The collective sees the way out of this situation as lying in the fuller utilization of the waste products from logging and cross-cutting into lengths, and increasing the quantities of them converted on the spot. But where are the funds to be obtained?

We are of course, doing whatever is within our power. In order that the short-length pulpwood derived from the cross-cutting of wood in the lower landing can be converted into lumber, a building has been erected and lathes acquired. We expect to obtain the initial output by the end of the year. Even so, this will not salvage the situation. What is needed is a sawmilling shop, if only for the conversion of 50,000 cubic metres of raw material.

Indeed, we have more than enough raw material. In addition to the cross-cutting wastes, there is also the possibility of including in the economic turnover both the wood of broad-leaved species which is not usually rafted and forms mountainous accumulations in the lower landing, and small-diameter wood. For all this lies around for years, becomes soaking wet and rots. Try and tell the workers that there is not enough wood for the economy! They are more likely to heed the bonfires, in which every year it is not only the wastes from cross-cutting that are burned, but even finished produce and boxes made from good quality wood. Many thousands of roubles are lost in this way. The Aslanovo Department of Workers' Supply alone posts an annual loss of 25 to 30 thousand roubles worth of destroyed packing material. And all this is legitimized by the "special conditions attaching to the supplying of consumer goods to the regions of the Extreme North and other regions subject to pre-term delivery". Efforts to have the packing material returned for reuse are to no avail and it continues to "litter up the street".

The situation is no better with respect to such an "essential timber saving resource" as waste paper, the requirement for which, according to the Concept, "is to be almost tripled and brought up to 8

million tonnes...". In our community alone, a single day's mail results in about 40 kilograms. Multiply this by 365 and you obtain the net annual losses. There is no problem about collecting it, but where is it to be put? Over the year, about 14.5 tonnes are collected. And so it is burned and poisons the environment. Sadder still is the fact that this attitude to forest products has become the norm, and is passed on from one generation to the next.

How can the situation be changed? Here is one of the basic questions, the answer to which one would hope to find in the Draft Concept.

(Signed by the Secretary of the Party Committee at the Aslanovo Logging Enterprise of the "Tomlesprom" Association).

Lesnaya promyshlennost'
April 20, 1989
Page 2 (Slightly abridged)

PULP AND PAPER

Polyethylene-Coated Kraft Paper Now Being Produced at Segezha

A large quantity of the lumber for export to the United Kingdom, Belgium and West Germany is being supplied by the collective of the Segezha sawmilling and woodworking combine. For a long time the Segezhans were plagued by a shortage of packaging materials for the products being exported. Out of the blue, workers of the neighbouring "Segezhabumprom" (Segezha Paper Industry) Association came to their aid. They independently drew up the documentation and have already manufactured the initial tonnes of kraft paper coated with polyethylene.

The new packaging has greater durability and is not affected by bad weather. The woodworkers continue to be highly satisfied with the paper. It is in no way inferior to the imported product.

The initiative taken by the Segezha papermakers is conferring a major economic benefit on the "Karellesprom" (Karelian Timber Industry) Association. With mass production of kraft paper the possibility arises of ceasing to purchase it abroad and using the currency saved for the acquisition of new equipment.

Lesnaya promyshlennost'

April 8, 1989

Page 1 (Full text)

Bureaucratic Mismanagement and Non-Deliveries of Waste Paper Interrupt Paperboard Production at Perm'

Whenever I pay a visit to the paperboard shop of the Perm' Pulp and Paper Combine I almost always see a KP-06 board-forming machine standing idle.

"Again?" I ask.

"Again", the workers reply. "For the umpteenth time there has been no delivery of waste paper".

The frequent stoppages of the machine this year have not only disrupted the shop, but also the entire Combine, which has led to a feeling of uncertainty about tomorrow. Labour discipline has declined and there has been an increase in absenteeism, late arrivals and drunkenness.

Periods of enforced idleness in January, February and the first half of March have already "eroded" 1016 tonnes of output valued at about 253,000 roubles. The non-rhythmic operation of the shop has slowed down the production of corrugated container board. For without the special wrapping materials produced at Perm', the trading network is deprived of a supply of butter, sausages and numerous other goods.

Who is responsible for the fact that the Pulp and Paper Combine is currently being starved of waste paper?

Last year, the Combine was allocated from reserves 47,000 tonnes of waste paper for the production of paperboard. Although only 43,300

tonnes were received, this means that the main suppliers of waste paper - the procurement organizations for Izhevsk, Krasnoyarsk, Novosibirsk, Omsk, Perm', Sverdlovsk, Tyumen', Kazakhstan and Uzbekistan - had for the most part, honoured their contractual obligations.

A different picture is being sketched this year. The impression created is that the procurement officials of many cities have no intention whatsoever of fulfilling the contracts for deliveries of raw material. And this in spite of the fact that the enterprise has extended practically all of its own contracts for the supply of waste paper.

Nor is USSR Gosplan (State Planning Commission) in a position to alter the observed trend. How else to explain the fact that the suppliers didn't turn a hair on receiving its letter of January 20, 1989 regarding an additional allocation of 13,000 tonnes of waste paper?

What is the reason for this? The answer, it seems to me, is to be found in a telegram from Deputy Chairman Petrovskii of Kazakhgosplan, which reads: "Pursuant to session of Kazakhstani government and delivery of 15,000 tonnes of waste paper for export, procurement organizations unable conclude agreement with you for delivery 5,000 tonnes waste paper in 1989."

In short, this is a repeat of the situation reported in "Pravda" under the heading "The Phoenix Bird" (March 9, 1989). To recapitulate, some economic planners had arranged for the sale of scrap metal abroad. After selling it there for a song, they purchased various articles made from our scrap metal for three times as much. Today, we have a

similar story with waste paper. It is particularly annoying on account of the fact that the Perm' Pulp and Paper Combine would have been able to manufacture from the waste paper being sold abroad paperboard at least as good as that being purchased with foreign currency. It would have resulted in earnings for the State many times greater than what was brought in by the sale of raw material for next to nothing.

For the time being anyway, machines are standing idle at the Combine and there is a drop in the take home pay of the workers which ironically, is numbered among the advantages of operating on the self-financing, profit-and-loss system of accounting (khozraschet).

Lesnaya promyshlennost'

April 20, 1989

Page 2 (Slightly abridged)

Show of Independence by Pulp Producers at Bratsk
Strongly Opposed by Ministry Officials

Last year the pulp makers of the Territorial Production Association (TPA) of the "Bratsk Timber Industry Complex" concluded an agreement with "Dal'intorg" (Far Eastern foreign trade organization) and for the first time, disposed of a part of their output by way of the coastal trading system to Japan. The Bratsk people sold 5,000 tonnes of unbleached pulp on the foreign market - derived over and above the plan from waste products of the main pulp manufacturing program - and, in so doing, earned a million roubles worth of foreign currency.

Half of these earnings were used to acquire industrial engineering goods from eastern neighbours - equipment, duplicating machinery and small mechanization facilities - and half were spent on the purchase of consumer goods. Children's clothing, footwear, modern radio equipment - all this was obtained by our pulp makers and their numerous sub-contractors.

Of course, the volume of scarce products purchased is a drop in the ocean of unsatisfied demands. Literally everything had to be distributed by coupons, in a manner totally above-board and under the strict supervision of the trade union committees. But this was only the first step.

All the same, this flicker of independence was noted and evaluated. People finally had the feeling that things would go well for them that beneficent changes in life depended on their own efforts. A chink had appeared in the decades old build-up of ice, alienating the worker from the fruits of his own labour. Many people realized that if things went smoothly, a genuine opportunity would be presented to the Bratsk wood chemists to resolve a mass of chronic problems, especially in the social domain, within a short span of time. For example, those to do with food products and in part, housing. The imported goods and equipment could be exchanged within the country for say, building components and materials. Not a few options are opened up by independence, if one displays initiative and doesn't give up.

Therefore, in formulating plans for the current 1989 year the pulp makers, as never before, took careful note of all their resources. It was decided to operate at the limit of their capacity,

fulfill the State order, guarantee deliveries within the Ministry and, moreover, achieve a high-quality output over and above the plan and to redispense of it, based on the needs and requirements of the collective.

The Bratsk people cannot be accused of group egotism. They meticulously attend to the interests of the sub-contractors and consumers. Judge for yourselves: under the Five-Year Plan the output of commercial pulp must be raised to 595,000 in 1989 tonnes. This is 17,000 tonnes higher than the level attained last year. However, considering the existing requirements both nationally and in the industrial sector, the collective planned an output of 600,000 tonnes of pulp, which means that they took upon themselves an exceedingly strenuous but feasible commitment.

At the same time, fully in accordance with the Law on State Enterprises, which gives the producer the right to dispose of production over and above the plan, the collective had intended to produce a further 10,000 tonnes of bleached pulp and sell this to Japan or other countries through "Dal'intorg". This step, according to the Association's estimates, would afford a further opportunity to purchase not only industrial engineering and household products, but also, in light of existing proposals from foreign firms, at least 4,000 tonnes of meat products. They resolved to sell them, not only among the wood chemists but also among workers in the kindergartens, hospitals and schools. Obviously, there is no need to enlarge on the question of how important such a food supplement would be, given the empty shelves of the retail outlets in the city and the lumber camps.

The collective had given the Ministry plenty of notice of its intentions. There, however, a very different view was taken of these ideas. Disregarding the interests of the Bratsk workers, the officials at the Ministry demanded fulfilment of the production plan for commercial pulp to the extent of the entire 610,000 tonnes, that is, they included in the plan what the Siberians had only intended to provide over and above it.

Naturally, the administration and the Council of the "Bratsk Pulp" Association's workers' collective were unable to agree to the plan being adjusted in this way. They therefore refused to sign the agreements for the delivery of the illusory 10,000 tonnes of output. By its arbitrary decision the Ministry threw all of the charts into a disarray and brought chaos to the enterprise's plans. Why should the Siberians strain themselves any longer, if all of the output, as in the years of stagnation, is again to be reduced to one level, with the immediate producer receiving nothing from the sale of it? As regards wages, the output of these additional amounts of pulp would have resulted in an increase of no more than four roubles on the average.

Nevertheless, the collective of pulp makers are holding to their belief that the Law on State Enterprises will prevail. The agreement on the sale to Japan of 5,000 tonnes of unbleached pulp derived from production wastes was signed for the second time. But such a piffling amount no longer suits the workers' collective. Accordingly, as recently as last year the Association entered into talks with the Soviet-Syrian joint venture known as "Lexica", which encompasses "Soveksportkniga" (Soviet Book Exports), the Syktyvkar' Timber Industry Complex and the Syrian firm "Kuli". The Bratsk workers' new partners need

raw material for paper production. Waste products derived from pulp manufacturing could become the source of this raw material. But this is only a part of the agreement, the main provision of which is to set up a branch of "Lexica" in Bratsk in order that waste products can be converted on the spot. Nor can the legal right to engage in international marketing of high-quality output over and above the plan be denied.

It is unfortunate that such a display of initiative "at the grass roots level", in this instance within the USSR Ministry of the Timber Industry, does not meet with approval higher up. For example, having become anxious over the fact that the Bratsk people had refused to conclude agreements for the delivery of 10,000 tonnes of pulp and were intending to sell this as they saw fit, Deputy Minister Sankin sent a threatening telegram to Bratsk stating that deliveries of pulp produced for export over and above the plan, and also coastal trade, are prohibited unless previously coordinated with the Ministry.

A similar style of administration is also being instituted in the Bratsk Timber Industry Complex's subordinate body - the Territorial Production Association (TPA). While understandably disturbed in a number of situations by the arbitrariness of the Ministry, the managers of the TPA are nevertheless themselves attempting to practise diktat against the production associations subordinate to them. Thus, one of the recent orders issued by the TPA says: "It is forbidden for production associations to independently dispose of output by coastal trade without being authorized to do so by the TPA and at the same time... to delegate to sub-units tasks relating to the marketing of

above-plan products by way of Dal'intorg.

What is the upshot of this? It means that although the labour collectives of the pulp manufacturers and woodworkers will be turning out the products, the right to market them, and consequently, distribute the corresponding wealth, will be vested in the higher authorities. The selfsame mechanism of alienating the workers from the fruits of their labour will be present. The "higher ups" do not favour a division of power. The question can be asked.. Can such an approach to business be considered democratic? Does it contribute to the development of initiatives in the provinces and as a result, to the solving of problems in the economic and social spheres? The answer is obvious.

(Article signed by V. Ledyayev, Deputy General Director of the "Bratsktsellyuloz" (Bratsk Pulp) Production Association and a Council Member of the Association's labour collective).

Lesnaya promyshlennost'

April 15, 1989

Page 2 (Full text)

FORESTRY

Replanting of Saplings in Zhitomir Oblast'

About 43,000,000 saplings of pine, spruce, oak and birch are in the course of being moved from the nurseries to the forests of the Zhitomir Oblast'. A large-scale establishment of new plantations has begun there. Throughout the season it is planned to cover an area of about five thousand hectares. Young stands are also appearing on the slopes of gullies and on river banks, as well as on farmlands subject to water erosion.

Lesnaya promyshlennost'

April 4, 1989

Page 1 (Full text)

Integration of Timber Working and Forestry Considered Necessary

(Letter to the Editor)

In the Draft Concept of the Development of the Timber Industry Up to the Year 2005 it is stressed that the principal type of enterprise in the timber industry will of necessity be the integrated enterprise, accomplishing all of the operations relating to reforestation and the harvesting and conversion of timber. I am convinced that the forest needs only one boss, but a real one, not just on paper.

In our Oblast', a fifth of the forested area is currently under the jurisdiction of the collective farms (kolkhozy) and State farms (sovkhozy). In

their productivity and timber reserves these tracts are 2 to 2.5 times inferior to the stands forming part of Goslesfond (General forest lands administered by the State). Therefore, if we are going to raise the question of annexing this part of the forests, then we shall not be looking for advantages. It is more likely that the reverse will be the case. To bring them into the proper state will require effort and funds. The main thing here is to think of tomorrow without losing time.

In the short term, the proposed merging of the woodworking and furniture manufacturing industries of the other organizations is seen to be important. This step would make it possible to pursue a unified policy here and thereby improve the performance of these subsectors.

Many sawmilling shops in the Oblast' are equipped with sub-standard production technology belonging to a number departments. They are not in a position to ensure the production of high-quality lumber and semi-finished furniture, nor the secondary conversion of timber. Our neighbours are neglecting to use a large quantity of wood chips and this can be said especially of wood packing material, which is simply being burned in substantial amounts.

In "Zakarpatles" (Trans-Carpathian Timber and Woodworking Association) the capacities for production of wood particle board are adequate, the network of sectors for production of fuel briquettes has been expanded, and the enterprises of the Association may go over to waste-free technology.

I firmly believe that the solution of these problems will open a direct route to the fuller

utilization of all of the resources and may improve the ecological situation.

(Signed by the General
Director of "Zarkarpatles")

Lesnaya promyshlennost'

April 20, 1989

Page 2 (Full text)

Labour Collective on Sakhalin Opposes
Plan to Integrate Forest Farm and Logging Enterprise

Our Aleksandrovo forest farm is one of the oldest forest farms in the Sakhalin Oblast'. It was established in 1936 and was the basis on which forestry originated on Sakhalin. And the fate of our enterprise matters more than a little to the workers' collective, for it has the largest number of skilled workers among the forest farms of the Sakhalin Oblast' and has created in recent years a solid base for the conduct of forestry, with the result that today the profitability is 40.7 per cent, which was at the cost of enormous efforts on the part of the entire collective.

In this situation the integration of our highly profitable industry with one that is unprofitable without taking the views of the collective into account contravenes item 23 of the Law on State Enterprises.

An experiment involving an earlier amalgamation of a forest farm with a logging enterprise, accomplished during the period 1960-1965, showed that forestry activities became a burden to the logging enterprise and fell into neglect.

Regrettably, the point must be made that the present attitude towards forestry operations on the part of the directors of the Northern Sakhalin logging enterprise remains at the level of the sixties, for a rational attitude to the use of timber resources is lacking here. The following facts graphically illustrate this: fines levied in recent years for timber processing offences have undergone a two-to threefold increase. Procedures for protecting the forests against fires are not being implemented, as a result of which the largest fire in the Oblast originated in 1988 on the territory of the forest resource base of the Northern Sakhalin logging enterprise.

All this convinces us that the merging of the forest farm and the logging enterprise will adversely affect the conduct of forestry in our district. Moreover, the creation of an integrated timber industry enterprise will deprive the district of consumer goods and of the output derived from improvement fellings, which is being sold directly in the district for a sum exceeding 400,000 roubles.

A decree of the CC CPSU and USSR Council of Ministers dated March 10, 1988 which was headed "On Improving the Management of Forestry and the Timber Industry in the USSR" provides for the leasing of forest tracts to integrated timber industry enterprises for periods of 30 to 40 years. We note, however, that on the territory of the Aleksandrovo forest farm the logging enterprises are already operating for seven tenths of the year. Every year they cut more than 500,000 cubic metres of timber in an area exceeding 2,000,000 hectares. During the last Five-Year Plan logging volumes on the territory of our forest farm increased 1.5-fold and the trend towards increased logging is continuing.

In view of the foregoing, a forest resource base for the conduct of industrial logging will only last for 10 to 20 years more at best. So what kind of long-term lease can this be? We are not opposed to restructuring in forestry, nor to the creation of integrated enterprises, but thoughtless decisions can inflict major damage here. It is necessary to make a precise estimate of the economic advantage of transferring the forest farms to the logging enterprises in the Sakhalin Oblast. Why repeat the mistakes of the past?

We believe that the improvement of forestry operations in the Sakhalin Oblast will not come about by merging forest farms and logging enterprises, but by strengthening the resource base for supplying the forest farms with materials and machinery.

(Article signed by the Director of the Aleksandrovo Forest Farm, the Secretary of the Party Organization and the Chairman of the Trade Union Committee)

Lesnaya promyshlennost'

April 6, 1989

Page 2 (Slightly abridged)

Deputy Minister Argues for Unified Management of Forestry and the Timber Industry

For many years now a debate has been under way in the periodic press between representatives of the timber industry and forestry concerning the condition and the paths of development of these sectors, which are closely linked in the production sense.

To some extent this interdependence is also reflected in the replies given by Academician A.S. Isaev, Chairman of the USSR State Committee for Forestry/Goskomles SSSR/, to questions asked by correspondents of "Lesnaya promyshlennost". These were published in the March 30, 1989 edition of this newspaper and touched upon a number of fundamental aspects of the present state of forestry. Considerable importance was attached to substantiating the pattern of future administrative and economic ties between the timber industry and forestry. (Full English translation provided in the February-March issue of these Extracts).

In the USSR Ministry of the Timber Industry however, certain of Comrade Isaev's opinions are not shared. In light of the plurality of views, Deputy Minister of the Timber Industry V.I. Matveev expressed a desire to state his own position on the matters in dispute. His article is presented below.

* * *

The replies contain a fair number of suggestions which are irrefutable, for instance the need to establish new extraction capacities in undeveloped regions, expand intermediate fellings, adopt the new principles of inexhaustibility and sustained yield, improve the quality of plantations, etc.

At the same time, a number of important evaluations cannot be allowed to pass without comment. First of all, in my view it is impossible, and it would seem, unrealistic in today's world to count on the budgetary appropriations for forestry being increased in the amounts requested. Given the economic reform being instituted in the USSR and the transfer of enterprises and sectors to the system of

profit-and-loss accounting and self-financing, we can no longer live in the expectation of repaying our debts and relying on the State to seek funds for the financing of forestry. We must begin to earn these funds ourselves.

The suggestion that operating expenditures for forestry be financed from the stumpage and the assumption that this will be sufficient is incorrect. It is incorrect because today, the funds being received by USSR Goskomles from the State budget are approximately 400 million roubles in excess of the total stumpage.

The question arises, where are additional sources of financing for forestry to be found? In our view, this problem can be resolved by setting up integrated enterprises and by redistributing the profits earned from sales of end product between the foresters, the loggers and the woodworking industries.

If the forest complex does not itself earn the funds which will provide for an enhanced regeneration of the forests and for their conservation and protection, then we shall indeed "eat through our forest lands and be held accountable for this by the generations to come."

In the last few years the problem of supplying the country with timber has been greatly exacerbated. Solving it is not only the task of the timber industry, but of forestry as well. However, if we compare the state of the forest lands and the situation in regard to forest use, we shall see that on the one hand, the dynamics of the overall main indices of the forest lands are improving, while on the other, in the areas where the logging enterprises

are working, the shortage of standing timber is being keenly felt.

In the European-Urals zone of the USSR, in the course of the last 20 years almost 5 billion cubic metres of timber have been felled. This need not give cause for regret, since during the same period about 6.6 billion cubic metres have been grown. Both the forested area and the total stock of timber have increased substantially, and the overall planned coupe throughout this zone has shrunk by 3 million cubic metres. There has been a corresponding decrease in forest yield. In the Karelian ASSR it has declined from 19 million cubic metres in the sixties to 11 million cubic metres currently, in the Kirov Oblast' - from 18 million to 12 million, in the Kostroma Oblast' - from 10 million to 6 million, and in the Arkhangel'sk Oblast' - from 26 million to 23 million cubic metres. But standing behind these figures are people and deserted camps.

These shortfalls are due not so much to overfellings of designated coupes as to errors in determining their dimensions, and incorrect estimation of the potential annual yield. As a result, errors were allowed to occur in the positioning of timber extraction and processing capacities.

In the past year the Ministry's territorial production associations have formulated and coordinated with local administrative bodies, measures for halting the overcutting of functioning coupes by 1995. To this end, the procedures involved in logging operations are being reviewed. Reconstructive and non-clear fellings are to be greatly expanded and the use of hardwood and low-grade wood, and of logging and processing wastes,

is to be stepped up. The production of commercial wood substitutes will also increase. The Ministry has formulated and will be implementing practical steps relating to the organization of output, starting from the current year, and the extensive use in the forests of unitized machinery on wheeled tractors. Although these measures were examined by the RSFSR Ministry of Forestry and the RSFSR State Planning Commission and ratified by the Council of Ministers of the RSFSR, the USSR State Committee for Forestry is again proposing a downward revision of the designated coupes for these oblasts and republics in the 13th Five-Year Plan.

We are seeing a similar state of affairs even in regions where overcutting has never been allowed. For example, just over 20 years ago the designated coupe for the Checheno-Ingushskaya ASSR was 275,000 cubic metres; today it is 88,000. For the Krasnodar Krai it was 3 million cubic metres; today it is 1.4 million.

The practice of mass exemption of forests from active exploitation has become widely prevalent across the country. In the European USSR alone, forests with a total growing stock of about 3 billion cubic metres are exempted from the economic turnover. This is double the size of the stocks in Finland, which annually extracts about 50 million cubic metres. Indeed, the Finns, as was mentioned by Aleksandr Sergeevich Isaev, are making three successive felling visits to a forest which according to our concepts, would be classed as parkland. With us, so many roadblocks have been erected and so many instructions must be observed, that the cutting of timber in this zone, even when the Finnish procedure is followed, is virtually prohibited.

The future outlook for the development of logging in our country is in many respects linked with the circumstances under which the forests are made available for leasing. As is well known, the draft of the Statute on the Leasing of Forests was envisaged by the decree of the CPSU and the USSR Council of Ministers on "Improving the Management of Forestry and the Timber Industry in the USSR". Unfortunately, here also we are at odds with the USSR State Committee for Forestry on a number of fundamental issues. First and foremost, there is nothing in the draft Statute that would make the leasing of forests economically attractive to a lessee. As is the case today, the lessee will be enmeshed in a network of multiple operating instructions and regulations which are even more stringent in the draft statute. Besides, a number of the sections directly contradict the Fundamentals of Forest Legislation in the USSR and the Law on State Enterprises (Associations). Certain of the paragraphs have been drafted in such a way that the effect of the Statute is extended to enterprises of all of the ministries and agencies except Goskomles SSSR, even though it ranks second in the country in the volume of forest products extracted.

The draft Statute drawn up by the Committee ignores the economics of the logging industry. It provides for the charging of a rent both for the overcutting of a designated coupe and its underutilization, as well payment of a fee for non-ligneous forest products. It would be more correct to call these charges punitive sanctions.

If an attempt is to be made to compel the logging industry to pay a fee for unfelled timber, then using this analogy as a guide, why shouldn't the USSR Ministry of Water Management and Reclamation

(Minvodkhoz) be made to pay a fee for water not used for irrigation or the USSR Ministry of the Coalmining Industry be similarly penalised for non-development of coal measures?.

There can be no doubt at all that not a single workers' collective is willing to pay or should be made to pay out of its own pocket for a fivefold overfelling of a designated coupe, the more so since it is doing this against its own wishes.

In contrast to the position taken by USSR Goskomles, in our view the leasing out of forest farms should not be limited to 50 years, but at least to the duration of the felling cycle. Otherwise, only mature and maturing forests will be leased, that is, contravention of the principle of sustained forest use will be enshrined in the terms of the lease.

We consider that the leasing out of forests should be done on a voluntary basis and in a way that is advantageous to both parties. Obviously the lessee must have an economic interest in maximum use being made of the raw timber potential of the forests being leased. The only catch here could be a designated coupe of sustained use. Evidently it would then no longer be necessary to determine the annual size of the allowable cut for the lessee. I maintain that the procedure being proposed for making forests available for leasing to loggers solely within the confines of the allowable timber limits assigned to them is similarly unwarranted.

In the draft Statute provision should be made for the replacement of a number of regulations and instructions which stifle the initiative of the lessee. There should also be guarantees and

compensation in the event of pre-term confiscation of a part of the leased forests.

Neither can I agree with the assessment that was made of managerial performance in integrated enterprises of the USSR Ministry of the Timber Industry. This is not to suggest that there are no shortcomings in their work. How could it be otherwise, for the vast majority of them were formed only two to three years ago?

Unfortunately, the situation is such that forestry and the timber industry, by operating for the most part as separate entities, have been unable, despite the existence of vast forest resources, to meet the needs of the economy and the general public for wood and wood-based products. The quality of the forests is continuing to worsen. Throughout the USSR as a whole, the quantity of standing timber that perishes annually is one and a half times the amount being extracted. The unstocked areas in the State forest lands (Goslesfond) are equal in area to all of the forests in the capitalist countries of Western Europe put together. There can be no question that in a situation such as this is ridiculous to speak of the advantages derivable from separate management of the forest.

Besides, experience shows that when forestry and the timber industry were amalgamated during the period 1959-1965 there was a 1.3-fold rise in the volume of reforestation work and a 1.5-fold rise in forest planting and sowing, in addition to which there was a 1.4-fold increase in the seeding areas in the nurseries and in the areas devoted to tending the plantations and a 2.9-fold increase in the establishment of nurseries for raising saplings.

By harnessing the mighty potential of the timber industry, there was a 10-fold rise in the volume of mechanization work related to planting and forest sowing, a 9-fold increase in preparation of the soil for planting and a doubling of activity related to the tending of the plantings. This growth was achieved over a six-year period. In all, 22 years have elapsed since forestry evolved as an independent sector. Throughout this period, budgetary expenditures on it have increased 2.5-fold, there has even been a decrease in the volume of forest sowing and planting, and activities related to tending the plantations and establishing nurseries for raising saplings of arboreal and shrub varieties have remained at roughly the 1965 level. The calibre of reforestation work is technologically and organizationally inferior. Consequently, throughout the country as a whole, every third hectare of established plantations is perishing, and in a number of forest farms the loss is as high as 90 per cent.

The advantages to be gained from joint management of forestry and timber industry operations are also demonstrated by the 133 integrated enterprises that were formed three years ago. Since then there has already been a 24 per cent increase in tree planting and a 10 per cent increase in soil preparation for forest cultures, nurseries and plantations there, as well as a 2.4-fold increase in the construction of logging roads. During the last three years 42 forest ranger farmsteads and 7 chemical fire-control stations have been built and reconstructed, and 74 hothouses for growing planting material under controlled environmental conditions have been placed in service.

Deliveries of forestry machinery have also been stepped up. The output of individual machines

and implements has begun at the country's machine-building enterprises.

(One paragraph omitted).

The experience gained from the initial stage of the reform has shown that under the conditions now obtaining, improvements in the administration of the complex would be impossible without the introduction of regional profit-and-loss accounting and the involvement of the local government bodies in the machinery of management. This is especially important for the forest complex because the object of labour here, the forest, is under the jurisdiction of the respective territorial councils. Local bodies must be made interested in the development and more efficient use of forest resources. The managerial machinery and administrative structures must be directed towards solving this problem, bearing in mind that a part of the forest revenue has to remain in the local budget.

The further improvement of the system of administering the forest complex will set the stage for a correct combination of timber extraction and reforestation activities and the taking of simultaneous measures aimed at preserving a part of the forest cover as is done in all the other countries.

Lesnaya promyshlennost'
April 13, 1989
Pages 1 and 2 (Slightly
abridged)

A Complaint About Forest Mismanagement in Latvia

(Letter to the Editor)

In recent years people have frequently asked how it is that the forests in Latvia are so cluttered and in some places, are even turning into swampland. Why are the local inhabitants not permitted to harvest timber for their own needs?

Recently, L. Vitols, the director of the "Latvijas Mezhs" Association, assured the public over the radio that the forest is not being overharvested and that the average growing stock in the republic is increasing every year and has reached 236 cubic metres per hectare.

What does this mean in practice? To me, after working for 23 years on forest resource inventories in an area of 210,000 hectares, and having covered on foot a distance equal to three and a half times around the globe at the equator, the answer is clear: we are not managing things in the best way possible. In pre-war days in Latvia, when horses were used, between six and eight million cubic metres of timber were harvested annually. Today, the total has shrunk to 3.2 million cu. m., and this with the aid of the most powerful tractors available. Every year the republic is importing 200,000 cubic metres of timber, mainly for the Sloka Pulp and Paper Mill, even though the Mazsalace logging enterprise is at a loss to know where to put the spruce pulpwood. How much valuable marketable timber is being left to rot, how many plantations have been damaged by elk and deer, and how many hectares of plantings have been spoiled and have withered up!

A scientist by the name of K. Bush who worked for the "Splava" Scientific Production Association once stated that it is better for 2,000,000 cubic metres of damaged spruce timber to be left to rot in the interests of soil improvement than to waste time hauling it out. As for birch, he regarded this species as a weed. Meanwhile, the Finns are paying us between 26 and 38 dollars for these pulpwoods. I maintain that it would be possible to reduce the imports of oil and coal into the republic and convert to heating with groups of boilers and wood-burning furnaces. Thus, while the grey alder yields on average 280 m³/ha, it would be possible to harvest no less than 1.7 million cubic metres of it annually for firewood. Today, the borders of fields, ditches and meadows are being overgrown with this species.

When tending the plantations you often come across manifest cases of injustice. The most one is paid for this kind of work is 15 roubles per hectare. This is a very low wage. The same can be said of tree plantings. For planting 700 young spruce in a day they are paying 5 roubles or about 100 roubles per month, even though Leningrad sociologists estimate that the work is worth at least 295 roubles. It is not surprising, therefore that the bulk of the trees are being planted by schoolboys and hunters, i.e. by untrained workers.

As for forest improvement measures, whereas in pre-war days about 220,000 hectares in the republic were drained and all the ditches were filled with running water, today the drainage sites of the sixties have long fallen into disuse. Now, they are frequently used as places to dump logging debris or as off-loading sites for log piles. Repairs to

drainage ditches in 1985 amounted to no more than 7,800 hectares. The actual need was 59,900. Such indeed was the volume of work completed in 1966.

The hunting industry could be a promising way of earning foreign currency. Here, however, the field is wide open for all kinds of excesses, beginning with wildlife inventories and ending with poaching by "titled" hunters. In actual fact, the numbers of elk and red deer in the republic have been halved. But the legislators have no need to worry about how to bring pleasure to themselves and the high-ranking visitors. For even though we have a goodly number of workers formally responsible for nature preservation, hardly anyone cares that only 3 per cent of the 20 per cent of young pine stands are doing well. The remainder are being gnawed by large and small animals. Forest pathologist Gint Ozols reached the conclusion that assembling branches and logging debris in huge rows causes a 300 to 500 times increase in the armada of forest pests, as compared to the old method of burning the branches there and then immediately after felling the trees.

Why don't the foresters return to grandfather's ways of tending the forest, where this is expedient? As I said earlier, everywhere there is a need to harvest the maximum amount of wood for the State and the population.

It is vexing that after reorganizing the Ministry into an association, practically nothing has changed in regard to the approaches to assiduous forest management.

(Article written by M. Dabolin'sh, Senior Engineer of the Latvian Forest Management Enterprise).

Lesnaya promyshlennost'

April 27, 1989

Page 2 (slightly abridged)

ENVIRONMENT

Scientific Centre for Ecology Founded in Klaipeda

Interdisciplinary solutions to environmental problems in the Baltic region will now be possible, thanks to the founding of a scientific centre for ecological problems.

It has been formed in Klaipeda by the Institute of Mathematics and Cybernetics of the Academy of Sciences of the Lithuanian SSR. The centre will conduct a study relating to the introduction in industry of waste-free technologies and effective devices for the purification of waste waters and the utilization of harmful wastes.

Lesnaya promyshlennost'
April 27, 1989 (Full Text)

A Plea to Replace Ecologically Harmful Caterpillar Tractors

(Letters to the editor commenting on the Draft Concept of the Development of the Timber Industry Up to the Year 2005)

Alas, nothing results in so much harm being done to the forest ecology as a conservative attitude towards the machinery used in the logging industry. The heavy machinery that we are using inflicts enormous damage on the woodlands and the entire ecological system. The soil cover, forest floor and underbrush all perish beneath the caterpillar tracks. Everything possible is done to submit a plan but hardly anyone worries about the poor quality of

the forest products derived from indiscriminate fellings.

Although the need to convert to ecologically harmless logging has long been apparent, there is currently no evidence of a change for the better. Nor does the prediction in the draft regarding the development of logging machinery and technology prior to the year 2005 inspire one with the hope of revolutionary change, for it lacks the necessary ecological orientation.

At TsNIIME (Central Scientific Research Institute of Mechanization and Power Engineering in the Timber Industry) the idea is firmly rooted that advantages are to be gained from studying the experience of countries that have extensive forests from which a great deal of timber is extracted. On the other hand, in Western European countries such as West Germany, where logging is done on a small scale, valuable experience has been accumulated in the area of non-exhaustive, productive exploitation of the forests. In my view, our sector is in need of immediate aid and an expertly devised protection programme.

Any primary conversion and extraction operations are both ecological and economic in character. The only variable is whether the effect will be favorable or adverse. It can confidently be stated that under conditions characterized by favourable ecological and economic effects the average per hectare pick-up of wood from the felling areas can be as much as 5 to 7 cubic metres across the country. The assortment method of logging is the most productive. It makes it easier for machinery and technology to be adapted to the needs of ecology, makes for a judicious combination of tree felling and

forestry, and enables the logging industry to be integrated with sawmilling. In the process, lower yards become unnecessary. With such a method and with preservation of the productive potential of the ecosystems, both selective and clear fellings are possible.

I maintain that restructuring in our sector should be directed along these lines. (Signed L. Sergin, Engineer).

Lesnaya promyshlennost'

April 20, 1989

Page 2 (FULL text)

Need to Recycle Activated Sludge and other Industrial Wastes

In my opinion, the "Ecological Problems" section of the Draft Concept of the Development of the Timber Industry lacks clarity. No reference is made to current thinking about the involvement of wastes in commodity production.

Several years ago, a special purpose programme known as "Sludge" gained recognition among scientific organizations and the pulp and paper mills of the USSR Ministry of the Timber Industry. Scientists had proposed specific ways of utilizing the recovered stock being derived during mechanical seepage of wastes, and also the activated sludge which is a product of bacterial activity during biological treatment. Some of the experiments have now found a permanent application, for example, obtaining wood fibreboard from recovered stock at the Svetogorsk Pulp and Paper Combine. Others still

require verification, for example the removal of the food additive bel'vitamile at the Kondopoga Pulp and Paper Combine, the production of fertilisers and of various additives to building materials and adhesives, and the partial return of the sludge to the production process involved in the cooking of pulp.

It soon became apparent, however, that all the numerous experiments were to no more avail than dredging the wastes from the sea with a teaspoon. The truth is that in the country's paperboard and pulp and paper mills about half a million tonnes of activated sludge form every year (calculated for dry sludge!). And all this seeps into the ground and after breaching the embankments, threatens to get into our rivers and lakes, which we are trying to preserve by waste treatment programs.

The seriousness of the situation was emphasised by the notorious government decrees calling for the shutting down of production at the Baikal Pulp and Paper Combine and the Priozersk Pulp Mill. Implementation of the "Sludge" programme is being postponed until some time in the future.

For this case, however, an alternative to the sludge disposal problem solution is already to hand at the USSR Ministry of the Timber Industry. In mid-1986, a meeting of specialists was convened by then Deputy Minister N.G. Nikol'skii which led to the surfacing of a "new", or more correctly speaking, forgotten idea: burning it. The only previously used methods of burning sludge - in drum furnaces and boilers - were rejected as not fully effective. It was decided to attempt destruction of the precipitate in special furnaces that have a boiling layer. Two of these units, which had been operating abroad, had

already performed well at the Svetogorsk Pulp and Paper Combine and the Ust'-Il'insk Timber Industry Complex. So, it made sense to adopt this variant for further working up and jointly with the Ministry of Chemical Machine Building (Minkhimmash) and the planning institute, to provide for the building of combustion shops at the earliest possible date, with the technical services department to be made responsible for notifying Minkhimmash of the requirement for equipment.

The approximate requirement was indeed communicated forthwith: for the Kama Pulp and Paper Combine - 3, for "Sokol Paper Products" - 3, for the Pitkyaranta Pulp Mill and the Kotlas Pulp and Paper Combine - a total of 13 mills. Altogether, 3 units were requested for 1987, 4 for 1988, 16 for 1989 and 15 for 1990.

Let us be clear about it: today, not one such domestically made furnace is in operation anywhere in the country. For at the last minute Minkhimmash turned down the application, postponing the release of these units until a happier tomorrow. The new programme, however, is not only perplexing on account of its hastiness and the unpreparedness of its participants. The main concern is that if it is implemented it may well open up a new series of problems and drastically prolong our campaign for a clean environment.

The point is that neither the manufacturer nor the designer has as yet made any provision as to where to put the combustion products. As a result, even the heat being generated threatens to become a serious polluter. This is to say nothing of gases, smoke and ash, for depending on the composition of

the industrial wastes, sludge can contain compounds of chlorine, sulphur, mercury and heavy metals.

It is to avoid these consequences that the "Sludge" programme needs to be reactivated.

(Signed G. Georgiev, Engineer).

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April 20, 1989
Page 2 (Full text)

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