

The Cost of Coal

Impact of Russian coal mining
on the environment,
local communities
and indigenous peoples



Introduction

In four hours of flight from Moscow, in the middle of the country, lies the coal heart of Russia.

Coal mining and burning are generally known to be polluting atmosphere with loads of CO₂ and causing climate change. But people of Kuzbass have little concern about global problems. They get used to open-cut mines operating and huge trucks roaring right out of their windows. Shot operations destroy houses, and spoil piles grow up around. Air and rivers are contaminated with coal dust, and fertile land is being devastated.

These particular problems can be discovered only by visiting surroundings of Novokuznetsk. Bad news about violations over environmental rights in Kemerovo Oblast would never reach Moscow themselves. They are hidden behind companies' ambition to get coal at any cost.

Number of official statistics provides evidence for contamination of air, water, and soil, high mortality and sickness rates in Kemerovo Oblast. Local authorities and regulatory bodies, however, prefer to avoid looking into particular cases.

There is Kemerovo Oblast with a range of general environmental problems, but there are no particular people whose violated rights need to be protected. This way, there are no victims and no need to pay out compensations or think about mine reclamation.

This report begins with statistic data which reflect environmental conditions in Kuzbass, followed by testimonies of the local residents. Interviews with those suffered from coal production but unable to get it acknowledged and fully compensated by the state are enclosed in the appendix.

Behind every figure of the official statistics presented below, there are lives of people who live in Kuzbass and battle for their rights.

«The Cost of Coal»

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Coal numbers

Kuzbass, or the Kuznetsk Coal Basin, is the largest coal mining area in Russia. Total reserves of Kuzbass coal would be enough to load a train stretched from the Earth to the Sun. And Russians are loading.

59% of all Russian coal is mined in the region. Kuzbass coal makes up 76% of Russia's coal export.

120 coal mining facilities (66 mines and 54 quarries) and 52 enrichment plants operate in Kuzbass at present. Another coal mining record was reached in 2014 when 211 million tons of coal were mined. 201.4 and 202.7 million tons of coal were mined in 2012 and 2013 correspondingly. The Energy Strategy of Russia provides for increase of Kuzbass coal mining to 224 million tons of coal annually.

Kuzbass beats records in coal mining. Production rates have grown in comparison to the Soviet ones, which is very important. Russia likes competing with the past.

Meanwhile, Kemerovo Oblast beats records in another field as one of the most environmentally unfavorable regions of Russia.

Thus it is a biggest producer of waste per capita and per gross regional product among Russia's regions. 984 tons of production and consumption waste per every resident of Kemerovo Oblast is generated annually.

It is second only to Moscow Oblast in share of land disturbed and taken out of the productive cycle, meaning that fertile soils are destroyed by mining of coal which is once mined and, unlike agricultural land, can never be recycled.

Disturbed land is estimated to make up about 20% of populated area in Kuzbass. However, as long as there is no single accounting of land use, accurate data cannot be provided. Moreover, mines try to give worked-out lands over to forestry for restoration.

According to official statistics, about 650 km² of land are disturbed at present while Kemerovo Oblast has an area of 95,000 km². So, the disturbed land makes up less than 1% of it. As small figure to care about as 2 °C of global temperature rising is.

Meanwhile, major cities of the region, such as Novokuznetsk, Kemerovo, Kiselevsk, Prokopyevsk, Belovo, and Mezhdurechensk, occupy an area of a little more than 1600 km² in total. Comparing to this figure, an area of land disturbed by coal production is found substantial.

Another bad environmental record of Kemerovo Oblast is ranking five among Russia's regions for emissions into atmosphere per unit of area which constitute 163.6 tons per 1,000 ha.

Vesti Kuzbass, Russia-1 TV Channel: "Vice-governor for natural resources and environment of Kemerovo Oblast Nina Vashlaeva presented a book titled *The Environment of Kuzbass: Figures, Facts, and Events. It analyses environmental situation in the region for last 15 years. Its main conclusion is that the situation is changing for better. Emissions to the atmosphere were cut down almost fourfold, dumping of waste water decreased by 40%, 460 old boiler installations were shut down. Grayling and taimen came to the Tom River, and population of elk has grown twice*".

But official environmental indicators are at least incomplete. According to the Interfax Russian regions business transparency rating, only a little over a half of Kemerovo Oblast entities published their environmental indicators of their activity in 2014.

Anti-records of Kemerovo Oblast are related to the environmental problems of the region which directly affect local population life quality. Coal mono economy and poor quality of life cause people outflow from Kuzbass.

Kemerovo region population trends

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total (thousand people)	2893	2862	2833	2806	2786	2780	2776	2773	2761	2751	2742	2734
Urban	2508	2783	2410	2390	2374	2369	2367	2365	2357	2351	2345	2340
Rural	385	379	423	417	412	411	410	409	404	400	400	394

Environment and health

Official health statistics demonstrates that Kemerovo Oblast is unfavorable for living in and reflects price the state and people pay for a possibility to mine coal.

The average life length of Kuzbass population is 3 to 4 years shorter than the average in Russia. Tuberculosis rate is 1.7 time above Russia's average.

Child mental disorder rate is 1.8 time higher, and child mental deficiency is 2.4 times higher in the region than the average in Russia.

Kuzbass rated first in 2011 and second in 2012 in Russia for child cerebral palsy. Incidence of 15 cancer diseases is above Russia's average.

Natalya Silinskaya, deputy chief physician of the Kemerovo regional cancer clinic: ***"We in Kuzbass hardly have any significant differences from other regions of Russia. As everywhere else, annual cancer rate in our region is increasing. An increase has made up 11% for last 10 years. 10,000 Kuzbass residents are diagnosed with cancer annually, 50,000 oncological patients are currently on the register. Most deaths in Kuzbass are caused by cardiovascular diseases and traumas while cancer rates third in mortality. Breast cancer rates first, lung cancer is the second, and skin cancer is the third most common oncological disease. Bowels and rectal cancer incidence is growing, together they would rate third. However, lung and stomach cancer incidence is declining."***

Kuzbass has the highest incidence of acute myocardial infarction and neonatal congenital malformation in Siberian Federal District. Infant circulatory system anomaly rate is 1.6 times higher and female reproductive system anomaly rate is 3.3 times higher than the average in Russia.

Kuzbass is the only region in Siberia where child infectious and parasitic diseases incidence is 2 to 3 times above Russia's average. While in Russia there are 988 cases for every 100,000 children, in Kuzbass the rate is 2,400-3,200 cases per 100,000.

Moreover, Kemerovo Oblast has the highest professional diseases rate which has increased by 5% over the last two years.

Poor health of the population is not only result of coal mining but the complex problem of the region where air and soil are saturated with coal particles. Besides that, the atmosphere in Kuzbass is polluted by industrial plants most of which were built in the 1950-es and renovation of which are now economically comparable with construction of new ones.

According to the official data, only three out of a hundred Kuzbass inhabitants have satisfactory habitation conditions.

This situation contradicts the constitutional right of every Russian citizen for access to the favorable environment. The official water, soil and air pollution index allows evaluating how favorable the environment of Kuzbass is.

Water

Kemerovo Oblast is rich with fresh water resources. There are a number of large rivers and underground water-bearing horizon in the area. Kuzbass rivers belong to the upper Ob River basin with total surface flow of 34 km³, or 67% of all Siberian rivers' flow.

There are over 32,000 rivers in Kemerovo Oblast with total length of 76,500 km and 850 lakes with total surface of 101 km² which is equal to 0.1 % of total Kuzbass area, 95,700 km².

The largest in Kuzbass Tom River is contaminated along its whole length. It's referred to as slightly polluted around Kemerovo, very polluted around Luzhba and Novokuznetsk, polluted around Mezhdurechensk and upstream Novokuznetsk, and dirty downstream Novokuznetsk.

The river is contaminated with oil products, phenols, nitrite nitrogen, ammonia nitrogen, iron, manganese, and copper. Concentrations of these substances routinely exceed several times the standards.

Two Ob's tributaries, the Aba and Uskat, affect it extremely negatively. Both rivers are classified as dirty by the Russian Federal Natural Resources Management Regulatory Service, Rosprirodnadzor.

The Aba River has a bad luck to serve as an indicator for the environmental conditions in the region. The Aba starts nearby Kiselevsk, a city surrounded by coal open-pit mines, and flows along industrial cities of Prokopyevsk and Novokuznetsk. At its confluence with the Ob, the Aba is already heavily polluted with untreated discharges from industrial plants and municipal sewage.

The Inya River is classified as very polluted, mostly with iron and organic substances. Concentrations of manganese, iron, and organic substances in the Belovo water reservoir are above the standards. The northern rivers of the region, the Kiya, Yaya, Tyazin, Barzas, and Alchedat, are all contaminated with iron, oil products, organic and nitrogen compounds.

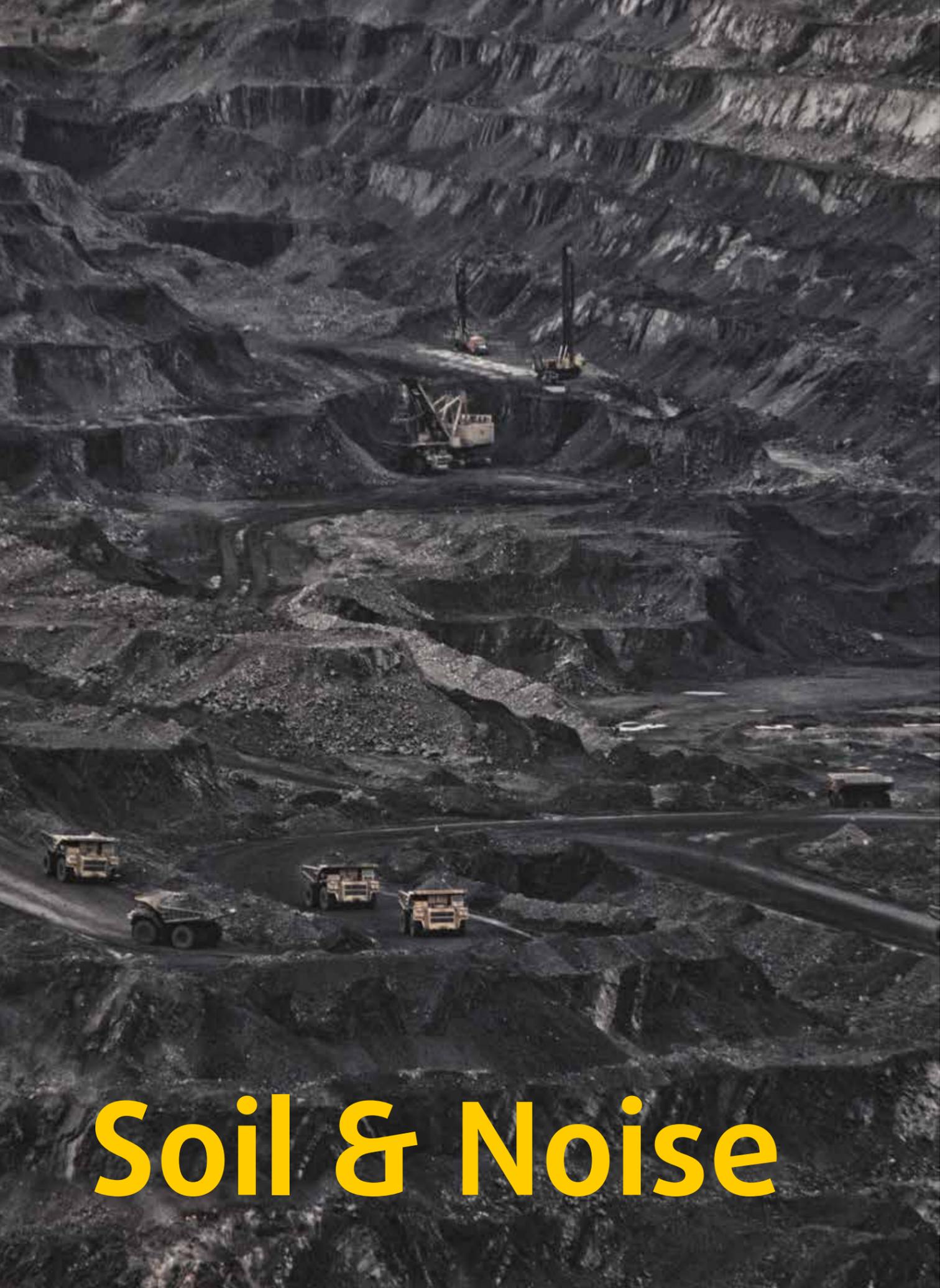
At the same time, another state agency, The Russian Federal Consumer Rights Protection and Human Well-Being Regulatory Service, or Rospotrebnadzor, states that bad sanitary state of water supply sources is mainly related to the absence of sanitary protection zones and/or failure to comply with the requirements of their arrangement and operation.

According to the 2013 Rospotrebnadzor state report, concentration of nitrates in drinking water in Kemerovo Oblast raises risk of blood and cardiovascular diseases in both children and adults. 93.8% of drinking water sources in Kuzbass do not meet the sanitary chemical and microbiological standards.

A local resident's story: ***"I live in Novokuznetsk and have a summer house in Chicherbaevo village of Novokuznetsk district where the Uskat River flows into the Tom River. For the last 5 years, due to operation of the coal mining facilities, the river has greatly shallowed. Once the high-water river, it's now in many spots less than knee-deep. The river strongly smells of oil products, its banks got overgrown with rush.***

In summer, children of our and nearby villages are forced to swim in the Uskat which can extremely hardly be called a river. The last outrageous incident took place in spring 2015, when due to the descent of waste pile produced by the SUEK-Kuzbass OJSC, the Uskat became an orange clayey stream with poignant smell of diesel oil.

I believe no one cares about our river. I would very much like that the responsible organizations answer for their mistakes and help cleaning the river. Otherwise the river will die."



Soil & Noise

Nevertheless, the Rosprirodnadzor reports on renovation of wastewater treatment plants, installation of additional filters, and funds spent for water protection activity from the federal budget.

Kuzbass water bodies, including the Tom, the major river of the region, are contaminated with coal dust. Local residents remember the river rich of fish, while now only Amur sleeper (*Percottus glehni*) able to live in water contaminated with coal and chemicals is found there. Villagers living along the Tom witness periodical summer fish murrains.

Viktor Kleutin, resident of Mezhdurechensk: *“In the past, one could catch grayling, lenok, taimen, perch, and pike here, which is not the case anymore. A fish murrain happened last year.”*

Chemical elements concentration in soils of settlements and cities located in immediate proximity to mines and reprocessing plants exceed the Russian average rates. Official statistics also indicate that for the last two years an area of contaminated soils in Kuzbass has grown by 20%.

Concentration of microorganisms and parasites in soils of Kemerovo Oblast is also above the Russian average. 8.9% of soil samples exceed the hygienic standards, and 7.9% of soil samples exceed the microbiologic ones.

A local resident, Kazas village: *„Mining is going on a hundred meter away. When they started blowing up, all the dust was brought to our vegetable gardens. Vegetables got covered with the coal dust which is impossible to wash out. Now I don't want to harm myself by eating anything from this garden.”*

Noise pollution is a feature of civilization. But while in the cities this problem is recognized and dealt with, noise accompanying coal mining, and thus living nearby, is treated as a norm.

According to the Rospotrebnadzor data, in 2013, Kemerovo Oblast was one of the leading regions in Russia for a number of industrial plants not meeting noise level sanitary requirements. Over 50% of the plants in Kuzbass make noise above the maximum allowable.

But noise produced by huge dump trucks roaring along the region's roads has never been taken into account. The BelAZ dump trucks are the most common vehicles for coal transportation. Besides noise pollution, they contribute to air pollution with coal particles.

Moreover, another source of noise pollution is explosions at mines and quarries development.

A local resident's story: *“Formally, it's forbidden to make noise. There are sanitary norms, but in fact, no one follow them. Well, we make complaints, have inspections arrived, and what? Measurements of mine noise, dust emissions, and water pollution are carried out so that to prove that these activities are going within the norms. Experts arrive when the mining operation is suspended and give out results that don't correspond to the real living conditions.”*



Air

The Russian Federal Natural Resources Management Regulatory Service, Rosprirodnadzor, is responsible for the air condition monitoring. But as the agency admits, the existing network of environmental monitoring stations is insufficient. Data on air conditions for major cities of the region, such as Belovo, Leninsk-Kuznetsky, Mezhdurecensk, Myski, Polysaevo, Osinniki, is unavailable.

Meanwhile, the main inhabited area of Kemerovo Oblast is located in a cavity, therefore harmful substances emitted by the industry are not carried away with wind but accumulate right there forming photochemical smog.

Unavailability of objective information about the state of the atmospheric air is a violation of the Russian citizen constitutional right to have an access to reliable information about the state of the environment.

According to the Kemerovo Hydrometeorological and Environmental Monitoring Center, in 2014, there was a very high level of air pollution in Novokuznetsk, a high level of air pollution in Kemerovo, and a heightened level of air pollution in Prokopyevsk. Air pollution in these cities is for the most part due to high concentrations of benzpyrene and nitrogen dioxide.

As medic experts estimate, chronic poisoning by air polluted with harmful substances and dust increase risks of sickness among the cities' residents. As the analysis of health risks related to environmental contamination in Novokuznetsk shows, in 2007 the most contribution to chronic air poisoning was made by carbon oxide (77.4%), dust (15%), and nitrogen dioxide (3%).

A characteristic for Kuzbass phenomenon visualizing the level of air pollution is black snow fallout. According to the official report, snow in Kuzbass contains sulphur compounds, nitrites, nitrates, chlorides, potassium, and manganese.

Gazeta Kemerovo: *“An excess of a maximum allowable concentration of polluting substances in the air was registered by meteorologists in Kemerovo and Novokuznetsk. An increased content of carbon black experts relate to stove heating in the private residence sector, while nitrogen oxide and dioxide as well as carbon oxide are due to industrial emissions and windless weather conditions.*”

Nature under the threat

14% of the Kemerovo Oblast's territory belong to the nature conservation areas with various protected statuses. The most well-known among them is the Kuznetsky Alatau Nature Reserve.

Rosprirodnadzor experts monitor and assess the vital state of forest by measuring concentration of sulphur and heavy metals in Siberian pine (*Pinus sibirica*) and fir (*Abies sibirica*) needles. According to the data available, the vital state index of the monitored species at the most of sample areas correspond to damaged and heavily damaged forest biocoenoses. Many of sample trees have already died.

A large quantity of yellowed and dried-out needles as well as affection by tree insects and mushrooms are observed in both tree species, which can be related to strong and continuous environmental contamination in the protected area. All needle samples are found to contain sulphur concentration 6-7 times above the maximum allowable ones; and some of the samples have as big excess of zinc.

At almost all sample areas where asymmetry of a birch's lamina was assessed this year, the state of environment is assessed as critical.

Besides the Kuznetsk Alatau, there are 20 other nature protected areas in Kemerovo Oblast. However, while observing threats for their existence, the Rosprirodnadzor experts speak about possibility to operate coal quarries in the proximity to the protected forest. Such developments would increase the anthropogenic load on the Siberian virgin forests already heavy enough.

Viktor Kleutin, resident of Mezhdurechensk, a member of City Council: *"I used to go right outside the vegetable garden and pick shamrock by bunches. There is no shamrock now even in the deep taiga. The sable is hard to find. Forest turned red. We are told it's caused by some kind of mite."*

Another threat to nature caused coal mining is the most barbarian technology of explosion which is, according to Kleutin who used to be a mine drilling technician, applied presently in Kuzbass. It leads to 30% of explosives, namely trinitrotoluol, being emitted in the atmosphere without burning out, and then falling out to the ground where it stays undecomposed for 25 years.

Coal earthquakes

A particular new threat to Kuzbass people is so called anthropogenic earthquakes. It became known when in June 2013 a very powerful earthquake of anthropogenic nature happened nearby Bachatsky open-pit mine (Kuzbasrazrezugol JSC). The earthquake reached 5.8 points of magnitude and 7 points of intensity. About 500 buildings were damaged by the earthquake and the total damage is estimated as 1.7 billion rubles.

Anthropological nature of the quake was detected by Novosibirsk seismologists. The US experts monitoring undergrounds tremor supported their opinion.

If the earthquake was caused by natural processes then the coal mining company is exempted from responsibility for what happened. According to the quake victims, aid was given selectively and didn't cover houses repairs. Houses remain the zone possibly affected by future earth tremors.

The local authorities and the mine management did allocate the funds for house repair but there were neither single compensation amount nor clear payment mechanism applied. Those working at the mine received bigger amounts, while the others addressed the local authorities and received lesser aid.

The earthquake was followed by a rising tide of complaints from the local people about explosions and coal dust. However, as the locals indicate, the inspection arrived to take measurements early in the morning before explosion and dust may appear. The resulting expert conclusion was that living conditions in the vicinity of Bachatsky mine satisfy the standards.



Waste treatment and soil reclamation

Until now, most of industrial facilities in Russia use the end-of-pipe method when handling problems associated with environmental pollution.

This method involves treatment installations to filter the emissions and mitigate their most harmful features, while the most effective solution to waste treatment problem is to prevent production of waste by changing production processes so that emissions and discharges no longer occur.

As mentioned above, Kuzbass is leading in the amount of waste produced, which is understandable. Coal mining leads to accumulation of spoil piles while coal reprocessing leads to production of industrial waste which is not treated but stored at the industrial sites.

Amount of waste produced has grown from 1753 million tons in 2007 to 2643 million tons in 2012, providing for 52% more waste in five years. In the same period of time, the share of recycled and treated waste reduced by 25%.

Secondary raw materials available for recycling in Kuzbass are the so called anthropogenic deposits accumulated by the metallurgic and metal mining industry, such as slag, sludge, and enrichment tailings.

Given that only 2% of mined mineral and raw material resources are made into final output, while the rest 98% became, in fact, waste, its recycling and reprocessing is a primary task both globally and in Kemerovo Oblast.

Coal production acceleration is accompanied by expansion of lost land which is associated with significant increase in opencast operation that constitutes 70-80% of all coal mining in Kuzbass.

In 70-80-es, land reclamation rate were taking the lead over land abandonment. By 2012, as statistics indicated, there were 1-1,500 ha of land lost and 200-300 ha reclaimed annually in Kemerovo Oblast.

Senkus Val. V., Klimov V. G., Senkus V.V., Novokuznetsk Branch of the Kemerovo State University: "Many private entities appeared recently that are supposedly dealing with restoration of land disturbed by coal mining but in truth scraping the bottom of mines for written-off deposits and having no equipment nor arboreta for proper restoration of land disturbed by opencast coal mining."

According to Dr. Yury Manakov, regional coordinator of UNDP/GEF program "Conservation of Biology in Energy Sector Policy and Development in Russia", most of land restoration companies are affiliated with coal enterprises which are interested to spend less on land restoration. Given that state regulatory bodies have little power, the companies conduct formal restoration aimed at reporting solely, not at real returning land to economic activity. They report that there is no need to reclaim agricultural lands, but birches can be planted instead and in 20 years vegetation will restore itself. However, it's obvious that opencast mines are not able to get overgrown or restored by themselves.

According to Manakov, there are excellent land restoration methods developed in Kuzbass, but they are applied only by a few companies exporting coal to Europe and having to meet environmental standards. However, no one seems to be interested in those methods for domestic use.

Unrightful right of coal

The basic environmental rights of the Russian citizens guaranteed by the Constitution and the existing legislation are rights of every human being for 1) the favorable environment, 2) access to the reliable information on its state, 3) compensation of damage caused to his health or property by environmental offence. According to the legislation, the state agencies and their officials have to provide every kind of assistance to the citizens and their organizations in implementation of their environmental rights.

The environmental conditions of Kuzbass are quite well presented in reports of the competent state services. Information related to air emission, soil contamination, and acid rains can be found published in the local and online media. Information is made available by a substantial expert and academic community concentrated in universities and research centers of the region.

However, research and monitoring data available is unemployed by the authorities. Environmental problems of Kuzbass has been stated but not officially acknowledged. Despite the necessity for changes in coal mining activity and the region's economy seems to be obvious for environmental and health reasons, the situation remains unchanged. The local authorities and regulation bodies of settlement, district, and city level continue functioning as if coal is the one and only value.

The first inhabitants of Kuzbass came there to mine coal, and they set their settlements nearby mines. Then mines have been replaced by a cheaper way of extraction, opencast quarries, while the settlement system hasn't changed. Therefore, now 80% of the region's population lives immediately by mining sites or in the area of their influence.

Denial of the problem by the authorities appears when coal mining operation starts nearby the dwelling houses. As local residents indicate, the regulatory bodies fail to provide true conclusions on the environmental conditions and to prove that coal mining pollutes air, water, and soil as well as increases noise level.

Prior to a new open-pit mine starts operating a mining company has to carry out the environmental impact assessment to provide estimations on what harm the project would cause to forest, soil, and water bodies. The project documentation must also foresee relocation of the residents from the sanitary zone and measures to mitigate possible damage to people's harm. In fact, the mining companies aim to cut their expenses on these activities. As the result, the developed project documentation claims that the site will not be deforested, and neither relocation of people nor environmental protection measures will be required.

On the basis of the poor project documentation, the authorities give a license for mine development, and a conflict arises. In most cases, there is a community living in a close proximity to a planned mine. People start protesting but it appears that they have no official grounds for that since the officially approved documentation says the project doesn't involve harm for their health and lives.

Some cases are absurd. A map enclosed to the mine development project documentation near Rassvet village by Energougol company didn't show the village itself. Therefore, its residents living in 300 meters from explosions and other mine operations were left deprived without rights for compensation and relocation.

Another example is Ananyevo village close to which Razrez Bungrsky-Severny company started mining. The project environmental impact assessment indicated that there were only bushes at the site while in fact there was Siberian pine forest.

According to the existing legislation, the public consultation should be organized prior to the coal mining operations start. Given 90% of population in Kuzbass believe that coal mining is a necessity, in many cases the solution might be relocation or compensation payment that would allow resettling in a new place.

But in reality the coal project developers avoid organizing a proper public discussion. They substitute the private conversations with the local residents for the public hearings as well as some settlement improvements for the compensation payments. An example is Razrez Kiyzassky company operating open-pit mine nearby Kazas village. A range of improvements offered include construction of a children playground, free coal supply, electrification of a settlement, drilling of a new water-supply well.

The question of relocation is raised only when dwelling houses are located in the sanitary protection zone. But in any case, coal companies use every possibility not to pay compensation and not to relocate people.

Local residents reveal falsification of documents by coal companies when it comes to compensation payments. An anonymous resident of Kiselevsk city experienced relocation of her mother whose house appeared to be in a sanitary zone. The mine management promised her an equal comfortable apartment in a city, but later forced her to sign an agreement to move for a smaller and worse accommodation. The woman assumes her mother received a bigger compensation on paper.

Another forgery was detected by Sergey Sheremetyev living in Alekseevka village. In his efforts to stop operation of the nearest mine, he was studying the documentation and found a new, non-existing street mentioned. He believes that residents of that street are supposed to be those to receive compensation payments.

Compensation of damage caused to health or property of the citizens in result of violation over the environmental legislation is one of the major instruments to defend the citizens' environmental rights. The existing Russian legislation provides that such compensation is paid in full size.



Local opposition

When, in the absence of the public discussion organized, coal companies proceed to mining, local residents start making protest and appealing to various competent instances. They demand relocation from the areas affected by mining, payment of compensation, shutdown of mining and development activities running nearby their houses.

The local authorities being controlled by the coal companies fail to give them official support and recognize the damage caused by coal industry. They refuse to notice home stoves destroyed by explosions at mines, the high level of noise, and trees cut down. The coal project documentation lacking proper environmental assessment backs this position. Then again, the coal first approach dominates in the regional policy of all levels.

Confrontations between the local residents and the coal companies may last for years. In some case, the operations may be shut down, but there is no guarantee that they won't be launched again.

An example of active opposition to coal is Berezovo village where Razrez Berezovsky Yuzhny has started operating in 500 meters from the nearest houses and plans to get even closer. People of Berezovo initiated a signature-gathering campaign against these plans. Many current residents moved to Berezovo from Novokuznetsk and built here their private houses. With the mine coming, these properties might completely lose their value.

City of Kiselevsk is all surrounded with coal quarries. People get used to them and not discomforted with explosions. Development of the Koksovy open-pit mine operated by Uchastok Koksovy was stopped only when pieces of rock started hitting people's vegetable gardens. Now the citizens try to defend at least their right for a sanitary zone so that the mine comes no closer than 1 km to their houses.

Clashing with active position of the local people, their unwillingness to relocate and urgent demand for an appropriate compensation, the coal companies get down to gangster actions. Thus, the coal company and the local authorities started putting pressure on the residents of Kazas village. They closed a school, arranged illegal access control posts at the entrance to the village, and introduced vehicle inspection. Every change for the worse forced another part of people to move their houses to the coal company at minimum price and leave. However, some of the residents stayed in the village, and then their houses were set on fire. Coal mining is ongoing in Kazas, and the residents keep defending their rights in court.

Expansion of coal production planned by the regional government would produce more confrontation. If under pressure of the public opinion the authorities take a clear and legally justified position, then the environment of Kuzbass may be preserved for its population. Otherwise, bad conditions of environmental and health will be getting worse.

The disappearing nation

Gornaya Shoriya is a mountain taiga territory located in the south of Kemerovo Oblast stretching for 170 km from north to south and for 100 km from east to west. It is a home for Sheregesh ski resort and rich coal deposits, and it used to be a home for the indigenous people of Shors.

Now the Shors have no land, though the rights of ethnic minorities recognized by the Russian government provide for their right over their ancestral land. According to 2002 Russian census, there were 14,000 Shors in Russia. But according to themselves, there are no more than 3,000 Shors left. In less than 20 year the nation would disappear. Their language and customs have already been forgotten, and native costumes are being reconstructed by Russian ethnographers' recordings.

Before 1917, the Shors were mainly engaged in fur hunting and fishing. They were also famous for their skilled blacksmithing and for this reason called Kuznetskie (Blacksmithing) Tatars. The Shors are the settled people, and therefore invasion of coal industry to their land made this smaller nation critically endangered.

In 1930s, The Soviet Union was developing the southern Kuzbass in two directions, coal mining and placement of prison camps. Local population mostly consisted of those living nearby the prison camps, working in the prison camp service, or imprisoned in those camps.

According to the Shor people, the civilization brought electricity, shops, medicine, and other good things to their land. But at the same time, alcohol came into the Shors' life causing their cultural degradation.

Many Shors, originally the settled nation, were forced to move to cities in order to find jobs. Some remained living on their native land. But coal mines of Yuzhny Kuzbass coal company had gradually been occupying the area and getting closer to their settlements.

According to the Russian legislation, a group of local residents can found a so-called territorial public self-governmental organization (TOS) to defend their rights. The Shor people intended to use this tool to demand a ban for mining development, clarification on their land status, and compensation for lost lands.

However, the local authorities realized that the TOS would be able to complicate their lives and established a quasi TOS mostly consisting of the officials.

Valentina Boriskina, the Shor village of Chuvashka: "We are not allowed to live our native lifestyle. The authority's concern about ethnic minorities comes in form of festivities and drinks. Here is your culture preservation."

The residents of Chuvashka claim that fish disappeared from the rivers due to operation of coal mines and facilities, while it became impossible to pick up forest berries and mushrooms due to coal dust they are coated with.

Explosions at the nearby quarries are of particular annoyance for the local residents. Besides making noise, they destroy buildings and stoves. The nearest open-pit mine is located in 1.5 km away from the village, and nobody warns the villagers about the explosions ahead.

The Shors believe that they still have a chance to survive as a nation, provided that the land is allocated to them and the effective self-governance is established. The youth should be enabled to revive traditional trades instead of working at mines. If there are no measures undertaken, coal will win a battle for land over the Shor people and this small ethnic group is going to become extinct.

Conclusion

59% of all Russian coal is mined in the region of Kuzbass, this coal makes up to 76% of Russia's coal export. During last decade, both mining and export of coal were growing up tremendously. And local residents, including indigenous people, are paying very high price for such development.

The average life length of Kuzbass population is 3 to 4 years shorter than the average in Russia. Kuzbass rated first in 2011 and second in 2012 in Russia for child cerebral palsy. About 93.8% of drinking water sources in Kuzbass do not meet the sanitary chemical and microbiologic standards of Russia. A characteristic for Kuzbass phenomenon visualizing the level of air pollution is black snow fallout. According to the official report, snow in Kuzbass contains sulphur compounds, nitrites, nitrates, chlorides, potassium, and manganese

A particular new threat to Kuzbass people is so called anthropogenic earthquakes. In June 2013 one of the earthquakes reached 5.8 points of magnitude and 7 points of intensity. About 500 building were damaged by the earthquake and the total damage is estimated as 1.7 billion rubles (about \$60 million in mid-2013).

The local authorities being controlled by the coal companies fail to recognize the damage caused by coal industry. Mining developments often meets resistance from local communities, including of indigenous people. Expansion of coal production planned by the regional government would definitely produce more confrontation. If under pressure of the public opinion the authorities take a clear and legally justified position, then the environment of Kuzbass may be preserved for its population. Otherwise, negative impact on the environment and health will be getting even worse.

Appendix

Alexandr Tokmogashev, a Shor resident of Kazas village where Yuzhnaya Coal Company started mining development in 100 meters from the settlement:

I was born on August 7, 1961, in Kazas where my father was given an accommodation as the war veteran. We had been living on nature gifts and fishing. Now we don't have anything left there.

It all started when Yuzhnaya Coal Company first came in Kazas. They started visiting house by house and offering the owners to sell them.

Before that, when my parents were alive, there were representatives of Mezhderechensky, Zagorsky, Sibirginsky quarries coming to the village and organizing gatherings of all residents in a club (we used to have the club). They were offering to build a new village or buy housing for those who want to move to the city. My parents kept rejecting these offers; they didn't want to move anywhere.

In December 2012, Yuzhnaya Coal Company carries out a village gathering to have the housing estate owners voted on selling their households. But it was lacking proper announcement among the residents, so many of the owners didn't attend. We were 36 owners participating, and 28 of us voted for a forced relocation. It was specified on paper as a forced relocation, not as just an individual sale. I was among those eight who voted against it.

After that I had an appointment to see Ivanov, acting our mayor then. He said he is not familiar with the issue, but later I received an official answer from him. That letter notified in black and white that we were voting not for an individual sale but for a forced relocation. In case of a forced relocation, coal companies must provide compensation payments.

Unfortunately, I didn't make any copy of the letter and lost it. Now, the local authorities refuse officially consider it as a forced relocation. I had three appointments with Ivanov; last time we, the Kazas real estate owners, visited him on January 26, 2015. He promised to set up a commission on our case, but in reality they report to the regional authorities that everything is going alright in Kazas.

The mine started silently operating. In the beginning, they made some improvements for Kazas. Bus connection with the village was established, and then street lighting and drinking water delivery were arranged. There was no clean water in the village before, since the Kazas river has been totally polluted by discharges from coal mines.

Then they made a promise to supply the indigenous people of Kazas, the Shors, with free coal. Lies started from there; we never received that coal.

And on November 26, 2013, the house No 15, of Jury Kostrakov, was set on fire. If police ever wanted to find those who did it, it's surely possible. There is a check point at the entrance to the village equipped with recording cameras. Later eight houses more were burnt down. In spring, ruins of the first burnt house were dismantled and moved away without the owner's knowledge and permission.

After they burned our houses, they started checking our documents and vehicles at the road check point which previously local residents could pass unchecked. Why do I have to show them my stuff? Do they think it's us who set our houses on fire?

They started threatening us. Once we had a conversation with Halimov, director of Yuzhnaya Coal Company. Again, we refused to sell our houses. He responded by threatening us with demolishing our burning our houses, namely No 48 and 33, down. We called the police, and all nine of us, participating in the conversation, gave evidence concerning the threats.

Other people were threatened too, but they are afraid to address to some instance. They are afraid they lose everything if they don't sell their houses. At the same time, the coal company uses the regional media to publicly blame us for the alleged intention to enrich ourselves.

They evaluated our real estates. Halimov sent me a paper where he evaluated my three room house and 950 m³ plot in less than 90,000 rubles. This is, in his opinion, a residual value of my house. Previously, he offered me 2.500,000 rubles. But taking it seriously, my rich soil plot costs about 10.000,000 rubles.

When my house was on fire, the fire fighters cut off electricity. Later outside electric cable was restored, but inside all wiring left burnt out. I didn't change it.

Eventually, almost all the residents sold their houses. There are five of us remaining, the owners whose houses were burnt down.

Recently we had a long lawsuit for two orphan girls. They lived in house No 35 alone. The coal company held negotiation with them to buy their house. They were given like 1.100,000 rubles as an advance payment. Later, when workers started to demolish houses already sold, the girls' house was demolished as well. And then the company demanded that the girls give the money back and cancel the deal, and brought a lawsuit against them.

We were having legal proceeding against the mine for eight months. The company sued the girls after they demolished their house and left with nothing. We were frequent to the court as witnesses and never saw Halimov there, only his lawyer. We won the suit. And they paid the girls the remainder agreed initially.

I don't quite understand how they managed to falsify a forced relocation to a voluntary one and report to the governor that everybody happily sell their houses and moved away. Despite my house is burnt down, I'm still its owner having all the documents.

We have addressed the public prosecutor's office. I visited the mayor thrice; have addressed the chief of police, the deputy of police, the chief of crime detection, and district police officer repeatedly. No progress, no changes for the better for us at any instance.

Last time I don't live in Kazas, but keep visiting to see it. In the mass media it's being presented as a deserted holiday area. But Kazas never was a holiday area, it was a residential village.

Now the mine workers are cutting down Siberian pine forest around the village destroying our habitat. We addressed the UN World Heritage Committee office in Moscow, and in February their inspection visited us.

Upon their arrival, we went to Kazas and tried to arrange a meeting with mayor Ivanov but he refuses to meet the UN Heritage Committee representatives. When we approached Kazas, the check point guards didn't let us, the local real estate owners accompanied by the visitors from Moscow, go through.

So we drove towards Chuvashka village, took some photo and video there. When we came home from Chuvashka, the mayor sent a migrant department officer to check our documents and claimed that the UN representatives came as private persons and were not invited by the municipal authorities. Sure they weren't. It was us, the victims whose rights are violated, who invited them.

I don't know what is going to happen next. I'm completely exhausted. My health is broken. We do our best in this fight. We will try to set a new organization, the territorial public governance.

It is not only us who fight. In Chuvashka, Valentina Boriskina and activists tried but failed to organize it. It appears that we, the indigenous people of Shor, don't have our own land. Previously there was the national council of the village to defend our rights. I think the village councils were closed down in order to open up the quarries here.

Valentina Boriskina, the Shor resident of Chuvashka village where Sibirginsky mine is operated by Mechel Group JSC:

I was born and lived in Shodrovo. A prison camp was located there. When they cut all the forest down, they shut down the camp and the entire infrastructure. They cut off electricity, closed a first-aid station, schools, and shops. Children went to school in Toz village 12 km away by the river in winter, by taiga in summer. We were left with no ways to make a living.

My parents were forced to leave our house and plot, slaughter our cattle, and move to Toz. In 1956-1957, the same story happened to this village; they cut down the forest and closed a prison camp.

These camps brought us alcohol addiction and diseases. The Shors have genetic predisposition to alcoholism. Tuberculosis, venereal and oncological diseases emerged among the Shors. Civilization brought us light and all the bad.

I remember my parents saying that in the Tsar time the Shors lived and worked well, and they were respected. The Shors were known for their blacksmiths who made implements of production and war.

Why are we degrading and dying out? Because the Shors are not nomads. The Shors are settled and peaceable, inhibited and diffident people.

The official statistics does not recognize extinction of the Shors. According to the last population census, there were 9,000 Shors. But we were unable to see the census results. My best estimation is 2,000 Shors in Kuzbass.

I can explain why the authority overrates the numbers. If we want to hold a referendum on any Shor related issue, then votes will be counted on the assumption of 9,000 Shors. But where could we find those people from?

The Shors have no their native land, it was all taken away from them. From 1992 to 2002, we had the National council of the village. In 2004, the land that belongs to the council was taken away. We were not asked, not even told. I came to the shop and saw an announcement saying that we are not The National council of village anymore, but just the Council of village. In 2006 the Council of village was abolished.

Now, we are not even allowed to have our territorial public self-governing organization to defend our rights as the local officials interfere with its activity.

Sibirginsky mine was launched in 1970. In Soviet time, the citizens were never asked for their opinion when the state set up industrial objects.

They played this game behind us again in the beginning of 2013, when we happened to find out about Kiyzassky mine had started developing. They would dig all around and force us to move again. Starting from April 2013, we had five months of protesting and demanding to stop development and discuss it with us.

In 2014 Kiyzassky mine started operating. It is located in 1.5 km from our village across the forest. They make four-five explosions a day. My house shakes, plaster falls down, walls on the first floor got cracked over. Trotyl and saltpeter fall out on a vegetable garden.

I read Professor Dr. Alexey Yablokov works about the state of our environment saying that our soil is contaminated and water is dangerous to drink. That's why we have poor harvests and can't even swim in the river. Last year we had a fish murrain and were told it was a natural phenomenon. But there is a gold mine in the upper river that is supposed to use mercury and cyanides.

They cut down all the Siberian pines, so the Shors can't pick up pine nuts as they used to. As far as possible, people keep cattle but it's getting more and more complicated as all the pastures were allocated to the construction area.

The entire city of Kiselevsk is surrounded by mines and quarries. The residents get used to explorations and explosions. However, in 2012 Stroyservis company initiated shooting operations at the mine no 12 in 100 m from the living districts, and the protests arose. Tatyana, a resident of Kiselevsk:

Initially they started making explosions and developing a mine in Boynia (district of Kiselevsk), they removed the road there and relocated people. Then, in 2011, they got digging closer to us, Afonino district. We were not afraid while they were digging only, but then they started shooting operation and our houses got shaking.

They conducted explosions every day; explosions were so heavy as if it were earthquakes shaking all around and causing clouds of dust. But first of all we were worried about our houses being destructed, walls being covered with cracks.

We were fighting a whole year, addressing the state bodies in Kemerovo and Moscow, we even had journalists from the 1st TV Channel visiting us. And the explosions here were stopped. Now they got another field and operate there.

Our demand was to stop explosions or relocated us outside the sanitary zone which should be 1 km. The mine relocated families that lived in four closest to the mine houses.

It is terrible here how the surrounded by the quarries and slag heaps they produce. When we moved in here, there was no mining at all, it was good and clean here. Before that, we lived near Krasnokamenskaya mine. We it was opened and coal dust started polluting everything, we were

Lyudmila Sokolova, Beresovo village where Berezovsky open-pit mine is operated by Stroyservis company:

When land is dug up, water accumulates in pits. It should be pumped out through a water treatment plant. But it is pumped out directly to the river while the mine is already operating.

At the last public discussion I asked when the waste water plant will be installed. In 2018, they replied. The river already turned black due to coal dust.

Sure, when we address any instance with a complaint, an inspection comes and the mine stops polluting for a while. The river turns clear very fast, as dust gets deposited at the bottom.

My father used to go for fishing in this river. But now it is just a dirty stream. They dried out the ponds. We moved here because of these ponds, and now there will be the mine instead of them.

I know for sure they are not going to provide anybody with other accommodation as I directly asked about that at the last public discussion. Relocation of people is not included anywhere in the project documentation.

Due to our active protests last year, they divided the planned mine into two stages and developed only the first stage in 1 km from the village.

I asked them what they are going to do with the second stage which was supposed to be closer to the village. They replied that they will decide when they get that close. When they get that close, we are not going to be here anymore.

There are cracks in our walls and stoves and clouds of dust in the air due to explosions. They are very similar to earthquakes and frightening children. It is a shame that the government should be protecting us but instead, the government cooperates with those companies. I don't want to say here as I want to live. They have a license until 2029.

At the public hearing that took place 10 days ago, they presented a nice plan of planting 186,000 trees. When? In 2031. Have you ever seen here a mine that would do anything after mining is completed? Surely, no.

I said, stop telling us the tales! Withdraw your license.

There are pastures and meadows where you plan to mine. Last year there were 70 cows in the village, no only 50 remaining. In Soviet times, 800 cows were fed by this land. Not to mention vegetable gardens, we need them to survive as prices in our state are quite growing. We naturally make a living by keeping cattle and chicken and cultivating our plots.

I don't consider jobs for youth as an argument in favor of the mine. They are killing our youth. Our population is 400 people; over 100 children live here constantly. Additionally, in summer 12 children come to spend their holidays on our street alone.

So where are we going to bring children when now we have clouds of dust coming from the mine? For the second summer already I can't give berries to children as I simply can't wash them out. Coal dust is unlike home dust, you can't wash it out simply. We, the local residents, are supposed to have professional diseases of miners.

We keep writing letter and suggesting them to set up a 5 km sanitary zone and don't get closer to the village. They may have their coal somewhere else, in taiga, where it won't be destroying people's lives.

They arranged the medical post entirely because of our protest activity. If we were quiet last year, there is no those highly promoted children playground and medical post. But the social center will not be constructed since people may be gathering there and saying that the mine is bad.

Sergey Sheremetjev, resident of Ananyino village where Bungursky Severny open-pit mine is operating:

Preparations for development of a coalfield nearby the village by Bungursky Severny Razrez company started in 2010. Distance from the mine to living houses is no more than 300 m. Trees were cut down. In prospect, the mine operation would lead to soil destruction and surrounding forests contamination. Thanks to active protests by the local residents, the mine is not operating in the moment. But there is no firm belief that it is all over. There is no final decision, there are only local residents having no other place to live.

Attempting to stop beforehand

According to the law, consultations with the public have to be organized prior to the operation start, but in the reality we find out that the operation has started only when they are already cutting trees and digging out.

So I found out that they were planning to fell trees in 500 m from the neighboring village of Alexeevka and in 600 m from my Ananyino. We managed to draw attention of the head of the district. We established the Coordination committee and requested all the documentation. And we discovered an interesting story about the felled trees. According to the documents, what grows here is not forest but bushes. But those loggers were in the first place felling pines which are profitable to sell. The expert company that provided the mine with such project documentation does not exist anymore.

At the gathering organized by the mine management they promised some help to the village to compensate for discomfort, like to clear the road in winter or supply with free coal. But, when the mine gets close to the village, no help will be needed as it will simply not be possible to live there.

The end of the year was marked by no motion from the mine towards Ananyino. We have placed the 'Ananyino village' signs.

But later we had many meetings with the mine management and the director of the mine told us they will dig and mine closer to the village anyway as a coal bank is deposited there.

2010-2013: Four years at war

In summer 2011 we continued to protect the village. We were placing border marks. And the mine workers were replacing them with excavators. They acted so blatantly that we went and stood between excavators to block their operation. Once a fellow of mine gave his patience and placed himself with his children at the explosion influence area at the mine. The mine brought a lawsuit against him for allowing children to stay in a dangerous place. We managed to prove the court that we lived in a dangerous place. With his action he managed to postpone an explosion for two days and in meanwhile I mobilized the entire village to come forward in support of him. And there was no explosion made. That way we were fighting from 2010 to 2013.

Police could not help us and was only advising us to go to the court. But what grounds for a lawsuit could we have if the police did not document the breaches?

We held in the village. Over 80 out of 112 households participated; 70 voted against the mine.

Instances and officials

I had an appointment in the Land Committee that is supposed to watch over the mine not be located so close to the village. An officer there told me we had a family and needed to maintain them. One woman from the local authorities told me privately that, despite of everything, an agreement on allotment of land had already been signed.

In 2012 I wrote a letter to the president. They were stopped for three months. And then restarted digging with tripled efforts.

I have nowhere to draw back. I write to every institution. No response.

In a while, one official came to check what's going on. I met him and took him to the mine. He was standing and looking at the forest which is documented to be small bushes. Then his conclusion arrived stating that everything is all right. It's corruption! The mine management claims they will restore the plants.

Compensations and fines

Many people believed they will gain apartments because of the mine. I unexpectedly found out that Novaya street appeared in our village and it is those who lived on this non-existing street who are supposed to receive compensations. Thought, so far there have been no promises about compensations or relocations.

I was offered a job at the mine so that I would do nothing and receive money. I was offered an apartment as well. But I can say there will not be the mine here as long as I'm alive.

Valentina Borodina, Rassvet village where Energougol company is operating open-pit mine:

Since 2009 the development of the open cut coal mining started nearby Rassvet village by Energougol company. A mine must have a sanitary protection zone of 1 km from the houses, but in fact it's still too close. Thought, in Rassvet, shooting operations and coal transportation are going to in 400-500 m from the houses. This is illegal but they managed to obtain the permission. The point is that the village is not marked on the map in the project documentation. It turned out that there is no settlement and no need to pay out compensation and discuss with the local residents. Confrontation between them and the mine has been going on since 2009, and mining is still in place.

Explosions are taking place all the time causing destruction of stoves. My cellar crumbled away due to explosions. They transport explosives right across the village. On May 1 last year, a truck carrying explosives run into a petrol carrier. They could transport coal outside the village, but it's closer for them to go through the village.

Our water bodies used to be very clean! Now it's impossible to swim in them. We don't pick up forest berries anymore. It's impossible to eat them.

We had no public hearings. They say the public hearings are like recommendations. We've been to any instance. I was in the ministry of natural resources on Moscow. Vladimir Fisher from Prokopyevsk is working there. I approached to him for a talk, he was asking me questions but superficially.

A sanitary expert conclusion was made by some Kemerovo-based company. What can I say? They went all around in just four days, even in two days since there were two working days and a weekend. How is it possible to take a sample on every square kilometer as required in such a period of time?

Somebody is talking that I received 25 million rubles. Well, if I did I put a banner on my house saying 'Live here anyone who wants to. The house is free.' Who would risk moving in here?

The head of the district administration Miroshnik came when there was a seismic activity here, but he didn't want to get the point. Meanwhile, all environmentalists across the world are saying that gases can accumulate in areas of mining causing earthquakes. It's clear to everyone already that earthquakes happen because there are five quarries in the area around the village.

I called to Rospotrebnadzor asking to make up an explosion schedule so that I can only hear them but not breathe them in. I was literally suggested to visit a psychiatrist. We addressed Rospotrebnadzor asking to check where the sanitary zone should be. They replied that it fits the standards.

Now I have legal proceeding with the district administration for allowing this all to continue.

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