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Agricultural Fires Ruin Emissions Data

Statistical summaries of emissions into the atmosphere of polluting substances in Krasnodar Krai will have to be seriously corrected soon—and in an increased direction. The reason is not at all the economic boom and growth of production, but rather that the region does not yet take into account air pollution from the burning of plant residues on fields and from dry growth. The authorities confirm that it is possible to include these, although the absence of a confirmed federal-level calculation method does not allow this.

Agriculture is not included in the pollution "rating"

Official statistics confirm that the primary sources of atmospheric pollution in Krasnodar Krai are automobiles, which account for up to 80% of polluting substances (and in certain cities of the region, more than 90%). Data from the official report on the condition of the environment, published each year by the Krasnodar Krai Ministry of Natural Resources, show that in 2013 atmospheric pollution from stationary sources in the region was approximately 205,000 tons of polluting substances.

The contribution of the various economic sectors to atmospheric pollution looks like this: 89,000 tons (42%) of emissions of polluting substances from extractive industries last year; transportation and communication, 26,700 tons (10%); chemical production contributed 14,600 tons (8%) to atmospheric pollution; food production, 14,800 tons (8%); oil refining (including attendant gas flaring) was the source of 11,000 tons of emissions of polluting substances (6%); and housing and public utilities were responsible for a little over 9,000 tons (5%).

Agriculture is not included in the "rating" of atmospheric pollutants. It is clear there are not that many stationary pollution sources from crops (the primary type of agriculture in Southern Russia), but the picture would be completely different if the statistics included the volume of pollution the atmosphere is exposed to as a result of the unsanctioned burning of agricultural residues in the fields.

This year the administration of the Krasnodar Krai Russian Prirodnadzor environmental watchdog service made some curious calculations. The environmental protection agency was interested in mass burning of rice stubble and husks (residue from processing rice grain), taking as the base the 2013 harvest, which produced 800,000 tons of grain. The harvest produced about the same amount of straw – about 800,000 tons (the ratio of grain to straw is about 1:1 for most grain cultures) and about 150,000 tons of husks.

"In practice, the specialists of Rosprirodnadzor and other oversight agencies are more and more often confronted with the fact that rice straw is burned. Such anthropogenic stress on the atmosphere can also negatively impact both the local environment and the health of the population and visitors to the krai. A similar situation exists from burning residue of other agricultural production. Unethical farmers in this way get rid of agricultural residue every year," in the words of the head of administration of Krasnodar Krai Rosprirodnadzor Roman Moldovanov in "Russian Agrarian Portal".

The issue references calculations made by Rosprirodnadzor specialists. If we assume that up to 800,000 tons of rice straw are produced in the Kuban each season, then not less than 16,000 tons of carbon dioxide alone is released into the atmosphere (and the total emission of carbon dioxide from all sources in Krasnodar Krai is no more than 36,500 tons according the federal statistics), not counting either soot or black carbon, which can travel huge distances on atmospheric currents.

Roman Moldovanov points out an analogous situation with regard to burning agricultural residue from other types of crops. Taking into account that each year 8 – 12 million tons of wheat and up to 2 million tons of maize and other grains are harvested, and also the not-so-secret fact that much of the straw remaining in the fields is simply burned, one can imagine the true amount of pollution emitted into the atmosphere. And this amount is outside official statistics, which do not allow ascertaining the true amount of atmospheric emissions of carbon dioxide from our region -- the primary cause for the "greenhouse" climate effect, the emissions of which our country is required to account for and control.

Who is hindering the calculations?

We have already discussed how in 2011 the Krasnodar Krai Department of Natural Resources commissioned the Kuban State Agrarian University Scientific-Research Institute for Applied and Experimental Ecology to research emissions of polluting substances from the burning of various kinds of straw. Based upon the experimental data received, the Department of Natural Resources prepared a project to measure harm to the atmosphere from burning agricultural stubble, proposing to assess emissions from agricultural fires as "emissions of polluting substances above emissions limits, factoring in the coefficient of ecological factors."

As a result of these calculations, the cost for burning 1 ton of agricultural residue was: barley – 35.45 rubles/ton, oats – 60.1 rubles/ton, wheat – 23.52 rubles/ton, rice – 19.81 rubles/ton, and dry leaves – 97.1 rubles/ton. As the Krasnodar Krai Ministry of Natural Resources suggests, introducing payments for emitting polluting substances along with fines for unsanctioned fires would allow the creation of "economic stimuli" for agricultural producers. "Otherwise, there are no incentives for producers to move away from these perverse practices," said Minister Vadim Alexandrovich Lukoyanov in April this year at the meeting of the regional Public Environmental Council.

We remind you that last year the legislature of Krasnodar Krai adopted a number of changes to regional legislation that introduced a direct ban on burning agricultural residues as well as fines. The maximum administrative fine that an agricultural law-breaker faces today is 50,000 rubles, which is not a particularly impressive sum, particularly for large agro-holdings (the primary culprits in large fires).

If agricultural producers who are caught illegally burning stubble and straw are forced to pay back to the public budget the amount of atmospheric damage caused, then substantial sums would accrue if we take into account the huge number of agricultural fires in Southern Russia. And the law-breakers would significantly increase their economic losses from this unique "use" of post-harvest residues.

However, the whole problem rests on the fact that there is no officially approved method for evaluating atmospheric pollution from burning agricultural residues in Russia today, and most important, there is little enthusiasm for adopting such a method at the Ministry of Agriculture.

The Fire "Harvest"

Harvest time, which in the Kuban lasts from the end of July to November, had a record number of fires this year. The reason was the atypical drought, which lasted in the region from the middle of July until well into autumn. October was particularly dangerous according to data from the internet resource, "Fires. Satellite Imagery": on certain days in the agricultural regions there were hundreds of fire points. Moreover, an altogether catastrophic situation was observed in the main rice-growing regions. The rice producers used the good weather to gather the harvest and get rid of as much straw as possible.

As we see, more severe regional legislation against the burning of agricultural residues has not proven capable of breaking decades of this pernicious practice, and controlling the guilty producers and fining them is frequently not sufficient.

Clearly, the first step in the fight against "ecological dumping" has to be the introduction of simple and understandable methods of measuring the atmospheric pollution from agricultural fires. In Krasnodar Krai, it stands to reason, this will seriously take the shine off of regional economic statistics. However, it will allow us to bring out of the "darkness" tens (or maybe even hundreds) of thousands of tons of pollutants, for which no polluter pays even a ruble.

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---Translated by Gail Stevenson, ICCI Russia Program Director