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Background

The attached document contains a summary of the outcomes of the project “Implementation of the Baltic Sea Action Plan in Russia” (BASE) related to development of manure management plan for Kalinigrad oblast.

Action required

The Meeting is invited to take note of the outcomes of the project outcome related to development of manure management plan for Kalinigrad oblast and discuss how to make use of this information.

Outcomes of the BASE project related to development of manure management plan for Kaliningrad oblast.

The Agriculture Development Program in Kaliningrad Region up to the year 2020 stipulates a substantial increase in farm animal and poultry stock. This will be achieved through the reconstruction of the existing and the construction of new livestock complexes employing the use of highly intensive technologies and high concentration of farm animals. The experience of intensive farming development in Leningrad Region demonstrates, however, that high concentrations of animal stocks create major problems in securing ecological compliance.

In this regard, one of the assignments within the HELCOM BASE project, which supports the implementation of the Baltic Sea Action Plan (BSAP) in Russia, was to prepare proposals on improving the public administration system within the sphere of environmentally sound development and functioning of agricultural production in Kaliningrad Region. The system of using livestock and poultry farm waste (animal and chicken manure) on the basis of nutrients (N and P) balance was suggested as the key measure to secure ecological safety. The overall animal and poultry stocks in farms and the amounts of animal and poultry manure produced were studied, and the farmland areas used for growing crops were determined.

There were around 60,000 heads of cattle, 63,000 pigs and 1.5 million heads of poultry (egg and meat chicken) at agricultural enterprises in Kaliningrad Region in 2013. This stock of farm animals and poultry produces some 1.26 million tons of manure per year. This figure will increase to 2.7 million tons per year if the long-term future farming development and the planned herd expansion are realized. The approximate amount of manure nitrogen in 2013 was 4,500 tons (in perspective 8,700 tons by 2015) and manure phosphorus 1,400 tons (2,650 tons by 2015).

Currently, arable farms make intensive use of around 360,000 hectares; if, however, the development plans were to be carried out, the used land area would be more than 700,000 hectares in 2016. Also, if the increase of plant and livestock production in Kaliningrad Region is realized, the average N load will be around 12 kg/ha and P load 4 kg/ha.

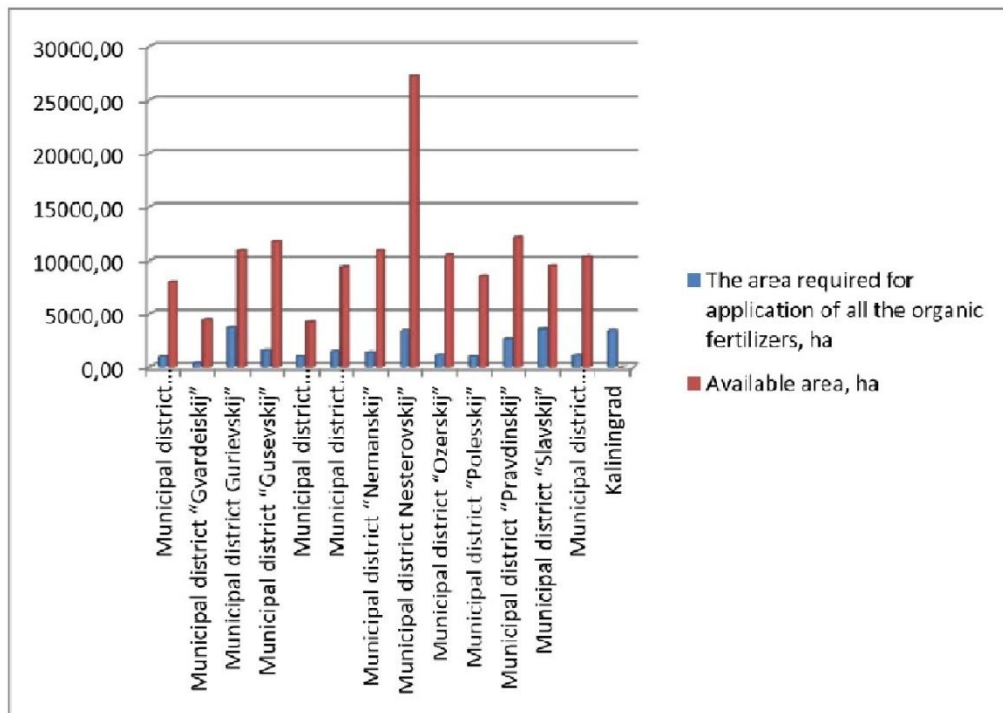
Despite the general positive balance between livestock and plant production in Kaliningrad Region, the regional farm survey revealed a number of substantial environmental problems in animal and poultry manure management. It is mainly associated with the lack of environmental coordination efforts by the executive bodies, the low profitability of agricultural production in general, and the fact that farms cannot make their own arrangement for the introduction of state-of-the-art and reliable technologies for the processing and application animal and poultry manure.

With the aim to assist the Kaliningrad Region Government to implement the Baltic Sea Action Plan and to contribute to environmental soundness of regional farming, a database on the farms in Kaliningrad Region and the guidelines on the substantiation of environmentally sound locations and operations of animal and poultry farms were developed within the HELCOM BASE Project. The database and guidelines are designed to establish an effective coordination system by the local executive agencies to ensure environmentally safe farming. The elaborated documents include:

- The allocation pattern of subsidies to agricultural producers to compensate a portion of expenditures on organic fertilizer use is substantiated and is proposed as a tool for state economic support.
- The introduction of measures developed within the framework of the project will minimize the risk of the uncontrolled access of nutrients to the water bodies and to bring the performance of agricultural enterprises concerning the processing manure and the application of organic fertilizers closer to best European practice.

The main recommendations for manure management plane of Kaliningrad oblast.

1. A general analysis of the amount of animal/poultry manure produced in Kaliningrad Region and the area of agricultural cropland has indicated that all the processed animal/poultry manure may be used as an organic fertilizer. Moreover, since there is a shortage of organic fertilizers in the region, even in the case of a significant growth in animal/poultry stock all the produced manure will be in high demand.
2. To produce high-quality fertilizers and to ensure the environmental safety and economic efficiency of their application, the relevant technologies should be used for animal/poultry manure processing. Kaliningrad Region offers demonstrative examples of such farms ("Dairy Factory Ltd."). Most farms, however, require their materials and technical facilities for animal/poultry manure handling to be modernized/renovated at the same time employing best region-specific practices.
3. The decision-making guidelines for the local executive agencies responsible for agriculture development on the siting of new and modernizing existing livestock complexes were elaborated. The guidelines are based on nutrients (N and P) balance calculation. The offered methodological approach will initiate the coordination of activities - aimed at ensuring the ecological safety of agricultural production - by the Agriculture Ministry of Kaliningrad Region.
4. The basic ecological and economic performance indicators of production and the use of various organic fertilizers were determined to propose financial motivation measures. The calculation basis was the cost-effective (rational) transportation distance (Rce) of organic fertilizers to the application site. The cost-effective transportation distance (Rce) meets the condition when the received additional profit (ecological and economic effect from the use of organic fertilizers) exceeds the expenditures on the processing and transportation of the fertilizers. The net profit on the use of organic fertilizers is determined as the extra yield cost minus harvesting costs.
5. The proposals on the subsidies for decoupled income support of agricultural producers in Kaliningrad Region were prepared based on results of the technical and economic analysis of manure processing and transportation technologies. According to Russian Federation Government Resolution No. 869 of 04.10.2013 "On approval of subsidy allocation rules from the federal budget to the budgets of the Russian Federation subjects on rendering the decoupled income support to agricultural producers in the field of plant production", the subsidies on rendering decoupled income support for agricultural producers in the sphere of plant production are financed from the budgets of the Russian Federation (local budgets). These include funds from the federal budget by way of co-financing (e.g. partial compensation of the costs of 'agro-technological work packages', raising the environmental safety of farming, as well as increasing the soil fertility and quality per hectare of crop land).
6. The introduction of measures developed within the framework of the project will minimize the risk of uncontrolled access of nutrients to the water bodies and to bring the performance of agricultural enterprises concerning manure processing and organic fertilizers applications closer to best European practices. Experts estimate that the implementation of a manure handling plan for Kaliningrad Region will reduce the entry of nutrients into the environment from animal/poultry manure as follows: nitrogen by 20-30% and phosphorus by 15%, which is equal to 1,100 tons and 210 tons per year, respectively.



District-wise land reserve for the application of organic fertilizers in Kaliningrad Region.