1. Key development issues and rationale for Bank involvement

Krasnodar Krai is located in the Southern Federal Okrug of the Russian Federation. It covers a total area of 7.5 million hectares and has a rural population of approximately 2.3 million. With its wide fertile northern plains, subtropical seacoast, and the slopes of the northern Caucasus, the krai is rich in natural resources and is also an attractive region for tourism due to its Mediterranean-type climate with long summers and short winters, and the 1,200 km long coastline along the Black Sea and the Sea of Azov.

Agriculture is the most important sector of Krasnodar’s economy as the northern two-thirds of the region lies in Russia’s black earth zone. The Krai accounts for 2% of Russia’s agricultural lands, and 5% of the gross agricultural production. Agricultural land area is estimated at 4.7 million ha (more than 60% of the land area; in the central and northern parts of the Krai agricultural lands occupy more than 80% of the land area), of which 3.9 million is arable land and the remainder comprises pasturelands and orchards. About 1.5 million hectares is under forest cover. The cultivation of wheat, sunflowers, fruits, vegetables, wine grapes, and rice, along with dairy farming, dominate the agricultural sector. The Krai’s share in the output of individual agricultural products is considerably high. In 1999, Krasnodar Krai accounted for 12% of grain (including 26% of winter wheat and 75% of rice), 19% of sugar beet, 15% of sunflower, 8% of fruits and berries, and 62% of grapes produced in Russia.

The Krai is one of the most intensively farmed regions in Russia. Intensive farming and poor land use management are contributing to serious environmental damage in the Krai and consequently to the Black Sea. The area is characterized by environmentally degraded animal production systems, unsustainable land use and high rates of soil erosion. Machinery and technologies used for soil cultivation, plant growing and cattle production are often outdated and fail to meet environmental standards.
Krasnodar Krai has several large livestock farms; most of these have manure conveyors and storage facilities, but they are poorly maintained and improperly utilized. Available retention ponds and manure storage facilities cover only 27% of the need in the Krai. The situation is exacerbated during the rainy season, when frequent storm runoffs destroy imperfect storage structures intended to prevent cattle-breeding wastes from spreading over vast territories. Animals are also kept at the household level and animal waste is piled in courtyards which are a source of water pollution and poor hygiene.

Discharges into the water bodies originate primarily from mineral and organic fertilizers and pesticides used in vineyards, gardens, and in field crop production; manure-containing runoff from cattle-production farms; and untreated or insufficiently treated wastewater from wineries. In addition, discharges to the Black Sea include mercury used to disinfect seeds, and copper from cheap pesticides widely used in vineyards. In some areas, the mercury, nitrites, and ammonium nitrogen contents of groundwater exceed permissible levels.

Thus, in Krasnodar Krai, the significant source of nutrient loads to the Black Sea and the Sea of Azov is agriculture. The nitrogen load in runoff waters from fields and manure storages has been estimated at about 20,000 tons per year. This can be compared with the nitrogen load from industry: 136 t/a. The River Kuban, the main river in Krasnodar Krai discharges to the Sea of Azov that empties into the Black Sea via the Kerch Strait. The annual discharge volumes vary from 18.3 to 8.6 km$^3$, the mean being 11.1 km$^3$ a year. The River Don is the largest river discharging into the Sea of Azov, and the discharge volumes are about three times higher than those of the Kuban. Following the economic decline of the early 1990s, the use of fertilizers was reduced sharply: from 167 kg/ha in 1990 to 33 kg/ha in 1995. However, since then it has gradually increased to 66 kg/ha in 2002 and this upward trend is continuing.

There are good prospects for promoting environmentally friendly agricultural practices, including organic farming, that will help Russia in meeting some of the internal and external consumer requirements as well as assist the Government in honoring its international commitments to reduce nutrient loads to the Black Sea. The Russian Federation is a signatory of the Bucharest Convention and the Odessa Ministerial Declaration, and is committed to reducing nutrient loads to the Black Sea. The Ministry of Agriculture (MOA), the Ministry of Natural Resources Management and the Krasnodar Krai Administration have expressed their strong interest in and full support for the project. Both the national and local governments deem the proposed project critical as GEF funds would stimulate investments in the vital sectors of agriculture and environmental protection and facilitate the development of international tourism.

The Bank has experience with a number of nutrient reduction projects – currently, nutrient reduction projects are under implementation in Georgia, Romania, Turkey, and Bulgaria prepared under the umbrella of the ; experiences and lessons learned from these projects will be used in the design of the proposed project.

2. **Proposed objective(s)**

The overall objective of the Agricultural Nutrient Reduction Project is to increase significantly the use of environmentally-friendly agricultural practices by farmers and agro-industry in the Krasnodar Krai of the Russian Federation in order to reduce nutrient (nitrogen and phosphorous) pollution from agricultural sources to the Black Sea. In support of this, the Project will assist the Krasnodar Krai administration to: (i) promote the adoption of mitigating measures by farmers
and agro-industry for reducing nutrient loads (nitrogen and phosphorous) entering local water bodies; (ii) strengthen national policy, regulatory enforcement and institutional capacity for agricultural nutrient pollution control; and (iii) promote a public awareness campaign and replication strategy so that project activities could be replicated in similar areas within Russia and other Black Sea riparian countries.

**Project Global Environmental Objectives:** The global environmental objective of the project is to reduce the discharge of nutrients into surface and groundwater in watersheds draining into the Sea of Azov and Black Sea. An ancillary benefit is increased carbon sequestration from tree planting and ecologically sustainable land use practices and decreased methane emissions from farming and livestock practices, both of which have significant implications for climate change mitigation and biodiversity conservation.

3. **Preliminary description**

**Project Area.** The Project will be implemented in regions that are significant sources of non-point nutrient pollution from agriculture and agro-industry and that are representative of pollution problems in the Krai. Based on the assessment of the information collected on the agricultural and environmental situation in various raions of the Krai, as well as field visits, and discussions with the Krai and raion administrations, the following raions/administrative territories were selected: Leningradskiy raion, representing the Northern zone of the Krai, with large-scale field crops and livestock production; Temryukskiy raion, in the Western Peninsular zone, with predominantly agricultural activities, including vineyards, rice fields and livestock; and Gelendzhik territory, in Black Sea Coastal zone, characterized by a sloping landscape and rivers entering directly into the Black Sea; agriculture here is dominated by horticulture and vineyards.

**Project Components.** The Project will have four components to be implemented over five years:

1. **Component 1. Promotion of Measures for Reducing Nutrient Loads.** This component will introduce mitigation practices for reducing nutrient loads from agriculture to the Black Sea. The project will support investments in (i) improved manure management practices, including manure handling, storage and use; (ii) promotion of environmentally-friendly agricultural practices, including nutrient management, crop rotation, conservation tillage, buffer strips and wetland management; (iii) measures to reduce pollution from small-scale agro-industries; (iv) riparian zone management; and (v) water and soil quality monitoring.

2. **Component 2. Strengthening National Policy, Regulatory and Institutional Capacity.** This component will focus on strengthening the legislative, regulatory and institutional capacity of the Krai government to address agricultural nutrient pollution control. The project would assist in the development of a Code of Good Agricultural Practices and strengthen the capacity of the government to promote scientifically grounded environment-friendly farming and land use management.

3. **Component 3. Public awareness and replication strategy.** A broad public information campaign will be undertaken to disseminate information on the benefits of the project activities. The main
audience would be the stakeholders of the project such as local and county officials, farmers, community groups, agro-enterprises, NGOs, and the population at large. The objective of the activity is to familiarize the population with environmentally sustainable agricultural practices and the Code of Good Agricultural Practices, raise awareness about project benefits, and generate interest in replicating project activities in other parts of the Krai and the Russian Federation. The project would support national and regional workshops, field trips, visits, training, publication in international journals, and other activities that promote knowledge sharing and replication of project activities.

**Component 4. Project Implementation Unit.** The Project will support a Project Implementation Unit (PIU) at the Krasnodar Krai level. The PIU staff would include: a Project Manager, a Technical / Monitoring & Evaluation Specialist, a Financial Management Specialist, a Procurement Specialist, an administrative assistant and a driver. The PIU will coordinate project implementation by the different implementing agencies, including the Ministry of Agriculture, Ministry of Natural Resources, relevant Krasnodar Krai regional agencies, the private sector, Universities, etc. It will also be responsible for overall project management, including procurement, financial management and monitoring/evaluation of the project. The PIU will report to the Krasnodar Krai administration.

**4. Safeguard policies that might apply**

The project is classified as environmental category B. No major adverse environmental impacts are expected under the project. The overall impact of the project would be positive as proposed activities would help reduce the amount of nutrients leaching into the surface and groundwater flowing directly into the river systems and subsequently into the Black Sea. The environmental issues that are likely to require special attention include: leakage of the manure from the village-level storage facilities (if construction is not made according to specifications), inappropriate manure spreading in the fields and improper cleaning of the individual manure storage tanks and large manure platforms. However, all physical investments will be screened in accordance with Russia’s environmental regulations to address any impacts that might arise. The EMP will be designed to monitor the soil and water quality and erosion so that immediate mitigation measures could be taken if the potential for environmental damage occurs.

**5. Tentative financing**

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<td><strong>Total</strong></td>
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**6. Contact point**

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