



**Major Industrial Complexes:** These include primarily agroindustrial concerns (sugar beet, cattle breeding, and alcohol), metallurgical complexes at Zaporizhzhia and Dnipropetrovsk, and chemical industries including fertilizer production. Because municipal wastewater treatment plants are designed to treat biodegradable wastes, it is important that non-biodegradable wastes are removed before the effluent is discharged into the municipal sewer of treatment plants. Fuel wastes including heavy metals (mercury, lead) and inorganic chemicals are particularly harmful.

Water-quality monitoring stations show a steadily worsening trend in surface water quality, particularly in the Dnipro, Desna, Seim, and Psel rivers, and the self-purification capacity of these rivers has declined.

Recognizing the critical state of the Dnipro and its effects on health the Ukrainian government has included rehabilitation of the river among its top priorities. A Presidential Decree of March 1993 created the "Extraordinary Commission on the Ecological State of the Dnipro River and Potable Water Quality". The task of this interministerial body, chaired by the Minister of Environmental Protection, is to coordinate preparation and implementation of the Dnipro rehabilitation program. The Extraordinary Commission reports to the

Cabinet of Ministers. The rehabilitation program will be incorporated into the National Socio-Economic Development Program.

Despite the critical economic situation and a high budget deficit, the Ukrainian government allocated 260,000 million karbovantsi (approx. US\$ 85,000 at June 1993 rate) for preparation of the rehabilitation program and 7 billion karbovantsi (approx. US\$ 2.3 million at June 1993 rate) for program implementation in the fiscal year 1993/94.

### IDRC PROGRAM

The International Development Research Centre will implement a 3-year, \$5-million project to assist with the environmental rehabilitation of the Dnipro River.

The program consists of two major components: (1) Environmental Management Capacity Building and (2) Water Pollution Control Action Plans.

The first component is intended to help address existing institutional and structural weaknesses of the Ukrainian environmental protection system. Canada will help strengthen Ukrainian environmental management capabilities by training 250 environmental professionals, of whom approximately 50 will receive follow-up training in Canada; designing an information management system; assisting

the Ukrainian government develop new environmental policies; as well as a public awareness program.

The second component is intended to help reduce actual pollution levels in the Dnipro River. Canadian assistance will focus on the conduct of a baseline water quality study to identify the most polluted sections of the river and on demonstration projects to introduce environmentally friendly management practices and technologies at selected enterprises. Environmental audits and partial implementation of corrective action plans will be carried out in selected agro-industrial enterprises. An audit and action plan will also be developed for a large waste water treatment plant.

The first concrete projects are already taking shape. This June, the first truly reliable study of the Dnipro and its' precise problems will be tackled in a major survey of the southern part of the river. This will involve a research vessel and the latest technology and equipment, and will include Canadian, Ukrainian and European scientists. Simultaneously, two mobile vans will conduct a water quality survey along the shore.

Later this summer, a major workshop will be held to look at the potential for better management of waste products from the sugar beet industry. A very large percentage of sugar beets ends up as waste product which could potentially be used as fertilizer. Precisely because it is still at the problem-definition stage, Ukraine will be very fortunate to have the world's most knowledgeable people on this subject co-sponsoring the conference. They will include representatives from UNIDO, the International Sugar Organization, as well as Canadian sugar beet producers. These two projects exemplify Canada's approach to this complex and wide-ranging program, namely, developing specific projects to deal with the component problems. The government of Canada anticipates that opportunities in environmental engineering and management will develop with Ukrainian agencies and newly privatized industries as a result of this program.



*Geographical Scope of the IDRC Dnipro River Program*