

Hydropower's heritage

By Jerome Simpson

A regional government proposal to raise the navigable water level upstream of Nizhny Novgorod is causing quite a stir. The project would involve the construction of a USD 1 billion dam at Bolshoye Kozino. Bringing economic benefits while causing environmental impacts, the proposal has stirred controversy among a plethora of governmental and non-governmental stakeholders.

The commissioning of hydropower systems at Rybinsk (1941), Gorky (1955) and Cheboksary (1980) left a considerable legacy for the Volga River near Nizhny Novgorod, Russia's third largest city (see map overleaf). It affected its level such that high-capacity cargo and passenger vessels require five days to travel from Gorodets to Nizhny Novgorod (55 km). An increase in water depth of two to three metres would ensure full navigability, reducing the transit time to between five and seven hours.

The construction of a low-pressure hydropower system 40 km upstream from Nizhny Novgorod at Bolshoye Kozino would guarantee this depth and be a huge economic boon to the region. The planned dam (see artist's impression), favoured by Nizhny Novgorod's regional government and Russia's Ministry of Transport, would include a double-lane navigation lock with approach channels. Incorporating a roadway, it would relieve traffic congestion in Nizhny Novgorod's town centre by offering an alternative route to those traveling from Moscow to Kirov in the east and beyond. It would also eliminate annual riverbed dredging along the shallowest sections of the Volga between Gorodets and Balakhna.

However, "most citizens of the Nizhny Novgorod region and its NGO community are strongly opposed to the initiative," according to Dront, an ecological centre that is coordinating the Volga-based 200-strong "Let's Help the River" NGO network. Besides material and morale losses to local communities in the sphere of water use, it will disrupt mating and hatching areas as well as wintering pits for sterlets, pike perch, burbot, flat fish, whitefish, whitebait, saber-fish and other valuable species. Stagnant water bodies will be formed downstream, and drinking water quality will deteriorate. The water body where dam construction would take place is currently classified as being of the highest fisheries category, according to the Russian Federation (RF) State Standard GOST 17.1.2.04.



Source: Ecological Projects Consulting Institute

Artist's impression of the proposed dam at Bolshoye Kozino

There are technical concerns, too. Riverbanks would need to be elevated at Zavolshie, Gorodets and Balakhna, and a second hydropower construction so close to the Gorky reservoir could endanger the safety of that dam, claims Dront, resulting in significant flood risk downstream.

In response to public opinion, the Russian State Duma's Committee on Ecology hosted a roundtable discussion to solicit the views of concerned stakeholders, during which many of the above benefits and concerns were acknowledged. Then, in March 2006, the Federal State Ecological Expertise, part of the Ministry of Natural Resources, issued a ruling (No.76) on the project. That body noted the weakness of the proposal due to its lack of consideration for the full environmental and social consequences and risks. Owing to its non-compliance with all necessary laws and normative acts, they invited the investor to resubmit the proposal for approval. A revised proposal has yet to be submitted.

With so many stakeholders and so many concerns, the route to consensus would seem to be for the responsible regional authority to invite all parties to an open dialogue. "Within the European Union, for instance, ►

Reports distill best river management practices

Two sister reports have been published under the auspices of the CABRI-Volga project. The first, "Environmental Risk Management in the Volga Basin: Overview of Present Situation and Challenges in Russia and the EU," presents papers that characterise the Volga Basin and selected European river basin management practices. Contributions describe the status of water quality, transport infrastructure and small rivers within the basin. Other papers describe the application of policy frameworks, such as the EU Water Framework Directive, water management at the regional level in Italy, the policy and institutional framework for environmental protection in Russia, in addition to the latter's public participation practices. A third section describes several approaches to managing human and environmental security.

The second report, "Environmental Risk Management in Large River Basins: Overview of current practices in the EU and Russia," offers 12 examples of good practice in water management. Grouped under three broad headings, the first describes integrated water management practices (examples include the Volga Revival Programme, the Volga-Rhine collaborative project and the Elbe decision-support system). The second details flood-risk management practices (such as the European Flood Forecasting System, flood protection in Greece, damage mitigation in Germany, and an approach to vulnerability assessment for floods). The third describes European and Russian approaches to institutional coordination and incorporates contributions from Italy, Russia, and the Netherlands.

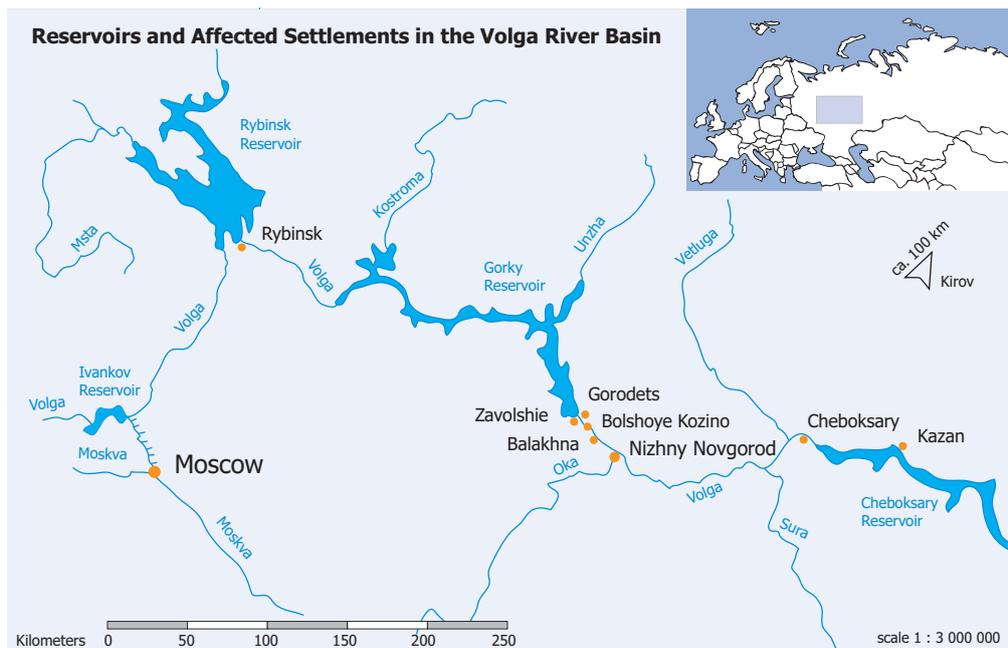
Both reports were prepared by Nizhny Novgorod State University of Architecture and Civil Engineering in collaboration with all CABRI-Volga partners. Both are available online for download at: www.cabri-volga.org/publications.html

▶ an environmental impact assessment (EIA) would include information on costs and required remedial measures and send a clear signal as to whether the benefits outweigh the costs," said Bela Petry, professor emeritus of Hydraulic Engineering at the Institute for Water Education, a subsidiary body of the United Nations Educational, Scientific and Cultural Organization (UNESCO) in the Netherlands. It would also serve as the basis for public discussion and decision making.

Yet despite the EIA's completion in Russia (the so-called "Substantiation of Investments"), the public's concerns are not being heard, said Elena Kolpakova, coordinator of the Russian river network. "What we need is for the authorities to uphold the laws we have in Russia, and for the local population's interests to be listened to," she said. "If the project's advocates calculate the overall cost of the dam, including the compensation, this will drastically increase its cost and make it hardly realistic. Proponents should consider alternative options to solve the problems of navigation, as recommended by law No. 174-Φ3 of 1995 on ecological examination," Kolpakova warned.

Recent developments show that some of these comments are being heard. An alternative is now being considered: namely to raise the level of the downstream Cheboksary Reservoir to 68m. This would create sufficient backwater to permit free navigation between Gorodets and Nizhny Novgorod. However, Natalia Davydova, director of the Moscow-based Ecological Projects Consulting Institute (EPCI), said this would "require colossal financial compensation against the damage caused by flooding in the Mary El and Chuvash Republics, and the Nizhny Novgorod region."

The Volga River is not only a natural object and unique complex feature that sustains the well-being of its population, but is also a source of renewable power and an important navigation route. Sustainable development calls for achieving a balance between three considerations: economic value, environmental impact and social contribution. The proposed project is emerging as a test case for regional and federal authorities to achieve such a balance, based on dialogue and cooperation among all parties concerned, transparency, and the rule of law.



Drawn by Tamas Bodai

Triple the Volga's protected natural territory

Distinguished water professionals debate policy measures to tackle environmental risk

By **Jerome Simpson**

Researchers and decision makers inevitably pay attention to the transition from the past to the future when making managerial judgments. That means taking stock of the operating environment and its evolution over time, as well as predicting possible trends and developments. Current problems, obstacles, and potential challenges must all be part of the mix before defining an appropriate response.

Along with being good tools to test policy strategies, scenarios are a good way to build a vision of the future. The CABRI-Volga team hosted the second in a series of expert group discussions in Kazan, Russia, April 5-7 to gather input for developing Volga River basin scenarios and proposing management strategies. Some 60 distinguished Russian and European Union (EU) water professionals contributed their knowledge on priority concerns and gave recommendations on policy response measures.

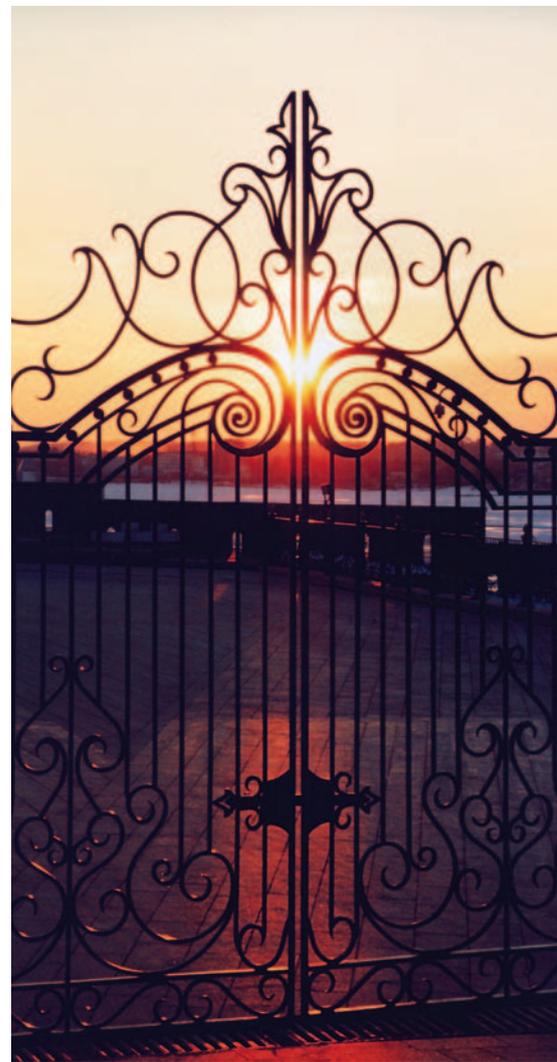
Attendees inventoried critical problems under five headings corresponding to the project's five expert groups: 1) River and Environmental Rehabilitation; 2) Human Security and Vulnerability; 3) Natural Resources and their Sustainable Use; 4) Connecting Goods and People; and 5) Institutional Coordination and Cooperation.

Most problems ranged from those of a technological nature (the safety of dams and hydro facilities) to environmental concerns (the degradation of natural resources – surface water by micro-organisms,

groundwater by oilfields, and land by agriculture). Institutionally, the lack of good local governance, administrative inefficiency at all levels, and poor coordination and communication were common concerns. From a mobility point of view, the lack of an integrated transport strategy, sound waterway and infrastructure conditions, and linkages between transport modes were ranked most problematic. Experts added that poor water quality meant no beach could be opened in the summer of 2005, which contributed to potential revenue losses from recreation.

During the expert group sessions, professionals were invited to recommend a range of policy response measures. Suggestions included institutional development such as capacity building, provincial empowerment, better monitoring and modeling, information sharing, and stakeholder involvement. Often cited was the need for more effective enforcement and implementation of legislation, as well as the application of integrated risk assessment and management. Tripling the size of protected natural territory would be one step toward overcoming losses of habitats and biodiversity. To combat water pollution, investment in wastewater treatment stations and natural systems was high on the agenda, along with local treatment facilities for small-scale industry and households. Transport professionals called for ensuring the navigability of the Volga basin's major rivers and the creation of intermodal freight ports.

The participating experts forecast the likely evolution of the main priority concerns according to



Ilya Kurochkin

Europe's gateway to Siberia: Kazan, at the confluence of the Kazanka and Volga rivers

three grades; improving, stable or worsening. The wealth of feedback was subsequently analysed by the Cadastre Institute of Yaroslavl of Russia in collaboration with Wageningen University of the Netherlands for inclusion in a report that combines these results with an assessment of major challenges, driving forces and response measures. Due in early 2007, the report is tentatively titled: "Challenges and Obstacles in Environmental Risk Management in the Volga Basin." The findings will be used as input for the fourth phase of the project, which will recommend management strategies and sustainable development options for the Volga basin. The Kazan meeting report is meanwhile available online at: www.cabrivolga.org/SecondExpertGroupMeeting.html.

Going local with sustainable development options

Sustainable development options for Volga basin management identified during three expert group consultations of the CABRI-Volga project will be shared amongst the river's towns and cities. Between 15 and 20 stakeholders, "movers and shakers" will be invited to participate in three workshops, tentatively scheduled for January-February 2007. A roundtable event, for instance, is scheduled for high-level Russian policymakers and EU officials at the end of February in Moscow. A scientifically oriented discussion forum is planned in Pushchino to discuss future research objectives for the Volga. In Yaroslavl, stakeholders with an industrial background or business interest will be informed and invited to take forward the project's results and recommendations within their organisations. Sustainable development proposals will be made available on the project website <www.cabri-volga.org> before the workshop series, inviting visitors to give online feedback. Committed "actors" and willing "ambassadors" ready to support implementation of the project's recommendations can gain more information from Frank Wefering <f.wefering@rupprecht-consult.de> (in English) or Elena Nikitina <elenanikitina@bk.ru> (in Russian).

Krouglov's vision for the Volga



Photo by Anna Kovalenko

Before UNESCO brought Russian scientists and politicians together to establish a vision for the Volga in the late 1990s, the Russian Federation launched the Volga Revival Programme in 1996. This initiative, the aims of which included the restoration and conservation of nature, was coordinated from Nizhny Novgorod. Valery Krouglov, head of the Legal Division for the Nizhny Novgorod Department of the Federal Service for Veterinary and Phytosanitary Surveillance, played a significant role in the programme's development and implementation. Concluded in 2004, it helped to realise a number of resource-saving and nature-conservation projects, including reforestation in the Nizhny Novgorod and Yaroslavl regions, construction of a waste processing plant in Kaluga, riverbank protection in Mari El Republic, soil protection, and the construction of a water purification facility.

Krouglov's specialisation lies at the intersection of biology, law and public management. His responsibility includes the enforcement and supervision of federal and regional legislation related to hunting and fishing, the protection and use of water, biological resources and habitats, and waste discharges. "The CABRI-Volga Project may be considered as the Volga Revival Programme's successor," said Krouglov during the project's second expert group meeting in Kazan. Within this project, "European experts have the opportunity to introduce their experiences. As a result, we will be able to compare the present situation in the Volga basin to the situation in Europe's large river basins."

He hopes the project will yield guidance and practical steps on options for management and problem-solving within the basin, particularly since the problems of the upper and the lower Volga differ. However, Krouglov regrets: "Local administrations don't have enough function in the management process." Therefore, "the project should also focus on municipal problems, as they are really important in complex basin approaches."

Krouglov's personal vision for the Volga includes the development of a system for safeguarding the environmental safety of water objects in their interaction with industrial and economic processes. Also high on his agenda is stronger interdepartmental cooperation and coordination between federal, regional and local levels.

CABRI VOLGA BRIEF

CABRI-Volga supports information and know-how exchange between Russian and European stakeholders in the water management domain. Its overall aim are to engender effective river basin management, foster cooperation and networking, and promote European integration. It is EC/UN financed and runs until February 2007. More information on goals, partners and forthcoming events is online, in both English and Russian, at: www.cabri-volga.org.

The **CABRI VOLGA BRIEF** seeks to raise awareness of the Volga region by publishing the views of a variety of stakeholders, disseminating the results and achievements of the Cabri-Volga project, and sharing policy news and best practices from related initiatives.

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