

## **Russian Federation**

**(191)**

### **UNITWIN/ UNESCO Chairs Programme**

#### **Progress Report**

**Period of activity: 2002**

#### **UNESCO Chair on Ecologically Safe Development of Large Regions: the Volga Basin**

**Report established by:** Prof. Valentin V. Naidenko, UNESCO Chairholder, Rector of Nizhny Novgorod State University of Architecture and Civil Engineering

#### **I. Activities**

##### **1. Education/Training/ Research**

###### **Education**

Lectures by Prof. V. Naidenko

Titles and expected results: Environmental rehabilitation of the Volga River and its tributaries, restoration and preventing degradation of natural complexes of the Volga Basin (Revival of the Volga).; Present environmental legislation of the Russian Federation; Optimisation of natural and waste-water treatment processes; New highly efficient methods for natural resources management; Mineral extraction. Recreation works; Low-waste and non-waste technologies. Structure of technological processes. Economics.

Target groups: Students, undergraduate students, graduate students, students taking advanced postgraduate courses, doctoral candidates, representatives of enterprises and environmental organisations.

Geographical coverage: National: the Volga Basin

Lectures by Prof. A.N.Kosarikov

Title and expected results: Legislation of the Russian Federation in the field of environmental preservation and the use of rational natural resources

Target groups: Students, under-graduate students, graduate students, students taking the advanced postgraduate course, doctoral candidates, representatives of enterprises, decision-makers.

Geographical coverage: National: the Volga Basin

Lectures by Prof. T. Vinogradova

Title and expected results: The architectural and historical environment of Nizhny Novgorod: Nizhny Novgorod in the history of Russia

Target groups: Students, under-graduate students, graduate students, students taking advanced postgraduate course, doctoral candidates, representatives of enterprises, managers, and schoolteachers.

Geographical coverage: Nizhny Novgorod

Partnership: UNESCO Institute for Education, Hamburg, Germany

Lectures by Professor V.V. Bessarab

Titles and expected results: World experience of the scientific and technical achievements implementation within the market economy

Target groups: Students, under-graduate students, graduate students, students taking advanced postgraduate courses, doctoral candidates, representatives of enterprises, decision-makers

Geographical coverage: National: the Volga Basin

Lectures by Dr. O. Kaschenko

Titles and expected results: Multipurpose uses of water resources; Water resources and the protection of natural water bodies; Monitoring, prediction and management of water quality; Environmental expertise of water supply and sewerage systems.

Target groups: Students, under-graduate students, graduate students, students taking advanced postgraduate course, doctoral candidates, representatives of enterprises and environmental organisations

Geographical coverage: National: the Volga River Basin

Lectures by Professor. A. Ivanov

Titles and expected results: System-based ecology; Information management in environmental projects; Information systems for ecology; Evaluation and elaboration of ecological investments; Monitoring and expertise of technogen systems.

Target groups: Students, under-graduate students, graduate students, students taking advanced postgraduate course, doctoral candidates, representatives of enterprises and environmental organisations, schoolteachers.

Geographical coverage: National: the Volga River Basin

Lectures by Dr. V.N. Georgiev

Title and expected results: The Genetic safety of environment

Target groups: Students, under-graduate students, graduate students, students taking advanced postgraduate course, doctoral candidates, representatives of enterprises, managers, and schoolteachers.

Geographical coverage: National: the Volga River Basin).

### **Research**

Title and expected results: Development of the Hydrodynamic Model of the Volga River at the Section between Nizhny Novgorod and Tcheboksary Hydro Power Stations. Development of the hydrodynamic model simulating the Volga River flow; Creation of an electronic map showing terrain features of the examining area; Development of software for flooded areas prediction, depending on water levels in the Volga River.

Partnership: Institute for Water Management, University of Karlsruhe, Germany.

Outputs: The data for calculation based on mathematical model had been collected; an electronic map of the of the Volga River area between Uglich and Rybinsk reservoir was developed.

Title and expected results: Investigation of the Volga River Sediments. Determination of sediment composition change and contaminant concentrations along the Volga River course; Estimation of the anthropogenic load along certain sections of the Volga River.

Partnership: Institute of Environmental Geochemistry, Heidelberg University, Germany.

Outputs: The sediments study in the section between Alatyr Town and Vasilursk Town of the Sura River was accomplished.

Title and expected results: Development of a Model for Calculation of Contaminant Inflow Mass Balances Discharging to the Surface Water Bodies of a River Basin. Development of a universal model for calculation of mass balances of the incoming contaminants determining surface water quality within a river basin; Software development for calculations, graphic analyses and presentation of information.

Partnership: Chair of Geo-Information Systems and Cadastre, NNSUACE.

Outputs: Schemas of the balance of pollution coming from discharge points to the Volga River and its largest tributaries were created.

Title and expected results: Creation of Scientific Basis for Social Partnership System to Achieve Sustainable Development of Nizhny Novgorod City. Estimation of ecological and ecologically-related economical problems of Nizhny Novgorod; Elaboration of indicators for the sustainable development of Nizhny Novgorod; Elaboration of conception of the sustainable development of Nizhny Novgorod based on the social partnership approach.

Partnership: Nizhny Novgorod Centre for the State Sanitary Inspection

Outputs: The project has been carried out since 2002 and it is planned to be finished in 2003.

## **2. Conferences/Congresses/Meetings**

Title and expected results: International Scientific and Industrial Forum "Great Rivers 2002", (ICEF2002)

Dates and place: May 14 to 17, 2002, Nizhny Novgorod, Russian Federation

Partnership: UNESCO, Government of the Russian Federation, Committee for Ecology of the State Duma of the Russian Federation, Ministry of Science and Technologies of the Russian Federation, Ministry of Natural Resources of the Russian Federation, Ministry of Fuel and Power Engineering of the Russian Federation, Ministry of Transport of the Russian Federation, State Committee for Hydrometeorology and Environmental Monitoring of the Russian Federation, Russian National United Nations Environment Programs Committee (UNEPCOM), Secretariat of National Committee of the 3rd World Water Forum in Kyoto (Japan), International Socio-Ecological Union, Administration of the Plenipotentiary Representative of President of the Russian Federation in Privolzhsky Federal District, Administration of the Nizhny Novgorod Region, Nizhny Novgorod State University of Architecture and Civil Engineering, All-Russia Exhibition Centre "Nizhegorodskaya Yarmarka".

#### IV International Scientific and Industrial Forum "Great Rivers 2003"

Outputs: Forum'2002 is dedicated to the issues of sustainable economic and social development of civilisations of great river basins and coastal zones of the world and targeted to initiate wide international cooperation regarding the creation of new forms of international and interregional partnership. The principle tasks of the Forum are the further development of the basin principle in the solution of social and economic issues, the consolidation of scientists' efforts, decision-makers, actors of industry on the task of transition to sustainable development .

Title and expected results: Conference: Agenda 21 for Nizhny Novgorod

Dates and place : December 18, 2002, Nizhny Novgorod, the Russian Federation.

Partnership: Nizhny Novgorod State University of Architecture and Civil Engineering, Nizhny Novgorod Committee for Conservation of the Environment and of Natural Resources.

Outputs: The main task of the Conference was the consolidation of scientists and public and business structures for Nizhny Novgorod's transition to sustainable development. Conference participants discussed problems of transport; historical, cultural and environmental preservation; issues of reconstruction and development of the city; ways to enhance administration potential and providing sustainable management of the city.

International and regional conferences and meetings:

Title and expected results: International Scientific and Industrial Forum "Great Rivers 2002"

Dates and place: May 14 to 17 2002, Nizhny Novgorod, Russia.

Output: Presentation on "Ecological Rehabilitation of the Volga River and its Tributaries, Restoration and Preventing Degradation of the Natural Complexes in the Volga Basin ("Revival of the Volga").

Title and expected results: International Scientific and Industrial Forum "Great Rivers 2002"

Dates and place: May 14 to 7 2002, Nizhny Novgorod, Russia.

Output: Chairing Section 8 of the Forum "Kremlins of the Volga Region in the World Heritage of UNESCO: Experience and Problems"; Presentation: "Kremlin and Power (on example of Nizhny Novgorod); "the Problem of Cultural Heritage Conservation in the Volga Basin"; "Elaboration of the Agenda 21 for the Big Industrial Centre".

Title and expected results: 4<sup>th</sup> World Water Symposium

Dates and place: June 3 to 7, 2002, Cannes, France.

Output: Presentation on "Ecologically Safe development of the Volga Basin Activities"

Title and expected results: International World Heritage Forum for Youth

Dates and place: August 25 to 29, 2002, Veliky Novgorod, the Russian Federation

Title and expected results: 3<sup>rd</sup> Regional Scientific Conference “Nizhny Novgorod Kremlin” in memory of S. Agafonov

Dates and place: December 5 to 6 2002, Nizhny Novgorod, the Russian Federation

Output: Presentation “Russian Kremlins in the World Heritage of UNESCO”

Title and expected results: Conference “Cultural Heritage Preservation: Reality and Perspectives” of Inter-institutional Public Committee at the Territorial Administration of the Ministry of Culture of the Russian Federation for the Cultural Heritage Preservation.

Dates and place: December 16-18 2002, Nizhny Novgorod, the Russian Federation

Outputs: Presentation of “UNESCO Activities for the World Cultural Heritage Preservation”

Title and expected results: Conference “Elaboration of System of Social Partnership for the Sustainable Development of Nizhny Novgorod – Agenda 21”

Dates and place: December 18 2002, Nizhny Novgorod, the Russian Federation

Outputs: Delivering presentation “Cultural, Historical and Architectural Heritage Preservation in Nizhny Novgorod”

Title and expected results: Round Table

Dates and place: December 18 to 19, 2002, Nizhny Novgorod, the Russian Federation

Outputs: Delivering presentation “Main Fields to Collaborate with UNESCO for Mobil Cultural Preservation Reserves of Nizhny Novgorod Museums”

Title and expected results: Conference dedicated to the 100 years which have passed since Aleksey M. Gorky stay in Arzamas.

Dates and place: December 19-20 2002, Arzamas, the Russian Federation

Outputs: Presentation on “Additional Information Regarding Genealogy of F.I. Vladimirsky” (according to the booklet of V.I. Vinogradov “K.I. Vladimirsky”)

Title and expected results: 4<sup>th</sup> International Scientific and Industrial Forum “Great Rivers 2002”

Dates and place: May 14 to 17, 2002, Nizhny Novgorod, the Russian Federation

Outputs: Presentation “Determination of Indicators for Estimation of Current Catchments and Population Water Supply Situation in the Volga Basin”

Title and expected results: UNESCO Meeting for preparation of the Volga Vision in the framework of the interdisciplinary UNESCO initiative for the sustainable development of Volga/Caspian Basin.

Dates and place: December 6 to 7, 2002, Moscow, the Russian Federation

Title and expected results: 4<sup>th</sup> International Scientific and Industrial Forum “Great Rivers 2002”

Dates and place: May 14 to 17, 2002, Nizhny Novgorod, the Russian Federation.

Outputs: Presentation Elaboration of Agenda 21 for the Big Industrial Centre;  
Mathematics Modeling Apply for Analysis of Urban Constructions Design ;  
Water Quality Management of Reservoirs Considering Density Stratification;  
Medical and Environmental Features of Different Aeries of Nizhny Novgorod

Title and expected results: International Meeting dedicated to social partnership in the field of solid waste management  
Dates: March to April 2002, Prague, Czech Republic

Title and expected results: Conference on Elaboration of a Social Partnership System for the Sustainable Development of Nizhny Novgorod – Agenda 21  
Dates and place: December 18 2002, Nizhny Novgorod, the Russian Federation  
Output: Presentation on Ecological Problems of Transport

Title and expected results: Conference on Actual Experience of Management  
Dates and place: March 2002, Nizhny Novgorod, the Russian Federation

Title and expected results: International Conference on Social Partnership Broadening for Solving Problems of City Solid Waste Pollution  
Dates: April 3 to 8 2002, Prague, Czech Republic

Title and expected results: Conference on Generation of Ideas in Formulation Conception of Sustainable Development of Nizhny Novgorod in the sphere of Waste Treatment

Title and expected results: Conference on Historical, Cultural and Environmental Preservation of Nizhny Novgorod  
Dates and place: October 16 2002, Nizhny Novgorod, the Russian Federation

Title and expected results: Conference on Transport Problems of Nizhny Novgorod  
Dates and place: October 17 2002, Nizhny Novgorod, the Russian Federation

Title and expected results: Conference on General Challenges of Construction in Nizhny Novgorod  
Dates and place: October 23 2002, Nizhny Novgorod, the Russian Federation

Title and expected results: Conference on Energy and Resources Saving Technologies in Nizhny Novgorod  
Dates and place: October 23 2002, Nizhny Novgorod, the Russian Federation

Title and expected results: 4th International Scientific and Industrial Forum “Great Rivers 2002”  
Dates and place: May 14 to 17, 2002, Nizhny Novgorod, the Russian Federation.

Title and expected results: Conference on Transport Problems of Nizhny Novgorod  
Dates and place: October 17 2002, Nizhny Novgorod, the Russian Federation

Title and expected results: Conference on Generation of Ideas in Formulation Conception of Sustainable Development of Nizhny Novgorod in the field of Waste Treatment

Title and expected results: Conference on General Challenges of Construction in Nizhny Novgorod  
Dates and place: October 23 2002, Nizhny Novgorod, the Russian Federation

Title and expected results: Conference on Energy and Resources Saving Technologies in Nizhny Novgorod

Title and expected results: Conference on Historical and Cultural Preservation of Nizhny Novgorod  
Dates and place: October 16 2002, Nizhny Novgorod, the Russian Federation

Title and expected results: Conference on Debating Conception of Sustainable Development Draft – Agenda 21 for Nizhny Novgorod  
Dates and place: December 5th 2002, NNSUACE

Title and expected results: Conference on Debating Agenda for Sustainable Development of Nizhny Novgorod  
Dates and place: December 13 2002, NNSUACE

Title and expected results: 4th International Scientific and Industrial Forum “Great Rivers 2002”  
Dates and place: May 14-17 2002, Nizhny Novgorod, the Russian Federation.

### **3. Missions / Travels abroad**

Destination: Paris, France

Purpose: UNESCO initiative for sustainable development of the Volga/Caspian Basin, Paris, France

Duration: February 13<sup>th</sup> 2002

Destination: Uglich, Russia.

Purpose: International Conference on Present Hydrological Conditions of the Volga Basin and their influence to the Status of the Cultural Monuments

Duration: June 11 to 12 2002

Destination: Delft, the Netherlands

Purpose: International Conference on From the Potential Conflict to the Potential Cooperation

Dates: November 20th to 23rd 2002

Destination: Cannes, France

Purpose: International Symposium on Water

Dates: June 3<sup>rd</sup> to 7<sup>th</sup>, 2002

Destination: International Ocean Institute

Purpose: Mission aimed at sharing programs and project activities experience; distance-related education experiences  
Dates: November 21st 30th, 2002

Visiting professors / Fellowships

Number: 5

Duration: Two weeks

University of origin: University of Karlsruhe, Germany; University of Heidelberg

## **II. Impact**

In 2002, the UNESCO Chair's main activities were the following:

Firstly, the realization of the Target Federal Program entitled Environmental Rehabilitation of the Volga River and its Tributaries, Restoration and Preventing Degradation of Natural Complexes of the Volga Basin (Revival of the Volga).

Its main objectives were: to determine the reduction of sewage discharges from sources; to determine a reduction in pollution from the atmosphere of the Volga Basin; the creation of a database containing information on the air pollution from industry and traffic in Nizhny Novgorod; approval of the method for joint data analysis regarding air pollution concentration in Nizhny Novgorod.

Secondly, the Interdisciplinary UNESCO Initiative for Sustainable Development of the Volga/ Caspian Basin.

The results of this project's outcomes include:

Recommendations for preparation of the Vision of Volga Basin; data collection and systematization of the status of the environmental components in the Volga Basin; the reporting of results to the UNESCO Moscow Office; implementation of the Russian-German project "Volga – Rhine"; collection and analysis of Sura River sediments; enrichment of the database with information on water quality parameters of the Volga and the Oka Rivers; correction of the hydrodynamic model of the Volga River.

Thirdly, preparation and implementation of the 4th International Scientific and Industrial Forum "Great Rivers 2002" on May 2002, in Nizhny Novgorod, Russia.

## **III. Forthcoming activities**

Forthcoming activities planned by the UNESCO Chair are:

Preparation for the 5th International Scientific and Industrial Forum "Great Rivers' 2003";

Participation in the preparation of the Volga Basin Vision in the framework of the interdisciplinary UNESCO initiative for the sustainable development of the Volga/Caspian Sea Basin";

Realisation of the follow-up stages of the Russian-German project "Volga-Rhine";

Finalization of GIS thematic stratum of the Volga Basin considering sediment quality based on data collected within the Volga-Rhine project;



Software development for hydrodynamic modeling used to maintain flooded areas;

Organization and implementation of regular water sampling from the Volga and the Oka Rivers in the Nizhny Novgorod area;

Follow-up to elaborate the model for the sustainable and ecologically safe development of the large industrial centres of the Volga Basin;

Participation in preparation of expedition along the Volga River organized by the Cousteau Society;

Finalisation of research entitled Elaboration of Methodology for Calculation of Potential Damage to Human Health and Environment Purposed to Support the Decision-making Process Based on Micro-territorial Risks Evaluation in Nizhny Novgorod.

#### **IV. Development prospects**

The UNESCO Chair is one of the principal structures of NNSUACE, which develops international co-operation, carries out a significant amount of research and takes an active part in preparing specialists for different fields of the economy. Current development prospects of the UNESCO Chair are the implementation of international environmentally-oriented projects.

Since it began, the UNESCO Chair has participated in the implementation of the FTP Revival of the Volga, whose tasks cover scientific, social, economic, technical as well as cultural aspects of sustainable development issues.

The UNESCO Interdisciplinary Demonstration Project Sustainable Development of the Volga and the Caspian Sea Basins is among the most significant of the Chair's activities. The project is based on the basin-wide approach to solving problems of ecosystem sustainability while providing economic development for the regions.

In 2002, the Chair took an active part in the preparation of the Vision for the Volga Basin. UNESCO considers a Volga Vision document as a necessary, initial phase in carrying out the main steps of the Volga Basin's transition to sustainable development.

The UNESCO Chair collaborates with many different Russian, foreign and international organisations, including: UNESCO, foreign universities, research centers, and Government institutes. Continued cooperation is high on the list of the Chair's activities.

Sharing the experience and results of projects and research is important. The Chair is planning to organize meetings and conferences to this effect, contribute to educational and training activities and deliver theoretical and practical courses.

#### **Outputs**

#### **Publications**

Title of Activity: Environmental protection

Title: Strategy for the Ecological Rehabilitation of the Large Rivers and Their Basins

Author V. Naydenko

Publisher Вестник ВРО РААСН №5 Nizhny Novgorod

Year 2002

Number of pages 15

Type of document/material Article

Training/learning material

Language Russian

Main keywords environmental problems, economical development, anthropogenic load, strategy for environmental preservation activities

**SHORT ABSTRACT**

Strategies for the ecological rehabilitation of the large rivers and their basins are presented

Title: Scientific Basis for the Ecological rehabilitation of the Large Rivers and Their Basins

Author V. Naydenko

Publisher: "Промышленное и гражданское строительство" №3

Year 2002

Number of pages 3

Type of document Article

Language Russian

Main Keywords river basins, anthropogenic load, development, complex actions for the environmental protection

**SHORT ABSTRACT**

Scientific basis for the ecological rehabilitation actions in the large river basins are presented

Title: Biota Elements Status as an Indicator of the Environmental Violation in the Zone of an Oil-processing Enterprise Location

Author(S) V. Naydenko, O. Gretchkanov

Publisher "Экология" №1, p. 62-64

Type of document/material Article

Language Russian

Main keywords oil protection, ecosystems, pollution, environment

**SHORT ABSTRACT**

Possibility of bio-indication approach for estimation of oil-processing enterprises effect on the environment has been examined

Title: Biota Elements Status as an Indicator of the Environmental Violation in the Zone of Location of an Oil-processing Enterprise

Author(S) V. Naydenko, O. Gretchkanev

Publisher "Экология" №1, p. 67-69

Year 2002

Number of pages 3

Language Russian

Main keywords oil protection, effect on ecosystems, pollutants

**SHORT ABSTRACT**

Estimation of influence on the elements of ecosystems provoked by the oil-products is presented

Title: Report of Scientific and Research Activities 2001 (BPO PAACH)

Author(S) V. Naydenko, V. Bobylev, V. Vturina

Publisher BPO PAACH №5 Nizhny Novgorod

Year 2002

Number of pages 13

Type of document/material Article

Language Russian

Main keywords scientific and research activities, main activities, results

**SHORT ABSTRACT**

Reporting of main activities and scientific activities results in 2001 to the Russian Academy of Sciences

Title: Features and Flood Reasons in the protected Areas of Tcheboksary Reservoir

Author(S) V. Naydenko, S.Sobol

Publishers Изв. ЖКА "Городское хозяйство и экология"

Year 2002

Number of pages 5

Language Russian

Type of document/material Article

Language Russian

Main keywords flood, water level, flood territories, reservoir

### **SHORT ABSTRACT**

Main reasons for the flooding of the protected territories of Tcheboksary reservoir were analyzed

The full version of the report provides information on another 28 books and articles published by the Chair.

## **Outputs**

### **Multimedia materials**

Title of Activity: Continuous education

Title: The Stroganov in Nizhny Novgorod

Author T. Vinogradova

Producer and/or distributor State TV/Radio Company (9, Belinsky St., Nizhny Novgorod)

Year 2002

Duration 10 video films X 15 minutes

Format PAL

Language : Russian

Main keywords “Stroganov” style in architecture, “Stroganov” icon painting, Stroganov buildings in Nizhny Novgorod, French Revolution, Civil War 1812, Pushkin and “Queen of Spades”

### **SHORT ABSTRACT**

The history of the famous and rich Russian dynasty: The Stroganov is presented. Special emphasis was placed on this family’s links with Nizhny Novgorod. A hypothesis of the creation of “Queen of Spades” by A.S. Pushkin is presented