# KYRGYZ NATIONAL REPORT ON 1HP RELATED ACTIVITIES

# 1. ACTIVITIES UNDERTAKEN IN THE PERIOD SEPTEMBER 2004 – JUNE 2006

# 1.1 Meetings of the IHP National Committee

1.1.1 Decisions regarding the composition of the IHP National Committee

|          | 1.1.1 Decisions regarding the composition of the IHP National Committee |                        |                           |             |  |  |
|----------|---|------------------------|---------------------------|-------------|--|--|
| Νō       | Name  | Scientific degree      | Place of work and         | Contact     |  |  |
|          |   |                        | position                  | information |  |  |
| 1        | Mamatkanov  | Academician, doctor    | Director, IWP&HP NAS      | 21-06-74 w  |  |  |
|          | Dushen  | of technical sciences  | KR                        |             |  |  |
|          | Mamatkanovich   |                        |                           |             |  |  |
|          | (chairman)  |                        |                           |             |  |  |
| 2        | Matychenkov   | Doctor of geological-  | Head of laboratory of     | 21-74-67 w  |  |  |
|          | Vladimir Egorovich  | mineralogical          | hydropower, IWP&HP        |             |  |  |
|          | (deputy chairman)   | sciences, professor    | NAS KR                    |             |  |  |
| 3        | Tuzova Tamara   | Candidate of           | Chief research officer of | 21-45-64 w  |  |  |
|          | Vasilevna   | physical-              | laboratory of long term   |             |  |  |
|          | (responsible  | mathematical           | regulation methods        |             |  |  |
|          | secretary)  | sciences, senior       | ofand forecasting of      |             |  |  |
|          |   | lecturer               | river drain,              |             |  |  |
| <u> </u> | • •   | 0 111 1                | IWP&HP NAS KR             | 24 42 =2    |  |  |
| 4        | Alamanov  | Candidate of           | Head of department of     | 21-18-73 w  |  |  |
|          | Salamat   | geological sciences    | regional problem in       |             |  |  |
|          | Kulenbekovich   |                        | Government of KR          | 24 45 64    |  |  |
| 5        | Bazhanova Larisa  |                        | Senior research officer   | 21-45-64 w  |  |  |
|          | Vasilevna   |                        | of laboratory of water    |             |  |  |
|          |   |                        | and water-power           |             |  |  |
|          |   |                        | resources, IWP&HP NAS     |             |  |  |
|          |   |                        | KR                        | 22.22.62    |  |  |
| 6        | Erokhin Sergei  |                        | Head of engineer-         | 22-38-62 w  |  |  |
|          | Aleksandrovich  |                        | geological detachment     |             |  |  |
|          |   |                        | of Agency on geology      |             |  |  |
|          |   |                        | and mineral resources     |             |  |  |
| 7        | Mahdychey   | Candidate of           | by Government of KR       | 21 45 62    |  |  |
| '        | Mahdychev<br>Alexandr   |                        | Head of laboratory of     | 21-45-63 w  |  |  |
|          | Nikolaevich   | geological and         | underground water         |             |  |  |
|          | INIKUIAEVICII   | mineralogical sciences | ecology, IWP&HP NAS<br>KR |             |  |  |
| 8        | Romanovskii   | 301011003              | Head of laboratory of     | 21-45-73 w  |  |  |
| 0        | Vladimir  |                        | water and water power     | 21-43-/3 W  |  |  |
|          | Vladimirovich   |                        | resources of IWP&HP       |             |  |  |
|          | viaulillilovicii  |                        | NAS KR                    |             |  |  |
| 9        | Tolstikhin  | Candidate of           | Chief geologist of        | 66-39-06 w  |  |  |
|          | Gennadii  | geological-            | Agency on geology and     | 00-33-00 W  |  |  |
|          | Mikhailovich  | mineralogical          | mineral resources by      |             |  |  |
|          | PHANIGHOVICH  | sciences               | Government of KR          |             |  |  |
|          |   | 30001003               | Government of KK          |             |  |  |
|          |   |                        |                           |             |  |  |
| 10       | Usupaev   | Doctor of geological-  | Head of Department of     | 21-95-26 w  |  |  |
|          | Sheishenaly   | mineralogical          | Ministry of emergency     |             |  |  |
|          | Eshmanbetovich  | sciences, professor    | situation KR              |             |  |  |

| 11 | Choduraev<br>Temirbek<br>Makeshovich  | Candidate of geological sciences                   | Pro-rector of Bishkek<br>University by I.Arabaev                          |            |
|----|---------------------------------------|--|---|------------|
| 12 | Shalpykova<br>Gulnara                 | Master of Arts in<br>International<br>Relations    | Head of Sector for External Relations, IWP&HP NAS KR                      | 21-45-63 w |
| 13 | Ergeshov<br>Abzapar<br>Abdrazzakovich | Doctor geological sciences, professor              | Pro-rector of Bishkek<br>State University on<br>scientific work           | 54-14-25 w |
| 14 | Erdman Olga<br>Dmitrievna             |  | Academic secretary,<br>IWP&HP NAS KR                                      | 21-45-74 w |
| 15 | Yakimov Viktor<br>Mikhailovich        | Candidate of geological and mineralogical sciences | Head of laboratory of economy and ecology of water economy, IWP&HP NAS KR | 21-45-73 w |

#### 1.1.2 Status of IHP-VI activities

Members of the Committee are currently involved in the Project implementation "Water and Ecological situation in the Issyk-Kul basin in the context of global climate change: scientific evaluation, forecast and mitigation."

# 1.1.3 Decisions regarding contribution to/participation in IHP-VII

The IHP Kyrgyz Committee supports the IHP's three important directions that have been mentioned in the letter dated 21 October 2003. These directions have always been priorities for the Kyrgyz Republic. For many years the country has been engaged in planned and regular research in the field of hydrology, water resources management, specialists' training and institutional capacity building. However, with the disintegration of the Soviet Union a decade ago, the situation with the water related research has drastically changed.

<u>Priorities Justification.</u> With respect to the hydrological research, the network of hydrological measurement stations in the country was reduced by 80%. The current hydrological research can be characterized as incidental due to a shortage of budgetary funds and professional manpower drain.

The water resources management issue also demands a high degree of attention because of its latent conflict potential. Indeed, co-riparians of the Aral Sea basin have diametrically opposite views on how to manage the trans-boundary water resources of the basin. Such clash of opinions leads to conflict situations and tense relations within the riparian community.

The essence of the problem lies in the fact that the water allocation scheme of the Soviet period still remains in force. As a result, upstream states (Kyrgyzstan and Tajikistan) of a mountain zone, where the main flow is formed, have small water quotas. Such situation with water allocations in turn causes the lowest indicator of water resources and difficult living conditions of people of the upper riparian states. This looks quite paradoxical, especially given considerable land resources availability fit for irrigation.

A number of resolutions and declarations on the necessity to develop a new water allocation strategy, adopted by the heads of the Central Asian states during the period of 1993-1996, has remained on paper and has never been put into practice in full measure. Market mechanisms on interstate use of the trans-

boundary water resources are lacking. The upstream states, therefore, have to provide funds from their budgets to maintain water facilities, which serve mainly the needs of downstream users.

<u>Long-term Priorities Setting.</u> The circumstances mentioned above have considerable influence on setting long-term priorities of Kyrgyzstan with regard to 'three essential lines of action.' The IHP Kyrgyz Committee does believe that the following topics will be the most priority and salient issues for the next several decades.

# 1. Hydrological Research

- assessment of the current/ future state of water resources in the context of climate change.

# 2. Water Resources Management

- preparation of a new water allocation strategy for the trans-boundary water resources of the Aral Sea basin, which would be able to provide for a balance of upstream-downstream state interests;
- elaboration/ introduction of economic mechanisms to manage the water resources;
- development of water disputes resolution techniques with due attention to unique peculiarities of the water issue of the basin.

#### 3. Education and Institutional Capacity Building

- preparation of different training programmes for water professionals;
- improvement of the Internet access to facilitate working partnerships, to promote compilation/ exchange of information and technology transfer;
- strengthening the Committee's role at the national, regional and international levels.

Conclusion. The IHP Kyrgyz Committee would appreciate it, if the proposed priority issues are reflected in the plan for the IHP-VII. Study and solution of these issues would exert direct and positive influence on interstate relations with respect to the trans-boundary water resources; thus promoting cooperation among Kyrgyzstan and its neighbours. Besides, mainstreaming the issues into the IHP-VII would brisk up the hydrological research and help to improve professional development and institutional capacities. Having skilled professionals as well as well-functioning institutions and being aware of the current/ future state of the water resources through the hydrological research, the country would be able to follow the principle of sustainable development. Finally, but not less important, if the problem of water allocations in the basin is solved with due and fair attention to the upper riparians needs, there will be an opportunity to increase a specific area of irrigated land in these countries. This in turn will improve the situation with food supplies and contribute to eradication of poverty. In that way the country will move towards fulfilling the UN Millennium Goals related to water.

#### 1.2 Activities at national level in the framework of the IHP

# 1.2.1 National/local scientific and technical meetings

The IHP Kyrgyz Committee conducted a number of meetings. For more details, please visit the website: www.caresd.net/iwp

# 1.2.2 Participation in IHP Steering Committees/Working Groups none

# 1.2.3 Research/applied projects supported or sponsored

The project «The water-ecological situation of the Issyk-Kul basin in the conditions of global climate getting warmer: scientific estimation, development forecast, measures on a mitigation of negative consequences » was implemented in 2004-2005. The implementation of the project "Creation of the information system block of the Issyk-Kul area for water-ground and hydropower resources management with the purpose of region steady development" is started in 2006.

# 1.2.4 Collaboration with other national and international organizations and/or programmes

**INTAS**. The perspectives of development of natural-economic resources in Kazakh Priaralye.

Coordinator: Dr. Mikael Motelica Heino, Geological service of France, Orlean,

France

Executor: V.Yakimov

2002-2004

The grant sum is 150 thousand euro Including IWP and HP- 24 thousand euro Was received by IWP and HP in 2003 -1,0

2004 .-2,2 2005 -1,793

#### ISTC

KR-330.2

Study of Quaternary climate changes in Tyan-Shan: freezing and fluctuation of the level of inflow lakes of Issyk-Kul, Chatyr-Kul (Kyrgyzstan)

Collaborators: prof., Tomas Jonson, doctor Rihard D.Riketts, Observatory of Great lakes, University Minnesota, USA

Prof. Kennet Rasmussen, Smith Institute, Washington, USA

The manager V.M. Yakimov

Period of implementation: 2004-2006.

# ISTC

KR-330.3

Study of water balance and hydrodynamics of the Issyk-Kul lake by isotope methods

Collaborators: Y.Klerks, The Chairman of the international bureau of environmental study (IBES), Belgium

S.Lombardi, professor of « La Sapienta» University, Rome, Italy

The manager V.E.Matychenkov

Period of implementation: 2002-2005.

#### 1.2.5 Other initiatives

#### EC, FP6

Estimation of risk to environment from tails of deposits working out of radioactive raw material

Coordinator: Y.Klerks, The Chairman of the international bureau of environmental study (IBES), Belgium

Period of implementation: 2004-2006.

### 1.3 Educational and training courses

1.3.1 Contribution to IHP courses

none

1.3.2 Organization of specific courses

none

1.3.3 Participation in IHP courses

<u>General:</u> From September 14, 2005 through September 20, 2005, Ms. Gulnara Shalpykova, representing the Institute of Water Problems and Hydropower of the National Academy of Sciences of the Kyrgyz Republic, visited the International Research and Training Center on Erosion and Sedimentation ("IRTCES").

All participants were set the following tasks:

- to attend a series of lectures on basic theories on mechanics of sediment transport, fluvial process, watershed eco-environmental management and water resources management;
- to participate in discussions and field trips; and
- to share information and to prepare presentations on the basic situation of water resource management in home countries.

<u>Activities:</u> From September 14, 2005 through September 20, 2005, Ms. Gulnara Shalpykova was taking part in the International Training Workshop on Watershed Eco-environment and Water Resources Management (the "Workshop"). The even was held at IRTCES and was sponsored by IHP-UNESCO Paris, UNESCO cluster offices and the Ministry of Water Resources of China.

The Workshop was devoted to:

- basic theories on mechanics of sediment transport;
- fluvial process;
- watershed eco-environmental management; and
- water resources management.

On September 15, 2005, Ms. Gulnara Shalpykova attended lectures on water resources management, strategic planning, integrated approaches to river basin planning, development and management.

On the next day there was a lecture on remote sensing and its application in water resources management in China. On the same day Ms. Gulnara Shalpykova visited Water Resources Department of the Institute of Water Resources and Hydropower Research.

During the whole day of September 17, 2005, Ms. Gulnara Shalpykova had been in the Beijing suburb visiting a small watershed management demonstration place.

The last day was aimed at discussing water relevant topics and/or presenting general issues in the field of water resources management in home countries. Ms. Gulnara Shalpykova made a brief introduction to the Institute of Water Problems and Hydropower of the Kyrgyz Republic. In addition, she presented the

main research activities of the Institute with key focus on preliminary studies related to transboundary water resources of the Tarim river basin, which is shared by Kyrgyzstan and China. Finally, Ms. Gulnara Shalpykova answered questions on transboundary water resources issues of Central Asia.

<u>Results:</u> In the course of the Workshop, Ms. Gulnara Shalpykova shared her knowledge in the field of transboundary water resources management and established a number of useful contacts with international experts interested in scientific partnership with research institutions of Central Asia. Several lecture materials and presentations were obtained and distributed subsequently among interested scientists of the Institute of Water Problems and Hydropower.

In addition, Ms. Gulnara Shalpykova successfully presented her report, obtained valuable and positive comments from international colleagues representing 9 countries of the world and answered several interesting questions on the most pressing water-related issues of Central Asia.

# 1.4 Cooperation with the UNESCO-IHE Institute for Water Education and/or international/regional water centres under the auspices of UNESCO

The IHP Kyrgyz Committee keeps trying to establish partnership relations with the UNESCO-IHE Institute for Water Education. Such partnership could contribute to further development of young water professionals. All attempts, however, are still unsuccessful since candidates from the Kyrgyz Republic are not eligible to apply for NFP fellowships to attend courses offered by the UNESCO-IHE.

#### 1.5 Publications

#### 2005

- 1. D.M.Mamatkanov Preliminary Results and Perspectives of USE of Space Imagery in Solving Water Problems of Highlands. Proceedings of the 7th international symposium on High mountain remote sensing cartography (Bishkek, Kyrgyzstan, 2002) Institut for Cartography Dresden University of Technology Germany, Dresden, 2004 p.179.
- 2. A.N.Mandychev Process of Transfer of the Weighted Material in Lake Issyk-Kul on Hand-Held Space Photos. Proceedings of the 7th international symposium on High mountain remote sensing cartography (Bishkek, Kyrgyzstan, 2002) Institute for Cartography Dresden University of Technology Germany, Dresden, 2004 p.181.
- 3.Mandychev A.N.., Prilepskaya S.V., « The estimation of renewed resources of underground waters of Quaternary water-bearing complex of the Issyk-Kul basin». 5p., 2005 (http://www.geohydro.narod.ru).
- 4.Mandychev A.N. « The estimation of renewed resources of underground waters Sharpyldak water-bearing complex of the Issyk-Kul basin». 6p., 2005 (http://www.geohydro.narod.ru).
- 5.D.M.Mamatkanov., L.V.Bazanova. Water balance of the Issyk-Kul lake at the present stage (2001-2003). « Study of hydrodynamics of the Issyk-Kul lake with the use of isotope methods » .Part 1, Bishkek, ILIM 2005.p.8-16 (RUSS)., p. II, 2006, 148 p(Engl).
- 6. V.V.Romanovskii, V.A.Kuzmichenok, D.M. Mamatkanov, A.O. Podrezov. All about Issyk-Kul.. The encyclopaedic information directory on a nature and ecology of the lake and the basin. Bishkek, 2005. p-406.

- 7.V.V.Romanovskii, V.A.Kuzmichenok. «Ursache und Auswirkungen der Seespiegelschwankungen des Issyk-Kul in jungerer Zeit». Gissen university by Ustusa Libiga, Germany, 2005. 90p.
- 8. r. Hanbilvardi, A.Gitelson, S.Stanichnii, A.Mandychev, V.Kushnir, V.Hasin, B.Shteinman. Remote monitoring of water dynamics and estimation of chlorophyll concentration. Works of the ninth biennale of ASCE (American society of the civil engineers). Space branch of the international conference on development, construction and actions in problem environments. The Earth and space, 2004, Lig-city- Texas.p. 263-268.
- 9. Sh.A.Ilyasov, V.M.Yakimov etc. A national structure of the Kyrgyz Republic for the estimation of a national infrastructure on management of stable organic contaminators. Bishkek, 2005. 240 p.
- 10. Shabunin A.G. « Geoinformation system of the Issyk-Kul area(The Kyrgyz Republic) » Urgent problems of modern science: The 1st International forum (:of the International conference) of young scientists and students). Natural sciences. p.18:Informatics and management information system / scientific editing by A.S. Trunin, A.V. Chuvakov, Samara, SSTUA. 2005, p.135.
- 11.Bazanova L.V., Change of liquid water content of the rivers on a background of global climate getting warmer // Water and market. St.-Petersburg. At Polytechnical university. 2005.250 p.
- 12. Luterbacher U., Kuzmichenok V. and Shalpykova Gulnara. *Mountain Glaciers and Society International and Interdisciplinary Workshop*. "Glaciers and Water Use in Central Asia." (submitted to Kluwer Academic Publishers in January 2005)

#### 2004

- 1. Shabunin A.G., Shabunin G.D.. Results of the spectral analysis of seiches fluctuations of the Issyk-Kul lake level. News NAS KR, № 2, 2004, p.92-96.
- 2. Shabunin A.G.. Transformation of coordinates. The collection of materials of the international conference « GIS use and simulative models for research and acceptance of the decisions in Central Asia river basins " » of Tashkent, 2004, p.68-70.
- 3. T.V. Tuzova, Dj Kachkynbaeva. " Use Even Uranium Isotopes Correlation as a Natural Radioactive Mark for Studying Water Resources Formation Condition in Mountain Areas ". Materials of the international conference " Monitoring of migration and accumulation of radionucleids in natural ecosystems components", Dushanbe, 2004, p.17.
- 4. T. V. Tuzova "Peculiarities of Even Uranium Isotopes Migration in Waters of the Gunt and Pjandj River Basins (Eastern Pamirs) ". Materials of the international conference "Monitoring of migration and accumulation radionucleids in components of natural ecosystems", Dushanbe, 2004, p.15-16.
- 5. Dj. Kachkynbaeva "Mechanism of Disequilibrium Uranium Formation in Natural Objects". Materials of the international conference " Monitoring of migration and accumulation radionucleids in components of natural ecosystems ", Dushanbe, 2004, p.25-28.

- 6. Mamatkanov D.M., Bazanova L.V., Romanovskii V.V., Dikih A.N., Modern changes of a climate and reaction on them of various kinds of water resources of Kyrgyzstan. J. " Water resources of Central Asia ",  $N_2$  2, Dushanbe, 2004, p.12-17.
- 7. D.M.Mamatkanov The threat of conflicts about the interstate use of transboundary resources in Central Asia. Cooperation and Conflict Management in Central Asia/ Peter Lang, Europaischer Verlag der Wissenschaften. Gissen, 2004. p.155-160.
- 8. Shalpykova G., "Upstream-Downstream Relations in the Syr Darya River Basin." In *International Conference on Security Challenges in Central Asia*, edited by Halim Nezihoglu, Iskender Ormon Uulu, Murat Bakir, 191-196. Bishkek: International Ataturk-Alatoo University, 2004.
- 9. D.M.Mamatkanov Preliminary Results and Perspectives of USE of Space Imagery in Solving Water Problems of Highlands. Proceedings of the 7th international symposium on High mountain remote sensing cartography (Bishkek, Kyrgyzstan, 2002) Institute for Cartography Dresden University of Technology Germany, Dresden, 2004 p.179.
- 10. A.N.Mandychev Process of Transfer of the Weighted Material in Lake Issyk-Kul on Hand-Held Space Photos. Proceedings of the 7th international symposium on High mountain remote sensing cartography (Bishkek, Kyrgyzstan, 2002) Institute for Cartography Dresden University of Technology Germany, Dresden, 2004 p.181.

#### 1.6 Participation in international scientific meetings

1.6.2 Participation in meetings abroad

<u>General:</u> From February 26, 2005 through March 05, 2005, a mission team (the "Mission") composed of Prof. Dushen Mamatkanov and Ms. Gulnara Shalpykova both representing the Institute of Water Problems and Hydropower of the National Academy of Sciences of the Kyrgyz Republic visited the Indian National Institute of Hydrology in Roorkee ("NIH").

The principal tasks of the Mission were to:

- present the Country Paper on Water in Arid and Semi-arid Regions of the Kyrgyz Republic;
- discuss the process of establishing a regional network (the "Asian G-WADI");
- become familiar with new developments in environmental modelling; and
- get modelling support in the form of access to appropriate software tools and web-based training materials.

<u>Activities:</u> From February 28, 2005 through March 04, 2005, the Mission was taking part in the International G-WADI Modelling Workshop (the "Workshop"). The even was held at NIH and was sponsored by IHP-UNESCO Paris, UNESCO cluster offices, DFID, G-WADI network, the Indian National Committee on Hydrology and the Indian Institute of Technology.

Among others, the goals of the Workshop included:

- discussion of the country papers for G-WADI;
- establishment of a regional network, the Asian G-WADI; and
- provision of modelling support to facilitate the sustainable development of water resources and the integrated management of river basins, to forecast and manage flood phenomena, and to monitor water quality in arid and semiarid areas.

During the first several days (from February 28 through March 03, 2005), the Mission attended all presentations and software demonstrations arranged by invited guests in order to become familiar with new developments in the field of environmental simulation for arid and semi-arid zones and to share experiences.

The next few days were aimed at presenting and discussing country papers on water resources management in arid and semi-arid regions. The Mission made a presentation of "the Country Paper on Water in Arid and Semi-arid Regions of the Kyrgyz Republic" prepared by scientists of the Institute of Water Problems and Hydropower of the Kyrgyz Republic.

On last day of the Workshop, participants discussed provisions of a declaration on the establishment of a regional network within the framework of G-WADI. The Mission participated actively in all discussions and initiated some amendments to this document.

<u>Results:</u> In the course of the Workshop, the Mission shared experiences in the area of hydrological modelling and established a number of useful contacts with international experts interested in scientific partnership with research institutions of Central Asia. Several software demo packages were obtained and distributed subsequently among interested scientists of the Institute of Water Problems and Hydropower.

In addition, the Mission successfully presented the Country Paper, obtained valuable and positive comments from international colleagues and answered several interesting questions on the most pressing water-related issues of Central Asia.

Lastly, but not of less importance, during discussions of the declaration provisions, the Mission supported the proposed initiative to establish the Asian G-WADI and put forward an idea to determine a fixed period for rotation of the network coordinating body.

<u>Outcomes:</u> The idea related to a fixed period for rotation was met with approval and support from participants of the Workshop. As a result, it was decided that the coordinating body of the Asian G-WADI would rotate in a three-year cycle among members of the network.

Afghanistan, China, India, Iran, Kyrgyz Republic, Mongolia, Pakistan, Tajikistan and Uzbekistan signed the declaration and became members of the newly created network. The network membership would be open to all.

According to provisions of the signed declaration, during the first three-year period, the Asian G-WADI will be coordinated by NIH.

The presented country papers as well as other proceedings of the Workshop are expected to be revised, published and open for public use through the G-WADI website.

#### 1.7 Other activities at regional level

# 1.7.1 Institutional relations/cooperation

The Kyrgyz IHP Committee actively cooperates with a number of regional institutions of Central Asia. For more information, please visit our website: www.caresd.net/iwp.

#### 1.7.2 Completed and ongoing scientific projects

Members of the Kyrgyz IHP Committee implemented and have been continuing to carry out the following locally financed studies and international joint projects:

# INTERNATIONAL JOINT PROJECTS

2004-2006

Study of Quaternary Climatic Fluctuations in Tien-Shan: Glaciation and Level's Fluctuations in Inland Lakes, Issyk-Kul and Chatyr-Kul (Kyrgyzstan) collaborators: Large Lake Observatory and Smithsonian Institution, USA grant sources: ISTC

2004-2006

Assessment of Environmental Risk of Radioactively Contaminated Industrial Tailings

collaborator: International Bureau for Environmental Studies, Belgium grant sources: EC FP6

2004

Central Asian Lakes Monitoring: Issyk-Kul, Aral Sea

collaborator: Laboratoire d'Etudes en Geophysique et Oceanographie Spatiales,

Centre National d'Etudes Spatiales, France

grant sources: NATO

2003-2005

Effect of Changes in Climate, Snow Pack, Glaciers and Permafrost on River Runoff in Tien Shan, Central Asia coordinator: University of Idaho, USA

grant sources: National Science Foundation, USA

2002-2005

Study of Water Balance and Hydrodynamic Model of the Issyk-Kul lake with the Use of Isotope Methods

collaborators: International Bureau for Environmental Studies, Belgium and

University La Sapienta, Italy

grant sources: ISTC

2002-2004

Prospect for the development of natural-economic resources in the Kazakh

collaborator: French Geological Survey

grant sources: INTAS

2000-2004

Assessment and Prognosis of Environmental Changes in the Issyk-Kul Lake coordinator: International Bureau for Environmental Studies, Belgium

grant sources: EC/ Copernicus II

brief project description

# 2000-2003

Water Use, Property Rights and Transboundary Conflicts in Central Asia:

**Exploring Problems and Solutions** 

collaborator: Institut universitaire Kurt Bosch, Switzerland

grant sources: SNSF

#### 1998

Late Quaternary Paleoclimatic Archives of the Issyk-Kul Lake collaborator: Large Lake Observatory and Smithsonian Institution, USA grant sources: National Scientific Foundation, USA

#### 1996-1997

Management and Control System of the Syr Darya River Basin to Support Decision Making

grant sources: USAID

#### 1995-1996

Water Pricing in the Central Asian Countries

grant sources: USAID

#### STUDIES FINANCED FROM THE STATE BUDGET

# 2004-present

"Research, development and application of technical regulations into practical work of scientific organizations."

#### 2003-2005

"Water and ecological situation in the Issyk-Kul lake basin in the context of global warming: scientific assessment, further event forecast and measures to mitigate negative consequences."

# 2000-2002

"Development of scientific foundations for integrated use of water and hydropower resources of the Issyk-Kul oblast in order to achieve sustainable development and to put into practice ideas of the Great Silk Way."

#### 1997-1999

"Development of scientific foundations to optimize use of the country's water and hydropower potentials in order to achieve sustainable development."

#### 1996

"Development of scientific foundations to optimize use and protection of water and hydropower resources of the Kyrgyz Republic in the context of market economy."

# 1992-1995

"Development of scientific foundations to evaluate water resources in mountainous areas and to assess efficiency of their use with due attention to environmental protection."

### OFF-BUDGET RESEARCH

#### 2000

Underground Waters, Landslide and Mudflow Phenomena in Kyrgyzstan: Assessment and Forecast.

#### 1999

Dangerous Phenomena Caused by Surface and Underground Waters in the Osh and Jalal-Abad oblasts of Kyrgyzstan: Regime and Forecast.

#### 1998

Integrated Hydrological and Hydrogeological Research in the Western Chui Valley (between Bishkek and Kara-Balty cities) to Assess Underflooding and Flood Risks. Development of Recommendations to Eliminate or Mitigate these Risks.

#### 1997

Integrated Hydrological and Hydrogeological Research in the Eastern Chui Valley (between Chu, Tokmok and Kant cities) to Assess Underflooding and Flood Risks. Development of Recommendations to Eliminate or Mitigate these Risks.

#### 2. FUTURE ACTIVITIES

# 2.1 Activities planned until December 2007

Further implementation of the current projects.

#### 2.2 Activities foreseen for 2008-2009

Development of a strategy for transboundary water resources management in Central Asia.

# 2.3 Activities envisaged in the long term

Glaciers monitoring of the Northern Tien-Shan range in the context of the global climate change.