

NATIONAL REPORT ON IHP RELATED ACTIVITIES

ARMENIA

1. ACTIVITIES UNDERTAKEN IN THE PERIOD JULY 2006 – MAY 2008

1.1 Meetings of the IHP National Committee

1.1.1 Decisions regarding the composition of the IHP National Committee

Armenian National Committee of International Hydrological Programme of UNESCO has been established on 27 September 2007 (Minutes N 01-09/07). The National Committee establishment meeting has been initiated and conducted with the active participation of the following organizations: Technical Consultative Commission on Water Systems Operation and Maintenance, which is the independent panel of highly professional experts established in accordance with the Armenian Water Code to provide consultancy to the Government; Water Problems and Hydraulic Engineering Institute after academician I.V. Eghiazarov, which is the leading scientific-research institute acting in water and hydraulic engineering sector in the country; Yerevan State University of Architecture and Construction, which is the state institution providing higher education in hydraulic engineering and construction as well as in water infrastructure and resources management; Armenian National Society on Hydraulic Researches, which is non-governmental organization involved in various local and international water research projects; and “Paskal” Ltd – a private company involved in the hydrological studies and water resources management related projects. The presidium of the IHP Armenian National Committee includes the following members:

Hovhannes Tokmajyan	Doctor of Technical Science, Professor, Rector of Yerevan State University of Architecture and Construction; Head of Armenian National Committee
Armine Simonyan	Ph.D. in Water Engineering, Member of Armenian Technical Consultative Commission on Water Systems Operation and Maintenance; Environmental and Social Officer of the MCA–Armenia SNCO; Secretary of Armenian National Committee
Grigor Gabayan	Ph.D. in Engineering, Member of Armenian Technical Consultative Commission on Water Systems Operation and Maintenance; Director of “Hydroenergy” Ltd.
Edgar Jrbashyan	Ph.D. in Engineering, Deputy Director of the Water Problems and Hydraulic Engineering Institute after academician I.V. Eghiazarov
Razmik Petevotyan	Ph.D. in Engineering, Docent; Dean of the Faculty of Hydraulic and Civil Engineering of the Yerevan State University of Architecture and Construction
Albert Margaryan	Ph.D. in Engineering, Docent; Chair of Hydraulics of the Yerevan State University of Architecture and Construction
Vilik Sargsyan	Doctor of Technical Sciences, Member of Armenian National Society on Hydraulic Researches
Tigran Kalantaryan	Ph.D. in Engineering, Member of Armenian National Committee Armenian National Society on Hydraulic Researches
Tigran Martirosyan	Ph.D. in Economics, representative of Paskal Ltd.

1.1.2 Status of IHP-VI activities

Since the National Committee was established even less than a year ago, there is no much information to be reported under the section related to current activities. However it is expected that the involvement of the Committee in water sector related activities will grow with time. Among the major current activities the following should be reported:

- Participation in organization of international conference;
- Provision of information regarding the activities of the Armenian National Committee to the International Hydrological Program of UNESCO.

1.1.3 Decisions regarding contribution to/participation in IHP-VII N/A

1.2 Activities at national level in the framework of the IHP

1.2.1 National/local scientific and technical meetings

Within the reporting period several technical meeting with participation of Armenian National Committee presidium members and invited scientists to draft a proposals for activities planned to be implemented within the 2008-2011.

1.2.2 Participation in IHP Steering Committees/Working Groups N/A

1.2.3 Research/applied projects supported or sponsored N/A

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

The Armenian National Committee is currently collaborating with several local organizations involved in the process of organization of the International Scientific-Technical Conference “Architecture and Construction – Topical Problems” to be held in Yerevan on October 2008.

1.2.5 Other initiatives N/A

1.3 Educational and training courses

1.3.1 Contribution to IHP courses

Yerevan State University of Architecture and Construction, which was involved in the establishment of Armenian National Committee and which is the state institution providing higher education in hydraulic engineering and construction as well as in water infrastructure and resources management accepts students from foreign countries for MS and PhD courses and as well as is implementing exchange programs.

1.3.2 Organization of specific courses N/A

1.3.3 Participation in IHP courses N/A

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

1.5 Publications

N/A

1.6 Participation in international scientific meetings

1.6.1 Meetings hosted by the country
N/A

1.6.2 Participation in meetings abroad
N/A

1.7 Other activities at regional level

1.7.1 Institutional relations/cooperation
N/A

1.7.2 Completed and ongoing scientific projects
N/A

2. FUTURE ACTIVITIES

2.1 Activities planned until December 2009

1. International Conference “Architecture and Construction – Topical Problems”

Armenian National Committee is co-organizer of the International Scientific-Technical Conference “Architecture and Construction – Topical Problems”, which will be held in the Yerevan State University of Architecture and Construction in Yerevan, Armenia on October 15-18, 2008. Several water related topics of the conference as the followings: Hydraulic engineering construction, Water systems and their operation, Hydraulics, mechanics of liquids and gases, etc. Several members of the Armenian National Committee are included in the Organizing Committee and the Head of the Armenian National Committee is a co-chairman of the Conference Organizing Committee.

2. Proposal on development and publication of multilingual technical explanatory dictionary of terms in hydrology and hydraulic engineering

A Multilingual Technical Explanatory Dictionary of Terms in Water Resources and Hydraulic Engineering (Armenian, Russian, English and French) is intended to provide definitive descriptions of terms in hydrology, water resources and hydraulic engineering, giving guidance on their appropriate usage and context. The glossary developed and published in series will contain appropriate diagrams, figures, tables, maps and technical explanations, and is envisaged to be considered as a very practical tool to apply this knowledge to solve problems in water resources and systems management as well as to facilitate international technical communication in water resources and systems field. Containing around 4000 commonly-used terms expressed in a user-friendly manner, these books will serve as a valuable resource for both practitioners and academicians.

The explanatory dictionary will be divided into the series of books to be developed and published after each other:

- Volume 1: Hydrology: Surface Water Resources (2008-2009)
- Volume 2: Hydrology: Groundwater Resources (2008-2009)
- Volume 3: Hydraulics: Water systems (2010)
- Volume 4: Water Use: Urban, Irrigation, Hydroenergy, etc. (2010)
- Volume 5: Ecohydrology (2011)

A Multilingual Glossary will be developed by the research engineers and scientists with substantial experience in the respective fields. Hydrologists, civil engineers, environmentalists or any student can use it to define their research in current terminology. It will be of great use and interest to scientists, engineers and ecologists, professionals and students working in hydrology/hydraulics, urban water resource/system planning, management and regulation, and ecology.

3. Proposal on development of debris and flood control structures and methods for their calculation

Protection of automobile roads and railways, communities and infrastructure from the influence of mudflows and floods has a very important economic and environmental meaning. This problem is especially urgent for the counties with mountainous landscape as is the case with Armenia.

Among the flood protection means the following two types of hydraulic structures (different by the operation type) can be considered:

- Derivation canals, mudflow escape canal and other linear structures, envisaged for the transportation and diversion of mudflows and floods;
- Dams, solid and perforated barrages and other transversal structures, which are aimed at breaking the inflowing mudflows, what in its turn leads to the river bed stabilization. Taking into account the relative cheapness and reliability of such structures, these means are widely used in practice.

Semi-centennial experience on operating such structures reveals serious deficiencies in both the methodology of calculating the criteria of bed-stabilization process and the structures applied. Deficiencies and omission of existing methods for calculation are substantiated by the absence of mathematical model to describe the actual process of this multifactor hydrodynamic process. Design defects are significantly decreasing the efficiency of operation, disturbing natural structure of river-bed regime.

Based on the analysis and processing of the large amount of the laboratory and field experiments and investigations, and taking into account the respectable experience of the proposed experts in resolving various problems related to river-bed processes, it is suggested to develop:

- Theory of river-bed formation process, considering the key factors impacting this process, such as criteria of inflowing sediments and bed of the stream/channel, parameters of mudflow and barrage structure;
- New efficient designs for flood control structures and the methods of their hydraulic calculation.

Investigations and analysis will allow to suggest a package of a programs aimed at determination of the following issues:

- Parameters of mudflow and protective/control structures;
- Parameters of longitudinal and transversal sections of the stabilized beds;
- Criteria of new designs for bed-regulating transversal structures and the duration of filling the structure.

2.2 Activities foreseen for 2010-2011

- Participation in IHP activities and events;
- Continue development and publication of Multilingual Technical Explanatory Dictionary of Terms in Hydrology and Hydraulic Engineering (Volume 3: Hydraulics: Water systems; Volume 4: Water Use: Urban, Irrigation, Hydroenergy, etc; Volume 5: Ecohydrology);
- Participation in organizing and conducting a Conference on trans-boundary water resources management of Kura-Araks water basin (Yerevan, October 2010);

- Development and information dissemination through a web-page of the Armenian National Committee.

2.3 Activities envisaged in the long term

- Participation in IHP activities and events;
- Follow up activities related to the Conference on trans-boundary water resources management of Kura-Araks water basin. Organization of further meeting to discuss this issue.