

Evaluation Report

The first five years performance

of

International Centre on Qanats and Historic Hydraulic Structures (ICQHS) under the auspices of UNESCO

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1- Background

1-1- Establishment of the International Centre on Qanats and Historic Hydraulic Structures

In connection with the final declaration of the International Conference on Qanats which was held in Yazd, Iran, in 2000, the Director-General was invited to launch a special project on Qanats for revitalizing traditional technologies in view of sustainable water use in arid zones at the 29th session of UNESCO General Conference.

To this connection, the Government of the Islamic Republic of Iran formally submitted a detailed proposal to UNESCO for the establishment of the International Centre on Qanats and Historic Hydraulic Structures in Yazd /Iran under the auspices of UNESCO, which finally met with the approval of the 32nd session of the General Conference of UNESCO. According to this approval, an agreement on the establishment of the center was signed by the director general of UNESCO and the Iran's minister of energy on March 26th 2005.

Following that agreement, the Headquarters for the International Centre on Qanats and Historic, Hydraulic Structures was designed and built in Yazd. This building, with an area of 2000 square meters is located downtown surrounded by some other research centres in Yazd. It enjoys a domelike roof and an octagonal building with a pool in the middle reminding us of the Qanat vestibules.

After the Iranian government procured the building, facilities, personnel and budget of the center, ICQHS started its activities on 14 August 2006.

1-2- Missions and Objectives

The main mission of the International Centre on Qanats and Historic Hydraulic Structures is emphasis on recognition, transfer of knowledge and experiences, promotion of information and capacities with regard to all the aspects of Qanat technology and other historic, hydraulic structures to fulfil sustainable development of water resources and the application of the outcome of the activities in order to preserve historical and cultural values as well as the promotion of the public welfare within the communities whose existence depends on the rational exploitation of the resources and preservation of such historical structures.

Another mission is to promote research and development to restore the Qanats and the other traditional historic hydraulic structures for sustainable development objectives through international co-operations and global transfer of knowledge and technology. Transmission of such invaluable experiences which have been obtained through centuries of great diligence to the next generation seems inevitable. It seems that more negligence will cause the eradication of such heritage. So, recognition, recording and transfer of such precious experiences are the main task of the centre.

Preservation of cultural values regarding the materialistic and spiritual frameworks is another important objective of the Center. Water, culture, human beings and civilisation are deeply interwoven. Historic hydraulic structures and the referred humanities have always been under one another's deep influence. So, regarding these interactions, we have to take these traditional hydraulic structures into consideration in addition to their cultural values.

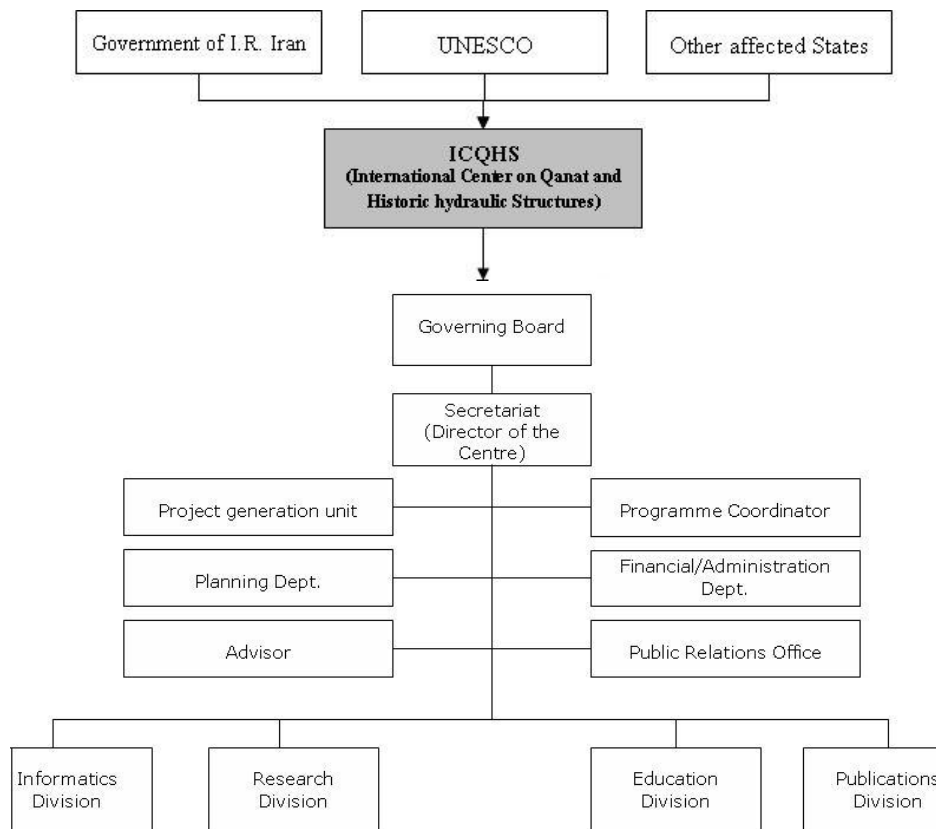
1-3- Structure of the Centre

The centre has been established by the Islamic Republic of Iran under the auspices of UNESCO based on the document 21c/36ii and its structure enjoys the following elements:

a) Board of governors including the Islamic Republic's representative and the representative of the Director General of UNESCO, the other concerned states, Director of RCUWM-Tehran, governmental organisations and NGOs.

b) Secretariat: including the director and the staff

Considering the above mentioned criteria the chart of the centre is illustrated as follows:



1-4- Executive Summary

Since the establishment of ICQHS, the center has carried out many technical activities targeted at a diverse range of audience which not only all under the mandate of the Centre but also contribute to different themes of IHP-VI and IHP-VII. The center has embodied its activities in the framework of its establishment agreement, the article III which stipulates the following items:

- (a) Executing educational and training activities to transfer qanats, traditional water resources system and historic hydraulic structures technology worldwide
- (b) Undertaking research, development and scientific investigation in collaboration with relevant research centers from all over the world
- (c) Holding scientific symposiums and conferences (regional and international)
- (d) Developing a comprehensive programmer of information and communication technology and collecting information available worldwide and setting up a data bank
- (e) Collecting and disseminating relevant local knowledge
- (f) Publishing and disseminating the outcomes of research activities in different countries through books, articles, etc
- (g) Compiling a comprehensive history on qanats, traditional water resources system and historic hydraulic structures

ICQHS's activities are mostly focused on training, research and study, knowledge transfer, scientific gatherings, and publications. To fulfill such missions, ICQHS has successfully carried out over 10 training activities on different technical subjects such as construction, operation and maintenance of Qanats, Management of Artificial Recharge and Rainwater Harvesting, and Qanats nomination as world heritage sites; 13 studies/research projects; various publications including 9 books plus 6 book whose publication is still under way; construction projects; and holding 4 regular Governing Board Meetings. Moreover, in response to requests from different countries, ICQHS has organized a number of special trainings related to Qanats construction,

operation and maintenance for Azerbaijan, Iran (different provinces), and Kurdistan region of Iraq.

ICQHS has also proceeded to nominate 12 qanats from across Iran for the UNESCO world heritage list. At present they are conducting some parallel studies on these qanats to glean the required information and put them together as their nomination files.

Technology transfer is another measure ever taken by ICQHS. In this respect, ICQHS has conducted 3 executive projects in order to transfer qanat technology and train the local man power. Re-construction of Barangard qanat, construction of new qanats in Nakhchivan - Republic of Azerbaijan, and renovation of Sheykh Mamudian Kariz in Erbil – Iraq are the projects ever done by ICQHS as part of technology transfer. The list of activities of the Centre has been summarized in annex 1.

1-5- Governing Board Meetings

The members of governing board are as follows:

- 1- Minister of energy of the Islamic Republic of Iran as the governing board chairperson
- 2- Representative of UNESCO
- 3- Director of RCUWRM (Regional Center on Urban Water Resources Management) which is a UNESCO category II center based in Iran
- 4- Representatives of China, Afghanistan, Iraq, Syria and Algeria

According the agreement exchanged between UNESCO and Iranian government, the governing board meeting should be held once every year. Thus four GB meeting have been held so far as described below:

- The first governing board meeting of the International Center on Qanats and Historic Hydraulic Structures (ICQHS) was held with the presence of UNESCO's representative and the representatives of some member countries on 10th July 2008. The governing board meeting was attended by the UNESCO's representative, the representative of Iranian National Commission for UNESCO and representatives of the countries Iraq, Afghanistan, China and Oman. This meeting was chaired by the Islamic Republic of Iran. At the meeting the report of the biennial activities of the

center (2007-2008) was presented and its biennial work plan of 2009 was approved. It was agreed that ICQHS should proceed to hold some training courses at an international level, and conduct some research projects on technical, historical and social aspects of Qanats. Preparation of the methodology of Atlas of qanats was another decision of this meeting.

- Second Governing Board was held on 23rd November 2009 with the presence of Director of UTCO as UNESCO representative, representatives of the countries Iraq, and Azarbaijan, Director of Iranian National commission for UNESCO, Director of RCUWM and the representative of Iranian Agriculture Ministry.

- Third GB meeting took place in Yazd on 23rd November 2009. Mr. Tegada Guiobert as representative of UNESCO attended this meeting. Also the representatives of the countries Algeria, Syria, Iraq, China participated in the meeting. Also senior experts from England, Japan and Emirate participated as observer.

- Fourth GB meeting took place in Tehran on 18th December 2010. Dr. Abdin Salih as representative of UNESCO attended this meeting. The director of Iranian National Commission for UNESCO as well as the representative of UNESCO Tehran cluster office participated in this meeting. Also the representatives of the countries Algeria, Iraq, and Azerbaijan attended this meeting. The representative of Japan was present at this meeting as observer. The Director of RCUWM also attended this meeting. According to the minutes of the 4th governing board meeting (in annex 2) it was agreed to hold the 5th meeting in Iraq, Kurdistan Region which has been very active in maintaining and refurbishing qanats.

2- Evaluation Report

2-1- Objectives

This evaluation aims at answering the following questions:

- How ICQHS has affected the different parts of society from grass roots to decision makers in terms of their attitude toward qanat system and the other historic hydraulic structures?
- How much ICQHS activities lie within the framework of UNESCO's Medium-term Programme priorities especially in the field of water management (Relevant IHP Phases);
- What results ICQHS has achieved, and how it has contributed to UNESCO's efforts in achieving respective sustainable water management in the area of specialization?
- How has ICQHS coordinated and interacted with UNESCO Headquarters, other Water Centres, field offices and international entities with regard to planning and implementation of programmes?
- How has ICQHS managed its funding issues, and what is on its financial horizon?
- Whether or not ICQHS designation as a UNESCO Category II centre should continue or lapse based on the aforesaid questions?

2-2- Methodology

This evaluation is mostly based on two sources of information including reports/publications/documents at ICQHS and interviews with ICQHS director/experts. This evaluation was made on the basis of our visit to ICQHS in Yazd. We referred to ICQHS between 21 and 25 February 2012 and the first thing which caught our attention was the fact that at ICQHS there is a good archive of many reports on the past activities and we could draw on such information to get a view on the situation of the center. Also we discussed the missions, objectives and the future plans with the ICQHS director and experts to come to a conclusion on whether or not this center can continue to work under the auspices of UNESCO.

This report has been configured according to the document 190 EX/INF. 16. We tried to put together the information gleaned from ICQHS under items 9

and 11 of the aforementioned document. Therefore the report provides the following information:

- Executive summary;
- Purpose of the review;
- Scope of the review;
- Methodology;
- Findings;
- Recommendation;
- Annexes which provide the following information:
 - A copy of the existing agreement between UNESCO and Iran establishing the centre;
 - Financial reports;
 - List of staff;
 - List of key publications;
 - Donors, project partners and activities ever done;
 - Minutes of the Governing Board meetings;
 - Account of networking achievements linked with other thematically related category 2 centres and UNESCO's programmes.

2-3- Findings

After investigating the measures ICQHS has ever taken, we came to the conclusion that this center has demonstrated a leading role in preserving qanats and other historic hydraulic structures. The Centre's activities have significantly contributed to sixth and seventh phase of IHP. ICQHS has had remarkable achievements from highest level of policy issues (e.g. revision of Iran water distribution law in favor of Qanats and qanats in school curricula) to innovative ideas on the use of Qanats in meeting today's needs (e.g. application of GIS in Qanats, Qanats and supply of drinking water, using Qanats to produce electricity: case study of Iraq, and modern technologies in construction of Qanats more efficiently), and finally practical hints/guidelines at the site level on different aspects of Qanats. These achievements could be exemplified in few of ICQHS's activities as listed below:

- 1- ICQHS has put forward to the Iranian ministry of energy a proposal on modifying the existing water fair distribution law in favor of qanats. In the wake of this proposal the Iranian parliament passed a law in terms of qanat and protection of this ancient legacy against groundwater over-exploitation and structural damages.
- 2- ICQHS has conducted a study on how to incorporate the issue of qanat in the curricula of primary, elementary and high schools, in order to instill the importance of this technique in the children at different levels.
- 3- ICQHS has organized some training courses for the experts of the ministry of agriculture in order to pave the way to better maintain the qanats and draw more attention to this technique. As a result, those experts were encouraged to send many files to the Cultural Heritage Organization to register their qanats as national heritage.
- 4- ICQHS has held elementary and advanced training courses for Iraqi experts in order to draw their attention to the importance of qanats in sustainable water supplying systems. Accordingly they proceeded to carry out some renovation projects in Erbil and Suleymaniyyeh in Iraqi Kurdistan.
- 5- In close collaboration with Azerbaijan IOM office, ICQHS has organized training courses for experts of Azerbaijan Republic as well as their qanat workers which made it possible for them to get started on qanat rehabilitation projects where even two new qanats were constructed/dug in cooperation with ICQHS.
- 6- ICQHS has directly and practically intervened in qanat renovation and construction projects by giving technical advices, dispatching engineers and overseeing the projects. For example we can mention the qanat renovation project in Iraq and new qanat construction in Republic of Azerbaijan.
- 7- ICQHS director has had different interviews on the Iranian media to bring qanat and historic hydraulic structures to the center of public attention. These programs led to a new trend toward qanats and IHH at both public and governmental levels. Eventually this impact resulted in more concern about qanats at the ministry of energy and Iranian parliament to allocate a special budget to studying prominent qanats across the country for UNESCO world heritage nomination.
- 8- In Iran there are two entities responsible for qanat related issues; ministries of energy and agriculture. ICQHS tried to establish a closer cooperation and

coordination between these two ministries in terms of qanats. ICQHS put forward a proposal on exchanging an agreement between the two ministries on more coordination and collaboration in terms of qanats. One of the articles of this agreement takes up the issue of a joint committee on qanat which eventually came into effect in 2010. This committee has been made up of the senior experts of the two ministries, which is held every once a month in order to discuss all the issues revolving around qanats and settle the problems.

- 9- ICQHS has entered the field of executive projects, apart from its main activities which are focused on research and education. There are some outstanding experiences on list of its activities, such as the construction of new qanats in Azerbaijan and rehabilitation of qanats in Iraq. Such executive activities prove that ICQHS could put some water management theories into practice.
- 10- ICQHS has also touched off some effective activities in terms of historic hydraulic structures. First it should be noted that ICQHS has organized 5 training courses on maintenance and preservation of such structures in 5 different provinces of Iran, which were attended by over 600 experts. These courses have yielded fruitful results. Second based on an agreement with Iranian academy of architecture, preparation of an encyclopedia on historic hydraulic structures has been put on ICQHS's agenda. The methodology of this encyclopedia is available at the center and can be followed by the other countries too, so that they can proceed to prepare the historic hydraulic structures encyclopedia of their countries.
- 11- ICQHS has a good experience in setting up water museum, and Yazd water museum bears witness to this fact. ICQHS has made this experience available to the countries Algeria and Thailand.

2-4- Relevance of its activities to UNESCO's programmes

Due to global changes, a considerable number of aquifers over the world are subjected to over exploitation. Qanat is one of the rational groundwater exploitation methods. In this regard ICQHS has planned the construction of new qanats in Azerbaijan and Iraq with the cooperation of these countries which is in line with item 1.4 of the strategic plan of 7th phase of IHP. One of

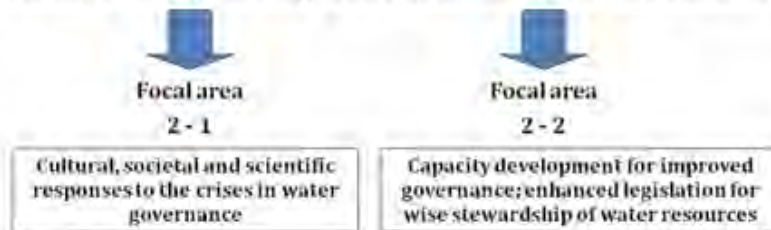
the actions suggested through item 1-5 of IHP VII is to develop regional networks and inter-regional transfer of knowledge with the participation of IHP national committees and UNESCO category II centers for hydrology in arid zones. In this regard ICQHS announces its preparedness to share this network and to transfer the knowledge of qanat constructions to the other communities. To do so, establishment of qanat club has been put on ICQHS's agenda. This club can pool the knowledge and experience of many scholars from different parts of the world concerning qanat system, on the other hand the club serves to network all the entities which are involved in qanat somehow including green NGOs, academic centers, research organizations, etc. Also, the members can be posted of the events taking place about qanat, and can share their information coming from their research projects through the qanat club.

One of the research projects of the center focuses on the enhancement of the economic efficiency of qanats which is completely in line with the objectives of item 4-4 of the IHP VII strategic plan. One of the main activities of the center is focusing on capacity buildings and educating different groups of people on the issue of sustainable use of underground water, this activity includes items 5-1 to 5-4 of the strategic plan of IHP VII. Also, the national committee of hydrology asked the center to go through the eighth phase of the International Hydrological Program of UNESCO and submit their comments and ideas. This task was fulfilled by using 10 person day work and ICQHS's suggestions were submitted to the Iranian National Commission for UNESCO.

- **Theme 1: adapting to the impacts of global changes on river basins & aquifer system**



- **Theme 2: Strengthening Water Governance for Sustainability**



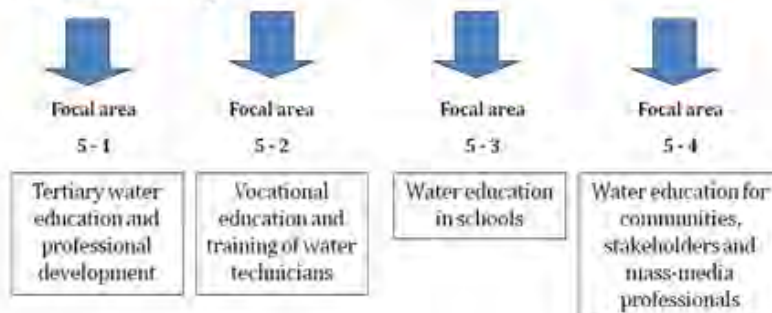
- **Theme 3: Eco hydrology for Sustainability**



- **Theme 4: Water and Life Support Systems**



- **Theme 5: Strengthening Water Governance for Sustainability**



According to our investigation, the center's work plan for the year 2012 is also in line with the programs of IHP. So they will follow up on the budget needed for carrying out some study and research projects. They are determined to continue their cooperation with other countries and the UNESCO category II centers, and also they are in the process of holding some international training courses and publishing some books in this respect.

2-5- Programmes and activities conformity

The official agreement signed between UNESCO and the Iranian government states the objectives of ICQHS as follows:

- (a) Promotion of capacity- building, research, and development in relation to qanats and other traditional water resources management system and historic- hydraulic structure for the purpose of achieving sustainable objectives through international cooperation.
- (b) Global exchange of knowledge technology on qanats, traditional water resources system and historical hydraulic structures.
- (c) Preservation of the cultural heritage that qanats, traditional water resources systems and historic hydraulic structures represent.
- (d) Bolstering cooperation with institutions dealing whit qanats, traditional water resources systems and historic hydraulic structures.

The activities carried out by ICQHS fully comply with the above mentioned objectives stated in its initial document of establishment. Capacity- building, research, exchange of knowledge, and cooperation with other relevant entities are the focal point of ICQHS's activities which are highlighted everywhere in their reports and publications. In the same agreement where it stated the function of the center, one can recognize how well the past activities match the functions defined as follows:

- (a) Executing educational and training activities to transfer qanats, traditional water resources system and historic hydraulic structures technology worldwide.

- (b) Undertaking research, development and scientific investigation in collaboration with relevant research centers all over the world.
- (c) Holding scientific symposiums and conferences (regional and international)
- (d) Developing a comprehensive programmer of information and communication technology and collecting information available worldwide and setting up a data bank.
- (e) Collecting and disseminating relevant local knowledge.
- (f) Publishing and disseminating the outcomes of research activities in different countries through books, article, etc
- (g) Compiling a comprehensive history on qanats, traditional water resources system and historic hydraulic structures.
- (h) Providing technical consulting and advisory services as required.

2-6- Coordination and interaction with UNESCO

Notably there is a close tie between ICQHS and UNESCO-IHE. Every year, ICQHS takes part in the course of World History of Water Management which takes place in the Netherlands, UNESCO-IHE. Also the last round of this training course was held in Iran at ICQHS with the presence of 53 national and international experts. This event coincided with our visit to ICQHS and we could see how UNESCO-IHE lecturers came to Iran to organize this training course in cooperation with ICQHS. According to an agreement between groundwater program of UNESCO and ICQHS, the GEF MENARID Project managers attended the above mentioned training course at ICQHS concurrently with TKWRM conference.

Also ICQHS could establish close relationship with different parts of UNESCO. For example the center actively participates in the IHP intergovernmental council sessions and gives reports and presentations there. ICQHS's director has attended the 18th, 19th and 20th IHP sessions which are held every two years in Paris.

Also during the 19th and 20th sessions of IHP, this center put forward a proposal on holding a meeting for the directors of UNESCO water centers,

and according to ICQHS's director this proposal is still being processed by UNESCO authorities.

ICQHS is always in touch with UNESCO Tehran Cluster Office and coordinates with them to better remain within the framework of UNESCO. They could define and carry out some joint projects including scientific gatherings and research as described under the other topics.

2-7- Coordination and interaction with relevant international entities

- A Memorandum of Understanding was exchanged between ICQHS and Hydrographic Agency of Sahara. One of the objectives of this MOU is to extend the cooperation with Algeria in education and renovation of Historic Hydraulic Structures. Also it was agreed to cooperate with them in terms of traditional water museum.

- Cooperation with RCUWM- Tehran & IRTCES- Beijing: According to the agreement between ICQHS, RCUWM- Tehran and IRTCES- Beijing, a joint training course is supposed to be held in Iran by these three water related UNESCO centers. Also in 2011 ICQHS dispatched one of its experts to China to participate in the International Advanced Training Workshop on Water and Soil Conservation held by IRTCES (International Research and Training Centre on Erosion and Sedimentation).

- ICQHS has actively participated in the two past international world water forums in Istanbul and Marseilles. At the 5th international world water forum in 2009 in Istanbul, ICQHS organized three workshops entitled "How to preserve & rehabilitate Qanats as a sustainable irrigational technique in arid & semi-arid regions?", "How can water play a role in the political history in the arid & semi-arid regions?" and "How to enhance the economic efficiency of Qanats?".

At the 6th international world water forum in Marseilles, ICQHS came up with a solution and a workshop. Its solution entitled "Traditional water mining techniques as solutions to better tackle recent climate change" which was

welcomed by the forum, and its workshop was held on "cultivation in desert with minimum irrigation".

- ICQHS has given a key lecture at the International conference on social aspects of water and water cultures in the Trans-Mediterranean area and design of water network cultures and historical processes of its formation in arid and semi-arid regions, which was held at Lisbon University, Portugal on 7 May 2012. That conference was an opportunity to establish a relationship between Lisbon University and ICQHS.
- ICQHS has cooperated with MENARID project in Iran. This project is working on three pilot zones in Iran one of which is Bahabad in Yazd province. ICQHS is a venue for their periodic meetings and has set out some project proposals in this respect to date.
- ICQHS has had a variety of cooperation and interaction with IOM Azerbaijan, such as holding training courses in Nakhchivan and Iran, training of the qanat practitioners of Azerbaijan and construction of new qanats.
- ICQHS has started some cooperation with Research Institute for Humanity and Nature Center (RIHN) based in Tokyo, Japan. ICQHS has taken part in two of their training workshops, and also assisted some RIHN experts to visit qanats and historic hydraulic structures of Iran.

2-8- Funding pattern and mechanism

ICQHS relies on two separate financial sources; non-governmental and governmental. Their non-governmental budget comes from some contracts that they sign with other entities mostly in terms of study and training projects on qanats and historic hydraulic structures. Such revenue can cover a part of their personnel salary and running budget. Their governmental budget directly comes from the Iranian ministry of energy. Since 5 years ago ICQHS followed up on a governmental budget needed for their study projects. These projects are very crucial in the destiny of qanats and serve

to better take care of them. Eventually this request met the approval of the Iranian board of ministers and then was ratified by the parliament. The parliament communicated this bill to the government to allocate a budget for carrying out these study projects, the budget has been allocated in 2010 to conduct ICQHS study projects. This budget has extended for the years 2011 and 2012. It should be noted that these projects will take some years to be conducted. For example it will take more than 5 years to wrap up the project of qanat encyclopedia. The running cost of the Centre by the end of 2012 has been demonstrated in the following table. As it is clear in the table, the total cost is 250,000 USD of 200,000 USD should be provided by the I.R. Iran based on the agreement made between the I.R. Iran and UNESCO. The rest 50,000 USD is provided by ICQHS through its contracts with different entities. The operating costs cover the projects including studied, research, workshops, seminars and training courses.

Running Costs for the year 2012

Items	Sum (USD)
Employees' Salaries and wages	120,000
Costs related to GBM of the Centre + temporary staff, etc.	35,000
Publication, printing, transportation, utilities, etc.	50,000
Other running costs	45,000
Total	250,000

2-9- Lessons learnt

The most important lesson is that a UNESCO Category II center should be set up in a country which is more concerned about the objectives and missions of the same center. ICQHS is a good example which has been established in Iran, a country that holds 37000 running qanats with an annual discharge of 7 billion cubic meters as well as some historical relics such as Shooshtar complex, Persepolis, etc which are on the list of UNESCO world heritage. Given that qanat and other historic hydraulic structures are still at issue in Iran, the government is interested in taking care of the center and investing on its activities.

Another lesson is that UNESCO Category II centers can play a significant role in enhancing public awareness on environmental issues and calling more attention to preservation of natural resources. The outcome of ICQHS' activities bears witness to the fact that an international organization with a local background has a good potential to raise public awareness.

ICQHS can be regarded as an international organization with minimum governmental affiliation, so it can mediate between the governmental entities which are involved in qanat activities. For example in Iran the ministries of energy and agriculture are dealing with qanats and sometimes their activities are duplicated or overlapped. ICQHS took the lead to make up a special council in order to make more coordination between the two ministries. The international nature of such centers facilitates integrated management of natural resources or cultural heritage in which different entities may be involved.

The activities carried out by ICQHS is out of proportion to the size, personnel and facilities of the center, whereas this center succeeded in carrying out many projects which may seem impossible to be done by such size, personnel and facilities. We believe that the high proficiency of ICQHS has something to do with the organizational nature of the center, which applies to the other centers of this kind.

2-10- Recommendations

- Structure of the governing board of ICQHS: according to the item 4 article 4 of the agreement signed between UNESCO and the Iranian government, the governing board meeting should be held once a year. A longer interval between the meetings seems more feasible while maintain the objectives of these meetings and also reduces the cost and time spent annually to make arrangements for these meetings. This suggestion can be taken into consideration just to the extent allowed by the agreement, otherwise the current order would remain valid.

Also it can be a good idea to give the opportunity to the relevant non-governmental organizations, water institutes and research centers to join the governing board. At present the item 1 article 4 of the agreement allows only the “international” governmental or non-governmental entities or ministries to take the membership of the board. In case we would pave the way for the other relevant organizations to join the governing board, ICQHS could benefit from a wider international network and find more opportunities to expand its activities into more countries.

- New Activities/areas for action:

i) Though ICQHS has carried out some valuable projects on historic hydraulic structures, most of its activities so far have revolved around Qanats. Given that ICQHS’s mandate covers all historic hydraulic structures, it is recommended that ICQHS should keep more balance between qanat issues and the other historic hydraulic structures.

ii) ICQHS should use its potential to launch a comprehensive training program for trainers in order to better disseminate its experience and knowledge on qanat and historic hydraulic structures in the other countries.

iii) ICQHS should place more value on the tourism and historic hydraulic structures by defining some study projects and training course in this respect.

iv) ICQHS should use its training potential to establish a graduate long term course on qanat and historic hydraulic structures. This suggestion can be put into action just when ICQHS can partner with a university to develop such an accredited course.

- New members for Governing Board: these countries who have relevancy to the mandate of ICQHS are currently absent from ICQHS Governing Board and it is therefore recommended that ICQHS would invite them: Egypt, Japan, Pakistan, Sudan, Turkey, and Russia.

- Nevertheless the excellent achievements and successes of ICQHS outweighs by far the areas which need further attention. Given our investigation into the missions, activities, plans and organization of ICQHS, we strongly recommend that the Agreement of this center with UNESCO would be renewed to enable ICQHS working under the auspices of UNESCO as a category II center for another period of six year.
- ICQHS should consider adopting a greater variety of techniques in the presentation and delivery of their programmes. In particular they should incorporate more case-study materials and employ greater hands-on type sessions (using the latest IT tools etc.)
- UNESCO should provide greater support to ICQHS in relation to innovations in developing, presenting and delivering training programmes and workshops (didactics, encouraging more hands-on, role play activity, etc.). This could be achieved by providing appropriate staff development to key individuals in ICQHS. The association with UNESCO-IHE Institute for Water Education can be very helpful in this respect.

ANNEX 1: Summary of ICQHS Activities

A1-1- Training

- Workshop on Groundwater Artificial Recharge and Rainwater Harvesting in Arid and Semi – Arid Regions of Asia: This workshop was held in Yazd under the auspices of UNESCO Tehran Cluster Office. This workshop could bring together many scholars from the neighboring countries and provided them with an opportunity to exchange their ideas which led to some fruitful results. The final statement of this workshop is known as Yazd declaration and the experts usually make reference to it. The proceedings of this training workshop was published under the title “Proceedings of Regional Workshop on Management of Aquifer Recharge and Water Harvesting in Arid and Semi-arid Regions of Asia”, and sent out to the different scientific centers.

- Establishment of the qanat training center: The training center is situated in Taft a town near Yazd. The students of this collage can gain the skill of construction and rehabilitation of qanat during a two year period. Actually there are 100 students busy studying there. This center is utilizing the experiences and knowledge of the traditional practitioners. So this center bridges the gap between the modern sciences and indigenous know how. The first round students of this collage have graduated, and their graduation ceremony coincided with the first governing board meeting of the center on 10 July 2008.

- The first international training course on Qanats "A Multidisciplinary Approach to Integrating Traditional Knowledge with Modern Development" on 1 ~ 4 July 2007, Yazd – Iran: This course which was supported by UTCO was aimed at developing the knowledge and technology of qanat. This event was scheduled to be hold during 4 days with about 30 hours course. The lecturers of this training course were ranked among the most outstanding researchers in the field of Qanat.

The main objectives of the course were to:

- a. Disseminate world experiences on various aspects of Qanats;
- b. Incorporate the indigenous knowledge into the new methods of construction, preservation, rehabilitation and operation of Qanat systems;

c. Turn Qanats into an interdisciplinary tool where the traditional know-how and the modern techniques work together;

d. Familiarize experts with the importance of cultural and technical aspects of Qanat systems as well as the community life linked to these systems.

- Training Course for Iraqi Experts: ICQHS has organized a two week technical training course on qanat for Iraqi experts between 28 June and 11 July 2008. UNESCO Office for Iraq has recommended the center to foresee such a training course to update the Iraqi experts on the methods of rehabilitating and repairing qanat systems, in order to better preserve this technique in Iraq. The main objectives of the course are to:

- 1- incorporate the indigenous knowledge into the new methods of construction, preservation, rehabilitation and operation of Qanat systems.

- 2- get familiar the Iraqi experts with the significant role the Qanats in Iraq can play in sustainable groundwater exploitation.

- 1- get familiar the Iraqi experts with the cultural and technical values the system of Qanat carries. This technical course has been started on 28 June 2008.

- Short term training courses for Iranian Experts: The efforts made by ICQHS to pave the way for an educational campaign for the experts involved in qanat technology eventually led to an agreement which was signed by the Iranian ministries of energy and agriculture in early 2009. According to this agreement the ministry of energy undertook to hold some short term training courses on the indigenous techniques of groundwater extraction so that the experts of the both ministries can attend these training courses. The first round of this training course on the technology of Qanat was held at ICQHS on 11 October 2008, in which 18 experts from different parts of the country enthusiastically participated, and all of them passed the final exam of the course successfully. The second round which started on 1 November 2008 was attended by 12 trainees including the experts and directors of the water related centers of Yazd. The third round was held between 20 and 25 December 2008, in which 23 trainees from the provinces

of Fars and Semnan participated enthusiastically, and they expressed their interest in the future advanced courses if held.

- Workshop on qanat and historic hydraulic structures: A 4 day workshop on qanat and historic hydraulic structures was held in Kerman on March 2011. This workshop was welcomed by many experts from cultural heritage organization, consulting engineers, researchers and qanat and water sectors. The workshop was attended by 250 people. This workshop was aimed at identification of indigenous knowledge and more interaction between traditional expertise and modern technologies.
- Training course for Azerbaijan qanat workers: Given the necessity of water supply of qanats on one hand and scarcity of skilful qanat workers on the other hand, International Organization for Migration (IOM) put on the agenda the issue of the training of young qanat workers. So ICQHS participated in the training course which took place in Nakhchivan in order to turn the young attendees into skilled qanat workers (kankans).
- Workshop on UNESCO world heritage list: In order to acquaint the consulting engineers with qanat nomination for UNESCO world heritage list, a one day workshop was held in Yazd at ICQHS. This workshop was attended by UNESCO Tehran cluster office officials and consultants on 11 August, 2011. During this workshop, the consulting engineers got familiar with regulations and guidelines of UNESCO world heritage nomination.
- Training course on "necessity of preservation and maintenance of historic hydraulic structures": This course was held in the city of Mashhad by ICQHS on 10 and 11 October, 2011. As many as 250 experts from Cultural Heritage Organization, Academic centers, regional water authorities and agriculture organization attended this training course.
- International Conference on Traditional Knowledge for Water Resources Management (TKWRM-2012): This conference which was attended by 440 scholars and experts from 31 countries was held from 10 to 13 May 2011 jointly by ICQHS, UNESCO, Iranian ministry of energy and some other

entities. The conference was aimed at bringing together leading water management experts and archeologists, scientists and engineers, policymakers, climate change experts and economists to discuss different aspects of traditional knowledge for water resources management and the lessons we can still learn from it to solve our new problems. The conference main themes were as follows:

THEME I: Sustainability of Traditional Water Management systems and coping with emerging challenges, i.e. changing climate, food security

THEME II: Traditional practices in community participation and level of decision-making in water resources management

- International workshop on “Trans-boundary Waters, Opportunities for cooperation” with the presence of 44 national and International experts.
- Short course on World History of Water Management: This course was held between 23 and 27 February, 2012 by ICQHS in cooperation with UNESCO- IHE, UNESCO IHP and IWHA, attended by 53 national and international experts. The course was aimed at providing a comprehensive overview of archeological and historical developments in water management including water harvesting, water supply, transportation, delivery, treatment, hydraulic engineering and allocation in different parts of the world and various cultural contexts. Also this course took up the role of cultural dynamics involved in managing water resources, especially at times of perceived water scarcity. The course also examined the historical antecedents of our current paradigm of water management and what can be learned from historical case studies on the basis of the knowledge and experience of several scholars from different countries and from the exchange of experiences to be generated between the participants of the course and the experts.

A1-2- Study and research

- Country report of qanats of Afghanistan, Iran and Pakistan: In cooperation with UNESCO Tehran Cluster Office, ICQHS succeeded in preparing the country report of qanats of Afghanistan, Iran and Pakistan. To preserve the

ancient heritage of Qanats system, UNESCO Tehran Cluster Office and ICQHS took the initiative to compile and produce a state-of-the-art report on Qanats of Afghanistan, Iran and Pakistan, within the framework of UNESCO's International Hydrological Programme (IHP) and UNESCO Tehran Cluster Office activities, focusing on IHP's main line of action "Mitigating water-related risks and facing social challenges". ICQHS took the lead to review, compile, make coherent and finalize the three reports into this report which gives a good insight into the status of Qanats systems in these three countries.

- Qanat Rehabilitation Project in Nakhchivan Republic of Azerbaijan: Taking into account the importance role the qanat system is playing in Nakhchivan (Republic of Azerbaijan), a comprehensive study was done in the wake of a contract between IOM International Organization for Migration and ICQHS. The focal point of this agreement is an assessment of the situation of qanats as well as the efficiency of the procedure conducted by IOM herein. ICQHS teamed up with IOM to examine and evaluate their kahriz related projects whether done or under way, which can be a good example for other countries to follow. Also ICQHS cooperated with IOM to build new qanats in Nakhchivan, which is unique of its kind.

- Nomination of Qanats for the UNESCO world heritage list: UNESCO Tehran Cluster Office and ICQHS put on the agenda the inscription of prominent Iran's Qanats. Afterwards 12 qanats across Iran have been selected according to the definitions and priorities of UNESCO. The Iranian ministry of energy allotted a budget of 480000 USD to ICQHS in order to hire some qualified consulting companies to study these qanats. At present seven consulting companies have agreement with ICQHS and they are conducting comprehensive studies on the above mentioned qanats for the purpose of nomination.

- Extracting Electricity from Qanat; A New Environment Friendly Source of Energy: In Iran, extracting energy from groundwater flow was an ancient technical tradition which unfortunately has been abolished in the wake of

the advent of modern means of power generating. The head of water in a qanat canal with a discharge of 80 liters per second is such that the flow can spin a millstone weighing over 800 kilos, in a traditional way in which the friction is so high. ICQHS experts conducted a research project on the possibility of replacing the abandoned traditional watermills with the modern optimized turbines to generate electricity in an environment friendly way. They reflected upon some considerable initiatives taken in Iran to make use of the groundwater flow in the qanat canals to generate electricity.

- Utilization of qanats to supply drinking water: The old experience of the inhabitants of the arid regions bears witness to the fact that the water coming out of qanat is drinkable, and a comprehensive study on the qanats not affected by the contaminants raises hope that the drinking water can be supplied to some villages and towns through the system of qanat. The qanat of Dowlat Abad is one the ancient qanats in Yazd, 35 kilometers southwest of Yazd, running down the foot of mountains of Mehriz. This active qanat enjoys drinkable water and is sheltered near the mountains and out of the range of threats and dangers. ICQHS has conducted a research project on how to provide the water of this qanat to the town of Mehriz.

- Qanats of Kish: The water of Kish island was being supplied by qanat system since a long time ago. Recently a contract has been signed between ICQHS and Kish Free Zone Organization to conduct a comprehensive study on the qanats of Kish from different points of view.

- Destructive impact of developmental project on qanats: The developmental programs have had some negative impacts on qanats, and a research projects was assigned to ICQHS by the Iran Water Resources Management Company to investigate these impacts.

- Methodology for preparing the atlas of qanat using GIS: In this project, a methodology for preparing the atlas of qanat has been set out and at the end a system has been defined for preparing the atlas of qanat.

- Study on The Modern Techniques and Methods In Qanat Construction And Restoration
- Comprehensive studies on 12 prominent Iranian Qanats in order to nominate them for UNESCO world heritage list
- Mapping project of Dehno- Hassan abad Qanat
- Study on the Qanats of Emamiyeh & Ghasem abad in Mashad to supply drinking water
- Study on enhancement of the economic efficiency of qanats

A1-3- Publication

ICQHS has prepared and published the below books since its establishment in line with its objectives and missions:

- Qanat from Practitioners' Point of View: This book contains some interviews with 16 qanat masters out of which 4 masters unfortunately passed away just during this short time. The book explains the qanat traditional know how in a question-answer way. This book has been translated into English and will appear in print soon.
- A Survey on the Qanats of Bam from Engineering Point of View: With UNESCO Tehran Cluster Office's support and advice, the book A Survey on the Qanats of Bam from Engineering Point of View which is a part of the project conducted by the mentioned office was published. This book sheds light on the qanat technology in Bam region and compares the situation of qanats before and after the earthquake which struck Bam in 2003.
- Qanat in its Cradle: This book examines the situation of Qanats in the countries Afghanistan, Azerbaijan, Iran, Iraq, Oman and Pakistan and focuses on the destiny of qanats in this region at present. The book also takes up the problems which lie ahead for this technology in confrontation

with modernity. With a glance at the history of Qanat in these countries, one can realize that before humans were armed with modern devices to exploit nature, this traditional system sufficed to supply water to arid lands, but since the last century, Qanats started falling into decay with an increasingly rapid downward trend. Now there is a dramatic decline in the number of active Qanats, and abandoned Qanats are outnumbering those in use, mostly because of over exploitation of groundwater by means of pumped wells. The book outlines the situation of Qanat and the role this ancient technology has been playing in these countries; in the cradle of Qanat, which develop this technique from its infancy to adulthood.

- **Veins of Desert:** This book takes up the issue of qanats in general and some other subjects revolving around this technology. In fact, what makes this book distinct from the other works on qanats is its emphasis on interdisciplinary studies, viewing all qanat-related issues as a whole. The book does not rehash what is already available in many references about qanats, and not to linger over such general facts as its definition or mechanism, but have described some new approaches, for example the impact of new strategies or technologies on the destiny of qanats, the measures some countries are taking to preserve qanats, how to better identify this environment-friendly technique and how to learn from the know-how accumulated about qanats over time, in order to devise a sustainable groundwater abstraction system.

- Proceeding of regional workshop on management of aquifer recharge and water harvesting in Arid and Semi arid regions of Asia, 27 November – 1 December 2004, Yazd, Iran

- Proceeding of the international training course on qanats “a multidisciplinary approach to integrating traditional knowledge with modern development, 1-4 July 2007, Yazd, Iran

- Proceeding of the international training course on qanat (kariz) for Islamic countries, 27 September – 2 October 2010, Yazd, Iran

- Abstracts of the international conference on traditional knowledge for water resources management (TKWRM), 21-23 February 2012, Yazd, Iran: This book contains all the abstracts delivered at the abovementioned conference which was aimed at bringing together leading water management experts and archeologists, scientists and engineers, policymakers, climate change experts and economists to discuss different aspects of traditional knowledge for water resources management and the lessons we can still learn from it to solve our new problems.

- Qanat Practitioners of Kerman: this book takes up the biographies and works of the traditional qanat practitioners in the province of Kerman in Iran. This book has been compiled according to ICQHS's objectives in terms of knowledge transfer and traditional know how documentation.

Moreover ICQHS has prepared the following books whose publication is under way:

- Indigenous Engineering of Qanat: This book is being prepared according to a contract with SPRINGER publication. This book introduces deeper layers of traditional technology of Qanat, through the interviews with many Qanat practitioners and masters. The book can be a source of inspiration for those who are involved in Qanat rehabilitation projects nowadays, while being a collection of traditional know how about Qanat system from ethnological point of view. Therefore this book is aimed at tapping into traditional knowledge in order to configure a sustainable groundwater exploiting system, while incorporating indigenous knowledge into modern technologies. One of the objectives of the book is provide the students with precise answers to the questions frequently asked about construction and mechanism of qanats.

- Qanat of Zarch: This book is a comprehensive monograph on the qanat of Zarch which is a plain qanat with a gallery length of 80 km, mother well depth of 90 meters and more than a thousand shafts. It is still active in the face of severe decline of the aquifer. According to the existing documents, this qanat dates back to the time before Islam. History books too, indicate

that this qanat had been active and was running across Yazd city about 700 years ago and people used its water for drinking and sanitation through payabs.

- Qanat of Dowlat-Abad
- Necessity of historic hydraulic structures preservation
- Qanats of Qasem-Abad and Emamiyeh in Mashhad
- Trace of culture in maintenance and development of qanats

A1-4- Technology transfer

ICQHS has also conducted some executive projects as follows in order to transfer of qanat technology and train the local man power:

- Re-construction of Barangard qanat: A technical team was dispatched to the province of Khoozestan to refurbish the qanat of Barangard. This project resulted in a considerable increase in the discharge of this qanat. Moreover some local workers went through a training program on rehabilitation of qanats.
- Construction of new qanats in Nakhchivan: ICQHS teamed up with IOM Azerbaijan to build new qanats in Nakhchivan, which is unique of its kind. Thus two new qanats were built in Nakhchivan and the local experts cooperated in this project along with ICQHS. ICQHS's experience and knowledge were transferred to the local experts during this project.
- Renovation of Sheykh Mamudian Kariz in Erbil, Iraq: according to a contract between ICQHS and UNESCO Jordan office, in 2009 ICQHS dispatched a team of experts to investigate the feasibility of this qanat. Afterward the qanat which was long in ruin got refurbished and water again ran down its dry tunnel. This project was carried out in cooperation with local people who could learn some technical facts about qanat during this project.

ANNEX 2:
Minutes of ICQHS Governing
Board Meetings



The International Center
on Qanats and Historic Hydraulic Structures (ICQHS)
Under the auspices of UNESCO

مرکز بین المللی قنات و سازه های تاریخی آبی
با مشارکت سازمان تربیتی، علمی و فرهنگی ملل متحد (یونسکو)



Agreed Minutes

of the First Governing Board Meeting

International Centre on Qanats and Historic Hydraulic Structures (ICQHS)

Yazd-Iran

10 July 2008; 09:00 – 13:30

The First Governing Board meeting of ICQHS was held in Yazd-Iran, 10 July 2008. The meeting was attended by the following honourable members:

Members:

• **Afghanistan**

H.E. Mr. Shodjauldin Ziaei, Deputy Minister of Energy and Water for Water Affairs

• **China**

Mr. Gao Zhanyi, Director of the Irrigation and Drainage, China Institute of Water Resources and Hydropower Research

• **I.R. Iran**

H.E. Mr. Rasoul Zargar, Chairman, ICQHS and Deputy Minister of Energy for Water and Wastewater Affairs

Mr. Ali Asghar Semsar Yazdi, Director, ICQHS

• **Iraq**

Mr Dhafer Abdullah Hussein, General Director for Water Wells Drilling, Ministry of Water Resources Iraq

• **UNESCO - IHP**

Mr. Jose- Alberto Tejada-Guibert, UNESCO Representative

• **Regional Centre on Urban Water Management (RCUWM – Tehran)**

Mr. Alireza Salamat, RCUWM-Tehran Representative (on behalf of Dr. F. Yazdandoost, Director, RCUWM-Tehran)

Observers:

- a. Mr. Iwao Kobori, Senior Programme Advisor of UN University, Japan
- b. Mr. Qunli Han, Director and Representative of UNESCO Tehran Cluster Office
- c. Mr Sulaiman Al Obaidani, Deputy Director General of Assessment and Monitoring , Ministry of Regional Municipalities and Water Resources (MRMWR), Oman
- d. Mr. Mohammad Reza Saeidabadi, Secretary General, Iranian National Commission for UNESCO
- e. Mr Ryuichi Fukuhara, Assistant Programme Specialist in Natural Sciences, UNESCO Office for Iraq

- 1- The meeting was officially opened by H.E. Mr. R. Zargar, Deputy Minister of Energy, I. R. Iran and the Chairperson of the Governing Board (GB).

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یزد، صندوق پستی ۸۹۱۶۵/۱۵۵۳ تلفن و فکس ۸۲۵۰۵۵۳ (۰۳۵۱)



- 2- The draft agenda was put on the floor and it was unanimously adopted and the following decisions were made :

• **Opening**

Opening Statement

Mr. A.A. Semsar Yazdi, Director of the Centre (welcoming address)

After a short welcoming, Dr Semsar provided brief information on the road to establishment of the Centre.

Mr. A. Tejada-Guibert, UNESCO Representative (opening speech)

Mr Tejada Guibert briefed the participants on the potential cooperation among the Category II water related Centres of UNESCO as coherent networks and UNESCO's role in facilitating this procedure.

H.E. Mr. R. Zargar, Chairman of GB and Deputy Minister of Energy, I. R. Iran (opening statement)

Mr Zargar as the Chair welcomed the new members and appreciated their efforts for participating in the 1st Governing Board of ICQHS.

• **Remarks by GB Members**

The members of ICQHS Governing Board (Afghanistan, China, Iraq, UNESCO and RCUWM-Tehran) presented their view points and remarks as new members of the Centre's Governing Board.

• **Adaptation of the agenda**

The agenda of the meeting was reviewed by all members of the meeting and it was adopted.

• **Report on activities and achievements of the Centre in 2007, budget and workplan of 2008-2009**

The Director of the Centre made a presentation on the activities and projects carried out by the Centre in 2007 and described the budget and work plan of 2008 and 2009.

The work plan and budget of the Centre for the year 2008 and 2009 were approved by the members.

• **Introducing UNESCO IHP VII Program (2008 – 2013) and investigating the cooperation mechanisms of the Centres contribution towards the IHP VII**



Mr. Alberto Tejada-Guibert made an informative presentation on UNESCO IHP phases focusing on the seventh phase of UNESCO (2008-2013). He also highlighted the role of Category II water related Centres particularly ICQHS in contributing towards this programme pointing a number of potential activities.

• **Approving the Organisational Chart of the Centre**

The Organizational Chart of ICQHS was presented by the Director of the Centre and it was put into discussion for receiving the members' suggestions. Some comments were proposed to be included in the new chart.

• **Financial Resources and Fund Raising**

The Director of the Centre briefed the participants on the projects to be carried out by the Centre during the year 2008 and 2009. The representatives from China, Iran and Oman will investigate with their own countries and organizations the ways of collaboration for being involved in these project.

- A) Inventory of the countries utilizing the Qanat technology for China, Iraq and Oman.
- B) Preparing the methodology of the Atlas of Qanats in close cooperation with the GB members and the Iranian Water Resources management Organization
- C) Introduction of the modern technology to operate and maintain Qanats

In addition, UNESCO was asked to contribute in the translation and publishing procedure of some books prepared by ICQHS in the field of Qanats. UNESCO Tehran Cluster Office referred to the development of UNDAF in Iran and suggested exploring support through UNDAF.

• **Approval of the Rules of Procedure of the Governing Board (GB)**

The rules of procedure of the GB was concisely described by the Director of the Centre and put into discussion.

A few comments were proposed by the members to be included in the final version particularly with respect to the re-election of the Governing Board members. ICQHS will follow up and prepare the final version according to the suggestions provided by the members.

• **Holding International Training Courses on Qanats and Sustainable exploitation of groundwater**

A brief presentation was made on holding a training event on Qanats and sustainable exploitation of groundwater.

The members of the meeting expressed their willingness to attend this event.

UNESCO representative suggested ICQHS to investigate having the International Water History Association experts participation in the above mentioned training course.

Date and Venue of the Second GBM

It was agreed to hold the 2nd Governing Board of ICQHS in Yazd during the first mid of September 2009. Further coordination will be made with the members in near future.



• **Closing Remarks**

Mr. Zargar, as the Chair of ICQHS GB presented the concluding remarks of the meeting. He also thanked the participants for their effective participation and wished to observe the members contribution towards the future work plan of ICQHS.

Mr. Shodjaulldin Ziaei, Deputy Minister of Energy
and Water for Water Affairs

Mr. Gao Zhanyi, Director of the Irrigation and
Drainage, China Institute of Water Resources
and Hydropower Research

Mr. Rasoul Zargar, Chairman, ICQHS and Deputy
Minister of Energy for Water and Wastewater
Affairs

Mr Dhafer Abdullah Hussein, General Director for
Water Wells Drilling, Ministry of Water
Resources Iraq

Mr. Jose- Alberto Tejada-Guibert, UNESCO
Representative

Mr. Alireza Salamat, RCUWM-Tehran Representative

(on behalf of Dr. F. Yazdandoost, Director, RCUWM-Tehran)

**Agreed Minutes
of the Second Governing Board Meeting
International Centre on Qanats and Historic Hydraulic Structures (ICQHS)
Yazd-Iran
23 November 2009; 09:00 – 13:30**

The Second Governing Board meeting of the International centre on Qanats and Historic Hydraulic Structures (ICQHS) was held in Yazd-Iran, 23 November 2009. The meeting was attended by the following honourable members:

Members:

• **Azerbaijan**

Mr. Sadeddin Talibov, Department of Kahriz, Nakhchivan Autonomous Republic
Mr. Maharram Zeynalov, Department of Kahriz, Nakhchivan Autonomous Republic

• **I.R. Iran**

Mr. Rasoul Zargar, Chairman, ICQHS-Yazd
Dr. Ali Asghar Semsar Yazdi, Director, ICQHS-Yazd

• **Iraq**

Mr. Muhammed Amin Faris, Ministry of Water Resources, Iraq Kurdistan Region

• **UNESCO**

Mr. Qunli Han, UNESCO Representative

• **Regional Centre on Urban Water Management (RCUWM – Tehran)**

Dr Homayoun Motiee, Director, RCUWM-Tehran

Observers:

- a. Mr. Mohammad Reza Saeidabadi, Secretary General, Iranian National Commission for UNESCO
- b. Mr. Abbas Zare, Jihad Agriculture Ministry, I.R. of Iran
- c. Mr. Alireza Parastar, Jihad Agriculture Ministry, I.R. of Iran

1- The meeting was officially opened by Mr. R. Zargar, Chairperson of the Governing Board (GB).

After Mr. Zargar's welcome address, he drew the attendees' attention to the fact that following the agreement signed and exchanged between I.R. Iran and UNESCO regarding the establishment of the International Centre of Qanats and Historic Hydraulic Structures, the Islamic Republic of Iran has made its utmost efforts to implement its commitments and in this concern necessary equipments have been provided for the Centre. He gave an explanation on the member courtiers and the invitation letters which were sent out to bring together the qanat holding countries at this meeting. He added that TIWA and the countries Azerbaijan-Nakhgivan, China, Sultanate of Oman, Iraq and Afghanistan have accepted the invitation of the I.R. Iran, though some of them could not attend the meeting for some reasons.

He finished his talk with thanking the members and observers to take part in the event, and expressed hope for further collaboration in the future.

- 2- The draft agenda was put on the floor and it was unanimously adopted, and the meeting was continued with the following topics.

• **Opening**

Opening Statement

Mr. A.A. Semsar Yazdi, Director of the Centre (welcoming address)

After a short welcoming, Dr Semsar provided brief information on the road to establishment of the Centre.

Afterward he explained the main mission of the International Centre on Qanats and Historic Hydraulic Structures which is recognition, transfer of knowledge and experiences, promotion of information and capacities with regard to all the aspects of Qanat technology and other historic, hydraulic structures. He added that this mission is to fulfil sustainable development of water resources and the application of the outcome of the activities in order to preserve historical and cultural values as well as the promotion of the public welfare within the communities whose existence depend on the rational exploitation of the resources and preservation of such historical structures. In closing he expressed his gratitude to the participants for their presence.

Mr. Qunli Han, UNESCO Representative

He started his talk with expressing his gratitude for organizing the governing board meeting. Then he continued with updating the attendees on the IHP phase 7 programme. He told that some changes have been made in the IHP programs and one of those important changes is public awareness that deserves more attention, and also enhancing the knowledge of people on water scarcity and water problems at different levels.

He pointed out the importance of the UNESCO category II centers like those based in Iran; ICQHS and the Regional Center for Urban Water Management (RCUWM). He mentioned the role of such centers in fulfilling the IHP programs. He stressed that UNESCO has called for a close relationship between the category II centers and the networks, for example G-Wadi can have a close and helpful tie with the centers based in Iran which enjoys the same climate as that of many arid countries.

He said that the importance of the category II centers is that such centers can mediate between UNESCO and their own countries, because on one hand they are linked to the IHP programs and on the other hand they are concerned about the local problems that their own countries are suffering from.

He brought up some suggestions for ICQHS as follows:

- launch for the qanat club
- holding of annual international training courses on qanat
- documentation of excellent historic hydraulic systems
- transfer of knowledge and know how on qanats and historic hydraulic structures to the other countries

Mr Saeidabadi, Director, Iranian National Commission for UNESCO

He said that ICQHS acts as a venue for the member countries to exchange their ideas and experiences on the progresses they have made so far on how to use qanat as an environment friendly means to obtain groundwater.

He said that development has three main components or pillars; Society, culture and motivating the society and culture. He concluded that qanat can motivate and mobilize the society and culture through its traditional function. He added that preserving the system of qanat means protecting environment and cultural values revolving around qanat, so it is a top priority to safeguard this system. He finished his talk with thanking the director of ICQHS and the chairperson of ICQHS for their successful activities.

• Remarks by GB Members

The members of ICQHS Governing Board (Azerbaijan, Iran, Iraq, UNESCO and RCUWM-Tehran) presented their view points and remarks as the members of the Centre's Governing Board.

Ministry of Jihad Agriculture

Mr Zare briefed the attendees on the measures taken by the ministry of Agriculture. He explained the role that the ministry of agriculture plays in the maintenance and rehabilitation of qanats. He added that what distinguishes the missions of the ministry of agriculture from that of the ministry of energy is that the ministry of energy is responsible for protection of the vicinity of qanats and their relevant aquifers, whereas the ministry of agriculture is in charge of rehabilitation of qanats and financing the qanat related activities.

Ministry of Water Resources, Iraq

Mr. Amin Faris started his talk with thanking the participants. He briefed the meeting on the present situation of kahrizes in Kurdistan. He said that groundwater in north of Iraq is of high quality contrary to the other parts of Iraq whose groundwater quality is not acceptable. So he believed that Kurdistan has a good potential for kahriz system, though because of some factors like urban development and over-exploitation of groundwater the kahrizes are on the verge of annihilation. He pointed out the groundwater drawdown in Kurdistan which has affected the discharge of the existing qanats there. Afterward he described one the most important kahrizes in Kurdistan which is called Senherib. He described their future plans which pertain to rehabilitation and maintenance of the existing qanats. In closing he thanked the Iranian government and UNESCO for their support.

Nakhchivan, Republic of Azerbaijan

Mr. Sadeddin Talibov thanked all the organizers of the meeting. He briefed the attendees on the general characteristics of Nakhchivan and its political affiliation to the Azerbaijani main land. He described the measures taken by the department of kahriz for example the training course they held for the qanat workers, and the kahriz database. He described some important kahrizes in Nakhchivan like Kalba Musa which is among the ancient kahrizes.

• Report on activities and achievements of the Centre in 2008-2009, budget and workplan of 2010

Dr. Semsar Yazdi reported about the actions taken by ICQHS between the first and the second GB meeting (from July 2008 to November 2009). He said that during last July, ICQHS has held a technical training course on qanat for Iraqi experts who are working in the ministry of water resources.

He added that a contract between IOM International Organization for Migration and ICQHS was signed. The focal point of this agreement is an assessment of the situation of qanats as well as the efficiency of the procedure conducted by IOM herein.

He explained the issue of qanat nomination in the UNESCO world heritage list. Given the role of Qanat in the forming of civilizations and taking into account the technical, social, historical, legal and cultural aspects of Qanats, UNESCO Tehran Cluster Office and International Center on Qanat and Historic Structures have put the inscription of prominent Iran's Qanats on the agenda. Dr. Semsar said that with a global study of the qanats of Iran, ICQHS could find 12 prominent qanats to nominate for the UNESCO world heritage list.

He reported that ICQHS organized three training courses for the experts of the ministry of agriculture. One of them entitled "indigenous techniques of groundwater extraction" was held between 20 and 25 Dec last year.

He also said that the International Center on Qanats and Historic Hydraulic Structures actively participated in the World Water Forum which took place in Turkey during March 2008. ICQHS held three training workshops there which were hailed by the attendees.

He reported that ICQHS held a training course for the experts of the Republic of Azerbaijan (Nakhchivan). This training course was held at the International Center on Qanats and Historic Hydraulic Structures from 13 to 19 April 2009 for the purpose of reconfiguration of qanat in sustainable development.

He added that following the IOM's request, the experts of ICQHS were dispatched to Nakhchivan three times to help them designate a suitable place for construction of new qanats, and as a result a new qanat is under way now and another one is planned to be built soon.

Dr Semsar pointed out the water scarcity in the town of Mehriz and the necessity of water supply there. That was why the issue of procuring a part of the drinking water of this town through the qanat of Dowlat Abad was put on the agenda of ICQHS. This study was conducted by some experienced experts and through some field studies during a year, and its final report was submitted to the employer before the deadline of the contract, and it met their approval.

He also explained how ICQHS took part in rehabilitation of qanat of Shekh Mamudian in Iraq, Kurdistan region. Afterwards he briefed the meeting on the research project entitled "Generating Electricity by Qanat Flow" which is getting finished and its result can make a difference in some remote rural areas.

After he finished reviewing the activities and experiences of ICQHS, he took up the issue of the center budget. He said that since 3 years ago ICQHS followed up on its request in terms of providing the budget needed for some study projects through the Iranian government. These projects are very crucial in the destiny of qanats and serve to better take care of them. Fortunately this request met the approval of the board of ministers and then was ratified by the parliament. The parliament communicated this bill to the government to allocate a budget for carrying out these study projects, and it seems that the budget will be allocated in 2010 to conduct the following projects:

- 1-preparing the qanat encyclopaedia
- 2- methodology of how to determine the qanat bound (Harim)
- 3-application of new technologies in qanat construction and rehabilitation
- 4- preparation of the atlas of qanats
- 5- setting out the file of the prominent qanats for their nomination for the UNESCO world heritage list
- 6- enhancing the public awareness about qanats & HHS.

Regarding the center's work plan for the year 2010, he said that this plan is in line with the phase VII program of IHP. He added that ICQHS will continue its cooperation with other countries and the UNESCO category II centers, and also it is in the process of holding some international training courses, publishing some books and conducting research projects in this respect as described in detail in his presentation at the meeting.

The budget of 2010 was determined to be 200,000 USD which should partly be provided by the I.R. Iran and partly by other countries and organizations through signing contracts.

• Comments and approval of the directors report

Dr. Saeidabadi, Director, Iranian National Commission for UNESCO:

He emphasized the issue of training in the work plan of ICQHS and placed a high value on the training of trainers, and he recommended ICQHS to give a priority to this issue. Also, he recommended ICQHS to be in touch with cultural heritage organization in terms of qanat nomination which can accelerate this process.

Mr. Qunli Han, UNESCO representative:

Mr. Han said he was impressed by the report on the activities done by ICQHS, and then underlined the issue of qanat nomination. He welcomed the idea of publishing a book entitled "Veins of Desert" which is about qanat system. He ensured UNESCO support for publishing this book. Mr. Han also suggested holding a training course specific to those who are involved in water management issues in the other countries and the content of this training course can come from the past projects and experiences of ICQHS.

Dr Homayoun Motiee, Director, RCUWM-Tehran:

Dr. Motiee drew the attention of the participants to the role that qanat can play in tourism. He recommended ICQHS to pay more attention to the tourist value of qanat.

Finally the activities and achievements of the Centre in 2008-2009, its budget and work plan for the year 2010 were approved by the members.

• Financial Resources and Fund Raising

Apart from the budget expected to be obtained from the Iranian government and the other countries or organizations, Mr. Han pointed out that the UN agencies like UNDP and FAO in Iran are interested in financing some of the educational projects of ICQHS.

• Date and Venue of the third GBM

It was agreed to hold the 3rd Governing Board of ICQHS in Yazd or Erbil during September 2010. Further coordination will be made with the members in near future.

• Closing Remarks

Mr. Zargar, as the Chair of ICQHS Governing Board presented the closing remarks of the meeting. He also thanked the participants for their effective support and contribution towards holding this gathering and wished to witness the members' contribution towards the future activities/projects of the centre. He also wished to have those members who were absent at this meeting in the next GB meeting; the representatives of China, Afghanistan, Oman and TIWA.

Mr. Rasoul Zargar, Chairman, ICQHS

Mr. Sadeddin Talibov, Kahriz Department, Nakhchivan,
Azerbaijan

Mr Muhammed Amin Faris, Ministry of Water Resources,
Iraq

Mr. Qunli Han, UNESCO Representative

Dr Homayoun Motiee, Director, RCUWM-Tehran



The International Center
on Qanats and Historic Hydraulic Structures (ICQHS)
Under the auspices of UNESCO

مرکز بین المللی قنات و سازه های تاریخی آبی
با مشارکت سازمان تربیتی، علمی و فرهنگی ملل متحد (یونسکو)



Agreed Minutes

of the Third Governing Board Meeting

International Centre on Qanats and Historic Hydraulic Structures (ICQHS)

Yazd-Iran

2 October 2010; 09:00 – 13:30

The Third Governing Board meeting of ICQHS was held in Yazd-Iran, 2 October 2010. The meeting was attended by the following honourable members:

Members:

• Algeria

Mr. Khadraoui, Director General of the Basin Agency of the Sahara Area, Algeria

• China

Mr. Wufuer Nuerding, Secretary General of Xinjiang Qanats Research Association and Deputy Director of Bureau of Hydrology and Water Resources of Xinjiang Weiwuer Autonomous Region

• I.R. Iran

H.E. Mr. Mohamad Reza Atarzadeh, Chairman, ICQHS and Deputy Minister of Energy for Water and Wastewater Affairs
Mr. Ali Asghar Semsar Yazdi, Director, ICQHS

• Iraq

Mr. Muhammad Amin Faris, General Director, Ministry of Water Resources (KRG)

• Syria

H. E. Mr. Kamal Al-Sheikheh, Deputy Minister of Housing and Construction

یزد، صندوق پستی ۸۹۱۶۵/۱۵۵۳ تلفن ۸۲۵-۵۵۳-۸۲۵۸۳۹۳ فکس ۸۲۴۱۶۹۰ (۰۳۵۱)

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• **UNESCO - IHP**

Mr. J. Alberto Tejada-Guibert, UNESCO Representative

• **Regional Centre on Urban Water Management (RCUWM – Tehran)**

Mr. Homayoun Motiee, RCUWM-Tehran Representative

Observers:

- a. Mr. Iwao Kobori, Senior Programme Advisor of UN University, Japan
- b. Mr. Parastar, Ministry of Jihad-e Agriculture, Iran
- c. Mr. Mohammad Reza Saeidabadi, Secretary General, Iranian National Commission for UNESCO
- d. Mrs. Nash, Senior Hydro-geologist, UK
- e. Mr. Qunli Han, Director, UTCO
- f. Mr. Ahmad Shah Lalpory, Afghanistan
- g. Mr. Kazuhisa Fujii, Second secretary, Embassy of Japan in Iran, Economic Cooperation section
- h. Mr. Aireza Salamat, RCUWM-Tehran

• **Opening**

Mr Semsar, Director, ICQHS-YAZD

Dr Semsar as the Director of ICQWHS warmly welcomed the participants to the 3rd Governing Board of ICQHS-YAZD.

He addressed the members with a brief background on the formation of the International Centre on Qanats and Historic Hydraulic Structures along with its different sections.

The director also briefed the attendees on the first and second board meetings held in Yazd, July 2008 and November 2009 respectively.

A short video clip on the Qanats of Iran was demonstrated for the audiences.

Mr. J. Alberto Tejada-Guibert, Secretary, International Hydrological Programme (UNESCO-IHP)

Mr Tejada Guibert stated that, this International Centre has a very strong culture ingredient and is precisely fulfilling all its tasks under the auspices of UNESCO and its mandate is in line with the UNESCO-IHP.

As stated by UNESCO-IHP representative, many Centres in the field of Water in developing and developed countries have recently been proposed, approved and they have entered into operation. ICQHS in Yazd should be in close contact with them.

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Mr Guibert mentioned that we should see how this Centre is conducted and we would need to follow up the guidelines and review the decisions made during the previous board meetings to approach the goals of this Centre.

Mr. Qunli Han, UNESCO Representative

Mr Qunli Han appreciated the strong participation of the member countries and organizations in the 3rd Governing Board meeting. He also stated that this Centre has carried out enormous valuable work in the field of research and documentation on Qanats not only in Iran but in other countries holding these kinds of historic hydraulic structures. He also pointed out o the Master degree courses conducted by this Centre in the field of Qanats which sounds quite efficient in such arid areas.

Mr Han announced UNESCO Tehran Cluster Office's preparedness for continuing its support towards the Centre.

Mr. Saeidabadi, Iranian National Commission for UNESCO

Mr Saeidabadi as the Secretary General of the Iranian National Commission for UNESCO thanked ICQHS for all their efforts carried out in publicizing the importance of historic hydraulic structures including qanats. He also pointed out the importance of capacity building and training activities to be carried out by the Centre. Mr Saeidabadi stated as qanats are important means in the field of sustainable water management these structures should be well maintained and ICQHS is efficiently carrying out its mission.

He finally welcomed all the participants to the Board meeting and wished them an enjoyable stay in Yazd.

H.E. Mr. Atarzadeh, Chairman of GB and Deputy Minister of Energy, I. R. Iran

H.E. Mr Atarzadeh, thanked UNESCO for its effective support towards the Centre's work plan. He also sincerely thanked the members and observers for participating in this meeting.

The Chairman sated that the Islamic Republic of Iran has carried out its utmost efforts in fulfilling the requirements of ICQHS as a category II Centre acting under the auspices of UNESCO by providing a suitable premises in Yazd and continuing its financial support towards the Centre's activities.

Ministry of Jihad-e Agriculture, Qanats of Iran, Present Situation,

Mr. Parastar, on behalf of the Deputy Minister of Jihad- e Agriculture briefed the participants on the situation of qanats in Iran. He pointed out the total water balance in Iran of which around 88 percent is used in Agriculture. He then pointed out the role of active qanats in providing agricultural water .

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He stated that the Ministry of Jihad-e Agriculture has made several common agreements with the Ministry of Energy in the field of Qanat buffer zones. As cited 3400 qanats have been rehabilitated and they are now under operation. The future plans of the Ministry for rehabilitating the qanats of the country is being prepared as an official document to be followed up.

• Remarks by GB Members

Mr. Kamal Al-Sheikheh as the representative of Syria thanked the organizers for hosting this event. He briefed the participants on his country's efforts carried out for providing water for agricultural and domestic purposes. He announced his preparedness for joint collaboration with the Islamic Republic of Iran in different fields of water in near future.

Mr. Khadraoui, as the Algerian representative at first thanked the organizers for their warm hospitality. He described the water distribution system in his country in brief. He then pointed out the role of Qanats (fogaras) in his country for providing water for domestic and agricultural use. Mr Khadraoui also described the problems of these structures as lack of maintenance and reconstruction. Other historic hydraulic systems have also been practiced in Algeria for efficiently distributing water in a logical manner.

Mr Amin Faris as the Iraqi representative also thanked the host, ICQHS for holding this board meeting. He described the sources of water in his country. Mr Faris stated that drought is a serious problem in his country and qanats and other water structures have been seriously affected by this phenomena. He also mentioned that the projects carried in the upstream and downstream area of Tigris and Euphrates are affected by the droughts. Due to drought most of the water coming out of qanats are from the shallow water rather than deep aquifers. Qanats in Iraq are gradually drying up which apparently needs further attention.

At first, Mr Wufuer Nuerding as China representative thanked the organizers and the participants. He introduced the situation of Qanats (Karez) in Xinjiang, China. He briefed the participants on the general survey on Karez carried out in Xinjiang province. As stated, 1784 qanats exist in this province and 1170 have dried up and only 614 are still running. A short presentation on the number of qanats, length, and situation was made and several nice arial photos were displayed. He also pointed out the importance of qanats to local people's life. He stated that over exploitation of water in some areas has led to qanats water decline which needs further attention. Laws of qanats has also been compiled recently.

Professor Kobari as an observer described his experiences during the previous years he managed to visit qanats in different provinces in Iran. He stated that ICQHS under the auspices of UNESCO will be able to take advantage of the studies in the field of restoration and rehabilitation of qanats.

Dr Motiee as the Director of the Regional Centre on Urban Water Management congratulated ICQHS for holding such a fruitful gathering. He mentioned that ICQHS activities are mainly limited to qanats whereas other valuable historic hydraulic structures exist in the region and ICQHS could focus on them. He also pointed out that the term Karez as a Persian word should be widely used by ICQHS in addition to Qanats.

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Mrs Nash as an observer from England congratulated ICQHS for publishing the book on Veins of the Desert, which she believed should be translated into different languages and published for a wide range of use among those interested.

Mr Shayan as an observer (Director of Iranian Water National Museum) briefed the participants on civilizations which were formed around water reservoirs. Iranians were the pioneers in using water in a sustainable ways. He explained about the historic dams designed and built in suitable sites. He provided the participants with good examples of historic weirs and dams built all over the country. The water national museum is also planning to prepare the encyclopaedia of the historic water structures in near future.

• **Adoption of the agenda**

The agenda was put on the floor, reviewed by all members and it was unanimously adopted.

• **Report on activities and achievements of the Centre in 2009-2010, budget and workplan of 2010-2011**

Dr Semsar as the Director of the Centre made a brief presentation on the activities, projects and training events, seminars, conferences and expert group meetings held by ICQHS in between the 2nd and 3rd Governing Board, some of which are as follows:

- a) Several research projects on Qanats in Iran and in the region were amongst the activities carried out by the Centre.
- b) ICQHS has also participated in several scientific gatherings by presenting relevant papers on qanats.
- c) Participation in the 19th session of the Intergovernmental Council of UNESCO-IHP and proposing a gathering for the directors of the Category II Centres active in the field of water with the aim of strengthening the links in between has been among the initial approvals of this meeting.
- d) Meeting with Qanat users in Bam was amongst other activities carried out by ICQHS. The aim was to better preserve qanats in Bam region.
- e) The training course on Qanats for the Islamic countries is the recent activity carried out by the Centre (27 Sep.-2 Oct. 2010). This event was organized in close cooperation with the Islamic Development Bank.

The work plan of the Centre during the year 2011 was detailed by Dr Semsar as follows:

- 1-Preparing the Qanat Encyclopaedia
- 2-Methodology of determining the qanats bounds (Harim)
- 3-Application of new technologies in qanats construction and rehabilitation
- 4-Preparing the atlas of qanats
- 5-Introducing some qanats to the world heritage
- 6-Enhancing the public awareness about qanats



As cited by the director various books and country reports will be published during 2011. Dr Semsar asked for the country's contribution in concern with providing information in respect to the qanats inventory.

Finally Dr Semsar briefed the participants on the expenses and costs of ICQHS during 2009-2010 and the budget of the Centre during 2011.

• Comments and Approvals on the Director's Report

The link between the students with the centres activities was highly appreciated and it was suggested to continue promoting it.

It was appreciated that the activities carried out by the Centre is linked to the 7th phase of UNESCO-IHP. ICQHS should also contribute to the 8th phase of IHP in various aspects.

A list of the staff working in the Centre and a brief report carried out by the Centre was requested by UNESCO-IHP.

Wonders of qanats were introduced and there was a request to further introduce these wonders via ICQHS.

ICQHS should also work on other historic hydraulic structures in addition to qanats.

The Centre is in the stage of being evaluated as it has completed its first five year plans, therefore necessary measures should be carried out in this respect.

The work plan of the coming year was requested to be disseminated prior to the board meetings for possible feedbacks to be made.

Both the Ministry of Energy and Ministry of Jihad-e Agriculture were requested to allocate budget for carrying out relevant projects on Qanats in close cooperation with ICQHS.

Finally the work plan of the Centre during 2011, the expenditures for the years 2009-2010 and the budget for 2011 was approved by all the members.

• Approval of new memberships

Dr Semsar briefed the participants on the new candidates Algeria, Syria and Japan for becoming new members of ICQHS Governing Board.

All present members approved the membership of the above mentioned countries and a warm welcome was given to them for joining ICQHS family.



• Financial Resources and Fund Raising

Algeria will be organizing a workshop in their country on traditional knowledge related to historic hydraulic structures. This workshop will be held in close cooperation with ICQHS during 2011.

The Syria representative will suggest a contribution towards the work plan of ICQHS in near future after receiving his capital's suggestion.

Iraq will be hosting the next Governing Board meeting of ICQHS.

UNESCO-IHP will facilitate holding the UNESCO water related Centres directors' meeting after receiving UNESCO DG's final approval.

Further financial contribution in the form of holding joint events/projects could be announced by the member states/organizations via official correspondences in near future

• Date and Venue of the 4th GBM

It was agreed to hold the 4th Governing Board of ICQHS in Arbil/Baghdad, Iraq during October 2011. Further coordination will be made with the members in near future.

• UNESCO Water Centers' Directors meeting

As stated in the directors' report, the I.R. Iran proposed holding the UNESCO Water Centres' Directors meeting during March, April or May 2011. The issue was initially approved during the 19th Intergovernmental Council of IHP.

Mr Tejada Guibert mentioned that UNESCO Water related Centres meeting held in Delft during the previous years could be a sample in this respect. UNESCO DG will provide its feedback in concern with this issue shortly.

• Closing Remarks

The chairman, closed the session with his concluding remarks, once again congratulating Algeria, Syria and Japan for joining ICQHS Governing Board.

He drew the attention of all members to focus on traditional methods in addition to modern technologies to solve water related problems. ICQHS and the Regional Centre on Urban Water Management (RCUWM) are prepared to collaborate in this concern.

Dr Atarzadeh also briefed the participants on the new proposal (International Drought Initiative, IDI) recently approved during the 19th IHP Intergovernmental Council. Further information could be received through RCUWM representative.

He finally thanked all the participants for their fruitful contributions.



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با مشارکت سازمان ترویجی، علمی و فرهنگی ملل متحد (یونسکو)



Mr. Abderrazak Khadraoui, Director General of the
Basin Agency of the Sahara Area, Algeria

Mr. Wufuer Nuerding, Secretary general of Xinjiang
Qanats Research Association and Deputy
Director of Bureau of Hydrology and Water
Resources of Xinjiang Weiwuer Autonomous
Region, China

Mr. Mohamad Reza Atarzadeh, Chairman, ICQHS
and Deputy Minister of Energy for Water and
Wastewater Affairs Iran

Mr. Muhammed Amin Faris, General Director,
Ministry of Water Resources (KRG), Iraq

Mr. Kamal Al-Sheikheh, Deputy Minister of
Housing and Construction, Syria

Mr. J. Alberto Tejada-Guibert, UNESCO-IHP
representative

Mr. Homayoun Motiee, RCUWM-Tehran Representative

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**Agreed Minutes
Of the 4th Governing Board Meeting
International Center on Qanats and Historic Hydraulic Structures (ICQHS)
Tehran – Iran
18-19 December, 2011**

The 4th governing board meeting of ICQHS was held in the ministry of energy of the Islamic Republic of Iran, Tehran on 18 December 18, 2011. The meeting was attended by the following honorable members:

Members:

• **Algeria**

Mr. Khadraoui, Director General of the Basin Agency of the Sahara Area, Algeria

• **I.R. Iran**

H.E. Mr. Mohammad Reza Attarzadeh, Chairman, ICQHS and Deputy Minister of Energy for Water and Wastewater Affairs

Mr. Ali Asghar Semsar Yazdi, Director, ICQHS

• **Iraq**

Mr. Muhammad Amin Faris, General Director, Ministry of Water Resources (KRG)

• **UNESCO – IHP**

Mr. Abdin Salih, UNESCO Representative

• **Regional Center on Urban Water Management (RCUWM – Tehran)**

Mr. Homayoun Motiee, RCUWM – Tehran Representative

Observers:

- a. Mr. Parastar, Ministry of Jihad-e Agriculture, Iran
- b. Mr. Mohammad Reza Saeidabadi, Secretary General, Iranian National Commission for UNESCO
- c. Mr. Kazuhisa Fujii, First Secretary (Economic Cooperation Section), Embassy of Japan in Iran
- d. Mr. Arya Gunawan USIS, Officer in Charge, UTCO
- e. Mr. Elovset, Republic of Azerbaijan

Opening

Mr. Semsar, Director, ICQHS-Yazd

Dr. Semsar as the director of ICQHS warmly welcomed the participants to the 4th governing board of ICQHS and thanked the board for responding positively to the invitation of ICQHS. He addressed the members with a brief background on the formation process of International Center on Qanats and Historic Hydraulic Structures.

Afterward he outlined the missions, objectives and the organizational chart of ICQHS, and then he briefed the attendees on the previous meetings of the governing board.

Mr. Abdin Salih, UNESCO Representative

Mr. Abdin Salih started his speech with pointing out the importance of UNESCO categories II centers in implementing UNESCO programs. He underlined Iran that has played host to the two of these UNESCO categories II centers and emphasized strengthening links between them. He described ICQHS as bridge spanning our modern water resources challenges and the wisdom and know-how of the past generations and civilizations in sustainable and rational water resources exploitation. He contended that the importance of ICQHS mission is becoming more obvious as we are facing more challenges in terms of water scarcity and global changes in water resources.

He also added that water related problems are so widespread and extended that no country can tackle them just on their own, so IHP can act as a mediator to facilitate the exchange of solutions between nations, and this mission can be better done through the UNESCO category II centers.

In closing he encouraged the member countries to keep up their cooperation with ICQHS and then appreciated the ministry of energy of Iran for their continuous and generous support for ICQHS from the very first moment of its establishment.

Mr. Saeidabadi, Iranian National Commission for UNESCO

He thanked Mr. Attarzadeh for paving the way for this meeting to take place, and Mr. Abdin Salih who touched off the establishment of ICQHS and followed up the whole process at UNESCO. He also appreciated the GB members for showing concern about qanats and historic hydraulic structures.

Mr. Saeidabadi pointed out that qanat is an interdisciplinary subject which engages a wide range of sciences from geology to engineering to humanities and sustainable development, so every organization can take part in this mission no matter what their specialty is. He also highlighted the role of ICQHS in expanding the literature of qanat and historic hydraulic structures by publishing many books and scientific materials which are now available to everybody interested.

Mr. Masood Alavian Sadr, Iranian Cultural Heritage, Handicraft and Tourism Organization

Mr. Alavian Sadr started his speech with expressing his gratitude to Mr. Attarzadeh, Mr. Semsar Yazdi, Mr. Abdin Salih and all the GB members for their support for qanats and historic hydraulic structures. He highlighted the significance of qanat in the forming of human civilizations by contending that qanat is the feat of hand-dug architecture which led to create great civilizations in a context of cooperative management. Qanat is the cause of durability of human communities in the central plateau of Iran which receives the minimum precipitation. So preservation of this relic is taken for granted, but the question is how to preserve. Mr. Alavian Sadr added that since the approval of the international convention for preserving of intangible cultural heritage in 2003, a new trend has caught on in the world toward cultural heritage. Ever since, physical figures are not only regarded as cultural heritage, but the tradition, history and knowledge behind these figures also appeared as intangible cultural heritage. Though even before this convention intangible cultural heritage has been at issue in Iran and many ethnological reports staked in our organization bear witness to this fact.

He also said that from this standpoint qanat does exemplify intangible cultural heritage, pertaining to a variety of issues from qanat bound to engineering techniques and water management. This know how has accumulated through hundreds of years and then passed down to the other countries. Qanat is a valuable combination of tangible and intangible cultural heritage which both deserve protection and preservation. In closing he suggested such measures as documentation of traditional knowledge, enhancing public awareness, improving the qanat practitioners' livelihood, etc to be taken in order to better preserve intangible heritage of qanat.

H.E. Mr. Attarzadeh, Chairman of GB and Deputy Minister of Energy, I.R. Iran

H.E. Mr. Attarzadeh thanked the GB members for accepting the invitation of the International Centre on Qanats and Historic Hydraulic Structures to attend its 4th Governing Board Meeting. The chairman stated that after the establishment of this center, the concern about such ancient and sustainable technologies has grown, which is indebted to the supports of IHP UNESCO from its inauguration until now. He also thanked UNESCO Tehran Cluster office as well as the Iranian National Commission for UNESCO for their support towards the center. The chairman pointed out the efforts that the government of Iran has ever made to retain and encourage ICQHS by equipping this center with all needed facilities. He then stated that the Government of the Islamic Republic of Iran is trying to allocate more financial resources to the research projects of the center as well as its current activities. In this regard a budget equal to around 250,000 dollars has been allotted to the Center during 2010-2011 for its operating costs. In closing he explained the situation of membership in the GB which raises hope for further participation.

Country reports and remarks by GB members

Representatives of Algeria, Iraq and Azerbaijan gave informative presentations on the situation of qanats in their esteemed countries:

Mr. Khadraoui, Algeria:

He stated that Algeria especially the region of Sahara enjoys the same climatic condition as that of Iran, so they have to face the similar problems. That is why the inhabitants of those countries came to use qanat system to mitigate water scarcity. The authorities of Algeria are very interested to learn from the expertise and experiences that Iranians have in terms of qanats. Thus the government of Algeria held a conference on qanat between 9 and 11 April in the town of Adrar located in the heart of desert. This conference took place with the support of UNESCO and four Iranians contributed to it. This event was aimed at pooling information about qanat and getting the attendees familiar with the qanats of Algeria. Concurrently with this conference, we could exchange a memorandum of understanding between ICQHS and the Sahara Water Agency.

Mr. Amin Faris, Iraq:

Mr. Amin Faris described two different types of qanats in Iraq and their geographical distribution throughout the country. There are 640 qanats running in the region of Erbil and 47 in Suleimaniyeh which are affected by frequent droughts. He referred to the drought as the main culprit of the depletion of groundwater which has led to the drying of qanats. In the face of all the pressures placed on qanats, these systems are still the only source in some villages to supply water. He pointed out the cooperation that ICQHS has had with UNESCO and Iraqi government to alleviate the situation of qanats in the region of Erbil.

Mr. Elovset, Republic of Azerbaijan:

He outlined the history of qanats in Republic of Azerbaijan. He stated that archeological researches give credence to the fact that qanat technology dates back to one century before Christ. Iranian historian Mostofi has reported that 72 qanats were operational in the city of Ordoobad at that time, and we can take it for granted that qanat has been the cornerstone of prosperity in many regions of Azerbaijan in the course of history. He contended that many qanat masters came to Nakhchivan from Iran and after 1939 when the political border between Iran and the former Soviet Union was determined, these qanat masters were stuck there and had to stay forever. He then added that the groundwater extracted in Azerbaijan totally amounts to 2.5 billion cubic meters out of which 450 million cubic meters are drained out through qanats. He also described the classification of qanats in Azerbaijan according to their recharge condition. He pointed out that a department of qanats has been set up in Nakhchivan and 100 qanats have been refurbished so far. He said that in cooperation with Dr. Semsar Yazdi and Mr. Majid Labbaf, a course on qanat was initiated at the University of Nakhchivan and the references used for this course have been mostly provided by ICQHS.

Director's report on implemented activities in 2010-2011

Mr. Semsar Yazdi the director of ICQHS briefed the board on the activities done during the year 2010-2011 by classifying them into seven categories as: research, training, technology transfer, scientific gatherings, publication and cooperation with other countries and organizations. In each category, he elaborated on many activities carried out during this period. In closing he stated that the running cost of ICQHS for the year 2012 is 250000 USD and its operating is 200000 USD.

Report on the Meeting of the Directors of UNESCO Water Centers

Mr. Majid Labbaf, senior expert of ICQHS reported on the proposal of Iran regarding a meeting to bring together the directors of UNESCO water centers. This meeting can yield more cooperation, interaction and synergy between the centers which all in fact belong to one family and have many things in common. Though this idea is in line with IHP's primary objectives, it could not be put into practice due to some bureaucratic barriers.

Remarks by GB Members

Mr. Abdin Salih stressed the necessity of holding a meeting for the directors of UNESCO water centers, and he commended Iran's initiative to do so. He said that he will pave the way for this suggestion at UNESCO in order to put it into action. He also placed a high value on historic hydraulic structures and also on the qanats of Bam which were affected by the earth quake. He mentioned the research project conducted by UTCO on the qanats of Bam in cooperation with a variety of specialists. He stated that this research which was later published as a book encompassed a wide range of issues from geology to archeology and sociology. Such interdisciplinary studies should be continued on qanats of Bam. Mr. Salih pointed out Taft Qanat Training Center and commended the Iranian ministry of energy that took this initiative. He also put an emphasis on the necessity of the application of modern technologies in qanat rehabilitation and construction projects. Mr. Salih asked about the evaluation process of ICQHS and the progresses ever made in this respect.

Mr. Semsar Yazdi explained that two evaluators have been chosen and confirmed by UNESCO, one from Iran and one from Italy who are going to attend the coming TKWRM conference in Yazd. They will evaluate ICQHS concurrently with TKWRM conference and submit their report to UNESCO. He also said that Taft Qanat Training Center keeps working and developing, and they are in close touch with ICQHS. Their students are using the books and texts prepared and published by ICQHS.

Mr. Amin Faris announced his preparedness to have a MoU signed between the government of Iraq and ICQHS in terms of holding training courses on qanat for Iraqi experts. He stated that Iraq is in need of training and capacity building regarding rehabilitation and construction of qanats.

Mr. Khadraoui called for bringing into effect the MoU exchanged between Algeria and ICQHS. He also requested for holding an international training course on historic hydraulic structures in cooperation with UNESCO and ICQHS in Algeria in 2012. He assured that the government of Algeria would support this training course.

Finally the work plan of the center during 2012 the expenditures and activities for the years 2010-2011 and the budget for 2012 was approved by all the members.

Executive and Financial Report on TKWRM Conference

Mr. Semsar Yazdi briefed the meeting on the objectives, topics, scientific and executive committees of TKWRM conference which is to be held in February 2012 in Yazd.

New GB membership

According to Mr. Salih's suggestion, it was agreed to send invitation letters for taking membership of the GB to the countries Egypt, Sudan, Turkey, Japan and Pakistan. The ministry of foreign affairs of I.R. Iran will follow up on the invitations through the Iranian embassies.

Date and venue of the 5th GBM

It was agreed that the 5th governing board meeting of ICQHS would be held in Erbil, Iraq. A letter will be signed by the GB chairman and sent to the ministry of water resources of Iraq in order to make arrangements and coordination. Mr. Amin Faris will follow up on the issue in the ministry.

The meeting was agreed to be held in October 2012.

Mr. Abdin Salih explained that changing the interval between the GB meetings is contingent on the approval of UNESCO. If ICQHS wants to change the interval, a proposal should be included in the center evaluation report, and the proposal would be assessed and decided by UNESCO.

Signatories:

Mr. Khadraoui, Director General of the Basin Agency of the Sahara Area, Algeria

H.E. Mr. Mohammad Reza Attarzadeh, Chairman, ICQHS and Deputy Minister of Energy for Water and Wastewater Affairs, Iran

Mr. Muhammad Amin Faris, General Director, Ministry of Water Resources (KRG), Iraq

Mr. Abdin Salih, UNESCO Representative, UNESCO – IHP

Mr. Homayoun Motiee, Regional Center on Urban Water Management (RCUWM – Tehran)