

8th Asian G-WADI 2nd IDI Expert Group Meetings

International Workshop on Adaptation to Water Scarcity and Basin-connected Cities



G-WADI

Venue: Ferdowsi University of Mashhad- IRAN

10-12 December 2018



8th Asian G-WADI
2nd IDI Expert Group Meetings
International Training Workshop on
Adaptation to Water Scarcity and Basin- connected Cities

International Drought Initiative (IDI)

Droughts have several economic, social and environmental impacts, depending on their intensity and duration. Occurrence of droughts is a natural event and it is not specific to a region or climatic regime, and it can occur in different climatic and geographic situations. Unlike floods that have limited coverage areas, droughts usually affect vast regions, and this causes a more widespread and extensive range of impacts which last for a long time. Therefore, droughts affect a large number of populations in comparison with other natural disasters. The experiences in developed and developing countries on drought management have proved that besides the level of development, the impacts and consequences of this phenomenon is deep and considerable, even with different characteristics and nature. With no doubt, the occurrence of this phenomenon is one of the important obstacles in the development process of the countries. As the impacts of this event lasts for a long period, the countries and people who have been affected by this phenomenon are forced to spend extensive financial resources to encounter it during and after the event.

The impact of drought on water and food security cannot be ignored. There is a need for an enhanced and coordinated global movement to face and encounter the challenges of natural waterrelated disasters, especially droughts. The International Drought Initiative (IDI) as a UNESCO-IHP flagship programme has been approved at the 19th Session of the Intergovernmental Council in Paris, July 2010. The Regional Centre on Urban Water Management (RCUWM- Tehran) under the auspices of UNESCO, hosts the Secretariat of IDI (<http://rcuwm.ir/idi/>).

IDI aims at providing a platform for networking and dissemination of knowledge and information between international entities that are active working on droughts. IDI continues to be of high importance within the framework of the Eighth Phase of IHP (2014-2021) “Water Security: Addressing Local, Regional and Global Challenges”. In particular, G-WADI plays a key role in the focus areas on “Addressing Water Scarcity and Quality” and “Water Related Disasters and Hydrological Changes”. IDI intends to bring together concerted efforts of the governmental and nongovernmental organizations for drought management. The initiative is open to other related entities interested in joining.



IDI Main Objectives

- To develop the methodology to prepare and compile policies and strategies related to drought adaptation, mitigation and management and encourage their inclusion in National action;
- To facilitate research and compile practical strategies to minimize impacts of drought for addressing emergency situations;
- To define the roles of stakeholders within the context of drought;
- To create an inclusive mechanism for the Governments, UN agencies, and NGO's that promotes drought management synergies;
- To facilitate creation of global drought warning systems and global drought watch, and;
- To develop methodologies to assess damages and long-term impacts of drought, including environmental conflicts.

IDI Contacts

UNESCO-IHP Contact:

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IDI Secretariat at RCUWM:

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UNESCO Regional Centre on Urban Water Management,
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Introduction to GWADI

UNESCO's programme for Water and Development Information for Arid Lands – a Global Network (G-WADI) was established in 2003 by the Intergovernmental Council of International Hydrological Programme (IHP) to address the urgent need for increased regional and international cooperation on sustainable development of water resources in arid and semi-arid regions. Over the last decade G-WADI has grown into a worldwide network coordinated by a global secretariat and 5 regional networks, providing a catalyst to leverage relevant scientific knowledge for decision-making and practice.

Centred around its website www.gwadi.org and its strong programme of regional activities, the network has focused mainly on the provision of interactive, data-based tools and methods to support evidence-based decision-making, such as the PERSIANN satellite-based precipitation products, drought monitors for Africa and Latin America, and regional frequency analysis. G-WADI's overall strategic objective is “to strengthen the global capacity to manage water resources in arid and semi-arid areas as well as promoting international and regional cooperation in the concerned region”. This network continues to be of high importance within the framework of the Eighth Phase of IHP (2014- 2021) “Water Security: Addressing Local, Regional and Global Challenges”.

GWADI Contacts

UNESCO Contact:

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Asian GWADI Secretariat in Hyderabad, India:

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Asian G-WADI

Asian G-WADI (<http://asian-gwadi.westgis.ac.cn>) was formed during 2005 with its first secretariat in India at National Institute of Hydrology, Roorkee. The 1st meeting of Asian G-WADI was held in Roorkee, India on March 2005 and since then subsequent meetings were held in China, India and Iran where annual or bi-annual progress have been discussed. The 7th Asian G-WADI workshop was held by CSIR-National Geophysical Research Institute, Hyderabad, India, November 2017. The outcome of this meeting was a document that included the guidelines to improve and test the methodologies to estimate various fluxes of the groundwater system for an Integrated Water Resources Management.

Asian G-WADI includes the following members:

1. Afghanistan
2. China
3. India
4. Iran
5. Kazakhstan
6. Kyrgyzstan
7. Mongolia
8. Pakistan
9. Thailand
10. Tajikistan
11. Turkmenistan
12. Uzbekistan
13. Vietnam

The Asian G-WADI has formulated guidelines for proposing one or more basins as G-WADI pilot basins in a country, which can contribute to the knowledge base for the region. Asian G-WADI has selected seven (7) pilot basins in Asian for further research activities and implementation of Asian G-WADI projects as follows:

1. Heihe River Basin (HRB), China, P. R. (proposal)
2. Jaisamand Lake Catchment (Gomti River Basin), India
3. Grantie Watershed in Krishna-Godavari basin, India
4. Kashafrud Basin/Mashhad, Iran
5. Taleghhan-Hashtgerd Basin, Iran
6. Chu River Basin, Kyrgyz Republic
7. Vakhsh River Basin (VRB), Tajikistan

Asian G-WADI Advisory Committee

The Advisory Committee for Asian G-WADI for the years 2018-2020 is as follows:

China: Prof. Xin Li, Ex-officio Member, lixin@lzb.ac.cn

India: Dr. S.K. Jain, Director, NIH, Roorkee, India, s_k_jain@yahoo.com

Iran: Dr. Ali Chavoshian, Director, RCUWM, Tehran, chavoshian@gmail.com

Asian G-WADI Secretariat: Dr. Shakeel Ahmed, shakeelifcgr@gmail.com

Asian G-WADI Secretariat Contact

Dr. Shakeel Ahmed, M.K. Gandhi Chair Professor, Jamia Millia Islamia, New Delhi-110025, India

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8th Asian GWADI Workshop and 2nd IDI Expert Group Meetings

10 December 2018

The 8th Asian G-WADI and 2nd IDI expert group meetings are being held in Khorasan Razavi Province (Holy City of Mashhad) 10-12 December 2018. These events are hosted by Khorasan Razavi Regional Water Authority in close cooperation with UNESCO Regional Centre on Urban Water Management and the support of UNESCO HQ's, UNESCO Field Offices in Tehran, Jakarta and New Delhi, the Ministry of Energy of I.R Iran, Iran Water Resources Management Company and the University of Ferdowsi, Mashhad.



The experience of arid and semi-arid countries dealing with water scarcity and drought related challenges is shared and discussed among the Asian G-WADI countries during the 8th Asian GWADI meeting. In this ration the 8th Asian G-WADI and 2nd IDI expert group meetings are being held in Khorasan Razavi Province (Holy City of Mashhad) 10-12 December 2018. These events are hosted by Khorasan Razavi Regional Water Authority in close cooperation with UNESCO Regional Centre on Urban Water Management and the support of UNESCO HQ's, UNESCO Field Offices in Tehran, Jakarta and New Delhi, the Ministry of Energy of I.R Iran, Iran Water Resources Management Company and the University of Ferdowsi, Mashhad.

8th Asian GWADI Workshop and 2nd IDI Expert Group Meetings

10 December 2018

8th GWADI Workshop Objectives

- Increase regional cooperation for sustainable development of arid and semi-arid zones
- Sharing national/regional experiences in groundwater management and finding solutions for sustainable groundwater harvest/extraction;
- Providing information on current UNESCO-IHP programmes in relation to groundwater management and water management in arid zones (G-WADI);
- Networking among the groundwater institutions and specialists with regional water policy making authorities;
- Sharing knowledge on adaptation to water scarcity; strategies and approaches.

2nd IDI Expert Group Meeting Objectives

- To develop synergies between the two programs of UNESCO, namely International Drought Initiative (IDI) and UNESCO IHP Programme on Water and Development Information for Arid Lands–A Global Network (G-WADI);
- To further involve international organizations including FAO, WMO, etc. in IDI projects and work plan;
- Establish IDI Advisory and Management Committee;
- Investigating potential projects and joint research activities;
- Sharing international/regional and national experiences on drought issues to come up with proposals for future work in the region;

Language

The working language of both events (8th GWADI Workshop & 2nd IDI EGM) is English. Workshop participants are encouraged to have a good command of the English language in order to benefit from discussions to the most.

International Training Workshop on Adaptation to Water Scarcity and Basin- connected Cities 11 December 2018

Introduction

Water scarcity is the lack of sufficient available water resources to meet demands of water usage within a region. This condition arises as consequence of a high rate of accumulated demand from all water-using sectors including agriculture, domestic, industry and environment compared with available supply, under the prevailing institutional arrangements and infrastructural conditions. The international workshop on “Adaptation to Water Scarcity and Basin- connected Cities” is designed to bring together researchers and practitioners alike including governmental officials, private and public sectors, water managers, urban planners as well as decision and policy makers engaged in various aspects of water scarcity adaptation and the new concept on basin- connected cities.

Objectives

- Charting practical solutions for water scarcity adaptation in different sectors;
- Providing best practices on demand management;
- Discussing basin-connected cities concept;
- Sharing advances in water security in human settlements;
- Providing information on Asian G-WADI and IDI activities.

Workshop Themes

- Water scarcity adaptation strategies and practical solutions;
- Demand/consumption management;
- Inter/Intra sectoral coordination;
- Multi/inter-disciplinary approaches;
- Basin-connected cities (why and how);
- Socio-economic considerations;
- Water scarcity adaptation success stories.

**International Training Workshop on Adaptation to Water Scarcity and Basin- connected Cities
11 December 2018**

Language

The official language of the workshop is English with simultaneous translation in Farsi.

Participants

The domestic participants of this training workshop are relevant experts and managers from the Ministry of Energy, Iran, Regional Water Authorities, Water and Wastewater Companies as well as Khorasan Razavi Municipality. International participants of this event are representatives from different countries including Afghanistan, Belgium China, France, India, Japan, Kazakhstan, Mongolia, Oman, Slovenia, Sudan, Thailand, Uzbekistan and Vietnam.



Scientific Committee (SC)

| Representative | Organization |
|-------------------|-----------------------------------|
| Shakeel Ahmed | Asian G-WADI Secretariat, India |
| Abou Amani | UNESCO-IHP |
| Amit Chanan | City of Sydney, Australia |
| Ali Chavoshian | RCUWM/IDI Secretariat, Iran |
| Kamran Davari | Ferdowsi University Mashhad, Iran |
| Toshio Koike | ICCHARM, Japan |
| Anil Mishra | UNESCO-IHP |
| Behshad Mohajer | UNESCO Tehran Cluster Office |
| Bruno Nguyen | W-SMART, France |
| Hans Thulstrup | UNESCO Jakarta Office |
| Banafsheh Zahraie | Ministry of Energy, Iran |

Local Organization Committee (LOC)

| Representative | Organization |
|------------------------|--|
| Mohammad Alaei (Chair) | Khorasan Ravazi Regional Water Authority |
| Ali Chavoshian | RCUWM/IDI Secretariat |
| Ahmad Ghandehari | Khorasan Ravazi Regional Water Authority |
| Mohammadhadi Mahdinia | Mashhad City Council |
| Alireza Salamat | RCUWM/IDI Secretariat |
| Hossein Esmaeilian | Khorasan Ravazi Water and Wastewater Company |

List of Foreign Participants

| Name | Country | Organization | Contact |
|-------------------------------|-------------|---|--|
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The First Day: Monday – December 10
IDI & G-WADI Meetings, Country and Regional Reports

| | |
|---------------|--|
| 7:30 – 8:30 | Registration and Reception |
| 8:30 – 10:00 | Welcome and Opening Ceremony <ul style="list-style-type: none"> • Holy Quran Recite and National Anthem • Mr. Mohammad Kafi, Dean-Ferdowsi University of Mashhad (10 mins) • Mr. Qorban Mirzaei, Governor of Khorsan Razavi Province (15 mins) • Mr. Amin Alizade, Ferdowsi University of Mashhad (15 mins) • Mr. Alexander Leicht, UNESCO Tehran Cluster Office (10 mins) • Mr. Mohammad Alaei, Khorasan Razavi Regional Water Authority (15 mins) |
| 10:00 – 10:30 | Coffee Break |
| 10:30 – 11:00 | Opening Ceremony and Introducing IDI & G-Wadi participants: <ul style="list-style-type: none"> • Mr. Ali Chavoshian, IDI Secretariat • Mr. Abou Amani, IHP • Mr. Ahmad Shakeel, Asian G-WADI Secretariat • Introduction of Countries' Representatives |
| 11:00 – 11:45 | Key Notes: <ul style="list-style-type: none"> • National Drought Management Policy Guidelines: A Template for Action, Ms. Sabina Bokal, GWP (30 mins) • Development of A Grid-Based Precipitation Data Visualization, using Satellite-Based Data and Ground Observations Ms. Sima Katiraei, <i>et al.</i>, RCUWM-Tehran (15 mins) |
| 11:45 – 13:00 | Lunch Break |
| 13:00 – 16:45 | Papers and Country Reports (Sorted Alphabetically) <ul style="list-style-type: none"> • Afghanistan • China • France • India • Iran • Japan • Kazakhstan • Mongolia • Oman • Sudan • Thailand • Uzbekistan • Vietnam • Wrap up: UNESCO-IHP, A-GWADI Secretariat, and UTCO (30 mins) |
| 16:45 – 17:00 | Transferring G-WADI Participants to the Hotel and Preparation for IDI Session |
| 17:00 – 19:00 | IDI Second Expert Group Meeting |

The Second Day: Tuesday - December 11
International Training Workshops
Adaptation to Water Scarcity and Basin-connected Cities

| | | |
|---------------|---|---|
| 8:00 – 9:00 | Registration and Reception | |
| 9:00 – 9:15 | Opening and Welcome Ceremony <ul style="list-style-type: none"> • Holy Quran Recite and National Anthem • Mr. Mohammad Alaee, Khorasan Razavi Regional Water Authority | |
| 9:15 – 10:30 | Key Notes: <ul style="list-style-type: none"> • Water Scarcity Adaptation Challenges and Opportunities, Ms. Banafsheh Zahraie (25 mins) • Water Scarcity Social Requirements, Mr. Mohammad Fazeli (25 mins) • Water scarcity adaptation approaches in the agricultural sector, Mr. Keshavarz (25 mins) | |
| 10:30 – 11:45 | Expert Panel, Water Management in East of Iran Ms. Banafsheh Zahraie, Mr. Abbas Keshavarz, Mr. Khaniki, Mr. Kamran Davari, Mr. Mohammad Alaee, Mr. Ghandehari <i>* A presentation on “Development of A Grid-Based Precipitation Data Visualization, using Satellite-Based Data and Ground Observations” will be delivered in the beginning of the discussion in 5 minutes.</i> | |
| 11:45 – 13:30 | Prayers and Lunch Break | |
| 13:30 – 16:00 | Panel I: Water Scarcity Adaptation and Water Resources Management in Khorasan Razavi Province Panelists: Mr. Mohammad Alaee, Mr. Hossein Esmailian, Mr. Saeed Morid, Mr. Davoodreza Arab, Mr. Keshavarz, Mr. Ghandehari | Panel II: Basin- connected Cities with respect to Sustainable Urban Development and Water Scarcity in Mashhad and other Metropolitans Panelists: Mr. Mohammad Hadi Mahdinia, Mr. Mohammad Fazeli, Mr. Oveis Torabi, Mr. Eric Huybrechts, Mr. Chavoshian |
| | <ul style="list-style-type: none"> • Panel Intervention (60 mins) • Discussion (90 mins) | <ul style="list-style-type: none"> • Panel Intervention (60 mins) • Discussion (90 mins) |
| 16:00 – 16:30 | Conclusion: Mr. Mohammad Alaee and Mr. Hossein Esmailian | Conclusion: Mr. Mohammad Hadi Mahdinia and Mr. Mohammad Fazeli |
| 16:30 – 17:00 | Coffee Break | |
| 17:00 – 18:30 | Closing Ceremony: <ul style="list-style-type: none"> • Appreciations to Mr. Sattar Mahmoudi, Mr. Mohammad Maghdouri, Mr. Velayati, and Mr. Abbas Keshavarz | |

Technical tour to Kashafroud River Basin

Kashafroud River with the length of 374 kilometers is a seasonal river that flows from the Hezar Masjed Mountains in Khorasan Razavi Province. After passing from the vicinity of the cities of Radkan and Chenaran in Khorasan Razavi Province and then passing north and east of the city of Mashhad, Kashafroud joins Harirud River at the frontier of Iran and Turkmenistan.

However, it was full of water during last decades and was working as a main drain of catchment area and the most important source of agriculture needs. Unfortunately, in recent years due to very vast reasons, such as, booming of population, developing of factories and industries in suburbs, decline of groundwater, illegal housing in river banks, lack of clear and distinct laws, absence of a strong supervision, outspread studies by each part of liable, lack of integrated water management programme, and many other reasons it moves to a natural sewage and flood channel.

One of the main reasons of Kashafroud River water pollution is discharge of sewage from villages nearby Kashafroud River. Flowing industrial sewage into the river is another reason for water pollution. Industrial sewage includes heavy metals produced by mining activities without taking into account environmental impacts and as a result increasing suspended materials like minerals will result in water quality decline. Besides, agriculture sewage: poisons, dung and fertilizers are other harmful substances in water pollution.

In this respect an important project as “Kashafroud River Restoration” was carried out by evacuating domestic, industrial and agricultural areas around the river buffer zone.

The participants will have the chance to visit this magnificent project carried out by Khorasan Razavi Regional Water Authority fully supported by the Judiciary, Legislature and Executive systems all committing themselves to implement this project by all means.

**Field visit to Kashafroud River
Wednesday - December 12th, 2018 (Third Day)**

| | |
|---------------|-------------------------------------|
| 8:00 – 13:30 | Technical tour to Kashafroud |
| 13:30 – 15:00 | Lunch Break |
| 15:00 – 19:00 | City tour |

Venue

Ferdowsi University of Mashhad

Ferdowsi University of Mashhad strives to be one of the top universities in Iran in terms of scientific, theoretical and technological areas of development, as well as maintaining its Iranian and Islamic identity. It is ranked as the top ten universities in the Islamic world, and in the 500 top universities worldwide.

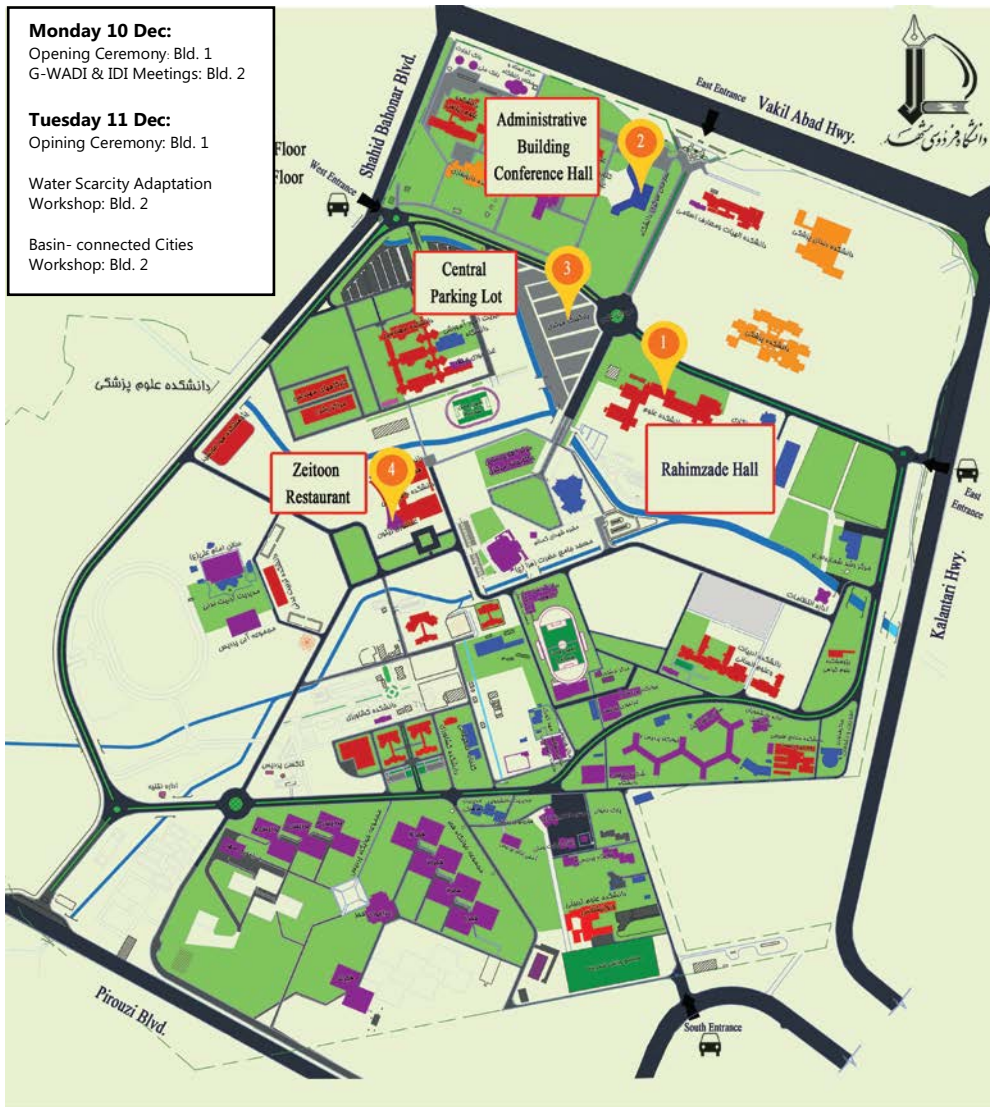
The mission of Ferdowsi University of Mashhad as the best university in the East of Iran is to educate the leaders for the society according to the divine principles of Islam and by relying on the existing highly qualified scientific Centres of excellence in a wide range of fields, plus the human and social capital and professional ethics that exist here at the Ferdowsi University of Mashhad. The university tries to train creative, committed, and professional citizens and knowledgeable and capable researchers. The mission is accomplished when Ferdowsi University of Mashhad can meet the needs of the society and maintain its cultural excellence by utilization of advanced technologies, compliance with international standards, and collaboration with scientific and cultural Centres. Ferdowsi University of Mashhad tries to advance the frontiers of knowledge both nationally and internationally.



Ferdowsi University of Mashhad

- **Venue:** Ferdowsi University, Mashhad, Iran
- **Accommodation:** 5 Star Pardisan Hotel, Mashhad, Iran

Map of Ferdowsi University of Mashhad



Ferdowsi University of Mashhad - North Entrance



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