**Under the patronage of His Royal Highness Prince El Hassan bin Talal**

The 6th International Symposium on Flash Floods in Wadi Systems

"BUILDING RESILIENCE, BUILDING CONFIDENCE"

26th – 30th September 2021, Amman, Jordan

The emergency response must be further complemented by efforts to build climate resilience and disaster prevention. This means looking beyond the next flood or storm to understand long-term climate vulnerabilities. It means helping society to prepare for and adapt to future weather extremes and other climate impacts through strategies and plans for disaster risk reduction. This requires a good analysis of climate change and flood risk mapping and good knowledge of the urbanized vulnerability to floods in such territories. Finding solutions to these challenging disasters also requires close collaboration between scientists, practitioners, and residents from local, regional, national, and international organizations, whether they are public or private. So, we will conduct the 6th International Symposium on Flash Floods in Wadi Systems to reduce flood risk, reduce vulnerabilities to natural hazards especially flash floods, and enhance building resilience.

The 6th International Symposium on Flash Floods in Wadi Systems will be held during 26 – 30 September 2021 in Amman, Jordan. This symposium will result in concise, forward-looking, and action-oriented outcome ideas of building the resilience of nations and communities to disasters.

This symposium is organized by the Inter-Islamic Network on Water Resources Development and Management (INWRDAM), Petra Development & Tourism Region Authority (PDTRA), and Kyoto University. The sixth symposium is one of a series of the annual International Symposium on Flash Floods in Wadi Systems that were organized in; Kyoto (1st ISFF 2015); Egypt (2nd ISFF 2016); Oman (3rd ISFF 2017); Morocco (4th ISFF 2018) and Kyoto (5th ISFF 2020). They have attracted a number of researchers, scientists, engineers, ministries, and practitioners in the world.

The 6th ISFF 2021 will be a good opportunity for participants to exchange experiences and share knowledge on integrated management of Wadi flash floods in arid regions, especially on "BUILDING RESILIENCE, BUILDING CONFIDENCE".

The event hosts several relevant research themes and projects to integrate ideas and critical pertinent data. Therefore, it provides a unique platform for discussion among researchers and practitioners and establishes a strong network between them.

**Agenda of the 6th International Symposium on Flash Flood in Wadi Systems**

26th – 30th September 2021, Amman, Jordan

**Sunday, September 26th, 2021**

**Official Opening of the Symposium**

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| 09:00 – 10:00 | **Registration and reception** |
| 10:00 – 10:10 | Welcome note and opening by HCST |
| 10:10 – 10:20 | Disasters and Human Security by COMSTECH |
| 10:20 – 10:30 | OIC water vision and the STI agenda OIC |
| 10:30 – 10:40 | Floods and UNESCO Heritage sites by Japan Government |
| 10:40 – 10:50 | OIC water status summary and INWRDAM's areas of focus by Executive Director of INWRDAM |
| 10:50 – 11:30 | **Session 1**: Roundtable on success stories and opportunities of WEFE Nexus in the OIC.<br>5 minutes presentation by focal points of INWRDAM. |
| 11:30 – 12:00 | **Discussion:** Q and A, Moderated by COMSTECH |
| 12:00 – 12:30 | **Group Photo** |
| 12:30 – 13:00 | Coffee Break |
| 13:00– 14:00 | **Session 2:** Creating a powerful WEFE knowledge base (Connecting the dots)<br>**Participants**: Iraq, Egypt, Malaysia, Union for the Mediterranean, Kyoto University |
| 14:00 – 15:00 | **Lunch Break** |
| 15:00 – 16:00 | **Session 3:** WEFE Nexus for Human security.<br>**Participants**: Pakistan, Saudi Arabia, Tunisia, World Bank, FAO, Private sector. |
| 16:00 – 17:00 | **Session 4:** Access to joint finance: WEFE NEXUS as a tool for inter-organizational collaboration.<br>**Participants**: OIC, Islamic Development Bank, SIDA, SDC, AFD, USAID, Kyoto Uni. |

**Monday, September 27th, 2021**

| **09:00 – 10:30** | **Session 5 - Part 1: Disaster risk reduction and early warning systems** | **Chair: Tetsuya Sumi** |
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| **09:00 – 09:30** | **Keynote Lecture**: Flash floods disasters in the MENA Region | Sameh Kantoush |
| **09:30 – 09:50** | Flash Flood Index Maps for Bavaria (Germany) using tree-based classifiers | Markus Disse |
| **09:50 – 10:10** | Flash floods mitigation in oman actions taken by oman water society | Ahmed Al Barwani |
| **10:10 – 10:30** | Impact of Urban Hydrology on The Formation of Shallow Perched Aquifers: Sharing Experience from Oman | Ali Al-Maktoumi |

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| **10:30 – 11:00** | **Coffee Break** | |
| 11:00 – 12:20 | **Session 5 - Part 2: Disaster risk reduction and early warning systems** | **Chair: Sameh Kantoush** |
| 11:00 – 11:20 | Integrated vulnerability analysis for flash flood risk management in Jordan | Katja Brinkmann |
| 11:20 – 11:40 | First-order quasilinear equations to model flash floods with non-dissipative wavefronts | Koichi Unami |
| 11:40 – 12:00 | Dam Break Analysis and Flood Inundation Mapping: A Case Study of Pinatubo Crater Lake | Mark Rigel Lorenzo |
| 12:00 – 12:20 | Flood risk mapping using a couple of hydrologic model WMS and hydraulic model Hecras in the Wadi Tataouine watershed Southern Tunisia | Jalel Aouissi |
| **12:20 – 13:20** | Poster Presentation (Part 1): 15 posters | 4 minutes for each poster |
| 13:20 – 14:20 | **Lunch Break - Poster Session 1:15 posters** | Evaluation of the poster |
| 14:20 – 16:20 | **Session 6: Real-time hydrometeorological monitoring and forecasting** | **Chair: Markus Disse** |
| 14:20 – 14:30 | Flash flood simulation using hydrodynamic rainfall-runoff modeling | Karl Broich |
| 14:30 – 14:50 | Early warning systems for water-related hazards in the valley of Ourika (Morroco): Functioning, evolution and learned lessons | Ahmed Fekri |
| 14:50 – 15:10 | Experimental rainfall-runoff data towards improving the model conception | Boutaghane Hamouda |
| 15:10 – 15:40 | **Coffee Break** | |
| 15:40 – 16:00 | Machine Learning Approaches for Flash Flood Risk Assessment in different climatic regions | Mohamed Saber |
| 16:00 – 16:20 | Daily Rainfall-Runoff modelling Using Machine Learning Models Forced by Satellite-Based Precipitation Datasets in a semi-arid region: Case of transboundary Mellegue basin | Tayeb Boulmaiz |

**Tuesday, September 28th, 2021:**

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| 09:00 – 10:50 | **Session 7: Flood Risk Management** | **Chair: Ali Al-Maktoumi** |
| 09:00 – 09:30 | **Keynote Lecture**: Flood Risk Management in Japan | Tetsuya Sumi |
| 09:30 – 09:50 | The hydrogeological conditions of wadi terrains in arid climate and effects of flash flood | Ahmed Murad |
| 09:50 – 10:10 | The impact of the increased flash flood frequency and their corresponding sedimentation problems on the water supply intakes | Abdelaziz Zaki |
| 10:10 – 10:30 | Investigation of shallow zone soil properties of wadi al ain and al suleimei and its role in mitigation of flash flood hazards, al ain city, uae | Saber Hussein |

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| 10:30 – 10:50 | Hydrological Change Based On Remote Sensing Data Due To The Construction of GERD And Their Influence On Egypt's Water Resources | Hadir Abdelmoneim |
| 10:50 – 11:20 | Coffee Break | |
| 11:20 – 13:00 | **Session 8: Flood Risk in Urban Areas** | **Chair: Ahmed Murad** |
| 11:20 – 11:40 | Building information modeling for enhancing construction flood resilience | Dalila Loudyi |
| 11:40 – 12:00 | Flash flood in Gabes City (Tunisia): hazard mapping and vulnerability assessment | Habib Abida |
| 12:00 – 12:20 | Management of sewer systems for protection against flooding in urban areas - Case of Boutlelis, Algeria | Chérifa Abdelbaki |
| 12:20 – 12:40 | Urban Flash Flood Modeling for Typical Sudanese City: Case Study of Kassala City, Sudan | Elhadi Adam |
| 12:40 – 13:00 | Parametric approach for land use planning as a flood risk reduction measure, case study: Egyptian city | Bahaa Elboshy |
| **13:00 – 14:00** | Poster Presentation (Part 2): 11 posters | 4 minutes for each poster |
| 14:00 – 15:00 | **Lunch Break + Poster Session 2: 11 posters** | Evaluation of the poster |
| **15:00 – 15:20** | **Closing Session** | |
| **15:20 – 15:40** | **Summary of the 6th ISFF** | Sameh Kantoush and Marwan Alraggad |
| **15:40 – 16:00** | **7th ISFF Announcement** | Chérifa Abdelbaki |

**Wednesday, September 29th, 2021:**

**Field Excursion - Petra Trip**

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| 08:00 – 08:15 | **Meeting Place: Grand Hyatt Amman** |
| 08:15 – 09:15 | Departure to Dead Sea |
| 09:15 – 10:15 | Wadi Zarqa Ma'in Visit |
| 10:15 – 11:15 | Wadi Mujib Visit |
| 11:15 – 14:00 | Departure and Arrival to Petra – Lunch Box |
| 14:00 – 15:30 | Check-In |
| 15:30 – 17:00 | **Session 9** (PDTRA – UNESCO – JICA) |
| 15:30 – 15:40 | Welcome message by Dr. Suliman Farajat – Chiefe Commissioner |
| 15:40 – 15:45 | Welcome message by INWRDAM and Kyoto University |
| 15:45 – 16:00 | Dr Hussien Al Hasanat - -Efforts of PDTRA for flash flood mitigation measures |
| 16:00 – 16:15 | JICA |
| 16:15 – 16:30 | UNESCO |

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| 16:30 – 17:00 | Discussion |
| 17:00 – 17:10 | 6th ISFF Closing Session |
| **18:00 – 20:30** | Social Dinner Hosted by PDTRA |

**Thursday, September 30th, 2021:**

**Petra City Site Visit**
**09:00 – 12:00**

- **Guided Tour**
- **Petra Visit Center**
- **Nabitean Dam – Diversion Tunnel**
- **Siq**
- **Treasury**

**Poster Sessions Program:**

**Monday, September 27th, 2021:**

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|---|---|---|
| 12:20 – 13:20 | **Poster Presentation (Part 1): 15 posters** | **4 minutes for each poster** |
| 13:20 – 14:20 | **Lunch Break - Poster Session 1:15 posters** | **Evaluation of the poster** |

| **12:20 – 13:20** | **Poster Presentation (Part 1): 15 posters** | **Chair: Dalila Loudyi** |
|---|---|---|
| 1 | Geomorphic Characterization of Bulakan, Bulacan and its Implications to the Proposed Land Use Development | Bea Reyes |
| 2 | Problematic of flood risk in urban areas, Case of Maghnia, Algeria | Halima Belarbi |
| 3 | Flood hazard mapping of El Ham wadi in Hodna region (Algeria) | Nour El Houda Belazreg |
| 4 | Flooding effect on the groundwater recharge of k'sob Wadi in Hodna region (Algeria) | Ahmed Ferhati |
| 5 | Flood forecasting in algeria using kalman filter and gr3h model- case of seybousse basin | Mohamed Amireche |
| 6 | Prediction of the possible impact of climate change on the flood areas of algiers | Lameche El Khansa |
| 7 | Extreme drought and flooding variability in northwest Algeria | Abdesselam Megnounif |
| 8 | Flood risk study using morphological Approach and GIS - Case of Mekkera Basin North West of Algeria | Abdellah Afra |
| 9 | Expert System for Prediction of Local Scour Around Bridge Piers | Mohamed Annad |
| 10 | Local scour Modeling by soil clustering coupled with supervised learning. | Mohamed Annad |
| 11 | Mapping of flood vulnerability in Mohammedia prefecture using the multi-criteria hierarchical analysis method | Leïla Ennajem |
| 12 | A new tool for depression storage assessment in runoff modeling | Morad Abdelsalheen |
| 13 | Floods and human health - Flood risk in Urban Areas | Ramy Abdelhafez |
| 14 | Impact of climate change on the intensity duration frequency curves of the city of algiers | El Khansa Lameche |
| 15 | 2d numerical analysis for the open channel confluences | Walaa Elhamamy |

**Tuesday, September 28th, 2021:**

| | | |
|---|---|---|
| 13:00 – 14:00 | **Poster Presentation (Part 2): 11 posters** | **4 minutes for each poster** |
| 14:00 – 15:00 | **Lunch Break + Poster Session 2: 11 posters** | **Evaluation of the poster** |

| **13:00-14:00** | **Poster Presentation (Part 2): 11 posters** | **Chair: Mohamed Saber** |
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| 1 | Flash flood hazards assessment and mitigation using lumped models, wadi bani ghapher, oman | Hamza Al-Salmi |
| 2 | Understanding storm flow generation within wadi systems based on geomorphological characteristics: case study of wadi billi, egypt | O. Almasalmeh |
| 3 | Suitable Hydrological Approach for Rainfall-Runoff Modelling of Wadi Billi, Egypt | O. Almasalmeh |
| 4 | The development of a method for evaluating potential flood-prone areas based on the flood hazard index: case of annaba city - northeastern algeria | Hamza Bouguerra |
| 5 | EVALUATION of SELECTION and WEIGHTING METHODS for FLOOD VULNERABILITY INDICES in URBAN AREAS: A CASE STUDY of ALEXANDRIA CITY, EGYPT | Karim Abdrabo |
| 6 | Modeling and integrated management of flash floods in wadi assuiti (egypt) | Mohamed Elkollaly |
| 7 | Flood investigation by modeling river flow using artificial intelligence modeling and ensembling techniques | Ehsan Foroumandi |
| 8 | Real-time Decision Support for Wadi Systems - how similarities with the sponge city concept may inspire technological innovation | Marianne Brum |
| 9 | Scaling of extremely heavy precipitation events with temperature over Japan | Sridhara Nayak |
| 10 | Streamflow forecasting utilizing artificial intelligence methods | Mohammed Allawi |