

Meeting Report

Improving Data for Water Resources Management

Mekong Water Data Experts Group

IBM Center for Cognitive Government, Washington, D.C., USA
April 3-4, 2019



What key needs,
apps to facilitate
sharing & colla

For "good" data -> 11
Capacity & desire
to share data.

> desire to receive & use
EX: UNN OR NGO data

> consideration of quality
OR procedures to build
data.

> support for country state
data & prioritize the

> gap with verification

> joint vision on what
use for.





CONSERVATION INTERNATIONAL



K water



CUAHSI Universities Allied for Water Research



Jet Propulsion Laboratory California Institute of Technology



NREL NATIONAL RENEWABLE ENERGY LABORATORY

MEKONG REGION FUTURES INSTITUTE



USAID FROM THE AMERICAN PEOPLE



SERVIR MEKONG



Australian Government Department of Foreign Affairs and Trade



USGS science for a changing world



adpc

THE AUSTRALIAN WATER PARTNERSHIP



UNIVERSITY OF VIRGINIA

GW



World Meteorological Organization Weather • Climate • Water

STIMSON



THE WORLD BANK



U.S. Chamber of Commerce

Meeting Report

MEKONG WATER DATA EXPERTS MEETING

IBM Center for Cognitive Government,
Washington, D.C., USA, April 3-4, 2019

BACKGROUND

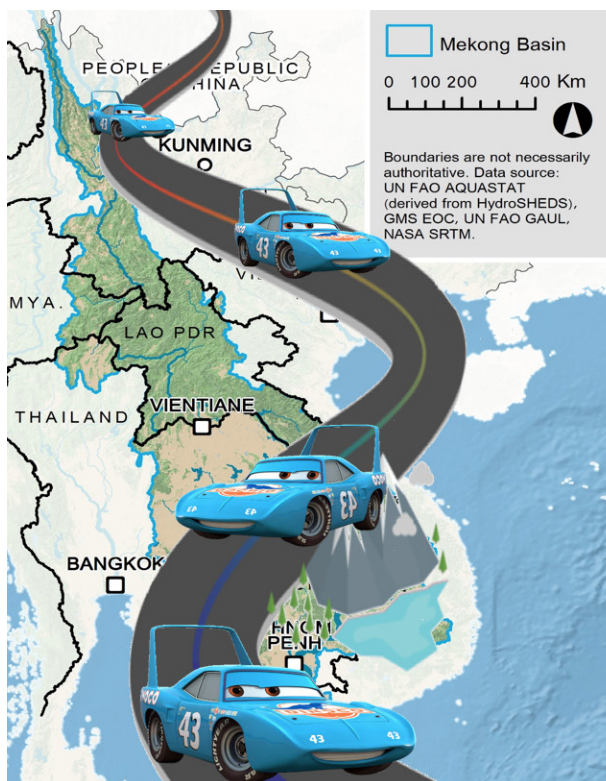
1. The U.S. Department of State (DOS), IBM, University of Virginia, and Pact organized a two-day Mekong Water Data Expert Meeting at IBM Center, Washington, D.C., on April 3-4, 2019. Participants included more than 60 water experts, scientists, and data specialists representing over 40 international public and private institutions, including the Mekong River Commission (MRC), Mekong countries (Cambodia, Laos, Myanmar, Thailand and Viet Nam), universities and research groups, international development partners and NGOs, and private companies.
2. The Mekong Water Data Experts Meeting was the fourth in a series of international discussions in support of the Mekong Water Data Initiative (MWDI) – launched under the Lower Mekong Initiative (LMI) in 2017 - and the first step toward implementing the 2018 [Joint Statement to Strengthening Water Data Management and Information Sharing in the Mekong](#). The overarching objectives of this meeting were to: 1) develop terms of reference for a model data exchange platform that would enhance access to natural resources data throughout the lower Mekong region; and 2) identify policy actions that could facilitate data access and management in the region.
3. The first day of the meeting was technically focused on how to improve Mekong water data management at regional and national levels, current approaches in data services, models and solutions, and how a Mekong water data access platform could be designed. The second day focused on policy recommendations and collaborative actions partner could take to advance shared goals. In a closed session at the end of the meeting, the MRC, LMI member countries, and key development partners, including Australia and the Republic of Korea, discussed a process to support the development of a broad strategy to upgrade the MRC's capabilities to meet the data needs of the region.



4. Improving access to data has value for all stakeholders, including for improving livelihoods, decision-making, policy development, and basic research. At the regional level, improving access to data is critical for connecting riparian states to be able to develop sustainable solutions to development challenges as well as better forecast and mitigate water-related challenges together.
5. Many modeling tools and data sets already exist to help address the water-related challenges in the region. Efforts should be made to improve the discoverability, access, and capacity to utilize existing resources.
6. Trust remains an obstacle in improving data access. Each Lower Mekong country has a different level of capacity and political readiness concerning sovereignty issue in collecting and sharing data. Improvements in standardization, quality control, and quality assurance of data products could improve willingness to exchange data.
7. Toward facilitating an open ecosystem of collaboration among stakeholders in the Lower Mekong Basin and beyond, the U.S. has launched a pilot project to build an open-access peer-to-peer platform for water and water-related data exchange and collaboration. The platform is expected to deliver a number of services, including a searchable resources directory, an access-controlled data exchange mechanism, and facilitated access to other existing databases, data services, and data facilities. The data platform will be free and open to use by any interested users and assure the integrity of any data exchange process. Data custodians will retain ownership of their data and determine terms of access.
8. National and regional level policies around data sharing should be reviewed and revised to solve water related challenges in the Mekong basin and to ensure the stable governance and sustainability of the data access platform. Special attention should be given to policy reform that facilitates cross-sector exchange of information and planning as well as promotes problem-oriented data collection and analysis.
9. Other stakeholders, including development partners, research institutions, nongovernmental organizations, and private business all have a role to play in improving access to water data, especially with addressing specific data gaps such as water-related socioeconomic data.



10. Welcome remarks from Mr. Jeff Talley, Senior Executive of IBM, who noted that he was very pleased to host the Meeting with US-DOS and partners. The Mekong region and the United States both experience vulnerability due to climate change. Climate change is a big data problem which requires a public-private partnership solution, exemplified fully by this Mekong Water Data Experts Meeting.
11. Dr. Aaron Salzberg, Chief of Water Division, US-DOS, provided a road map of Lower Mekong regional cooperation on data since the signing of the 1995 Mekong Agreement, including World Meteorological Organization (WMO) Resolutions for increasing the availability of meteorological data for WMO' applications, the 2017 launch of LMI-Mekong Water Data Initiative (MWDI), the 2018 Mekong Summit that addressed institutional needs to improve availability of data and analysis tools, and the 2018 Joint Statement to Strengthen Water Data Management and Information Sharing in the Lower Mekong.
12. The MWDI continues to be a vehicle for coordination among partners and stakeholders across the globe to explore, discuss, and build consensus around possible solutions to broaden data access in the Mekong region. This two-day dialogue is meant to be another step in this multi-partner effort that convenes water data experts, partners, and implementers to: 1) develop terms of reference for a model data access platform; and 2) identify actions that the Mekong River Commission, LMI members, and other stakeholders can take to advance data access and management in the region.



Strengthening Data Management in the Mekong (The Road We've Taken)

- 1995 Mekong River Agreement**
- 1995 WMO Res 40**
- 1999 WMO Res 25**
- 2001 MRC PDIES**
- 2009 Launch of the Lower Mekong Initiative (LMI)**
- 2013 LMI RWG – The Nexus**
- 2015 WMO Res 60**
- 2016 Drought**
- 2017 LMI Ministerial: Mekong Water Data Initiative (MDWI) Launched**
- 2017 Launch of the World Data Initiative**
- 2017 MWDI Meeting 1 (Laos)**
- 2018 MRC Summit**
- 2018 MWDI Meeting 2 (Naypidaw)**
- 2018 LMI Ministerial: Adoption of the Data Action Plan**
- 2018 Mekong Research Forum**
- 2019 MDWI Meeting 3 (Washington DC)**

13. Dr. Jerad Bales, Executive Director of Consortium of Universities for the Advancement of Hydrological Science and Information (CUAHSI), gave keynote remarks emphasizing the value of shared data that connect riparian states together and of the promise of technology solutions in integrating data access through a shared platform. Dr. Bales noted that financial integrity and slow implementation process could be major challenges in the effort to deliver a Mekong Water Data Platform. However, there is evidence around the world that water data has improved water diplomacy and supported contingency plans. Improving access to water data can be difficult, from the policy point of view, but in the Mekong, we are not far away from that goal.

14. Six panelist members from Lower Mekong countries provided a key critical concern regarding data access and sharing in the region. Dr. Chusit Apirumanekul, emphasized that a basic understanding of water data cycle and its technical steps have continued to confuse non-experts. He addressed the challenges in the financial sustainability of capacity building and technical assistance programs that largely rely on donors and development partners. Each country has a large difference in capacity and readiness gap to develop and sharing data.
15. Ms. Nguyen Hong Phuong, Deputy Director of Vietnam National Mekong Committee (VNMC), stated that it is difficult to coordinate all data from many different sectors. Data produced by the Lower Mekong countries are still inadequate in both quality and quantity. All data have different standards and not all are sufficient for decision making. There is need for technologies to help fill data gaps, as well as producers to develop such required data.
16. Dr. Khin Ni Ni, Secretary of National Water Resource Committee from Myanmar, remarked that data sharing requires 360-degree capacity building support. Myanmar sees data sharing as a national security risk that could lead to loss of sovereignty. There is a need to develop an agreement with Myanmar to share data with the other riparian countries, as well as have an enforceable water management plan.
17. Dr. Winai Wangpimool, Senior Technical Specialist of Thailand National Mekong Committee (TNMC), emphasized the capacity needs for analytical tool applications and updated technologies. He also emphasized the importance of data sharing among the MRC Member Countries.
18. Mr. Hong Chheang, Deputy general of Cambodia National Mekong Committee (CNMC) noted that Cambodia still has data and capacity gaps in hydrology, sediment, water quality, fisheries, and land-use analysis. Use of analytical and forecasting tools is what Cambodia needs in terms of capacity building. Operation and maintenance of hydromet stations, and database management is also a priority for national capacity building.



19. Mr. Oulaphone Ongkeo, Director of Natural Resources and Environmental Research Institute (NREI), shared that access to hydromet data in Laos can still be an issue. Data gaps and reliability of data are also ongoing challenges. Same as the others, use of analytical and forecasting tools is what Laos needs in terms of capacity building.

20. Ten panelist members from the MRC, Australia E-Water, U.S. Geological Survey (USGS), Korea Institute of Hydrological Survey (KIHS), SERVIR-Mekong, IBM, and Thailand National Office of Water Resources (NOWR) shared a presentation of existing data and tools available in the Mekong region and internationally.
21. Dr. Jenjira Chuthong from the MRC provided that hydromet and other types of data of the MRC are available on the MRC website. This also included flood forecast, basin plans, and a climate change assessment tool. The MRC collects data on its own and in coordination with the Member Countries. Data inputs from stakeholders are also welcome but will be used and analyzed in different processes.
22. Dr. Paradis Someth from Australia E-Water presented that the Data Cube is a satellite-based tool that provides geometric median and drought status information in the last 30 years. The E-water Source models forecast water demand and floods from 3-10 days to one year. The model tool is available publicly and was tested successfully in Cambodia.



23. Dr. Sachin Shah from USGS presented on the USGS's public and open source data platform which uses primary, secondary, and remote sensing data to develop understanding of groundwater hydraulic, as well as the world's largest dataset and analysis on agricultural cropland. This platform can be used for either learning and actual planning i.e. identification of borehole drilling, crop type scenario assessment, etc. The platform is available publicly on website and mobile application.
24. Dr. Eunjeung Shim from KIHS highlighted that KIHS is a public institute supported by the South Korea Government, responsible for hydrological data collection and analysis for planning. KIHS has developed advanced techniques of streamflow management. The institute uses FlowTracker, microwave water surface current meter, and Acoustic Doppler Profiler (ADCP) technology to monitor and develop standardized its hydrological dataset. KIHS also provides training in hydrological survey and there have been more than 1,000 people trained since 2009.
25. Dr. Ashutoshe Limaye from SERVIR-Mekong spoke on their project which provides satellite-based data to users for planning and decision making. SERVIR-Mekong is a demand driven initiative that helps users to assess their needs and select suitable tools for their use. There are a number of tools which they have provided to regional and national users such as reservoir mapping, stream flow and surface water mapping, dam inundation mapping, climate service tool and global rainfall dataset, to name but a few.

26. Dr. Somkiat Apipattanavis from Thailand ONWR shared that Thailand has established the ONWR in 2018 with the mandate to coordinate data and expertise from 38 different water related agencies. www.Thaiwater.net is Thailand's master website that coordinates and shares all water, forecast and planning data for the public that links to a national big data system.

27. Dr. Derek Vollmer from Conservation International presented a tool for river health impact assessment. FHI has provided training courses using Freshwater Health Index (FHI) to assess river health impacts in different scenarios. The FHI is a standardized way to get multiple stakeholders on the same page with regards to water resources management. Dr. Derek also presented a research case of 3S River where the FHI was demonstrated.

28. Ms. Jennifer Daw from National Renewable Energy Laboratory (NREL) presented a set of NREL planning and assessment tools and a user-friendly webpage on global renewable potentials classified into resource, technical, economic, and market potentials. She also showed how a search on energy potentials in South Asia looks like, through the NREL webpage. NREL also facilitates online Resilient Energy Platform that developed through the USAID-NREL Partnership, providing expertly curated resources, trainings, data, tools, and direct technical assistance in planning resilient, sustainable, and secure power systems.

Reservoir Mapping Tool

- In response to the stakeholder requests, SERVIR-Mekong has developed this tool that estimates the dam inundation area for a select location throughout the region.
- SERVIR also has an offline capability to compute the volume of water existing (post 1999) and potential reservoirs using satellite imagery

<https://webserverbkk.adpc.net/ReservoirMappingTool/>

Resilient Energy Platform

Developed through the USAID-NREL Partnership, the Platform provides expertly curated resources, trainings, data, tools, and direct technical assistance in planning resilient, sustainable, and secure power systems.

<https://www.nrel.gov/usa/partnership/resilient-energy-platform.html>

Streamflow measurement

Advanced Techniques of streamflow measurement in Korea

- Currently, it was developed a variety of high tech current meter

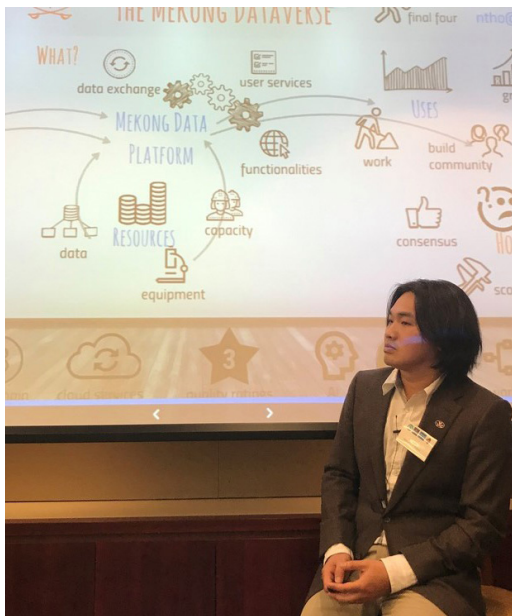
FlowTracker

Fixed type microwave water surface current meter

KIHS Korea Institute of Hydrological Survey

29. Dr. John Sabo from Arizona State University (ASU) presented a case of hydropower dam versus Mekong food supply solution. Through an ASU's study, an algorithm for hydropower dams that operate without compromising Mekong' fish stock was developed and calculated. The research recommended a model of long low-flow periods punctuated by pulses of flooding, which will allow dam operators to co-manage their power generation priorities, while protection livelihood for fisheries downstream.

30. Mr. Lee Angelelli from the IBM presented an overview of IBM's big data, AI, and Cloud technology that assist humans to integrate and manage data (physical environment information, socioeconomic, and sociopolitical information) and respond to disasters i.e. impacts/response to floods and droughts, wildfires, to name but a few. IBM also owns a data platform namely, Machine Learning Data Catalog (MLDC), that is self-federated and provides visualized data exchange service. IBM is familiar with and has a team established in the LM region. IBM has developed products and tools to improve water security in the Mekong.



31. Dr. Tho Nguyen from the Department of Computer and Science, University of Virginia (UVA) presented on the need for and design of a Mekong Data Access Platform pilot. Dr. Tho highlighted the issue of trust and data quality that impedes the free sharing of data. He proposed a model of a peer-to-peer data access and sharing platform. Rather than a data repository, this platform will facilitate a knowledge hub that provides a discoverable catalogue of available datasets, tools, or services. Four small group discussions were facilitated after the plenary session, considered three questions:

- 1) What are key needs/capacity gaps to facilitate water data sharing and collaboration?
- 2) Describe the user community; what are key activities to build this community?
- 3) What are key operational guidelines to operate and sustain the Mekong data communities?

Input from meeting participants informed the following proposed Mekong Water Data Platform (MWDP) deliverables:

1. *Resources directory*, which is searchable to the users, and includes:
 - a. Data – metadata and other associated descriptors (e.g. linked studies, publications, etc.)
 - b. Expertise – individuals and institutions, their expertise, capacity, and areas of priority interests
 - c. Tools and resources - simulations, analyses, applications, sensors, and equipment
2. *The data exchange*, which is a mechanism that:
 - a. Provides data owners/custodians fine-grained control over the process of sharing data under their care. For example, data custodians can implement the terms of access to their data (e.g. by who, level of access, duration, etc.). The data exchange does NOT dictate or recommend the terms of exchange.
 - b. Alleviates the burden of data provenance and integrity from the users (these responsibilities belong to the data custodians)
 - c. Assures the integrity of the exchange process. Record and preserve the transaction activities.
3. *Integration with existing databases, data services, and data facilities*, including:
 - a. Support for existing databases and data services to publicize their data on the MWDP directory
 - b. Support for existing databases and data service to continue implementing their data sharing policies, while providing options to enhance how they share data (e.g., better ability to have more fine-grained control and documentations)
 - c. Support for existing data facilities (e.g. data centers, where hardware resources are also available to share) to integrate with the MWDP and engage users for their facilities.



The Mekong Water Data Platform will be free and open for use by any users who are interested. Anticipated major users and uses of this platform include:

1. *Inter-government organizations, government policy makers and development managers.* Uses include weather and climate forecasting, analyses to support policy making and decision making.
2. *Private industry users such as companies and commerce organizations.* Uses include analyses for market studies and forecasting, and decision support.
3. *Public not-for-profit organizations and researchers, including NGOs, universities, and public interest groups.* Uses include research and analyses to advance knowledge, decision support, and advocacy.
4. *Individual stakeholders.*



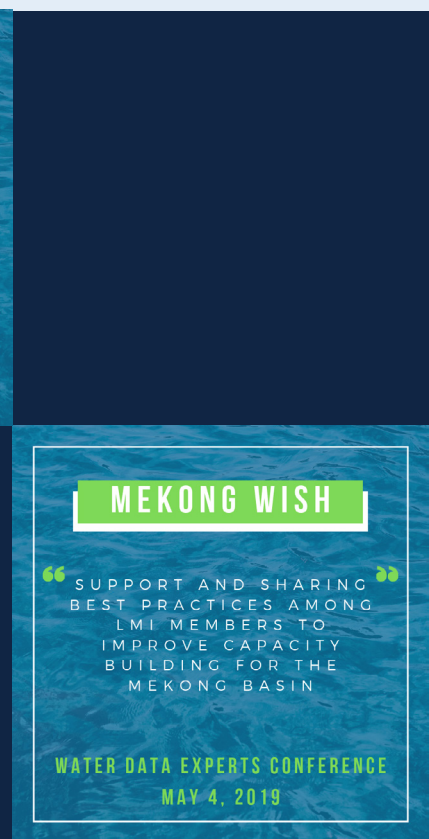
DAY 2 – Session IV: Developed Policy Recommendations

32. Panelist members of this session included Dr. John Dore from Australia Department of Foreign Affairs and Trade (DFAT), Dr. Kenji Nagata from Japan International Cooperation Agency (JICA), Dr. Ezra Khan from United States Department of Agriculture (USDA), and Dr. Ron Argent from Australia Bureau of Meteorology. Each representative from the LM countries also provided a final comment at the end of the panel discussion. The key question for this session was “what actions can governments, institutions, and other policy makers take to improve data access in the Mekong?”

33. Key discussion points from this session are summarized as follows:

- a) For some Mekong governments, data development is not yet a priority. At the regional level, however, through the leadership of the new MRC Chief Technical Advisor, strengthening database development and modeling assessment are a priorities for the MRC. Other regional cooperation and technical assistance (TA) frameworks, such as the Ayeyawady - Chao Phraya - Mekong Economic Cooperation Strategy (ACMECS), also have water management in their agenda. Development support to LM countries can be provided through a number of water management programs, i.e. young professional development, policy development and implementation, TA, and other bilateral cooperation.
- b) Shared problems build cross sectoral collaboration. Traditional governmental structures do not facilitate cross sectoral collaboration. With that in mind, problem identification can unite sectors together to work in synergy. Development of data management plans with clear objectives is also a good way to start.
- c) Water plays a key role in every development sector; nevertheless, the sharing of data may not be sufficient. The development of robust datasets and information will build a strong foundation for sharing. There is a need to have full commitment of all LM countries to the water data initiative and consistently providing updated essential data.

- d) Datasets shared between the MRC member countries through the PDIES framework are still limited. There is a need for more datasets on environment and socioeconomic issues, e.g. flow data from China, especially during the dry season. Environmental and socioeconomic priority issues and scope should be identified to provide guidance for data collection.
- e) The MRC still provides a solid structure for data cooperation and has the capacity to evolve. The PDIES framework could be revisited and updated based on lessons learnt, though the procedures are not subject to be totally revised. The MRC could also develop a self-financing plan for its database and information management system in the future as to ensure sustainability.
- f) Data sharing from the private sector, especially from hydropower companies, is a gap that should be addressed. How can the LM countries, the data platform, and development partner efforts engage this group?
- g) Understanding clear terms and differences between “data sharing”, “data exchange” and “data access” is required. Returned benefits from data sharing should be explored and addressed clearly.



Session V: What Can We do?

- 34. This last session included a panel discussion around “how other organizations and stakeholders play a role in improving data access and sharing in the Mekong region?”. Panelist members for this session included Dr. Astrid Hillers from the Global Environment Fund (GEF) International Waters Program, Mr. Chuck Chaitowitz from the U.S. Chamber of Commerce, Mr. Rafael Glemet from IUCN Asia, Dr. David Hyndman from Michigan State University, Dr. John Ward from Mekong Region Futures Institute (MERFI), and Dr. Mark Smith from Integrated Water Resources Management (IWMI).
- 35. Key discussion points from this session are summarized as follows:
 - a) The way people view the water sector must reflect the advanced thinking of water as integral to all facets of life and economic sectors. Speaking of water data alone may not convey the importance of water for agriculture, water for urbanization, etc. Looking at water data through a social lens will capture the interest of a larger audience.



- b) How can the private sector be helpful in terms of water data access? The private sector is an ever-growing force in economic development. Data development still has not been well defined in the business world, with a lot of data still to be shared for the greater good.
- c) The notion that data sharing will improve decisions is challenged. Many decisions are made from a political or economic vantage point, not solely based on evidence. The right question is how can we make data accessible to influence decisions and translate these into actions.
- d) Socioeconomic data from the region have been developed independently from the MRC. For example, MERFI has conducted research in Laos and collected socioeconomic data from 6,000 households. Nevertheless, relevant indicators must be identified and quantifiable.
- e) Development agencies such as DFAT and LMI should coordinate in order to support the MRC more effectively.

Closed Session

- 36. In a closed session at the end of the meeting, the MRC and the LMI member countries, and other key development partners, including Australia and the Republic of Korea, outlined a process to support the development of a multi-year strategy to upgrade the MRC's capabilities to meet the data needs of the region.



ANNEX I: Program Agenda

DAY I Enabling Data Access: the hardware <i>(technical focus)</i>											
08.00	Registration and Breakfast										
08.30	Opening <ul style="list-style-type: none"> • Welcoming Remarks - Jeff Talley, IBM • Meeting Road Map - Aaron Salzberg, U.S. Department of State • Participant Introductions 										
09.15	Keynote – Jerad Bales - <i>the power of data sharing and the art of the possible – What does the future look like? How can we get there?</i>										
09.30	Session I – Understanding Data Access Goals in the Mekong Moderator: Aaron Salzberg, U.S. Department of State <i>What are the critical questions we are trying to answer? What do you want data for? Where are the greatest data access and capacity needs?</i> <ul style="list-style-type: none"> • Format: Panel addresses aspirational goals followed by open discussion • Dr. Chusit Apirumanekul, Water Expert Consultant • Mr. Chheang Hong, CMNC, Cambodia • Mr. Oulaphone Ongkeo, NERI, Lao PDR • Dr. Khin Ni Ni Thein, AG/NWRC, Myanmar • Dr. Winai Wangpimool, TNMC, Thailand • Ms. Nguyen Hong Phuong, VNMC, Viet Nam 										
10.30	Break										
10.45	Session II – Current Approaches in Data Tools, Models, and Services Moderator: Jerad Bales <i>What does your tool do well? What data are you using? Who has access to your data tool? What doesn't it do? Can it help address the needs from Session I?</i> <ul style="list-style-type: none"> • Format: Presentations (5-7 min + 3-5 min Q&A) • Janejira Chutong, MRC • Paradis Someth, Australia eWater • Sachin Shah, USGS • Eunjeung Shim, Korea Institute of Hydrological Survey • Ashutoshe Limaye, Servir-Mekong • Somkiat Apipattanavis, Thailand • Derek Vollmer, Conservation International • Jennifer Daw, NREL • John Sabo, Arizona State University • Lee Angelleli, IBM 										
12.30	Lunch										
13.30	Session III – Designing a Mekong Data Access Platform Moderator: Jerad Bales <ul style="list-style-type: none"> • Format: The data string game, Aaron Salzberg • Walk through discussion of the design, testing, and eventually scaling process of a data access platform, Tho Nguyen, UVA 										
15.00	Coffee Break										
15.15	Session III cont'd – Designing a Mekong Data Access Platform Moderator: Jerad Bales <ul style="list-style-type: none"> • Format: Breakout groups discuss data access platform design and considerations for its terms of reference 										
16.45	Close										
17.00	Reception and Demo Session Demos: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">1. Alan Basist - Eyes on Earth</td> <td style="width: 50%;">6. IBM</td> </tr> <tr> <td>2. Venkat Lakshmi - UVA</td> <td>8. Conservation International</td> </tr> <tr> <td>3. NASA</td> <td>9. Stimson Center</td> </tr> <tr> <td>4. Servir Mekong</td> <td>10. Australia e-Water</td> </tr> <tr> <td>5. ASU</td> <td>11. Wonders of the Mekong</td> </tr> </table>	1. Alan Basist - Eyes on Earth	6. IBM	2. Venkat Lakshmi - UVA	8. Conservation International	3. NASA	9. Stimson Center	4. Servir Mekong	10. Australia e-Water	5. ASU	11. Wonders of the Mekong
1. Alan Basist - Eyes on Earth	6. IBM										
2. Venkat Lakshmi - UVA	8. Conservation International										
3. NASA	9. Stimson Center										
4. Servir Mekong	10. Australia e-Water										
5. ASU	11. Wonders of the Mekong										

DAY 2 Enabling Data Access: the software (policy focus)

08.30	<p>Review progress from Day I</p> <ul style="list-style-type: none"> • Format: Working breakfast with facilitated discussion 										
09.30	<p>Session IV – Data Access Impediments Moderator: Aaron Salzberg <i>Data owners discuss terms with data end users– can they come to terms?</i></p> <ul style="list-style-type: none"> • Format: Role Play on Data Sharing • Data policy wishes on the Magic Chicken 										
10.30	Break										
10.45	<p>Session V – Develop Policy Recommendations Moderator: Hans Guttman, Asian Disaster Preparedness Center <i>What actions can governments, institutions and other policy makers take to improve data access in the Mekong?</i></p> <ul style="list-style-type: none"> • Format: Panel followed by facilitated discussion • Robert Argent, Australia Bureau of Meteorology • Ezra Kahn, U.S. Department of Agriculture • Kenji Nagata, Japan • John Dore, Australia DFAT 										
12.30	Lunch										
13.30	<p>Session VI – What Can We Do? Moderator: Brian Eyer, Stimson Center <i>What actions can individuals, organizations and other stakeholders take to improve data access in the Mekong?</i></p> <ul style="list-style-type: none"> • Format: Panel followed by a “tour de table” • Mark Smith, IWMI • Chuck Chaitovitz, U.S. Chamber of Commerce • Astrid Hiller, GEF • David Hyndman, Michigan State University • Raphael Glemet, IUCN • John Ward, MERFI 										
15.00	Next steps and Concluding Remarks										
15.30	<p>Session VII – Networking and Demo Session</p> <p>(Closed Session with MRC, FLM, and Mekong Reps)</p> <p>Demos:</p> <table border="0"> <tr> <td>1. Korea</td> <td>6. JICA</td> </tr> <tr> <td>2. USACE</td> <td>8. USGS</td> </tr> <tr> <td>3. UVA</td> <td>9. IUCN</td> </tr> <tr> <td>4. IBM</td> <td>10. University of Michigan</td> </tr> <tr> <td>5. CUAHSI</td> <td>11. USDA</td> </tr> </table>	1. Korea	6. JICA	2. USACE	8. USGS	3. UVA	9. IUCN	4. IBM	10. University of Michigan	5. CUAHSI	11. USDA
1. Korea	6. JICA										
2. USACE	8. USGS										
3. UVA	9. IUCN										
4. IBM	10. University of Michigan										
5. CUAHSI	11. USDA										
17.00	Close										

ANNEX II: List of Participants

Mekong Water Data Experts Meeting

IBM Center for Cognitive Government, Washington, D.C., USA

April 3rd – 4th, 2019

No.	First name and last name	Department/Agency	Country based	Email contact
1	John Dore	DFAT	Australia	John.Dore@dfat.gov.au
2	Rob Argent	Bureau of Meteorology	Australia	robert.argent@bom.gov.au
3	Paradis Someth	Australian eWater	Australia	paradis.someth@ewater.org.au
4	Chheang Hong	Cambodia National Mekong Committee (CNMC)	Cambodia	hongcnmc@hotmail.com
5	Kenji NAGATA	JICA	Japan	Nagata.Kenji@jica.go.jp
6	Mina Sato	MOFA Japan	Japan	mina.sato@mofa.go.jp
7	Oulaphone Ongkeo	Natural Resources and Environment Research Institute (NERI)	Lao PDR	oulaphoneongkeo@gmail.com
8	Janejira Chutong	Technical Support Division, Mekong River Commission Secretariat	Lao PDR	janejira@mrcmekong.org
9	Chusit Apirumanekul	Integrated Water Resources Management Capacity Building Program, World Bank	Lao PDR	capirumanekul@gmail.com
10	John Ward	Mekong Region Futures Institute (MERFI),	Lao PDR	john.ward@merfi.org
11	Khin Ni Ni Thein	National Water Resources Committee (NWRC)	Myanmar	aiweb.lead@gmail.com
12	Ye Thu Aung	Hydro-Informatics Centre, Component (I), AIRBM Project	Myanmar	yta.hic.researcher@gmail.com
13	Eunjeung Shim	Korea Institute of Hydrological	Republic of Korea	ejskim@kihs.re.kr
14	Euiho Hwang	K-water Corporate Research Office	Republic of Korea	ehhwang@kwater.or.kr
15	Hyosok Chae	K-water	Republic of Korea	hyosok.chae@kwater.or.kr
16	Mark Smith	IWMI	Sri Lanka	mark.smith@cgiar.org
17	Winai Wangpimool	Office of National of the Water Resources	Thailand	winai.wangpimool@gmail.com
18	Somkiat Apipattanas	Office of National of the Water Resources	Thailand	skavis@yahoo.com
19	Hans Guttman	Asian Disaster Preparedness Center (ADPC)	Thailand	hans.guttman@adpc.net
20	Raphael Glemet	IUCN	Thailand	Raphael.GLEMET@iucn.org
21	John Choi	Embassy Bangkok	Thailand	ChoiJY@state.gov
22	Suparek Janprasart	Pact Thailand	Thailand	sjanprasart@pactworld.org
23	Olufemi Akinmade	Pact HQ	United States	oakinmade@pactworld.org
24	Jerad Bales	CUAHSI	United States	jdbales@cuahsl.org
25	Alan Basist	Eyes on Earth	United States	anbasist@gmail.com
26	John Sabo	Arizona State U	United States	john.l.sabo@asu.edu
27	Gordon Holtgrieve	Washington U	United States	ghoit@uw.edu
28	David Hyndman	Michigan State	United States	hyndman@msu.edu
29	Chuck Chaitowitz	US Chamber of Commerce	United States	CChaitovitz@USChamber.com
30	Derek Vollmer	Conservation International	United States	dvollmer@conservation.org
31	Guillermo Mendoza	USACE	United States	Guillermo.F.Mendoza@ostp.eop.gov
32	Travis Dahl	USACE	United States	Travis.A.Dahl@usace.army.mil
33	Nina Burkardt	USGS	United States	burkardtn@usgs.gov
34	Sachin Shah	USGS	United States	sdsah@usgs.gov
35	Arlene Fetizanan	DOE	United States	Arlene.Fetizanan@Hq.Doe.Gov
36	Kevin Coffey	USAID	United States	kcoffey@usiad.gov
37	Venkat Lakshmi	UVA	United States	vlkshml@virginia.edu
38	Sudeep Chandra	U of Nevada	United States	sudeep@unr.edu
39	Astrid Hiller	GEF	United States	ahillers@thegef.org
40	Susan McCarthy	USDA/NAL	United States	Susan.McCarthy@ars.usda.gov
41	Ezra Kahn	USDA/NAL	United States	Ezra.Kahn@ars.usda.gov
42	Jill James	USDA/NAL	United States	Jill.James@ars.usda.gov
43	Kerrie Gell	USDA/NAL	United States	Kerrie.Gell@ars.usda.gov
44	John Bolton	NASA	United States	John.bolton@nasa.gov
45	Ashutosh Limaye	NASA	United States	ashutosh.limaye@nasa.gov
46	Amanda Weigel	NASA	United States	amanda.m.weigel@nasa.gov
47	Jennifer Daw	NREL	United States	Jennifer.Daw@nrel.gov
48	Brian Eyster	Stimson	United States	beyler@stimson.org
49	John Caves	Elliot School	United States	jpcaes@gwmail.gwu.edu
50	Courtney Hill	UVA	United States	clh023@gmail.com
51	DK/ Kang/Hanh Jung	NASA	United States	dk.kang@nasa.gov; hanhchul.jung@nasa.gov
52	Rickey Myseky	Army Geospatial Center	United States	Rickey.N.MYSKEY@usace.army.mil
53	Mary Melnyk	USAID	United States	mmelnyk@usiad.gov
54	Courtney Weatherby	Stimson Center	United States	cweatherby@stimson.org
55	Aaron Salzberg	US Department of State	United States	salzbergaa@state.gov
56	Jenna Shinen	US Department of State	United States	ShinenJL@state.gov
57	Tho Nguyen	University of Virginia	United States	thn2c@virginia.edu
58	Lee Angelleli	IBM	United States	langelel@us.ibm.com
59	Megan Sullivan	Pact HQ	United States	msullivan@pactworld.org
60	Tess Ericson	US Department of State	United States	EricsonEA@state.gov
61	Debbie Kuhn	US Department of State	United States	KuhnDW@state.gov
62	Carol Lynn, MacCurdy	US Department of State	United States	MacCurdyCL@state.gov
63	Tori Peabody	US Department of State	United States	PeabodyYVW@state.gov
64	BeBe Tran	US Department of State	United States	TranBHI@state.gov
65	Dave Herman	US Department of State	United States	HermannDC@state.gov
66	Nguyen Hong Phuong	Vietnam National Mekong Committee (VNMC)	Vietnam	hongphuong.nguyen@gmail.com

