

문서번호 APCC-출장-17-0368(2017-04-10)

## TRAVEL REPORT FORM

### 출장보고서

|        |           |       |       |       |
|--------|-----------|-------|-------|-------|
| 결<br>재 | 선임연구<br>원 | 팀장    | 부서장   | 원장    |
|        | 04/07     | 04/10 | 04/10 | 04/10 |
| 협<br>조 | 김대하       | 조재필   | 김형진   | 정홍상   |
|        |           |       |       |       |

#### I. Reporter 보고자

| Department<br>소속 | Position<br>직위(직급) | Name<br>성명 | Travel Date<br>날짜 | Note<br>비고 |
|------------------|--------------------|------------|-------------------|------------|
| 응용사업본부           | 선임연구원              | 김대하        | 2017.3.29.-31.    |            |

#### II. Major Activities 주요업무 수행내용

##### 1. Main Contents and Activities 주요내용 및 활동

- Asia Water Council (AWC) 4<sup>th</sup> Board of Council Meeting 참석
- 일시/장소: 2017.3.29.-31 / China Palance Hotel, Beijing, China
- 주관기관: The Ministry of Water Resources of China, China Institute of Water Resources and Hydropower Research, AWC Secretariat
- 주요내용
  - AWC 활동 및 Asia Water Issue에 대한 우선순위 결정
  - 1차 Asia International Water Week (AIWW)의 경주 개최 건에 대한 승인 및 차년도 개최국가 선정 프로세스 승인
  - 8차 세계 물포럼 주제와 컨셉노트 공유
  - 협력기관 활동(Asia-Pacific Water Summit, UNESCO i-WSSM, UN Capital Development Fund, K-water Global Scale Activities)에 관한 소개
  - AWC Business Model Development Task Force 승인 등
- APEC Climate Center 참여활동
  - 3월 29일 사전 프로그램 발표: Global Warming and Drought Hazard
  - 3월 30일 Asia Water Issues 프로그램 Water and Climate Change 주제 논의 (불확실도, 적응방안 개발에 관한 내용 논의)
  - 3월 31일 중국 남수북조 프로젝트 Technical Trip 참석

##### 2. Relevance to APEC Climate Center's Activities 결론 및 소감

- 지구온난화와 가뭄위험에 관한 발표와 Asia Water Issue에 대해 참여한 내용은 K-Water 측에서 좋은 반응을 보였음
- AWC는 국내 및 국외 프로젝트 펀딩을 위한 기반활동으로 판단되며 K-Water를 중심으로 활동영역을 넓혀가고 있는 것으로 판단됨
- K-Water 측에서는 APCC의 참여기관 등록을 기대하고 있고 climate change and asia water issue에 대해 활발한 활동을 원하고 있음



### III. References 참고사항

(with attachment of any information or report in case of attendance of conferences, workshops and meetings) 학술대회, 워크숍, 회의 등 참석 시 관련 정보 및 문서 첨부

#### 1. Presented and Collected Materials 주요 수집자료

- AWC 4<sup>th</sup> Board of Council Meeting 회의 안건 및 결정사항
- Priority for implementation outcome 2016
- China Institute of Water Resources and Hydropower Research Annual Report

#### 2. Suggestions and Remarks 건의사항

## Asia Water Council 4<sup>th</sup> Board of Council Meeting 보고

김대하 /응용사업팀 (4/6)

### □ Board meeting 주요내용

- AWC Activity Report 및 Priotization of Asia Water Issues
- Reporting outcomes from Water Projects
- The 1<sup>st</sup> Asia International Water Week 경주 개최 건 (2017. 9. 20-23, 70개국 15,000명 참가예정) 승인 및 차년도 Hosting 국가선정 프로세스 승인
- The 8<sup>th</sup> World Water Forum 주제와 컨셉노트 공유
- The 2<sup>nd</sup> General Assembly와 5<sup>th</sup> Board of Council Meeting 경주 개최 승인
- AWC Business Model Development Task Force 승인
- 협력기관 활동에 관한 소개
  - The 3<sup>rd</sup> Asia-Pacific Water Summit
  - UNESCO i-WSSM
  - UN Capital Development Fund
  - K-Water's global scale activities

### □ 고려사항

- AWC는 국내 및 국외 프로젝트 펀딩의 기반활동으로 판단되며 시작된 지 얼마 되지 않았지만 활동영역을 점차 넓히고 있는 것으로 판단됨
- AWC와 K-Water에서는 APCC가 Contributing Organization으로 Climate change and water issue에 관한 활동을 기대하고 있음



## ASIA WATER COUNCIL

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### **INVITATION TO THE AIWW GOVERNING BOARD MEETING & 4<sup>th</sup> BoC MEETING 30 March 2017**

Dear Dr. Hong-sang Jung,

We would like to invite you to the AIWW Governing Board Meeting and the 4<sup>th</sup> Board of Council Meeting which will be held on 30 March 2017 in China Palace Hotel, Beijing, China.

The objective of meeting is to prepare for the 1<sup>st</sup> Asia International Water Week which will be held from 20-23 September in Gyeongju, Korea. The AIWW Water Issues which we are focusing on will be the main issue to discuss.

The meeting will be followed by the 4<sup>th</sup> Board of Council Meeting which is the main event of the Asia Water Council. Ministry of Water Resources, China, China Institute of Water Resources and Hydropower Research and AWC Secretariat will welcome you as they are the host for the 4<sup>th</sup> Board of Council meeting.

As the 4<sup>th</sup> Board of Council meeting is the first gathering among BoC members in 2017, it will be focused on the AWC's business in 2017. The 1<sup>st</sup> Asia International Water Week will be mainly discussed and the 5<sup>th</sup> Board of Council and the 2<sup>nd</sup> General Assembly will be followed. In addition, Priority for Implementations (PFIs) and Water Projects (WPs) 2017 will be reported for approval.

There will be a parallel conference organized by Beijing Hydraulic Engineering Society, which will give you a unique opportunity to interact with Chinese water experts and professionals.

We cordially invite you to the AIWW Governing Board Meeting. As your decision is important for us, please confirm your participation and specific theme you may have interest in.

Yours Sincerely,

A handwritten signature in black ink, appearing to read 'Hak-Soo Lee', is positioned above the printed name and title.

**Hak-Soo Lee**  
**President**  
**Asia Water Council**



### The 4<sup>th</sup> Board of Council Meeting

- **Date.** 30<sup>th</sup> Mar 2017 (Thu) (Overall schedules: 29<sup>th</sup> – 31<sup>st</sup> Mar)
- **Venue.** China Palace Hotel (Chinese: 北京职工之家), Beijing, China
- **Participants.** The representatives of 26 board member organizations, special committees, Advisory Board and the Governing Board of Asia International Water Week (AIWW)
- **Host.** Ministry of Water Resources of China (MWR), China Institute of Water Resources and Hydropower Research (IWHR) and AWC Secretariat
- **General Program**
  1. The 4<sup>th</sup> BoC main meeting
  2. The AIWW Governing Board meeting
  3. A Joint Conference hosted by Beijing Hydraulic Engineering Society

| Time                             | Activity                                                    |
|----------------------------------|-------------------------------------------------------------|
| <b>29<sup>th</sup> Mar (Wed)</b> |                                                             |
| Afternoon                        | Collaborated Session with Beijing Hydraulic Eng. Society    |
| Evening                          | Bureau Meeting                                              |
| <b>30<sup>th</sup> Mar (Thu)</b> |                                                             |
| Morning                          | <b><u>AIWW Governing Board Meeting</u></b>                  |
| Afternoon                        | 4 <sup>th</sup> BoC main meeting ( <b><u>Observer</u></b> ) |
| Evening                          | Welcome Dinner                                              |
| <b>31<sup>st</sup> Mar (Fri)</b> |                                                             |
| Morning                          | Joint Cultural & Technical Trip                             |

- **Key Agenda**
  1. The detailed implementation plan of Asia International Water Week 2017
  2. PFI and Water Project in 2017
  3. Call for the 6<sup>th</sup> BoC meeting

\* The more specific agenda will be circulated a month prior to the 4<sup>th</sup> BoC meeting



## The 4<sup>th</sup> Board of Council Meeting

- **Date.** 30<sup>th</sup> Mar 2017 (Thu) (Overall schedules: 29<sup>th</sup> – 31<sup>st</sup> Mar)
- **Venue.** China Palace Hotel (Chinese: 北京职工之家), Beijing, China
- **Participants.** The representatives of 26 Board organizations, Special Committees and Advisory Board of the AWC, Governing Board, Champions and Coordinators of the 1<sup>st</sup> Asia International Water Week (AIWW)
- **Host.** Ministry of Water Resources of China (MWR), China Institute of Water Resources and Hydropower Research (IWHR) and AWC Secretariat
- **General Program.** (TBD)

| Time                             | Activity                                                                                                                                                                                                                                                                     | Venue              |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| <b>29<sup>th</sup> Mar (Wed)</b> |                                                                                                                                                                                                                                                                              |                    |
| <b>14:00~17:30</b>               | <ul style="list-style-type: none"> <li>• <b>Joint Session - Bridging Technology and Implementation for Asian Water Issues</b><br/>Host Chinese Hydraulic Engineering Society, Beijing Hydraulic Engineers Society, Tsinghua University and the Asia Water Council</li> </ul> | <b>Room 23, 4F</b> |
| 14:00                            | <b>Opening Remarks</b><br>BHES / CHES (TBD)                                                                                                                                                                                                                                  |                    |
| 14:05                            | <b>Congratulatory Remarks</b><br>Philippe Gourbesville, Vice President, Asia Water Council / Professor, University of Nice-Sophia Antipolis                                                                                                                                  |                    |
| 14:10                            | <b>Introduction of PFIs 2017 by the 7 Special Committees of the Asia Water Council</b>                                                                                                                                                                                       |                    |
| 14:50                            | <b>Coffee Break</b>                                                                                                                                                                                                                                                          |                    |
| 15:00                            | <b>Speech 1: Rock-Fill Concrete Dam Construction: An Environment Friendly Option</b><br>Feng Jin, Professor, Tsinghua University / Vice chair of Hydraulic Structure SC, CHES                                                                                                |                    |
| 15:20                            | <b>Speech 2: Global Warming and Drought Hazard</b><br>Daeha Kim, Research Fellow, APEC Climate Center                                                                                                                                                                        |                    |
| 15:40                            | <b>Speech 3: Dam Sedimentation and its Countermeasures: A Case of Yellow River</b><br>Zhaoyin Wang, President, WASER                                                                                                                                                         |                    |
| 16:00                            | <b>Speech 4: Water for Ecosystem (TBD)</b><br>Nidal Salim, Director General, Global Institute for Water, Environment and Health                                                                                                                                              |                    |
| 16:20                            | <b>Speech 5: Eco-Friendly and Flooding Adaptive River Restoration of Yongding River, Beijing</b><br>Zhuozhi Deng, Institute of Design and Planning of Water Resources, Beijing                                                                                               |                    |
| 16:40                            | <b>Speech 6: Achievement of the SDGs (TBD)</b><br>Deghyo Bae, Professor, Climate Change Adaptation on Water Resources Group                                                                                                                                                  |                    |
| 17:00                            | <b>Speech 7: Low Impact Development (TBD)</b><br>Hyunsuk Shin, Professor, LID Research Center                                                                                                                                                                                |                    |
| 17:20                            | <b>Wrap-up &amp; Closing Remarks</b><br>Zhongjing Wang, Professor, Tsinghua University                                                                                                                                                                                       |                    |
| <b>17:00~18:00</b>               | <ul style="list-style-type: none"> <li>• <b>Bureau Meeting (Closed meeting)</b></li> </ul>                                                                                                                                                                                   | <b>Room 28, 4F</b> |
| 17:00                            | <b>Pre-Discussion on Agenda for the 4<sup>th</sup> BoC Meeting among AWC Bureau</b>                                                                                                                                                                                          |                    |
| <b>18:00~20:00</b>               | <ul style="list-style-type: none"> <li>• <b>Dinner (Host: China Institute of Water Resources and Hydropower Research)</b></li> </ul>                                                                                                                                         |                    |

| Time                  | Activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Venue              |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| <b>30th Mar (Thu)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |
| <b>09:30~12:00</b>    | • <b>The 1<sup>st</sup> AIWW Governing Board Meeting</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Room 22, 4F</b> |
| 09:30                 | <b>Opening Remarks</b><br>Firdaus Ali, Vice President, Asia Water Council / President, Indonesian Water Institute                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |
| 09:35                 | <b>Introduction of the 1<sup>st</sup> Asia International Water Week</b><br>Seong Han Kim, Secretary General, Asia Water Council                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |
| 09:50                 | <b>Discussion on the Detailed Program – Asia Water Issues</b><br>Moderator: Philippe Gourbesville, Professor, University of Nice-Sophia Antipolis<br><b>General Information</b> Philippe Gourbesville, Professor, University of Nice-Sophia Antipolis<br><b>Theme Introduction by Each Champion</b><br>1 Water and Climate Change – China Institute of Water Resources and Hydropower Research<br>2 Drinking Water and Sanitation – K-water<br>3 Sustainable Water Resources Management – Royal Irrigation Department<br>4 Water-Energy-Food Nexus – Food and Agriculture Organization of the UN<br>5 Water for Ecosystems and Waterfront – Global Institute for Water, Environment and Health<br><b>Discussion to Concretize the Theme and Sub-Themes</b>                                                                                                                                                                        |                    |
| 10:50                 | <b>Coffee Break</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |
| 11:00                 | <b>Discussion on the Detailed Program – Water Project Forum / Asia to World Statements</b><br>Moderator: Bindu N. Lohani, Former Vice President of Asian Development Bank<br><b>General Information</b> Bindu N. Lohani, Former Vice President of Asian Development Bank<br><b>Panel Discussion &amp; Presentations to Deliver Water Issues of Asian Countries</b><br>1 Firdaus Ali, President, Indonesian Water Institute<br>2 Somkiat Prajamwong, Deputy Director General, Royal Irrigation Department of Thailand<br>3 Ponh Sachak, Director General, Ministry of Water Resources and Meteorology of Cambodia<br>4 Bui Du Duong, Deputy Director, National Center for Water Resources Planning and Investigation<br>5 Kongkiat Charoenboonwan, Deputy Governor, Metropolitan Waterworks Authority<br>6 Zhiguang Liu, Director General, Ministry of Water Resources of China<br>7 Won Cheol Park, Vice President, K-water       |                    |
| <b>12:00~13:30</b>    | • <b>Lunch</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |
| <b>14:00~17:00</b>    | • <b>4<sup>th</sup> Board of Council Meeting</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Room 22, 4F</b> |
| 14:00                 | <b>Opening Remarks</b><br>Hak-soo Lee, President, Asia Water Council                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |
| 14:05                 | <b>Welcoming Remarks</b><br>Jianchun Ye, Vice Minister, Ministry of Water Resources of China (TBD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |
| 14:10                 | <b>Congratulatory Remarks</b><br>Basuki Hadimuljono, Minister, Ministry of Public Works and Housing of Indonesia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |
| 14:15                 | <b>Discussion on the 4<sup>th</sup> BoC Agenda</b><br>1 Opening<br>2 Record of Attendance and Proxies<br>3 Replacement of Board Members and Alternates<br>4 Provisional Agenda<br>5 Minutes of the 3rd BoC Meeting<br>6 Membership<br>7 Finances<br>8 Activity Report<br>9 PFI (Priority for Implementation)<br>10 Water Projects<br>11 The 1st Asia International Water Week (AIWW) & Korea International Water Week 2017<br>12 The 8th World Water Forum in Brazil<br>13 The 2nd Asia International Water Week<br>14 The 2nd General Assembly and the 5th Board of Council Meeting<br>15 Asia Water Council Business Model Develop TF<br>16 Cooperative Activity<br>16.1 Asia Pacific Water Forum and Asia Pacific Water Summit<br>16.2 UNESCO i-WSSM<br>16.3 Asian Infrastructure Investment Bank (TBD)<br>16.4 United Nation Capital Development Fund<br>16.5 Social contribution program of K-water<br>17 Any Other Business |                    |
| 16:55                 | <b>Closing Remarks</b><br>Hak-soo Lee, President, Asia Water Council                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |
| <b>18:00~20:00</b>    | • <b>Welcome Dinner (Host: Ministry of Water Resources of China)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |



| Time                       | Activity                                                                                                                                                         | Venue          |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 31 <sup>th</sup> Mar (Fri) |                                                                                                                                                                  |                |
| 09:00~12:00                | • <b>Technical Tour</b>                                                                                                                                          | Tuancheng Lake |
| 09:00                      | <b>Departure</b><br>China Palace Hotel → Tuancheng Lake (by bus)                                                                                                 |                |
| 09:30                      | <b>Tour: The Middle Route of the South-to-North Water Diversion Project</b><br>The last stop of the Middle Route that connects with the Summer Palace in Beijing |                |
| 11:30                      | <b>Return</b><br>Tuancheng Lake → China Palace Hotel (by bus)<br>* Shuttle is provided to Airport right after the return (just once)                             |                |

# Technical Tour

## The Middle Route of the South-to-North Water Diversion Project

- **Date.** 31<sup>th</sup> Mar 2017 (Fri) 09:00~12:00
- **Destination.** Tuancheng Lake
- **Description.** The last stop of the Middle Route of the South-to-North Water Diversion Project that connects with the Summer Palace in Beijing
- **Notice.** Introduction will be provided through the tour

Since the earlier study on South-to-North Water Transfers started in 1950s, the following general layout of South-to-North Water Transfers has been worked out: three water transfer projects, i.e. Western Route Project (WRP) and Middle Route Project (MRP) and Eastern Route Project (ERP) will divert water from upper, middle, and lower reaches of Changjiang River respectively, to meet the developing requirements of Northwest and North China.



The layout is suited to three topographic terraces of the continent of China. Situated in highest Qinghai-Tibet Plateau, WRP can control whole Northwest and North China, but only divert water for Northwest in upper and middle reaches of Huanghe River due to the limited water quantity in the upper reach of Changjiang River. Passing the west of the third terrace, MRP will divert water from middle reach of Changjiang River and its tributary, Hanjiang River, and the water can now by gravity to the most parts of Huang-Huai-Hai plain. Passing the east of the third terrace, ERP will pump water north due to its lower diversion location.

The Middle Route Project (MRP) mainly provides for two provinces of Henan and Hebei and two municipalities of Beijing and Tianjin. Water can flow almost by gravity along the canals from the Danjiangkou Reservoir (whose storage has been expanded) through the intake gate of the Taocha headwork. The MRP will be completed in two phases.



## AIWW Water Issues

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### **AIWW**

The Asia International Water Week (AIWW) is a triennial water gathering to share tangible implementation for resolving Asian water problems. The Asia Water Council in collaboration with the authorities of host country and host city organizes the event. Asian water problems discussed three years prior to the AIWW through the preparatory process will be raised as the primary issues in the Asian water community and will be disseminated to the global water community with action plans to solve them.

### **The AIWW Water Issues (Themes)**

During the Korea International Water Week (KIWW) on 19<sup>th</sup> – 21<sup>st</sup> October 2016, the AIWW Stakeholders' Consultation Meeting (SCM) with AWC members was held as a top-down approach, while the most important subjects for the AIWW were surveyed among general participants as a bottom-up approach. Based on the overall outcomes of AIWW SCM, collected questionnaires and the discussions among the AWC Bureaus, five Themes were selected;

- (1)Water and Climate Change
- (2)Drinking Water and Sanitation
- (3)Sustainable Water Resources Management
- (4)Water-Energy-Food Nexus
- (5)Water for Ecosystems

### **Champions**

The Champions are to develop the five themes of the AIWW Water Issues. Each Champion will have the responsibility of reviewing and selecting the session proposals for each theme based on a consultative process.

### **Coordinators**

The Coordinator, as a Session organizer, has the duty of developing its own sub-theme relevant to a main Theme. The Champions and Coordinators will deliberately select the speakers for a respective session among the speakers who have sent their proposals for a speaker or who have been invited by Champions and Coordinators.

## Appendix #1: AIWW Water Issues Organizer (Provisional)

| Theme<br>(5)                            |                                                                           | Sub-Theme<br>(25) |                                                                                 | Session<br>(25) |
|-----------------------------------------|---------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------|-----------------|
| Topic                                   | Champion<br>(Organizer)                                                   | Topic             | Coordinator(TBD)<br>(Sub-Organizer)                                             | Topic           |
| ①Water and Climate Change               | Chinese Institute of Water Resources and Hydropower Research (Gao Zhanyi) | a                 | Asian Institute of Technology                                                   | 1               |
|                                         |                                                                           | b                 | Climate change Adaptation for Water                                             | 1               |
|                                         |                                                                           | c                 | <u>Chinese Institute of Water Resources and Hydropower Research</u>             | 1               |
|                                         |                                                                           | d                 | APEC Climate Center                                                             | 1               |
|                                         |                                                                           | e                 | CSU, Gyeongju                                                                   | 1               |
| ②Drinking Water and Sanitation          | K-water (AWC)                                                             | a                 | Metropolitan Waterworks and Sewerage System / Metropolitan Waterworks Authority | 1               |
|                                         |                                                                           | b                 | United Nations Economic and Social Commission for Asia and the Pacific          | 1               |
|                                         |                                                                           | c                 | Metropolitan Waterworks Authority                                               | 1               |
|                                         |                                                                           | d                 | International Water Association                                                 | 1               |
|                                         |                                                                           | e                 | AWA, Gyeongju                                                                   | 1               |
| ③Sustainable Water Resources Management | Royal Irrigation Department (Thayida)                                     | a                 | @qua                                                                            | 1               |
|                                         |                                                                           | b                 | SWG Research Group                                                              | 1               |
|                                         |                                                                           | c                 | K-water                                                                         | 1               |
|                                         |                                                                           | d                 | LID Research Group                                                              | 1               |
|                                         |                                                                           | e                 | IBM, Gyeongsangbuk-do                                                           | 1               |
| ④Water-Energy-Food Nexus                | Food and Agriculture Organization of the United Nations (Louise Whiting)  | a                 | Royal Irrigation Department                                                     | 1               |
|                                         |                                                                           | b                 | Korea Rural Community Corporation                                               | 1               |
|                                         |                                                                           | c                 | K-water                                                                         | 1               |
|                                         |                                                                           | d                 | <u>Food and Agriculture Organization of the United Nations</u>                  | 1               |
|                                         |                                                                           | e                 | Global Water Partnership, WBCSD                                                 | 1               |
| ⑤Water for Ecosystems                   | Global Institute for Water, Environment and Health (Marguerite)           | a                 | Korea Environment Institute                                                     | 1               |
|                                         |                                                                           | b                 | International Union for Conservation of Nature                                  | 1               |
|                                         |                                                                           | c                 | <u>Global Institute for Water, Environment and Health</u>                       | 1               |
|                                         |                                                                           | d                 |                                                                                 | 1               |
|                                         |                                                                           | e                 |                                                                                 | 1               |

※ Each Theme has at most 5 sessions (coordinators), each session has its own coordinator,

## Appendix #2: Definition of the Themes

### 1. Water and Climate Change

According to IPCC(Intergovernmental Panel on Climate Change) technical report(VI) in 2008, observed warming over several decades has been linked to changes in the large scale hydrological cycle and both higher water temperature and changes in extremes, including floods and droughts. These are projected to affect water pollution. In addition, climate change affects the function and operation of existing water infrastructure including hydropower, structural flood defence, etc. Current water management practices may not be robust enough to cope with the impacts of climate change on water supply reliability, flood risk, health, agriculture, energy and aquatic ecosystems. This Theme focuses on water management policy and technology responding climate change encouraging more engagement of stakeholders including policy makers, experts and water practice managers.

*Tentative Sub-Themes:*

- *Local water cycle vs. Climate Change (Top-down)*
- *Improving technology of coastal development to balance the level of rise caused by climate change (Top-down)*
- *Climate change & water aid project (Top-down)*
- *Adaptation and mitigation to Climate Change (Bottom-up)*

### 2. Drinking Water and Sanitation

The Millennium Development Goals (MDGs) have set us on a common course to push back poverty, inequality, hunger and illness. The world has pledged to reduce by half the proportion of people without sustainable access to safe drinking water and basic sanitation. Currently, nearly 800 million people lack dependable access to clean water and about 2.5 billion lack access to modern sanitation, putting them at risk of disease. Narrowing down to the Asian Pacific region, according to Asian Development Bank, 1.7 billion people living in Asian Pacific countries are currently suffering from the lack of water or not able to access the clean water properly. Achieving the drinking water and sanitation target poses two major challenges;

- A rapid pace of urbanization, which requires a major effort even to keep up the current coverage levels;
- a huge backlog of rural people unequipped with basic sanitation and safe drinking water, which calls for reducing the vast coverage gap between urban and rural populations.

We put our focal point to relieve aforementioned challenge and to improve the quality of life across the countries including Asian community with the institutional reform and technical innovation.

*Tentative Sub-Themes:*

- *Tab water drinking by cultural difference (Top-down)*
- *Smart solution for Water (Top-down)*
- *Strategies for increasing water use efficiency (Top-down)*
- *Appropriate technologies on water and sanitation (Top-down)*
- *Guideline for water and sanitation aid projects (Top-down)*
- *Is it possible that science and technology could contribute on realization of SDG 6.2? (Top-down)*
- *Efficient use of surface water and groundwater (Bottom-up)*

### 3. Sustainable water resources management

Growing pressure on water resources from population and economic growth, climate change, and other challenges has major impacts on our social, economic, and environmental well-being. We can say that the world's water problems stem from our failure to meet basic human needs and our inability to balance human needs with the needs of the nature. These maladies are caused by waste of water, poor water management systems, improper economic incentives, underinvestment, failure to apply existing technologies, and an outdated perspective focused mainly on developing new supplies. Sustainable water resources management deals with a long-term view towards water sufficiency. Water sustainability could be defined as supplying or being supplied with water for life or as the continual supply of clean water for human uses and for other living things. Water is a renewable resources, but water availability is constrained by natural processes, water allocations across jurisdictional boundaries, the infrastructure necessary to deliver water for use, and human impacts on water quality and quantity. Therefore, we need to work together for developing appropriate solutions for sustainable water resources management for Asian community.

#### *Tentative Sub-Themes:*

- *Infrastructure for sustainable water resources management and services (Bottom-up)*
- *Implementation of integrated water resources management-IWRM (Top-down)*
- *Strategies for increasing water use efficiency (Top-down)*
- *Integrated water resource management system for increasing efficiency on managing water system (Top-down)*
- *Efficient use of surface water and groundwater (Bottom-up)*
- *Sharing water resources security (Top-down)*

### 4. Water-Energy-Food Nexus

Water, energy and food are inextricably linked. Water is an input for producing agricultural goods in the fields and along the entire agro-food supply chain. Energy is required to produce and distribute water and food. Food production is the largest consumer of water, and also accounts for about 30% of total global energy consumption. There are many synergies and trade-offs amongst water and energy use and food production. Understanding these synergies and balancing trade-offs is the key to jointly ensure water, energy and food security. We could observe huge differentiation of natural, social and agrarian conditions, economic capacity among Asian countries, the same as political strategies in field of water, energy and agricultural development. Water-Energy-Food nexus approaches will be one of the methodologies to resolve the Asian water challenges with extended stakeholders including water, energy and food partners.

#### *Tentative Sub-Themes:*

- *Water and energy nexus for sustainable environment (Top-down)*
- *Water and food nexus for sustainable social development (Top-down)*
- *Water-energy-food nexus for sustainable future (Top-down)*
- *Water, energy and food security nexus (Bottom-up)*



## 5. Water for Ecosystems

All freshwater ultimately depends on the continued healthy functioning ecosystems. Recognizing the water cycle as a biophysical process is essential to achieve sustainable water management. Rapid industrialization and urbanization with population growth are the global environment challenges that have been emerging for several decades. Half of world's population are already living in cities and it is projected to reach 70% by 2050. It is more likely to bring negative influence on aquatic ecosystem in terms of quality and quantity, and given the high spatial concentration of people and values in cities, small scale flood may lead to considerable damage. This Theme will focus on tendencies and methods of improving water cycle, strategies to enhance aquatic ecosystem management for human wellbeing and Low Impact Development.

### *Tentative Sub-Themes:*

- *Approaches with ecosystem priority issues based on local/national capacity building (Top-down)*
- *Healthy urban where people and water ecosystem live together (Top-down)*
- *SDG 11, the New Urban Agenda regarding water front city (Top-down)*