APPENDIX XIV [PCTA Item 7.2]

AGENDA FOR THE INFORMAL MEETING OF THE WORKING GROUP ON SUSTAINABLE REGENERATION OF COASTAL ENVIRONMENT (WG-SCER)

05 September 2024, 08:30-10:00 hours (Session I)
05 September 2024, 10:30-12:00 hours (Session II)
Sydney, Australia

Strategy Theme: Natural Resources

WG-SCER Agenda Item 1: A brief report on the restructuring of WG by the Chair

1. At the 74th International Executive Council (IEC) meeting in Vizag (India), a proposal for the restructuring of the Working Groups was discussed and approved. Among the existing 18 working groups, 9 working groups completed their mandate in November 2023. The remaining working groups proposed to be structured into 11 new working groups under four themes: (1) Irrigation and Drainage; (2) Natural Resources; (3) Climate Change and impacts; and (4) Sustainable Development. Under these four themes, the WG-SDTA has been included in theme 2 (Natural Resources) and three working groups viz WG-AFM, WG-IDM and WG-M&R integrated with the WG-SDTA. As per the structure approved by PCTA/IEC (*Resolution IEC-2/74)*, a new group - Working Group on Sustainable Coastal Environment Regeneration (WG-SCER) has been approved by integrating the mandate of three working groups – WG-AFM, WG-IDM and WG-M&R. The Minutes of the 1st Virtual meeting of WG-SCER held on 10 July 2024, which is available at: < https://icid-ciid.org/inner_page/152 >.

2. Dr. Ruey-Chy Kao, Chair of the erstwhile WG-SDTA will provide a brief report on the restructuring of the new WG-SCER.

WG-SCER Agenda Item 2: Discussion on the Scoping Document for a new WG

3. In March 2024, Dr. Ruey-Chy Kao prepared and shared the draft Scoping Document for the establishment of the new WG-SCER with the ICID Central Office. After formatting the Scoping Document of the new WG, the ICID Central Office shared it with the Chair, Vice Chair and Secretary of WG-AFM, WG-IDM, WG-M&R and WG-SDTA for their comments and suggestions (refer **Annex 1**). During the Sydney meeting (2024), members of the group may discuss the Scoping Document (SD) and send the final version to PCTA/IEC for approval.

4. The ICID Central Office has informed the decision of PCTA about the establishment of a new WG-SCER with all members of WG-SDTA, WG-IDM, WG-AFM & WG-M&R and requested them to confirm their membership for the new WG. The following new nominations have been received for the membership of the new WG-SCER:

- Dr. Chung-Feng Ding (Chinese Taipei Committee)
- Dr. Hsiao-Wen Wang (Chinese Taipei Committee)

5. The erstwhile WG-SDTA, WG-M&R, WG-AFM and WG-M&R membership are given in **Annex 2** (refer to the electronic version for the latest list). New nominations, if any, for the membership received, will be dealt suitably after the meeting.

WG-SCER Agenda Item 3: Election of Chair, Vice Chair, and Secretary of restructured new WG

6. The members may like to discuss and elect its Chair, Vice Chair, and Secretary for the new WG-SCER during the meeting.

WG-SCER Agenda Item 4: Road Map to ICID Vision 2030 - Status of activities on Sustainable Regeneration of Coastal Environment

7. The Action Plan of the Road Map to ICID Vision 2030 of the erstwhile WG-SDTA, WG-AFM, WG-M&R and WG-IDM is given in **Annex 3**. The group will discuss and prepare the new Action Plan of the Road Map to ICID Vision 2030 as per the mandate of the newly established WG-SCER at the meeting.

WG-SCER Agenda Item 5: Activities of the erstwhile Working Groups – Publication / Report / Guidelines

8. The new WG will review and undertake the pending activities of the erstwhile working groups of WG-SDTA, WG-AFM, WG-IDM and WG-M&R.

WG-SCER Agenda Item 5.1: Publication of the Working Group on 'Adaptive Flood Risk Management' by WG-AFM

9. As per the minutes of the erstwhile WG-AFM, it was decided to publish a document titled 'Adaptive Flood Risk Management' (*covering both structural and non-structural aspects of flood management*) based on the workshop papers and country presentations on floods along with the country case studies, covering both structural and non-structural aspects of flood management as part of the Road Map to ICID Vision 2030.

10. Based on the publication of the WG, Malaysian NC has presented its case study on flood management in Malaysia with an emphasis on non-structural measures with the title of 'National Flood Forecasting and Warning Systems'. The case study was accepted for inclusion in the publication of the WG. Moroccan National Committee (ANAFIDE) and other members of the group are yet to present their case study.

11. Vice President Hon. Dr. Kamran Emami (Iran), Chairman of the erstwhile WG-AFM will provide further updates during the meeting.

WG-SCER Agenda Item 5.2: Publication of the erstwhile Working Group on Modernization and Revitalization of Irrigation Schemes (WG-M&R)

12. During the Vizag meeting (2023), the following activities related to the erstwhile WG-M&R publication were discussed.

13. **Guidelines on modernization**: VPH Ian Makin (UK), Chair of erstwhile of WG-M&R summarized the progress towards completion of the Guidelines on "Modernization of Irrigation and Drainage Services" noting drafts of most sections being edited for consistency. The group proposed to complete the final (1st edition) in early 2024 and future updates will be produced under the new WG.

14. **Develop norms of O&M of Irrigation systems:** Ms. Mona Liza Delos Reyes (Philippines) informed that a total of 25 responses to the questionnaire had been received and encoded into SPSS for analysis. The data set has been shared with other members working on the norms for comments.

15. Further, the erstwhile WG-M&R proposed the following activities to PCTA:

(a) The completion of the Guidelines continues with the current authors (assuming the willingness of individuals) under the mandate of a new WG, but published as an output of the WG-M&R

(b) The new WG considers how (and if) to complete the Norms and Processes study.

(c) Finalize the Proceedings of the International Symposium by the members of the WG-M&R with authors of the papers and ICID Central Office as a publication of the WG-M&R

(d) Modernization of Irrigation and Drainage Services is of critical and growing importance to the sector in the efforts to achieve food security in an increasingly resource-constrained environment. The challenges that climate change and agricultural demographics pose to secure food production will continue to mount. The group requested PCTA to ensure that work on Modernization remains a central topic of the ICID program.

16. Chair/Vice-Chair/Secretary of erstwhile WG-M&R will provide further updates during the meeting.

WG-SCER Agenda Item 5.3: Publication of the erstwhile Working Group on Irrigation Development and Management (WG-IDM)

17. During the Vizag. meeting, the following activities related to the erstwhile WG-IDM publication were discussed.

(a) **Goal A - Strategy A1 - Activity 1.1.** "Develop a program for introducing standards for irrigation systems", Dr. Wang-Shen Wei (Chinese Taipei Committee) agreed to submit the draft of the report by November 2023. Dr. Sheng-Wei/ Chair will provide further updates at the meeting.

(b) **Goal A -Strategy A1 – Activity 1.2.** "Report or case studies on recent developments in irrigation drainage management" - Mr. Ahmet Seren made a presentation on "Irrigation Development & Management Activities in Turkey" during the Adelaide meeting. Mr. Ahmet Seren will provide further updates at the meeting.

(c) **Goal B -Strategy B1 – Activity 1.14.** "Report on South-South cooperation for capacity development in the field of irrigation management", members agreed to confirm with Ms. Mary Jean Gabriel the contents of the report through e-mail discussion/ virtual meetings.

(d) **Goal C - Strategy C4- Activity 4.17.** "Overview paper on the Irrigation Development for publication in Irrigation and Drainage (IRD)", the item was transferred to Dr. Sheng-Wei Wang. Dr. Sheng-Wei will provide further updates at the meeting.

(e) **Goal B - Strategy B3 – Activity 3.1**. "Assess methods and develop guidelines on relevant water balance approach", Dr. Amgad Elmahdi (Australia) agreed to submit the draft by November 2023. Dr. Amgad will provide further progress on the preparation of the guidelines at the meeting.

(f) **Goal A - Strategy A6- Activity 6.7** – "Identify drivers and social resistances within the systems to improve Irrigation management", the draft was submitted by Mr. Ahmet Seren however, a response from Mr. Ian Makin is awaited. Mr. Ahmet Seren will provide further updates at the meeting.

(g) **Goal C - Strategy C1 - Activity 1.3**. "Organize Workshop, Seminar, and Symposium on Water Balance Approach", Dr. Amgad Elmahdi (Australia) agreed to hold a symposium before the end of November 2023. Dr. Amgad will provide further progress on the preparation of the guidelines at the meeting.

(h) **Goal D - Strategy D2 - Activity 2.3.** "Investigating and documenting the social and economic impacts of irrigation systems" - Dr. Akie Mukai (Japan) submitted the draft report and also made a presentation during the WG meeting. The group reviewed the contents and proposed that Dr. Akie will revise and submit the report after getting feedback from the WG members by November 2023. Dr. Akie will provide further updates at the meeting.

(i) **Goal E - Strategy E6 - Activity 6.2**. "Investigate and report on the state of research, barriers or locks and promising paths in the field of irrigation management" was discussed among the WG members. Dr. L.B. Roy prepared and shared "A Table of Contents" with the erstwhile WG-IDM Chair. Dr. Roy will provide further updates at the meeting.

18. Chair/Vice-Chair/Secretary of the erstwhile WG-IDM will provide further updates during the meeting.

WG-SCER Agenda Item 5.4: Publication of the erstwhile Working Group on Sustainable Development of Tidal Areas (WG-WG-SDTA)

19. As per the minutes of the group, the following items related to the publication of erstwhile WG-SDTA were discussed during the Vizag. meeting.

20. **Special Issue on SDTA**: The erstwhile WG-SDTA will bring out a Special Issue with the support of Dr. Hsiao-Wen Wang (Chinese Taipei Committee). In this regard, Prof. Wang is conducting the review process of the workshop papers in consultation with President Hon. Prof. Dr. Bart Schultz (The Netherlands) for the Special Issue of the WG-SDTA. Further, Prof. Wang presented a detailed procedure for the paper submission with review process for the Special Issue. She has informed that the process of review and editing work of the papers are going on.

21. Dr. Ruey-Chy Kao / Dr. Hsiao-Wen Wang will provide further updates during the meeting.

22. **A format for the 2-page Country Note – Sustainable Development of Tidal Areas**: During the Bali meeting (2019), it was noted that the members of the group will provide two-page (approx.1500 words) country papers with tables comparing different factors as shown in 'Country Notes' **(Annex 4).** It was also suggested to prepare a questionnaire in a format for the 2-page 'Country Note'. ICID Central Office has repeatedly requested NCs / Members of the group to provide their country note for the group.

23. In response, NCs – Japan, Korea, Malaysia, Indonesia, The Netherlands, India, and Chinese Taipei Committee have shared their contribution on two-page country papers for the WG. ICID CO has again requested China, Egypt, Thailand, and other member countries to share their country notes (two-pages) for the group. Response is still awaited.

24. Dr. Ruey-Chy Kao will provide further updates during the meeting.

WG-SCER Agenda Item 6: International Short Course titled 'Tidal Prediction and Land Subsidence Prevention and Reclamation' in October 2024

25. During the WG meeting, it was noted that the group will organise International Short Course titled 'Tidal Prediction and Land Subsidence Prevention and Reclamation' in October 2024 at the University (NCKU), Tainan City.

26. Dr. Ruey-Chy Kao / Dr. Hsiao-Wen Wang will provide further updates during the meeting.

WG-SCER Agenda Item 7: International Workshop of WG-SCER in 2025 at Kuala Lumpur, Malaysia – Proposed

27. As part of the Action Plan 2030, the group is proposing to organise an International Workshop during the 76th IEC & 4th WIF to be held in September 2025 at Kuala Lumpur, Malaysia.

28. Dr. Ruey-Chy Kao will provide the updates during the meeting.

WG-SCER Agenda Item 8: Any other business (with permission of Chair)

29. **ICID Members' Profile Section:** As a new initiative, ICID has launched a new website (https://icid-ciid.org) as part of ICID's 70th Anniversary Celebration to meet the new web technologies. One of the newly added web features provides WG members access to their profile section using their dedicated account. ICID CO vide email dated 9 July 2021 <https://icid.bmeurl.co/C7D4D2E> informed all members on how to access their accounts and change their passwords to maintain accuracy. Members are requested to review and update their information using their credentials and help us to maintain accurate information. For more information, please refer to inside back cover page.

30. **World Irrigation and Drainage Schemes (WI&DS):** ICID has taken the initiative to document the development of irrigation and drainage schemes in the world by establishing an online Register on "World Irrigation and Drainage Schemes (WI&DS)". WI&DS will fulfil the need for a much-awaited global repository of information in systematic irrigation and agricultural water management. Irrigation projects having 5000 Hectares and above of Command Area can submit their information for inclusion in the register. The irrigation projects approved by National Committee/ ICID Central Office for inclusion are entitled to Certification. Chair will encourage members to urge all irrigation and drainage scheme owners, managers, and researchers across the world and especially in their respective countries for contributing to the register. The review process and other details are outlined on the portal <https://wip.icidevents.org/ > in detail.

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NOTES FOR CHAIRPERSON:
1. Draft minutes of this meeting to be submitted to ICID Secretariat at Sydney, Australia after the meeting.
2. Chair to participate and present the WG report to PCTA meeting on 06 September 2024.

Annex 1 [Appendix XIV, Item 2]

WORKING GROUP ON SUSTAINABLE COASTAL ENVIRONMENT REGENERATION (WG-SCER)

SCOPING DOCUMENT

1. Introduction

1.1 Coastal zone is the intersection of land and sea, with the characteristics of daily sea level fluctuations due to ocean tides, as well as complex hydro-meteorological conditions of oceanic and continental climate interactions. Coastal zone is also the tail end of rivers and drainages, where confluent land water is discharged into the sea. On the sea side of the coastal zone, there are abundant marine fisheries and very strong and powerful of wind energy, tidal energy, and wave energy, which might be available for development in marine resources, while on the land side, there are vast agricultural and food production areas, increasingly urban and industrial areas, nature and recreational areas. These areas are also potential for developing solar energy, water energy, wind energy and biomass energy. Besides, the estuary areas often consist of various ecosystems, supporting biodiversity. Based on multiple considerations of food production, agricultural irrigation water, drainage and flood protection, proper planning and development of clean green energy not only meets the Sustainable Development Goals (SDGs) but also contributes to net zero carbon emissions by 2050 (2050 Net- Zero Emissions), the national commitment by many countries.

However, these coastal environments and resources have diverse and complex disaster risk issues, such as heavy rainfall and floods in lowlands, over-pumping of groundwater leads to land subsidence and easy flooding, coastal erosion and land loss, seawalls and coastal facility damage, sea level rise under climate change, earthquake and tsunami invasion and destruction of land areas, etc. Therefore, it is necessary to clearly understand these potential disasters with more sophisticated knowledge and technology to upgrade the coastal environment master plan, introduce appropriate clean green energy, so as to ensure responsible newly construction projects operation and maintenance, as well as improvement of existing aging capacity of irrigation, drainage and flood protection facilities.

1.2 In view of these illustrative issues, the **Working Group on Sustainable Coastal Environment Regeneration (WG-SCER)** integrated interdisciplinary knowledge and technology to propose a coastal environment regeneration strategy to form the main mandate, including:

(a) Investigate and review the capabilities of irrigation, drainage, and flood protection facilities in under multiple land use with a focus on the agricultural areas on the landside of coastal areas and coastal topography erosion or accumulation, etc.;

(b) Inventory and analyze irrigation water sources, water quantity, water quality, grain farming types and productivity in coastal agricultural areas to understand water supply demand issues;

(c) Review and analyze the long-term record data and characteristics of coastal tide levels, and plan regular and accurate surveys of land surface elevations in coastal areas to clarify the proportion of coastal lowland flooding disasters caused by land subsidence and rising sea levels;

(d) Comprehensively review the situation of coastal land use and flooding disasters, and formulate readjustment strategies with a focus on the rural areas to improve irrigation, drainage and flood protection infrastructure, designate flood detention areas, and establish adaptive flood management systems;

(e) Check or upgrade the sensors, data acquisition and transmission systems of various relevant coastal meteorological, surface water and groundwater observation systems, oceanographic monitoring systems, etc. to maintain normal functions of automation and digitalization, as well as the distribution of representative data devices;

(f) Analyze and evaluate the feasibility of developing ocean energy, wind energy, solar energy, small or micro hydropower and biomass energy to pursue autonomous utilization of green energy in coastal rural areas;

(g) Introduce water industry technologies development, such as, the use of green energy for wastewater reuse and seawater desalination, sophisticated agricultural water-saving management and equipment components, leakage detection of water supply facilities, intelligent water management software and hardware technology, etc., to effectively manage irrigation water regulation and dispatch and energy utilization, control over-pumping of groundwater, prevent land subsidence and reduce flooding disasters.

2. Objectives

2.1 Relevance of the Working Group (WG)

2.1.1 The relevance of the working group is clearly defined as follows:

(a) The topic of sustainable coastal environmental regeneration is based on ICID's vision and mission towards the Sustainable Development Goals (SDGs), and is organized as a working group under the theme of "Natural Resources", one of the four New Strategy Themes;

(b) The working group is interested in the participation of its members, especially for coastal and island countries to have more members join the working group;

(c) The working group will introduce water industry knowledge and technology through coastal environmental regeneration, derive green energy and seawater desalination development and wastewater reuse, and effectively provide control and dispatch capacity for irrigation water and other industrial, commercial and domestic water use, etc. Contribute to reducing water conflicts;

(d) Under the theme of natural resources, the working group promotes the development of green energy with a focus on coastal agricultural areas to provide rural energy autonomy and contribute to a sustainable and friendly environment;

(e) Promote the conservation of coastal environments, natural resources, and ecosystems

2.2 Relevance of working groups to the scope of thematic areas

2.2.1 This WG-SCER is one of the technical work bodies established under the theme of "Natural Resources", and the main scope is as outlined and described above.

2.2.2 The scope of this WG-SCER must consider various relevant conditions that affect both sea and land areas. In addition, interdisciplinary integration in professional knowledge and technical fields is also required.

2.3 Existing gap that the Working Group is expected to fill

2.3.1 Other ICID working groups with relevant scope of work include: WG-IWM&D; WG-NWREP; WG-LDRG; WG-RWH; WG-WFE_N; WG-CLIMATE. For more information about these working groups, please visit: www.icid.org

2.3.2 This working group can contribute to intelligent irrigation, drainage and flood protection facilities and management, and conjugate utilization of surface water and groundwater on farms in coastal lowlands.

2.3.3 This working group introduces water industry knowledge and technology to develop seawater desalination and wastewater reuse, which can complement each other with irrigation water management and development and non-conventional irrigation water.

2.3.4 This working group is concerned about the low-lying coastal area where irrigation and drainage tail-water is discharged to the sea. The periodic rise and fall of the sea level with the tide affects the irrigation and drainage capacity. In addition, the irrigation and drainage facilities are located on the coastal area and vulnerable to damage by storm waves.

2.3.5 This working group is also concerned that insufficient irrigation water in coastal agricultural areas and unrestricted over-pumping of groundwater have led to land subsidence and groundwater salinization pollution. Properly plan appropriate areas for large-scale rainwater harvesting basins, which can be used as surface water storage to supplement water supply and groundwater recharge, and as flood detention basins during floods.

2.3.6 The scope and mandate of this working group are directly or indirectly related to other working groups. It is mainly to fill in the missing areas in the past, that is, the scope of irrigation, drainage and water management as well as flood protection in the coastal zone is more complete. With the full collaboration of each working group, fruitful results that complement each other should be achieved for ICID.

3. State of knowledge on the topic

3.1 Other International Organizations that are working on the subject

3.1.1 There are several other International Organizations that have programs and activities on this topic:

(a) Food and Agriculture Organization of the United Nations (FAO);

(b) International Fund for Agricultural Development (IFAD);

(c) United Nations Educational, Scientific and Cultural Organization (UNESCO);

(d) United Nations Office for Disaster Risk Reduction (UNDRR);

(e) Union of International Association (UIA);

(f) Agricultural Research Service (ARS), Department of Agriculture, USA;

(g) Water Environment Federation (WEF);

(h) International organizations such as the World Water Forum (WWF), World Water Council (WWC), International Water Management Institute (IWMI) , World Bank (WB), Asian Development Bank (ADB), etc.

3.1.2 There are several other professional water associations that have programs and activities on this topic:

(a) International Commission on Large Dams (ICOLD);
(b) International Water Association (IWA);
(c) International Hydropower Association (IHA);
(d) International Water Resources Association (IWRA)

3.2 The niche that the WG ICID is expected to fill in this area

3.2.1 Mandate of the Working Group on Sustainable Coastal Environment Regeneration (WG-SCER):

(a) To prepare a practical case report on coastal environmental regeneration and disseminate experience and knowledge in workshops or short courses for regional and local re-examination and clarification of coastal issues;

(b) To organize events and prepare a document to raise awareness that the multiple compound effects of sea level rise, coastal erosion and land subsidence may lead to increased risks in coastal areas;

(c) To encourage accurate investigation and analysis of irrigation, drainage and flood protection capacity of coastal areas and coastal management master plans to formulate flood management levels to designate adaptive flood management areas;

(d) To promote the application of Cyber-Physical System (CPS), Internet of Things (IOT), related analysis software and intelligent integrated management technology to achieve an optimized irrigation and drainage management system;

(e) To organize events and prepare a case report on sustainable development and management of coastal areas and find a balance between the conservation and development of the coastal environment and tidal areas with acknowledgment of ecosystem services;

(f) To join the international dialogues and organize international workshop, side event talks and short courses to promote interdisciplinary and participatory land and water planning and management in coastal environment and tidal areas;

(g) To collaborate with other related working groups or international organizations actively, and to exchange relevant experience.

3.3 How is the Working Group expected to collaborate with the other International Organizations?

3.3.1 When international organizations that have signed cooperation agreements or memorandum with ICID have needs for professional consultation, review, training, and activities related to the topics of this working group, the Central Office Referral Working Group will assist in providing comments and suggestions, or jointly apply for collaborative research project proposals.

3.3.2 International organizations can contribute to the activities of the WG by nominating Permanent Observers.

3.3.3 Presentations of the work and achievements of the WG-SCER can be presented at the occasion of events organized by international organizations.

4. Work Plan

4.1 Scope

4.1.1 The scope and mandate of the Working Group on Sustainable Coastal Environment Regeneration (WG-SCER) have almost covered the diverse and complex issues that need to be explored and studied in the coastal zone.

4.1.2 The WG-SCER proposed six tasks to achieve the mandate, and also leveraged the expertise of outgoing working group members, whom we welcome to join the working group, and recommended to lead a task if necessary. The six tasks are as follows:

Task 1. Investigate and share practical cases of seaside, landside, and estuary coastal environmental resources and disasters in regional and local coastal zones.

Task 2. Consult and guide the exploration methods of potential threats to coastal environmental issues on the land side of the coastal zone to develop strategies and integrated solutions.

Task 3. Assess and analyze groundwater development and management, surface water and groundwater conjunctive use for irrigation in the coastal zone to estimate land subsidence potential and the possibility of groundwater salinization.

Task 4. Strengthen the promotion of ICID coastal country members to accurately investigate the irrigation, drainage and flood protection capacity of coastal zones and coastal management master plans to formulate flood management levels to designate adaptive flood management areas.

Task 5. Practice and plan modernization, automatic monitoring and control systems in coastal environment and irrigation, drainage and flood protection management.

Task 6. Organize and hold international activities of the working group such as side events, short courses, workshops, symposiums, and special issues.

4.1.3 **Annex 1** has the details on the results-based workplan for the period 2024 to 2029.

4.2 Target audience

4.2.1 The target audience of this working group will be managers of coastal zone irrigation, drainage and flood protection schemes, green energy schemes, environmental schemes, rural regeneration schemes, professors and researchers, planning engineers and consultants, contractors, manufacturers, government officials, farmers/farmer representatives, students, young professionals, agronomists, coastal and irrigation, drainage and flood protection engineers and staff of international organizations working on this topic (e.g. FAO, IFAD, WB and ADB).

4.3 Outputs

4.3.1 The major expected outputs during the six-year life of this WG are the following:

(a) At least three working group meetings per year (one physical meeting and two online virtual meetings)
(b) The journal "Irrigation and Drainage" publishes two special issues;
(c) Members of this working group published six country overview documents;
(d) Organize at least three workshops, side events, young professionals or special forums during ICID annual events;
(e) A special short course and a visit to demonstration sites for exchange of training technology experience in countries with willing members;
(f) Exchange of knowledge and experience among representatives of National Committees;
(g) The results of other activities or events related to this working group.

4.4 Timelines

4.4.1 There are complex hydro-meteorological conditions in the coastal zone where the ocean and continental climate interact, and there are abundant natural resources and energy potential to be developed.

Therefore, in order to solve the difficult issues of irrigation, drainage and flood protection in the traditional coastal environment and meet the requirements of global carbon reduction strategies, green energy and water source development must change the concept of innovation, use coastal environment regeneration as

the overall planning framework, and introduce modernization technology and water industry are feasible. However, in order for these new concepts and technical knowledge to be recognized and familiarized, it will take some time to learn, train and communicate the integrated technology, which is different from the past irrigation, drainage and flood protection planning and design, construction, operation, maintenance and management. Therefore, it is appropriate for this working group to initially set a total duration of 6 years for the two phases.

4.5 Collaborators and dissemination strategy

4.5.1 The WG would have to base its activities on an open attitude with a clear scope for invitation of outsiders that are interested in the topic on a Permanent Observers (PO) or ad hoc basis.

4.5.2 The dissemination strategy would have to be based on reaching those who can apply the findings and recommendations of the WG in their research and especially in policy development, decision making and implementation in practice.

5. Core Group

5.1 The Core Group consists of:

5.1.1 Senior consultation and guidance

(1) President Hon. Prof. Dr. Bart Schulz (The Netherlands);
(2) President Hon. Peter S. Lee (UK)

5.1.2 The Chair, Vice-Chair, Secretary and Members of WG-SDTA before being transformed into the new WG-SCER are as follows :

(1) Prof. Ruey-Chy Kao (Chinese Taipei Committee), Chair; (2) Ir. Hj. Nor Hisham Bin Mohd Ghazali (Malaysia), Vice-Chair; (3) Er. Paavan Kumar Reddy (India), Secretary; (4) Prof. Budi Santoso Wignyosukarto (Indonesia); (5) Dr. Hiroki Minakawa (Japan); (6) Dr. Hsiao-Wen Wang (Chinese Taipei Committee); (7) Dr. JANG Jeong Ryeol (South Korea); (8) Dr. Mona Liza Delos Reyes (Philippines); (9) Mr. Surat Thanusin (Thailand); (10) Dr. Vijay Labhsetwar (India); (11) Dr. Chung-Feng Ding (Chinese Taipei Committee); (12) Prof. Zhang Zhanyu (China); (13) Dr. Sanidhya Nika Purnomo (Indonesia)

5.1.3 Former WG-AFM outgoing Chair and Secretary: (1) Dr. Kamran Emami (Iran), Chair; (2) Ms. Sahar Norouzi (Iran), Secretary

5.1.4 Former WG-M & R outgoing Chair, Vice-Chair and Secretary: (1) Mr. Ian William Makin (United Kingdom), Chair; (2) Dr. Dong Bin (China), Vice Chair; (3) Engr. Muhammad Sani Bala (Nigeria), Secretary

5.1.5 Former WG-IDM outgoing Chair, Vice-Chair and Secretary: (1) Dr. Ahmet Seren (Turkey), Chair; (2) Dr. Sheng-Wei Wang (Chinese Taipei Committee), Vice Chair; (3) Dr. Katsuyuki SHIMIZU (Japan), Secretary

5.2 Cross-professional and Interdisciplinary Working Group Members

5.2.1 The main purpose of this working group is to focus on coastal disasters such as extreme rainfall, increased drought periods, rising sea levels, more violent storm surges, etc. under today's climate change, which also endanger the production capacity and yield of food production. In addition, more Under the unconscious and uncontrolled behavior of humans over pumping groundwater, the superposition effect of coastal disasters has a more serious impact. This is a very obvious issue of great significance and has reached a time when it is necessary to respond without delay.

5.2.2 Please refer to the content of each sub-item of the main item "2. Objectives" of this document. This WG-SCER working group recruits interested members, especially coastal and island countries, as well as those who have advanced water industry technology and can share knowledge.

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Annex 1(a)

ROLLING PLAN FOR THE WORKING GROUP ON SUSTAINABLE COASTAL ENVIRONMENT REGENERATION (WG-SCER)

Activity	2024	2025	2026	2027	2028	2029	Actors
Mailing the Scoping Document to members of the former WG-SDTA, and Chair, Vice-chair and Secretary of the former WG-AFM, WG-M&R and WG-IDM, as well as central office and selected individuals.							Convener
Comments on Updated Scooping Document received							All consulted individuals
Finalizing Scoping Document and detailing of Work plan							Convener
Invitation to NCs for nominations and information							Central Office
Virtual Meeting, Informal Meeting of participants							Central Office
Submission of nominations & information							National Committees
WG-SCER Meetings are organized during the 75th to 80th IEC Meeting							Members and Permanent Observers
WG-SCER organizes twice a year online virtual working group meetings							Members and Permanent Observers
Organize international workshops, seminar, side events or special forums							Members and Permanent Observers
Organize Webinars, e-discussions, and IYPeFs related WG-SCER							Members and IYPeF, Permanent Observers
Exchange of information, knowledge, experience, networking							Members and Permanent Observers
Support the Central Office with updating of the databases on relevant coastal environment							Members and Permanent Observers
Preparation of coastal zone rural environment overview document							Selected / nominated members
Review special issue papers for publication in the Irrigation and Drainage journal							Some members and Academic Review Committee
Organize specialized International Short Courses and demonstration site activities to exchange knowledge,							Selected members and central office

Activity	2024	2025	2026	2027	2028	2029	Actors
technology and experience with ICID member countries							
Draft Position paper on key issues related to the Sustainable Coastal Environment Regeneration among members and permanent observers							Chair, Vice-Chair, Secretary, and Task Leader
Position paper on key issues related to the Sustainable Coastal Environment Regeneration among members and permanent observers							Chair, Vice-Chair, Secretary, and Task Leader

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Annex 2 [Appendix XIV, Item 2]

2.1 (A) MEMBERS OF ERSTWHILE WG-SDTA			
No.	**Members**	**Country**	**Remarks**
1.	Dr. Ruey-Chy Kao	Chinese Taipei Committee	Chairman
2.	Ir. Hj. Nor Hisham Bin Mohd Ghazali	Malaysia	Vice-Chairman
3.	Mr. Paavan Kumar Reddy (YP)	India	Secretary
4.	Dr. Hsiao-Wen Wang	Chinese Taipei Committee	
5.	Prof. Budi Sasntoso Wignyosukarto	Indonesia	
6.	Prof. Zhang Zhanyu	China	
7.	Dr. Jeongryeol Jang	Korea	
8.	Dr. Vijay K. Labhsetwar	India	
9.	Dr. Surat Thanusin	Thailand	
10.	Dr. Dina Salesh	Egypt	
11.	Mr. Alok Paul Kalsi	India	
12.	Dr. Hiroki Minakawa	Japan	
13.	Ir. LIU Zhitong	China	
14.	Ms Mona Liza F. Delos Reyes	Philippines	
Observer/ Permanent Observers			
15.	Ir. Henk P. Ritzema	Netherlands	Observer
16.	Mr. Arthon Suttigarn	Thailand	Observer
17.	Dr Jo jin Hoon	Korea	Permanent Observer
18.	Dr. Daeou Eo	Korea	Permanent Observer
19.	Mr. Robiyanto Hendro Susanto	Indonesia	Permanent Obsever
20.	Mr. Harry Denecke	FAO	Permanent Obsever

(B) Nominations received for new SCER

No.	**Members**	**Country**
1	Dr. Chung-Feng Ding	Chinese Taipei Committee
2	Dr. Sheng-Wei Wang	Chinese Taipei Committee

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2.2 MEMBERS OF ERSTWHILE WG-AFM			
No.	**Members**	**Country**	**Remarks**
1.	VPH Dr. Kamran Emami	Iran	Chairman
2.	Ms. Sahar Norouzi – Young Professional	Iran	Secretary
3.	Engr. Duan Cheng	China	
4.	Dr. Zhong-Kai Feng, Young Professional	China	
5.	Dr. Hui Lu	China	
6.	Ir. Zhu Haidong	China	
7.	Dr. Ming-Che Hu	Chinese Taipei Committee	
8.	Mr. Olli-Matti Verta	Finland	

2.2 MEMBERS OF ERSTWHILE WG-AFM			
No.	**Members**	**Country**	**Remarks**
9.	Mr. Tamá Tóth	Hungary	
10.	Mr. Rajini Kant Agarwal (Direct Member), WAPCOS Ltd.	India	
11.	Dr. Akie Mukai	Japan	
12.	Dr. Hiroki Minakawa	Japan	
13.	**Mr. Ahmad Bin Dakur**	Malaysia	
14.	Dato's Ir. Mohd Azmi Bin Ismail	Malaysia	
15.	Dr. Abdelilah Taky	Morocco	
16.	Dr. Maheswor Shrestha	Nepal	
17.	**Mr. Marcel Marchand**	Netherlands	
18.	**Engr. Syed Mahmood-ul-Hassan**	Pakistan	
19.	Mr. Muhammad Ejaz Tanveer	Pakistan	
20.	**Eng. Hind Massoud**	Sudan	
21.	**Dr. Arthon Suttigam**	Thailand	
22.	Engr. Muhammet Bahattin Avcuoglu	Turkey	
23.	Engr. Mehmet Akif Kaygusuz	Turkey	
24.	Mr. Maurice Roos	USA	

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2.3 MEMBERSHIP OF ERSTWHILE WG-M&R			
No.	**Members**	**Country**	**Remarks**
1.	VPH Ian Makin	UK	Chair
2.	Dr. Dong Bin	China	Vice Chair
3.	Er. Muhammad Sani Bala	Nigeria	Secretary
4.	Dr. Yalong Li	China	
5.	Dr. SHI Yuan	China	
6.	Dr. Di Wu	China	
7.	Dr. Chih-Hung Tan	Chinese Taipei Committee	
8.	Dr. Hwa-Lung Yu	Chinese Taipei Committee	
9.	Prof. Dr. Tarek Ahmed El-Samman	Egypt	
10.	Dr. Sanjay Belsare	India	
11.	Prof. Sunil D. Gorantiwar	India	
12.	Dr. Neelam Patel	India	
13.	Mr. Mohamad Ramdani	Indonesia	
14.	Mr. Muhammad Adrie Azhari	Indonesia	
15.	Mr. Mehrzad Ehsani	Iran	
16.	Mr. Omid Moridnejaad	Iran	
17.	Dr. Mohsen Barahimi	Iran	
18.	Mr. Ali Omran Ali	Iraq	
19.	Mrs. Zaineb Mohammed Akram	Iraq	
20.	Dr. Toshihiko Kuno	Japan	
21.	Dr. Shinji Fukuda	Japan	

2.3 MEMBERSHIP OF ERSTWHILE WG-M&R			
No.	**Members**	**Country**	**Remarks**
22.	Mr. Mohd Yazid bin Abdullah	Malaysia	
23.	Mr. Dinesh Bhatt	Nepal	
24.	Mr. Usman-e-Ghani	Pakistan	
25.	Dr. Usman Khalid Awan	Pakistan	
26.	Ms. Mona Liza Delos Reyes	Philippines	
27.	Engr. Reyne B. Ugay	Philippines	
28.	Mr. Jan Potgieter	South Africa	
29.	Dr. Macdex Mutema	South Africa	
30.	Ms. Kwang-Sik Yoon	South Korea	
31.	Ms. Bedriye Nur Dikenli Aytekin	Turkey	
32.	Mr. Ali Volkan Seyfi	Turkey	
33.	Mr. Bilal Alpaslan	Turkey	
34.	Dr. Brian T. Wahlin	USA	
Observer/ Permanent Observers			
35.	Mr. Alan Kendall Clark	UK	
36.	FAO Representative		
37.	Dr. Petra Schmitter (World Bank)	Myanmar	
38.	Dr. Alok Sikka (IWMI)	India	

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2.4 MEMBERSHIP OF ERSTWHILE WG-IDM			
No.	**Members**	**Country**	**Remarks**
1.	Mr. Ahmet Şeren	Turkey	Chair
2.	Dr. Sheng-Wei Wang	Chinese Taipei Committee	Vice Chair
3.	Dr. Katsuyuki Shimizu	Japan	Secretary
4.	Dr. Amgad Elmahdi	Australia	
5.	Dr. Wu Jingwei	China	
6.	Dr. Liu Jing - Young Professional	China	
7.	Prof. Huang Jiesheng	China	
8.	Prof. (Ms.) Chen Jing	China	
9.	Dr. Hwa-Lung Yu	Chinese Taipei Committee	
10.	Eng El Sayed El Yamani Ali Sarkees	Egypt	
11.	Dr Eman Ragab Mohamed Nofal - Young Professional	Egypt	
12.	Mr. Waleed Abou El Hassan	Egypt	
13.	Dr. Gamal Mohamed Elkassar	Egypt	
14.	Prof L.B. Roy – Direct Member	India	
15.	Dr. Narges Zohrabi	Iran	
16.	Dr. Akie Mukai	Japan	
17.	Ir. Mat Hussin Bin Ghani	Malaysia	
18.	Mr. Mohamad Radzi Bin Abdul Talib	Malaysia	
19.	Mr. Tariq Altaf	Pakistan	

2.4 MEMBERSHIP OF ERSTWHILE WG-IDM			
No.	**Members**	**Country**	**Remarks**
20.	Dr. Khumbulani Dhavu	South Africa	
21.	Engr. Ali Mohamed Ahmed Elhaj	Sudan	
22.	Ms. Özlem YILDIZ	Turkey	
Permanent Observers			
23.	31. VPH Ian Makin	UK	
24.	32. VPH Hafied Gany	Indonesia	

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Annex 3 [Appendix XIV, Item 4]

ROAD MAP TO ICID VISION 2030 – ACTIVITIES OF WG-SDTA

	Activity	Outcomes/ Outputs	Milestone for Year 2017	Milestone for Year 2018	Milestone for Year 2019	Milestone for Year 2020	Milestone for Year 2021	Milestone for Year 2022	Milestone for Year 2023
Goal B: Be a catalyst for change in policies and practices									
Strategy B1 : Supporting Development of Appropriate Policies	1.1 Promoting Sophisticated water-saving irrigation development with IOT and water-saving irrigation model techniques exchanges	Technical report, workshop proceedings and water industry web site	Preparing: Promoting demonstrative plan	Site tests demons-tration: Hardware const-ruction and software tests	Site tests demons-tration: Hardware, software and system control integrating process	Site tests plan: Workshop observation	Examination Plan results & improvement	Examinat ion Plan results & improve ment	Examination Plan results & Improvement; expand to other areas
	1.2 Promoting up-to-date water-saving experience exchange	As above	As above	As above	As above	As above	As above	As above	As above
	1.10 Sustain-able drainage management experience exchange	Internet of Things Water industry workshop					Web-based seminars on SDTA	Web-based seminars on SDTA	Internet of Things Water industry workshop
Goal C: Facilitate exchange of information, knowledge and technology									
Strategy C4 : Compile, Collate and Share Know-ledge and Ex-periences	4.26 Special Issue of ICID Journal on SDTA	Special issue of IRD	Announcement of special issue, inviting authors etc.	Setup Review Committee for selected papers based on the workshops	Submission of final drafts	Review Papers: 2019 International workshop papers	1. Publish-ing Special Issue of IRD 2. 2021 Inter-national workshop "Integrated Solution for Irrigation and Drainage of Drainage Tails and Land Subsidence in Tidal Areas"	Review Papers: 2021 Internationa l workshop papers	Publishing Special Issue of IRD
Strategy C5 : Dissem-ination of Data, Infor-mation, Tools, Know-ledge & Know How	5.8 Develop and maintain the ICID web site as a knowledge hub	On-line					Develop and maintain the ICID web site as a SDTA knowledge hub	Update and maintain the ICID web site as a SDTA knowledge hub	Update and maintain the ICID web site as a SDTA knowledge hub
Goal E: Encourage research and support development of tools to extend innovation into field practices									
Strategy E3 : Develop and Promo-ting Tools for AWM	3.2 The application for output of development tools from academic institutions			Prepare tidal prediction and typhoon wave model		Prepare Short Course (2021)	Prepare "Tidal Prediction and Land Subsidence Prevention and Recla-mation"	Prepare "Nume-rical Simu-lation of estuary and drai-nage flood in Tidal areas"	Prepare "Numerical Simulation of estuary flood and coastal flow field"
Goal F: Facilitate capacity development									
Strategy F3: Technical Training of Young Profe-ssionals from	3.7 workshop/Training Workshop on Sustainable	Technical transfer and internet information short course	Scope, theme and announcement		Short Course/Trai ning Workshop on SDTA		Short Course / Training Workshop on SDTA	Web-based seminars on SDTA	Short Course / Training Workshop on SDTA

	Activity	Outcomes/ Outputs	Milestone for Year 2017	Milestone for Year 2018	Milestone for Year 2019	Milestone for Year 2020	Milestone for Year 2021	Milestone for Year 2022	Milestone for Year 2023
Member Countries	Development of Tidal Areas	/training workshop							
	3.8 To launch e-Discussion on Sustainable Development	E-discussion	E-discussion on Sustainable Development of Tidal Areas		e-Discussion on SDTA		e-Discussion on SDTA	e-Dis-cussion on SDTA	e-Dis-cussion on SDTA

(Source: Consultative Group (CG) Report: A Water Secure World Free of Poverty & Hunger: A Road Map to ICID Vision 2030**)**

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Annex 3 [Appendix XIV, Item 4]

ROAD MAP TO ICID VISION 2030 – ACTIVITIES OF WG-M&R

Goals/ Strategies	Activities	Outcomes / Outputs	Milestone for 2017	Milestone for 2018	Milestone for 2019	Milestone for 2020	Milestone for 2021	Milestone for 2022	Milestone for 2023	Respon-sibility
Goal A: Enable higher crop productivity with less water and energy										
A1. Strategy: Modernizing irrigation systems	1.4 Preparation and presentation of Case studies	Compilation of Case Studies	6 Case Studies	5 case studies presented	9 Case Studies			Selected case studies to address key missing aspects	Edited volume of case studies – published on the ICID website	Authors of case studies
	1.5 Prepare an overview paper on State of the Art on Modernization of Irrigation Systems	State of the Art Paper		State of the Art Paper	State of the Art Paper re-arranged	Cancelled				
	1.6 Develop Guidelines for Modernization of Irrigation systems	Guidelines (This is to be reviewed and possibly revised in Mexico in 2017)			Release Guidelines in WIF3				Release Guidelines	Lead Authors (Ian Makin, Dong Din, Sani Bala)
A2. Strategy: Improving O&M of Irrigation Systems	2.1 Advocacy paper to draw attention to the need of adequate resources for O&M	Advocacy paper								
	2.2 Develop norms of O&M of Irrigation systems	Technical Report					Survey developed and submitted for distribution to ICID NCs	Survey to be sent out by CO – Q1, 2022 Analysis and draft report by Q3, 2022	Final report on Norms and processes – presented at WIF 4, Beijing	Core writing team, led by Mona Liza del le Reyes
Goal B: Be a catalyst for change in policies and practices										
B1. Strategy: Supporting development of appropriate policies	1.9 Prepare position Paper on Key Issues on Modernization of Irrigation Schemes	Position/Policy Paper of ICID								
Goal C: Facilitate exchange of information, knowledge and technology										
C1. Strategy: Providing knowledge sharing platform for AWM professionals	1.5 Organize Workshops, Seminar and Symposium on modernization	Compilation of proceedings	Main Theme of Congress, Inputs to Congress		Full-day workshop on modernization			International Workshop in Adelaide in 2023		Ian Makin
Goal F: Facilitate capacity development										
F4. Strategy: Developing and sharing AWM knowledge	4.4 Condensed overview of Key books, manuals and Guidelines	Book Overview								Ongoing – all members of WG_M&R

(**Source**: Consultative Group (CG) Report: A Water Secure World Free of Poverty & Hunger: A Road Map to ICID Vision 2030

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Annex 3 [Appendix XIV, Item 4]

ROAD MAP TO ICID VISION 2030 – ACTIVITIES OF WG-IDM

Goal/ Strategies	Activities	Outcomes/ Outputs	Responsible person
Goal A: Enable higher crop productivity with less water and energy			
A1. Strategy: Modernizing irrigation systems	1.1 Develop a program for introducing standards for irrigation systems	Standards for Irrigation and Drainage	Dr. Sheng-Wei WANG
	1.2 Report or case studies on recent developments in Irrigation Drainage Management	Case studies Presented in WG meetings	Dr. Narges ZOHRABI Mr. Ahmet SEREN
A6. Strategy: Improving the performance of irrigation systems	6.1 Investigating and providing information on the positive amenities, services, and goods provided by irrigation systems (in consultation with WG-ENV)	Technical Report	Dr. K SHIMIZU
	6.7 Identify drivers and social resistances within the systems to improve Irrigation management	Report	Mr. Ahmet SEREN Mr. Ian MAKIN (to assist)
Goal B: Be a catalyst for change in policies and practices			
B1.Strategy: Support the development of appropriate policies	1.14 Report on South-South cooperation for capacity development in the field of irrigation management	Report	Ms. M.Jean GABRIEL
B3. Strategy: Integrated Irrigation and Drainage Management	3.1 Assess methods and develop guidelines on relevant water balance approach	Guidelines	Dr. Amgad ELMAHDI Mr. Ian MAKIN (to assist)
Goal C: Facilitate exchange of information, knowledge and technology			
C1.Strategy: Providing knowledge sharing platform for AWM professionals	1.3 Organize Workshop, Seminar and Symposium on Water Balance Approach	Proceedings	Dr. Amgad ELMAHDI
C4.Strategy: Compile, Collate and Share Knowledge and Experiences	4.9 Condensed overview of existing documents and practical examples on water balance approach	Technical Report	Ms. M.Jean GABRIEL
	4.17 Overview paper on the Irrigation Development for publication in Irrigation and Drainage (IRD)	Technical Paper	Dr. Sheng-Wei WANG
Goal D: Enable Cross Disciplinary and Inter-Sectoral Engagement			
D2. Strategy: Developing Technical Documents in Non-technical Language	2.3 Investigating and documenting the social and economic impacts of irrigation systems	Technical report	Dr. Akie MUKAI
GOAL E: Encourage Research and Support Development of Tools to Extend Innovation into Field Practices			
E6. Strategy: Dissemination of Useful Research Outputs	6.2 Investigate and report on state of research, barriers or locks and promising paths in the field of irrigation management	Technical report	Prof. LB ROY

(**Source**: Consultative Group (CG) Report: A Water Secure World Free of Poverty & Hunger: A Road Map to ICID Vision 2030)

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Annex 4 [Appendix XIV, Item 5.3]

DRAFT FORMAT FOR 'COUNTRY NOTE'

Title:

(a) Country Note – Sustainable Development of Tidal Areas in ……..???

(b) Name of the country)

Author(s)

(a) Name, _____

(b) Designation, _____

(c) Organization, _____

(d) E-mail ID _____

CONTENTS:

(a) Introduction

(b) Topography/soils and natural characteristics'

(c) Climate and rainfall

(d) Sea conditions in front of the coast and river regimes

(e) Sustainable development and management options in tidal areas (design criteria for drainage and flood protection provisions)

(f) Risk on tidal areas due to changes in land use, land subsidence and impacts of global climate change (rainfall, river regimes, drought)

(g) Potential challenges and opportunities for development and management of tidal areas

(h) …

Page limitation: Roughly 2 pages (1500 words) + 1 page for the table

Note: (1) Please correct above items (add/delete) and improve as much as possible. (2) An informative table may be generated to show important SDTA related statistics to get a glimpse of the SDTA in the country. The draft table is shown on the next page. (3) The Format for the Country Note is developed by Dr. Vijay K Labhsetwar in consultation with Prof Dr Bart Schultz.

Please see next page.

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Annex 4 [Appendix XIV, Item 5.3]

TABLE: IMPORTANT CHARACTERISTICS ON SDTA IN _____ (NAME OF THE COUNTRY)

Note: Please fill-in the information as much as possible and leave out the rest

Sl. No.	Particulars	Situation in 2020	Expected in 2050	Comments, if any
1	Topography: • area in ha • surface level in m+ MSL			
2	Population			
3	Value of public and private property			
4	Rainfall in mm: • annual • 1 day 1* per 10 year			
5	Sea level: • low tide • high tide • storm surge			
6	River water level • low flow • average flow • peak flow			
7	Land use in %			
	Urban area			
8	Landfill or polder			
	Drainage system: • percentage of open water • discharge sluice and or pumping station • capacity • preferred conditions • design conditions			
9	Flood protection: • risk of failure			
	Rural area			
10	Landfill or polder			
11	Drainage system: • percentage of open water • discharge sluice and or pumping station • capacity • preferred conditions • design conditions			
12	Flood protection: • risk of failure			

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