

THE NEED FOR DATA AND INFORMATION SHARINGS: TOWARD INTEGRATED WATER RESOURCES MANAGEMENT

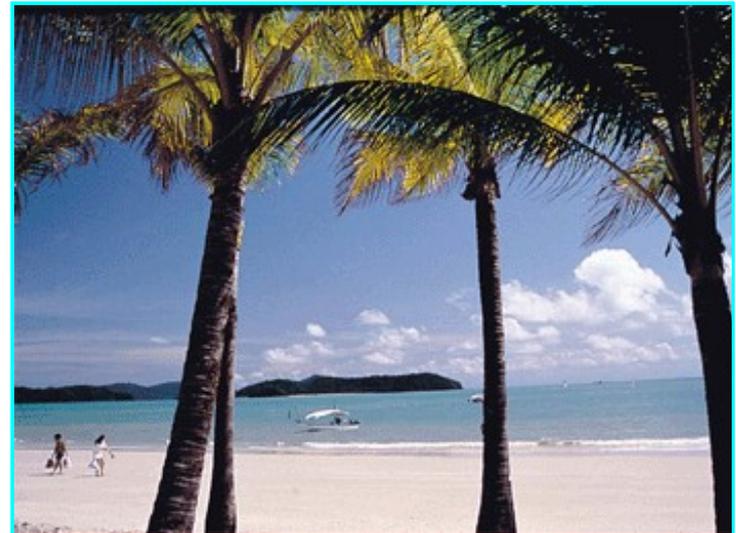


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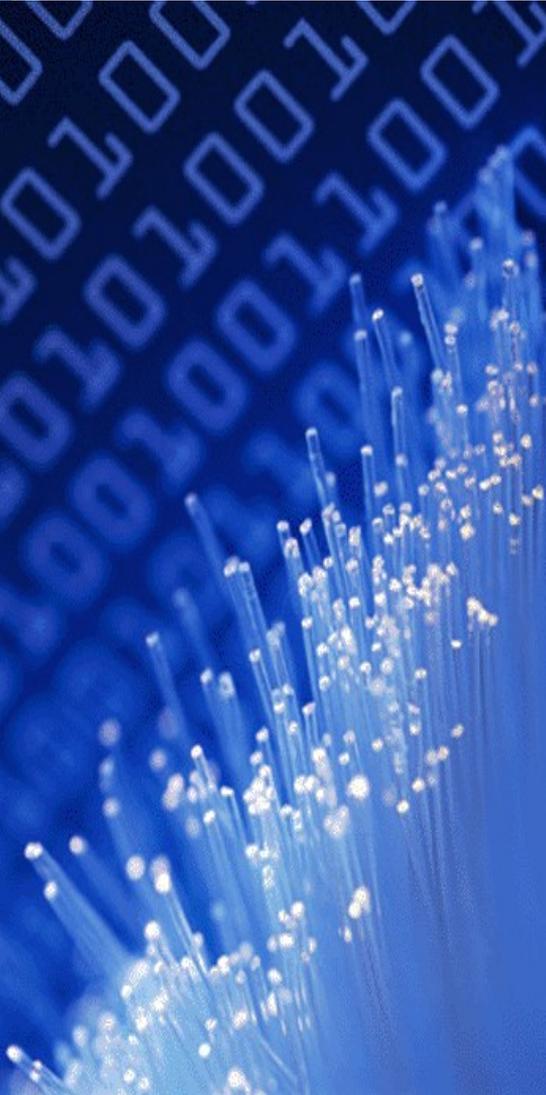
INTRODUCTION

- Management of water resources is a **sharing of responsibility and role** among stakeholders.
- Perspectives and challenges vary amongst individuals, organizations and countries - Refers to different needs and challenges among them to collect and keep the data in a **sustainable ways and practices**.
- Normally agencies or institutions work alone and have their own goals, perspectives and interests - There should be initiatives from agencies to extract the data to make it **useable and acceptable by all**.





THE NEED FOR DATA AND INFORMATION



What kind of data that we really need?
Where to get the data?
How to get them?

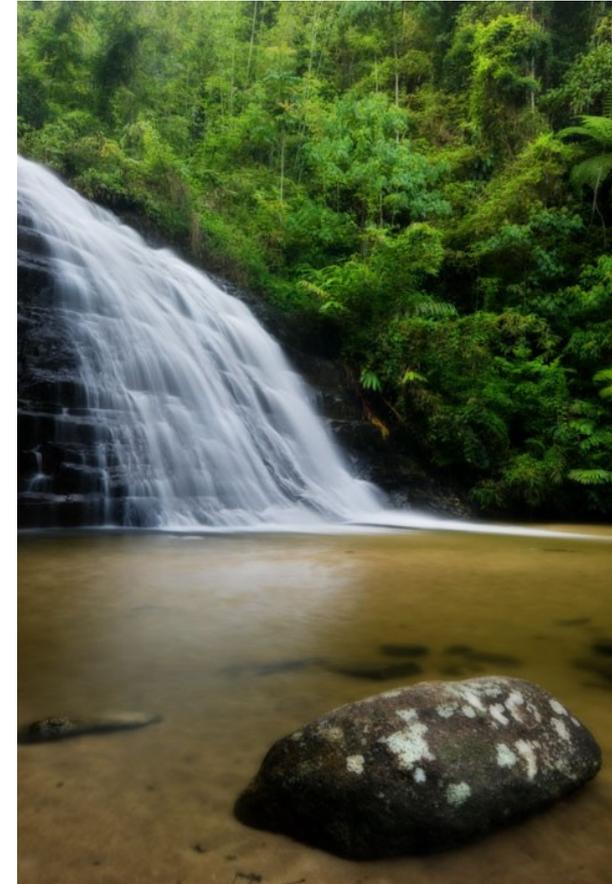
- Information and data related on environment including on water resources had been **available** for many decades, and some had been developed well **established database** which could be **easily accessible**.



THE NEED FOR DATA AND INFORMATION

Why we need data and information?

- Systemic Data & Information
- Monitoring Data & Information
- Strategic Planning Data & Information
- Decision Making Process





DATA AND INFORMATION CHALLENGES



- **Availability** of data and information
- **Confidentiality** of data and information
- **Quality** of data and information
- **Ownership/Custodianship** of data and information
- **Acquisition, Storage, Retrieval & Dissemination** of data and information
- **Sustainability** of data and information
- **Trans boundary issues** of data and information

DATA AND INFORMATION FOR IWRM

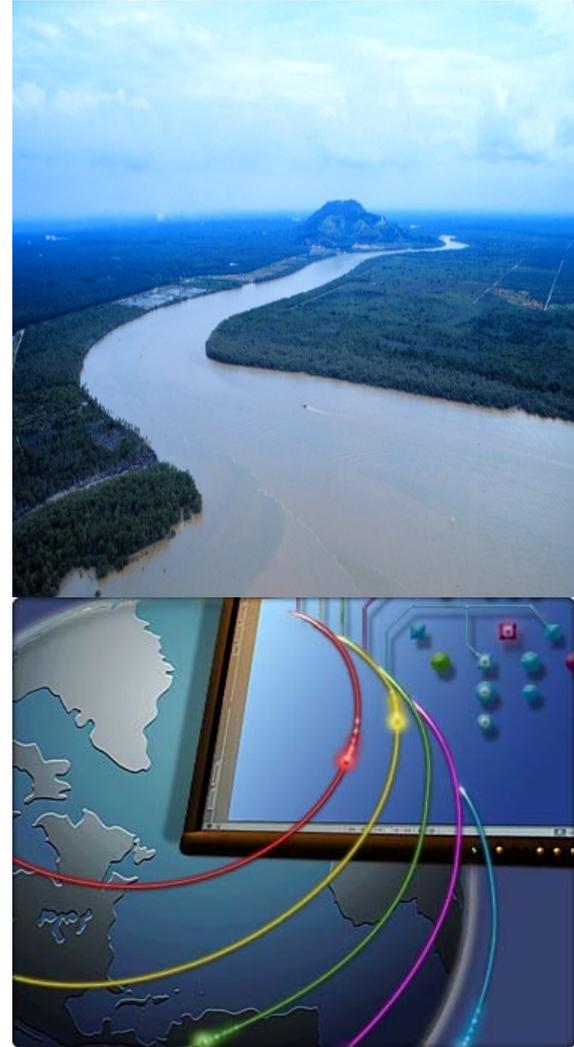
- IWRM involved **multidisciplinary approach** - Needs supports from various issues and field of studies.
- Issues on water resources management cannot be handled properly if there is no enough information to **facilitate decision making process** that is related to water resources management.
- The big challenges related to data and information in IWRM is to **acquire and compile** data and information in a **timely manner**.
- Challenges to make them **collaborate among each other** and to provide the data and information to be **available and useful** for them.





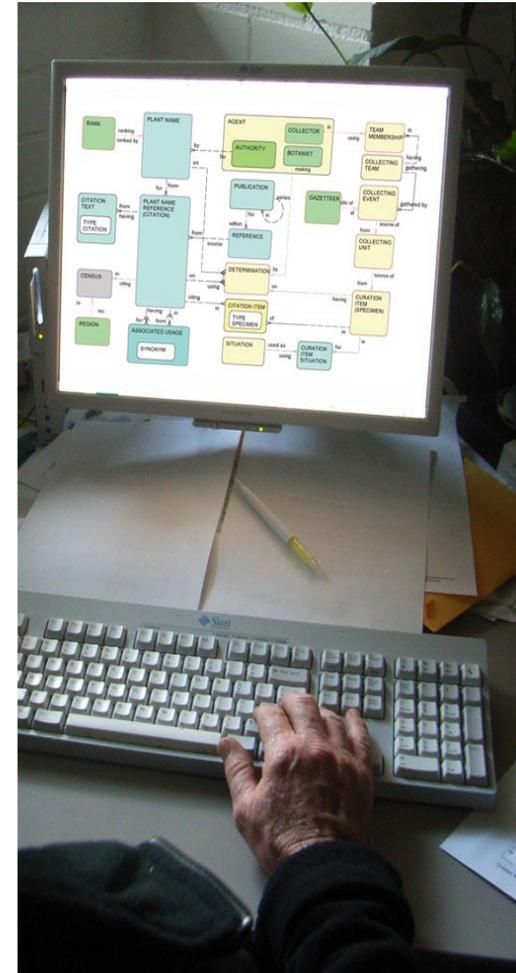
INTEGRATED INFORMATION SYSTEM FOR IWRM

- Information system plays an important role in **policy and decision making** processes, **monitoring and enforcement** as well as **developing cutting edge knowledge**.
- Integrated information system is very much **needed and critical** in water resources management and towards IWRM.
- **Lack of information system** which could deliver data and information on water resources management issues and status caused:
 - **Difficulties to identify and determine** the best and appropriate methodology towards IWRM
 - **Influenced water resources management process** in the country, policy and decision maker, scientist and wider community.



INTEGRATED INFORMATION SYSTEM

- Systematic data and information **need to be developed** based on data received from various agencies.
- The success of information system development involving multi-organizations, depend heavily on **effective knowledge sharing** across boundaries.
- Data integration in term of information sharing by having collaborative working groups is very important to let data and information **cross the boundaries**.



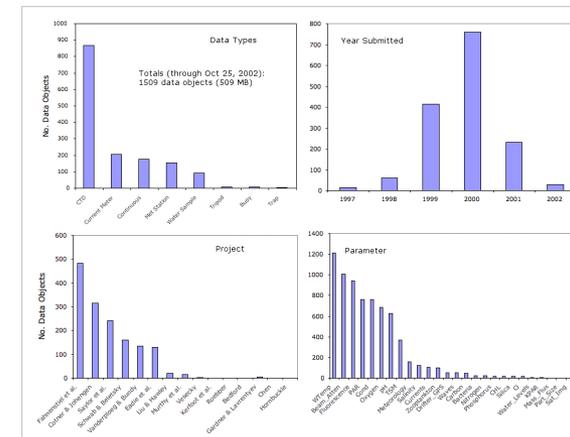
DATA AND INFORMATION ON IWRM IN MALAYSIA

- Information system of environmental technology is **critical** for environmental management and towards achieving sustainable development for Malaysia.
- Existing information system on environment in Malaysia focus on physical, biological, ecosystem, human health, social and economy data, which included data on water waste and water quality of selected locations in Malaysia.
- No mechanism in data and information **sharing & exchanging** among the agencies to get the data. (Some can get easily, some have to pay, some cannot get it at all).
- Data is not completed, not perfect, and missing some points here and there.
- Development of information system for IWRM should be **prioritizes on developing a database** on technology, which is to be used or produced in Malaysia.



DEVELOPMENT OF INFORMATION SYSTEM

- **Feasibility Study**
 - Important to build information through Literature Review & Survey/Questionnaire
 - E.g. Malaysian Quality of Life Index (MQLI) Report by EPU
 - E.g. Malaysian State of Environment by DOE
- **Data Analysis**
 - Extracting useful information obtained from feasibility studies
 - SWOT Analysis
 - Matrix Analysis
- **Framework**
 - Involved the data structure and also data flow process to make it clear the input and output of the information system





STRATEGY TO OVERCOME: What should be done?

- Through consensus and consultation that will bring agencies towards Collaborative decision Making (CDM).
- In order to improve the existing water management system.
- CDM is a suitable and appropriate way within framework of IWRM and IRBM
 - CDM is needed as enabling environment towards IWRM
 - Mechanism of CDM allow and provide institutional frameworks
 - CDM as a tool for management instruments





WHAT IS CDM?

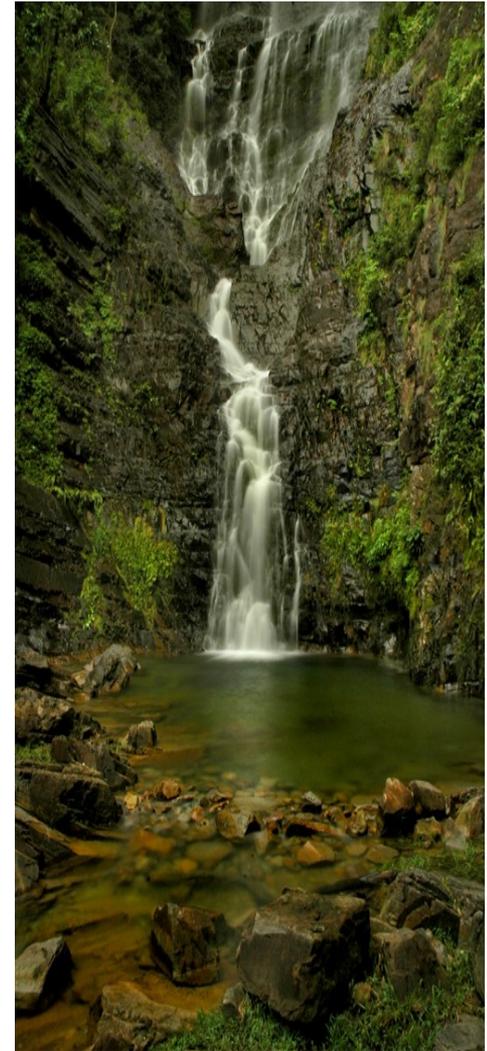
- CDM in term of data & information sharing and exchange is a collaboration process in decision making in a way forward to generate an integrated information system among multi stakeholders to be easily used and obtained by relevant stakeholders, through data and information sharing and exchange.
- CDM will lead the agencies and communities to better prepare and **manage information** required for making decisions about sustainable resource use, predictability over the outcomes, and better solutions by **bringing a diversity of knowledge and expertise**.





THE NEED OF COLLABORATION

- Good decision making needs data & information
- Depends on the **availability of sound supporting information.**
- Decision-making involves framing the issues, gathering information, drawing conclusions, and learning from feedback.
- There is a need to provide data and information to facilitate decision making processes that are related to water resources management.
- An open dialogue can demonstrate that opposing parties may actually **share interests, values and concerns.**
- Thus, collaborative processes can lead to a **shared vision of the future, resolve conflicts, and result in creative solutions.**



THE NEED OF CDM

- CDM is needed to choose relevant data and information that will be used by relevant agencies or stakeholders.
- CDM is needed to collaborate among each other including sharing & exchanging of knowledge, experiences, data & information.
- CDM is important to **combine the idea, data & information** from all agencies within the local context.
- This will bring them into cooperation and collaboration in sharing and exchanging of knowledge, experiences, lesson learnt, and incorporate their data and information into decision making process in the CDM mechanism.





Integrating Data & Information



Collaboration among Agencies

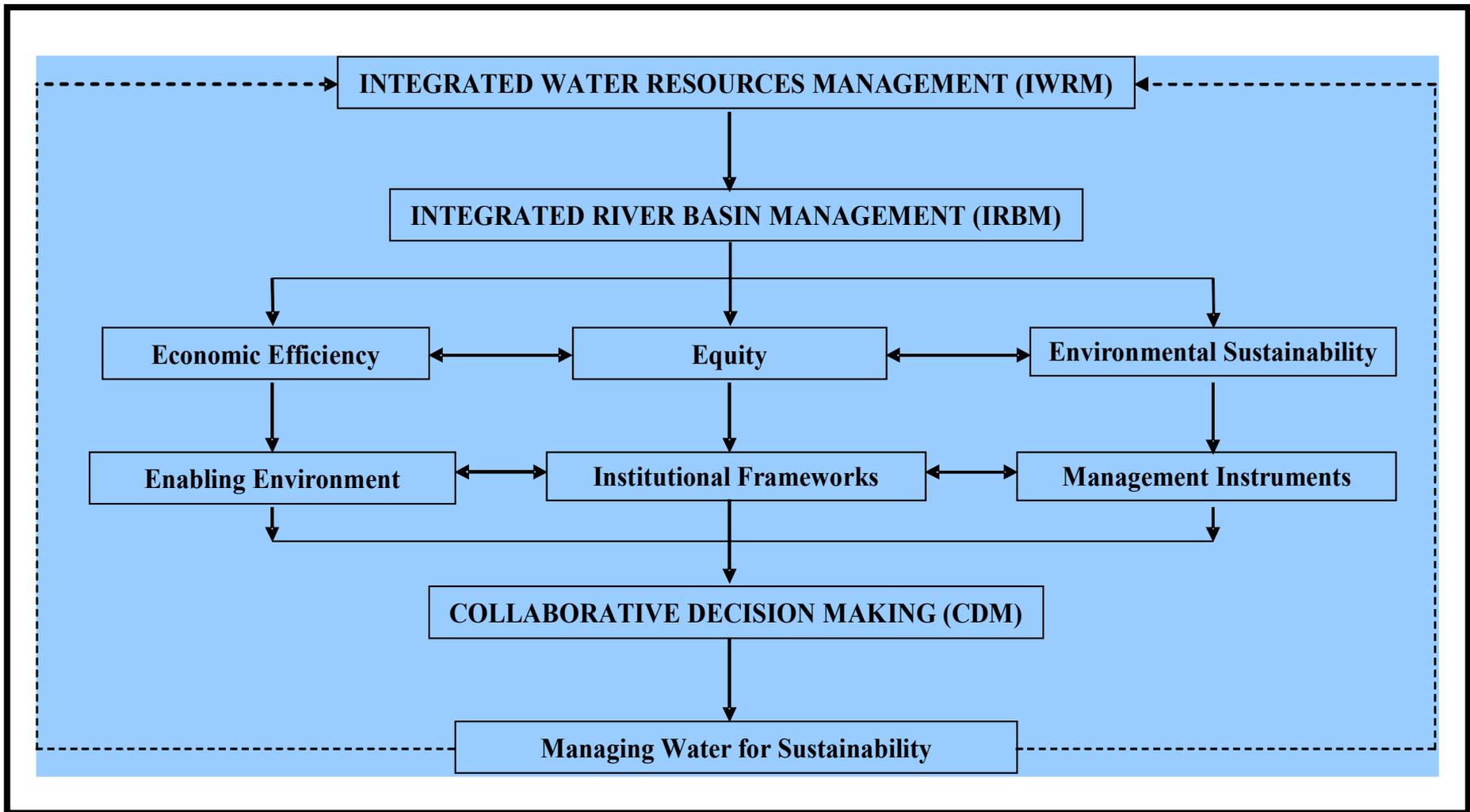


Consensus & Consultation



Collaborative Decision Making

FRAMEWORK OF IWRM AND IRBM THAT SHOWED THE IMPORTANCE OF CDM



WHY CDM?



- CDM is a suitable mechanism for data and information sharing and exchange among agencies.
- Therefore data and information exchange and dissemination should be part and parcel of CDM.
- CDM needs involvement of relevant stakeholders to work together as partners and make decisions collaboratively in aspects related to various issues in water resources management.
- CDM will also ensure a more informed and holistic decision-making in water resources management



OTHER MECHANISMS FOR DATA AND INFORMATION

- Existence of regular mechanisms for exchange and dissemination of information is currently not available and the quality of the data is unknown.
- There is also the need for appropriate and suitable management instrument or tools instead of CDM, such as development of Geographical Information Systems (GIS) Database, Global Positioning System (GPS) Data Conversion, the development of Indicators of water resources management and other sectors of the study, Water Quality Decision Support Systems (DSS), Development of Water Quality Modeling Application System and application of the development of a water quality modeling DSS.





CONCLUSIONS



- The CDM efforts among agencies and other relevant stakeholders that are related to water resources management are pertinent to be applied at various scales.
- Any evaluation should be based on what have been identified as the goals and objectives of CDM including in data and information sharing.
- Without collaboration among agencies through CDM, the status of availability of data & information is only based on estimation from backgrounds or kinds of agencies (that specific agencies will probably have specific kind of data & information).



L E S T A R I

UNIVERSITI KEBANGSAAN MALAYSIA

**Terima Kasih
Thank You**