



Activities of INDONESIA for Strengthening Water-related Disaster Resilience and Achieving Sustainable Development under Climate Change

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INDONESIA'S MEASURES AND EFFORTS

EXPECTATION FOR REALIZATION OF OUTPUTS OF PAST INTERNATIONAL COOPERATION DIALOGUE

- National development with climate change adaptation agenda aims to **create resilience systems** against the current shock of climate variability (climate anomalies) and anticipate future impacts of climate change. In 2021 we have tried to apply what has been conveyed in ICHARM-IFI activities such as making a flood risk map in the Citarum watershed.
- Infrastructure resilience to natural disasters and global climate change **must be a priority and integrated program**, through synergy and cooperation between stakeholders and public works both at the central and regional levels.
- PUPR support coping with flood infrastructure damage as a result of climate change is done through **real-time observation, data management and engineering and infrastructure development, observation due to land subsidence in coastal area, etc.**
- All parties must begin to **identify plausible future climate scenarios** to understand how relevant factors such as sea levels and the intensity of projected extreme events change. Using this information, we can identify the necessary changes to the design, construction, and maintenance of the structure. Development practitioners must understand the vulnerability of various structures, based on location, design, and construction in addition to the impact of hydrology, environment, and ecosystems.
- **Evaluate non-climatic factors**, such as land use changes, to understand how they can improve or worsen flood effect.

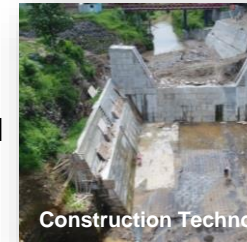
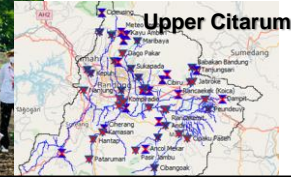




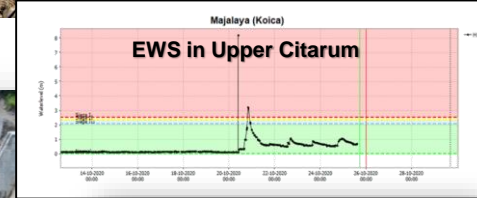
PRIORITY ACTION ON CLIMATE CHANGE

- **Modernization of irrigation** to improve the effectiveness and efficiency of irrigation water supply to support food security;
- Improved implementation of **Smart Water Management System** in the operation and management of water resource infrastructure to improve the effectiveness and efficiency of water use, one of which supports **Hydrological Modernization**;
- Increased application of the use of information and communication technology for **Early Warning Systems (EWS)** for the anticipation of flood, drought and landslide disasters especially in urban areas for the rivers of urban areas and other strategic areas prone to flooding.
- **National standar and guidance review** of water resources that are responsive to climate change. Examples of design discharge changes for flood control infrastructure and wave height for coastal safety infrastructure design.
- The use of **Information and Communication Technology (ICT)** to optimize the "conjunctive use" of surface water and groundwater for the provision of raw water in areas that often experience drought;
- Development of **construction technology** that is resilient to disasters;
- Water resource infrastructure must be **designed and built resilient** against disasters.

Sprinkler Irrigation in Rotiklot Dam



Construction Technology



ADCP tools –Hydrological modernization



DAM Safety



GENERAL CONDITION OF WATER RESOURCES IN INDONESIA

- Availability of sufficient water
- High potential for irrigation and swamp development
- The challenge of the **flood**

- Availability of sufficient water
- Limited potential for irrigation and swamp development
- Flood** problems in some area

- Availability of sufficient water
- Land degradation
- The challenge of flooding (**flashflood**)



- Availability of water is very important
- Focus on improving existing irrigation schemes
- Flood** management is very demanding throughout the region

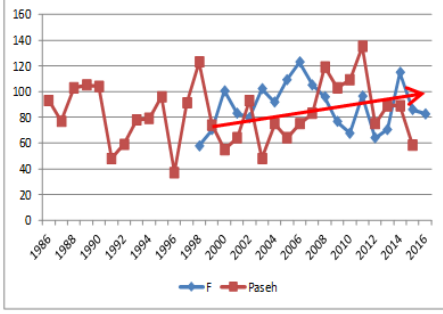
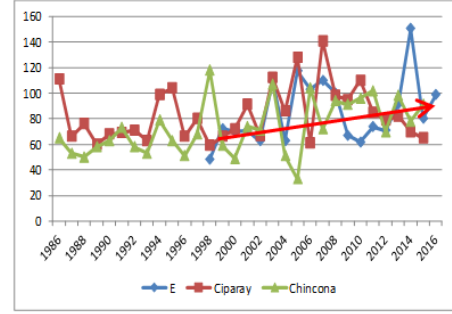
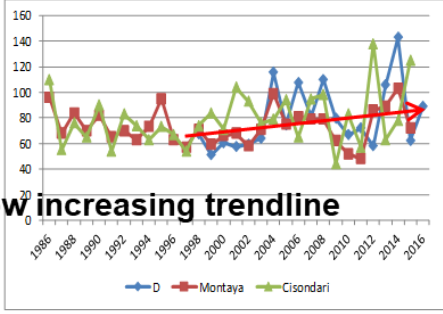
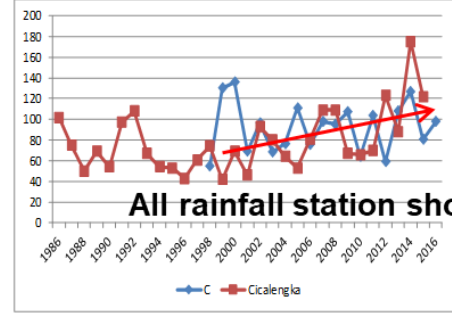
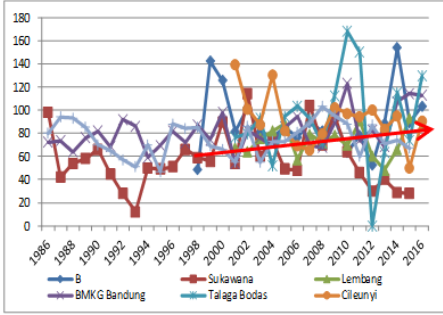
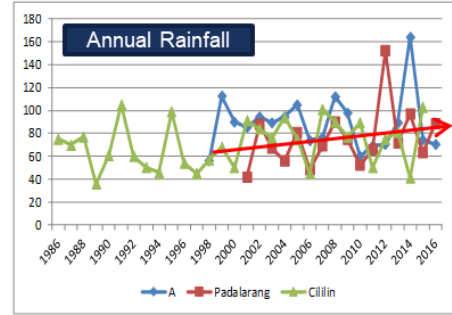
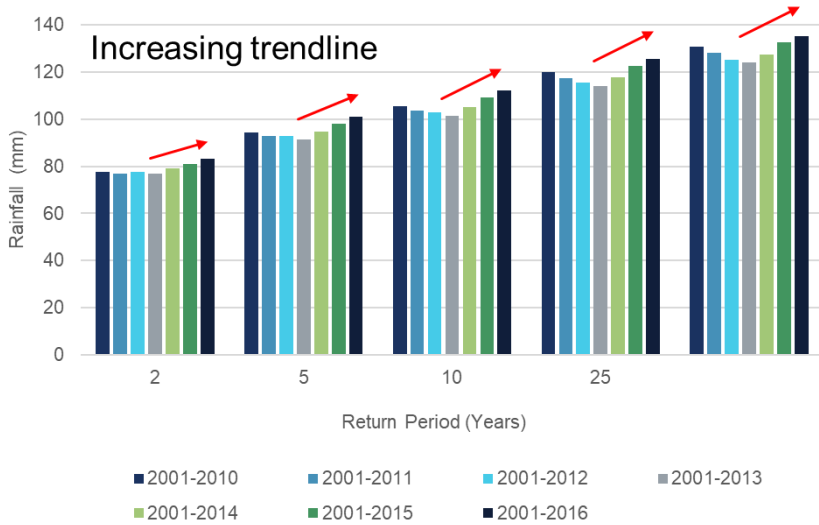
- Availability of water is very important
- Selective irrigation scheme development
- The **flood** problem is relatively low

- High water availability
- Limited potential for development of irrigation and swamp areas
- Flood** problems begin to appear frequently



EXTREME RAINFALL AND INFRASTRUCTURE RESILIENCE IN UPPER CITARUM

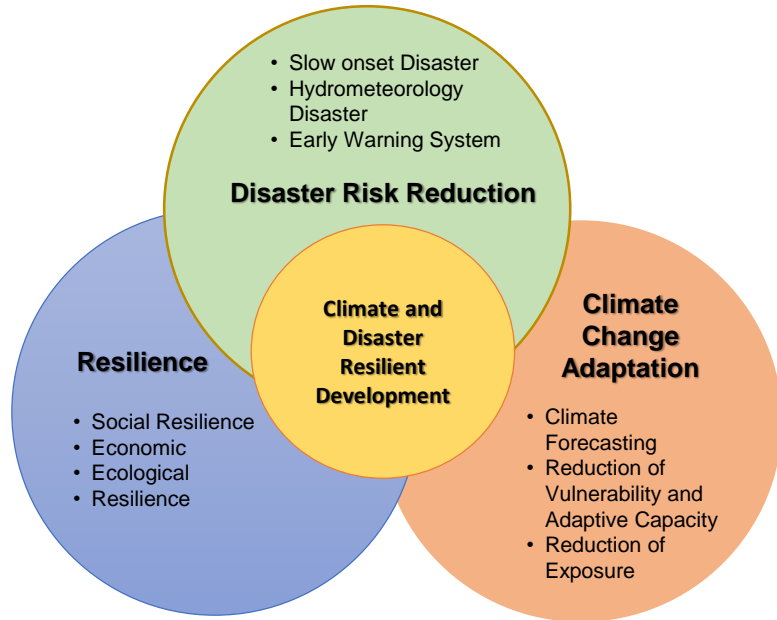
- In the last 34 years (1986-2019) the annual maximum daily rainfall tends to increase with the highest rainfall peaks ranging from 103-188 mm.
- The Citarum watershed is projected to experience an increase in rainfall intensity which will be greater in the 2020-2045 period compared to 1981-2019. The implication of this incident is an increase in the incidence of flooding due to high intensity rainfall in a short time.



All rainfall station show increasing trendline



FUTURE CLIMATE AND DISASTER RESILIENT DEVELOPMENT



- Climate-resilient development needs to be implemented in infrastructure development activities in Ministry of Public Works and Housing
- Climate resilient development is a combination of adaptation efforts, increased resilience and disaster risk reduction to strengthen the development system so that it is resistant to negative impacts due to climate hazards in social, economic and ecological aspects.
- The challenge of reconstruction presents an opportunity to promote disaster risk management through integrated resilient recovery and reconstruction planning that will drive longer-term resilient development. We hope that IFI - Indonesia can cooperate in future activities

*THANK
YOU*



**DIRECTORATE OF WATER RESOURCES
ENGINEERING DEVELOPMENT**

KEMENTERIAN PEKERJAAN UMUM

Draft Agenda of the AWCI Session for the 15th AOGEO Symposium

15:30 – 18:00 (JST), 14:30 – 17:00 (PHT), 13:30 – 16:00 (ICT, WIT), 12:00 – 14:30 (IST),
11:30 – 14:00 (PKT)

Wednesday, 21 September 2022, Online

Meeting Link: <https://pwri.webex.com/pwri/j.php?MTID=m46adb36e53aeaf6d5bbaf90b4fae9d95>

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AGENDA

Moderator: Dr. Mamoru Miyamoto, ICHARM

15:30-16:00 1. Opening AWCI Session

1) Special Speech

His Excellency Dr. Renato U. Solidum, Jr., Secretary, Department of Science and Technology (DOST), Republic of Philippines (TBC)

2) Briefing on the Kumamoto Initiative for Water

Prof. Toshio Koike, ICHARM

3) Photo Session

16:00-16:50 2. Country Reports on the Platforms on Water Resilience and Disasters

Philippines (12min)

Sri Lanka (12min)

Indonesia (12min)

16:50-17:20 3. Thematic Presentations

Science: Earth Observation; (JAXA)(TBC)

Governance: XXX; (GWP)(TBC)

Finance: Infrastructure/Investment; Neeta Pokhrel, Chief of Water Sector Group, ADB

17:20-17:25 4. Sharing from ADBI

Dwiky Wibowo, Capacity Building and Training Associate, ADBI

17:25-17:55 5. Discussion on Inputs into the Statement of 15th AOGEO Symposium

Chair: Prof. Toshio Koike, ICHARM

17:55-18:00 6. Summary and Closing

Prof. Toshio Koike, ICHARM

18:00 Adjourn