BMKG REGIONAL TRAINING CENTRE FOR RA V, INDONESIA

Designing the Indelible Moment of OGD#100: a celebration of the 100th Online Group Discussion

Australian VLab Centre of Excellence Regional Focus Group (RFG),
August 13th 2020

OUTLINE

TOPICS TO BE COVERED

OGD Facts and Figures
Topics Coverage
The Indelible OGD#100
Way Forward

What is Online Group Discussion (OGD)?

Online Group Discussion is a monthly event with the concept of presentation and discussion on certain predetermined themes, i.e Meteorology organized by BMKG Education and Training Centre.

Numerous topics to updated in the field of weather, climate, earthquake, database, AI and other update issues in BMKG

The platform utilized in this event are webinar software of Wizlq with max 200 participant/user and Zoom Meeting with max 500 participant/user

and Moodle for all OGD repositories from 2014 - recently.

THE TEAM

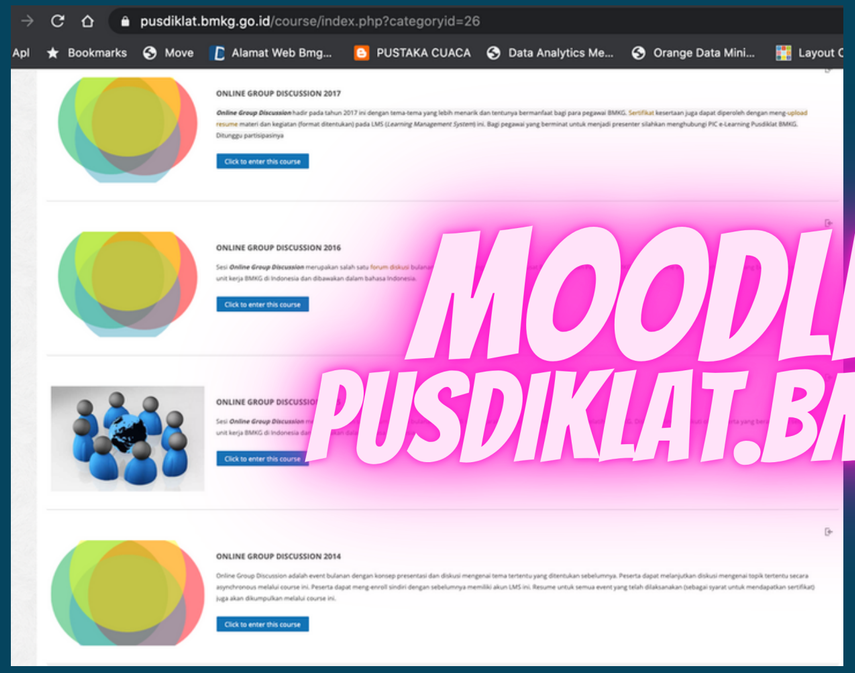
- Moderator
- Technical Support Officer
- Administrator
- Presenter

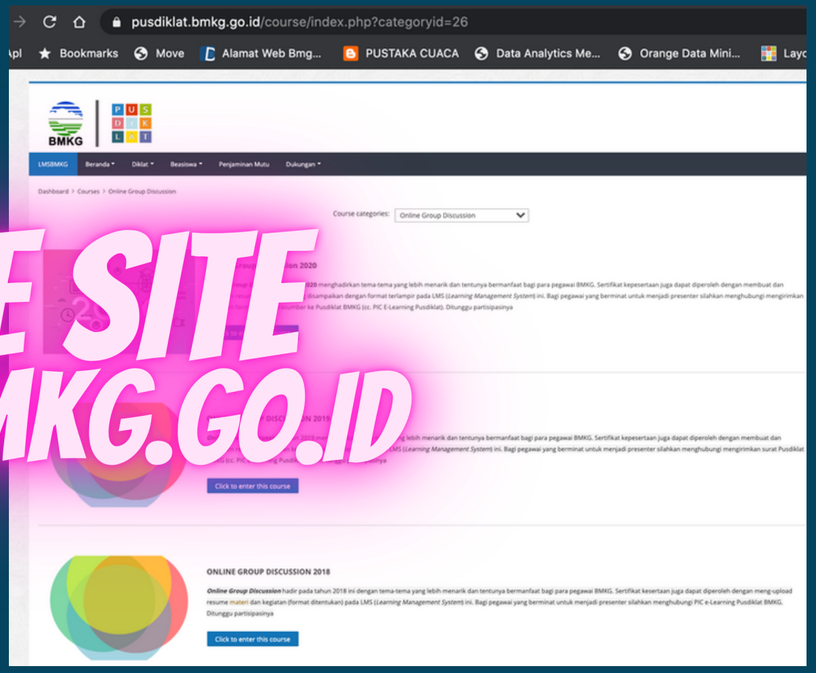
EVENT's FORMAT

- Seminar Online / Online Meeting
- Synchronous (Webinar) & Asynchronous (Moodle)
- WIZiq & LMS Pusdiklat
- 2x / month
- 1.5 – 2 hours of duration / 3 JP

ENGAGEMENT

- Handouts
- Online Survey
- Text Chat
- Video
- Forum
- Assignment → Certificate





MOODLE SITE
PUSDIKLAT.BMKG.GO.ID

OGD PRESENTERS

Location: Elearning Studio, BMKG HQ Jakarta

VS

OGD PARTICIPANTS

BMKG Stations throughout Indonesia

Denpasar, Bali

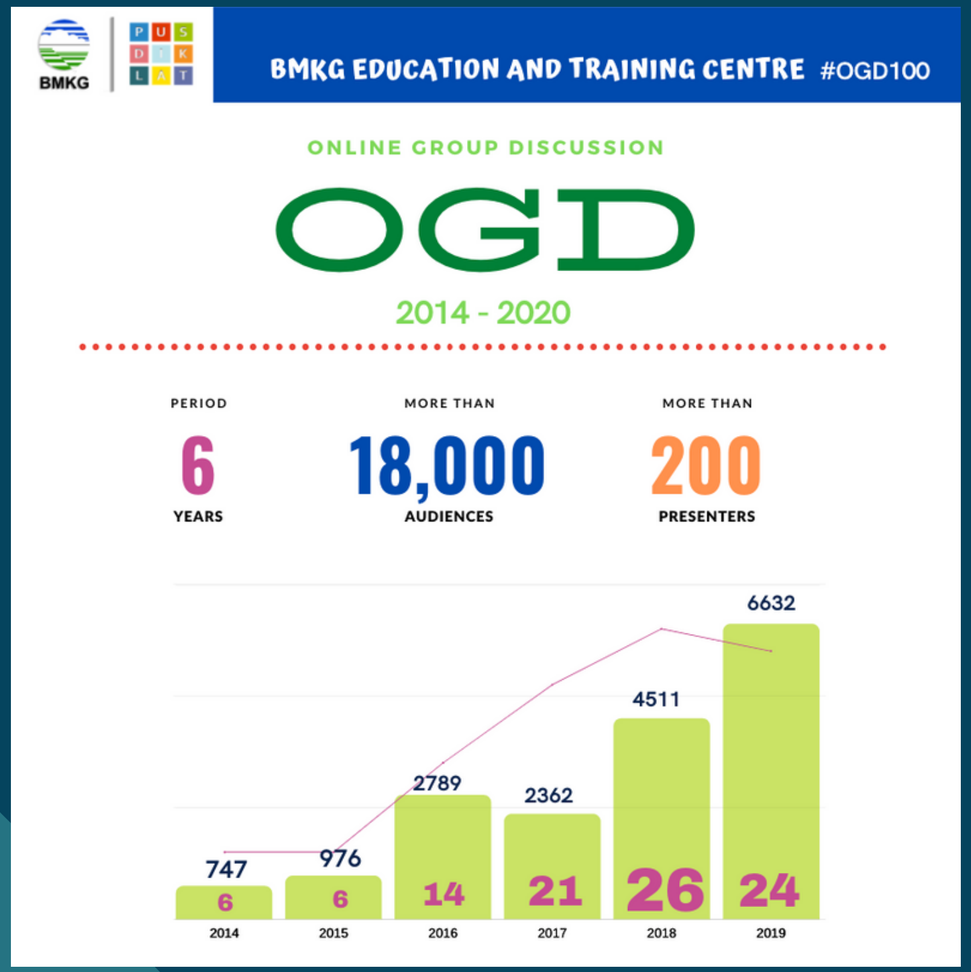
Tangerang

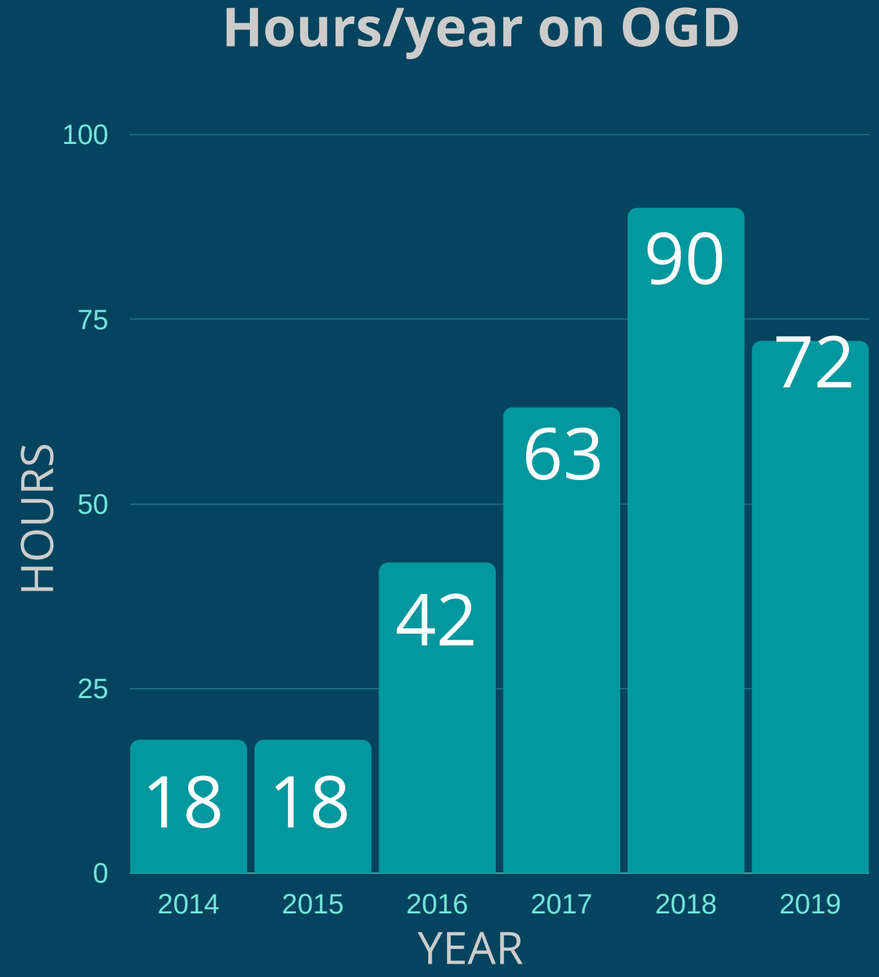
Makassar

Medan

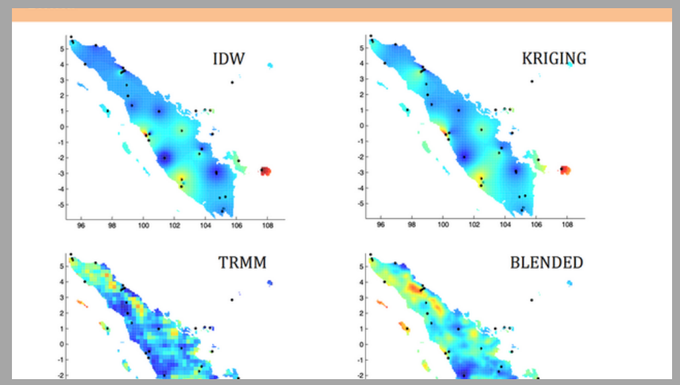
Work Unit's Photos

Fact and Figure

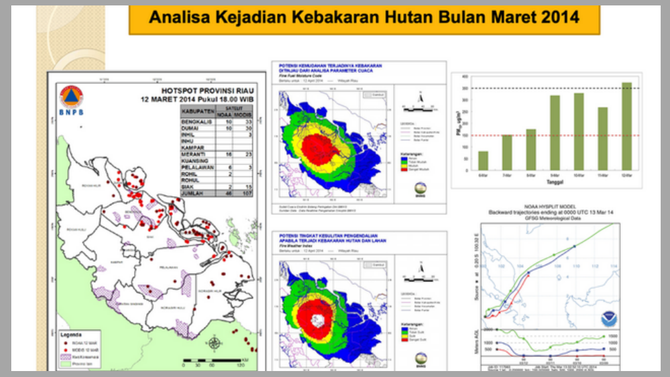




1st Ogd
May 16th, 2014



Assimilation of Insitu Rainfall with Satellite Data: Basis for Indonesian Grid Data

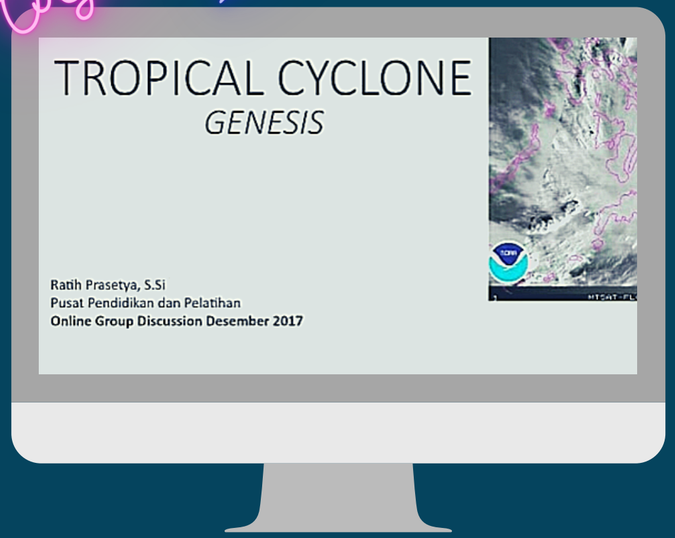


The FDRS Early Warning in Forest and Land Fire Prevention

R**ecommendation:**

1. **"Smart Assimilation"**: Combining in-situ observation data (Rainfall) and satellite observation data (TRMM)
2. **Fire Danger Rating System (FDRS)** is one of the systems forest / land fire early warning that can be used for provide input on decisions related to prevention, mobility and fire suppression. Forest Fire Weather Index **(FWI)** calculated from measurements of air temperature, relative humidity, velocity wind and rainfall. Besides taking into account topographic factors, vegetation, and surface conditions.

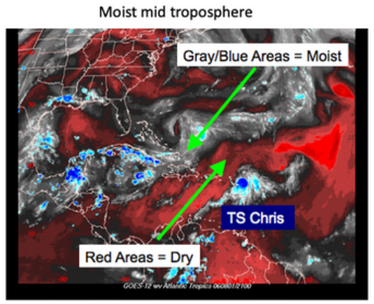
OGD 42nd 2017



1. **"Tropical Cyclone Genesis"**
2. **"Analysis of Atmospheric Dynamics during Cempaka and Dahlia Tropical Cyclones"**

NECESSARY CONDITIONS FOR GENESIS (Gray, 1968)

Pre-existing synoptic disturbance Significant planetary vorticity Favorable wind shear pattern	Dynamical parameters
Moist mid-troposphere Warm ocean, deep mixed layer Conditionally unstable atmosphere	Thermodynamic parameters

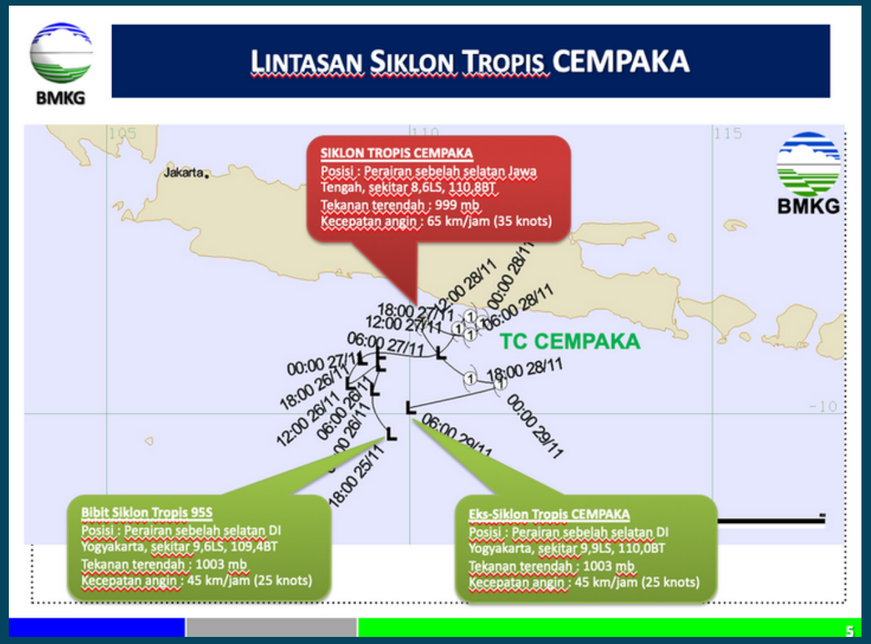


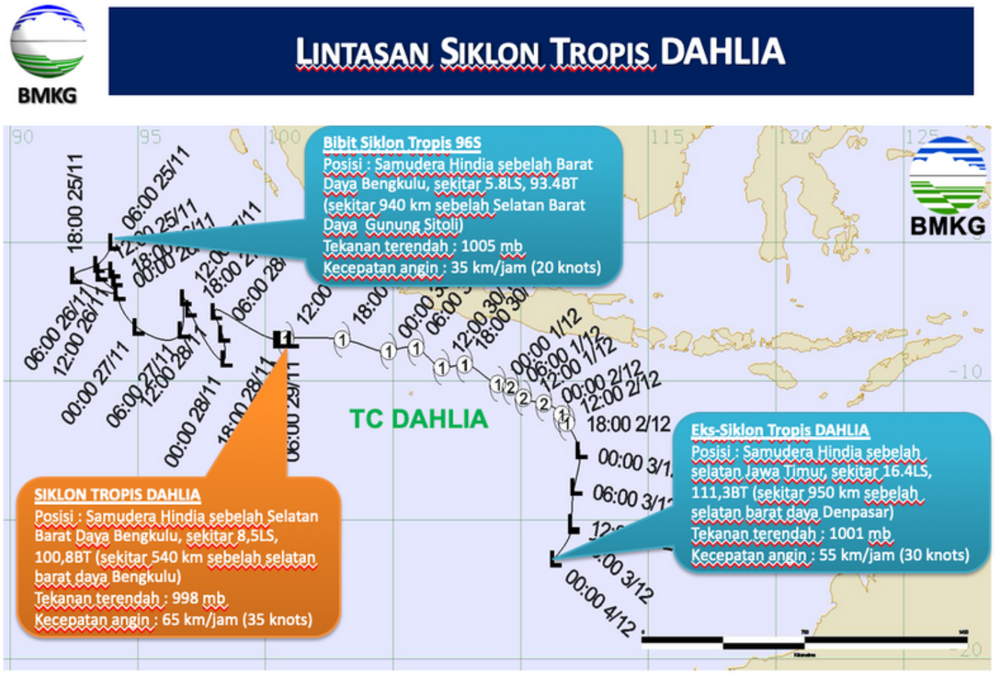
Goes-12 Water Vapor 1-August 2006

THEORIES OF TC GENESIS (I): CISK

- CISK (**Conditional Instability of the Second Kind**) A process whereby low-level convergence in the wind field produces convection and cumulus formation, thereby releasing latent heat.
- Theory developed by Charney and Eliassen (1964), Ooyama (1964)
- Basic Assumption:
  1. Initial pertubation is a synoptic-scale wave
  2. Frictional Convergence in Latent heat release above center of low-level cyclonic vorticity
  3. Magnitude of latent heat release proportional to Ekman pumping
  4. Large CAPE (Convective Available Potential Energy) is required

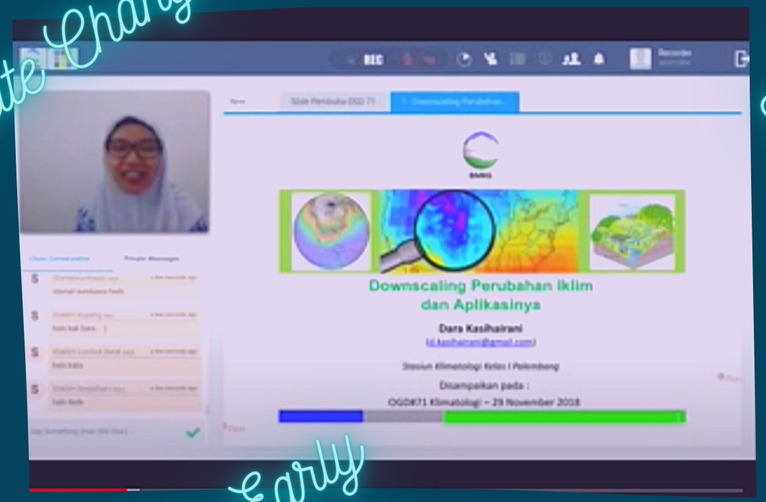
Jule Charney



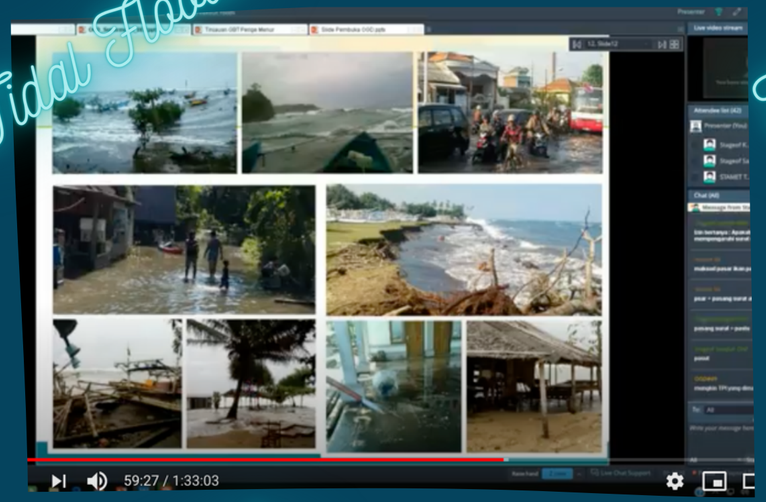


OGD's Sessions In Frame

Climate Change

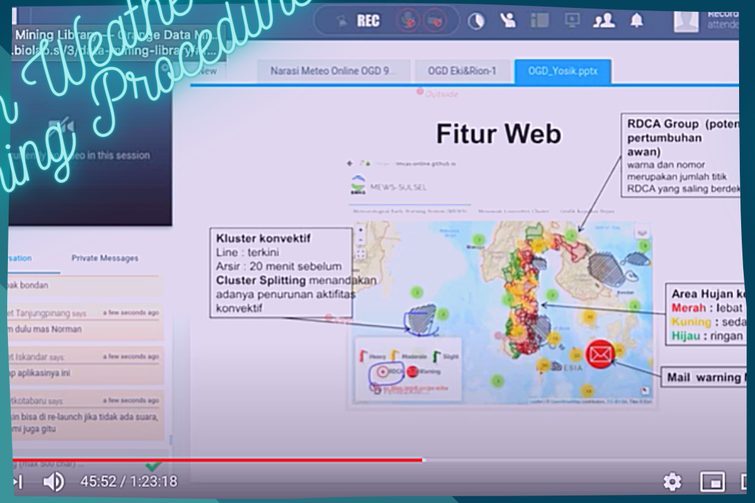


Tidal Floods



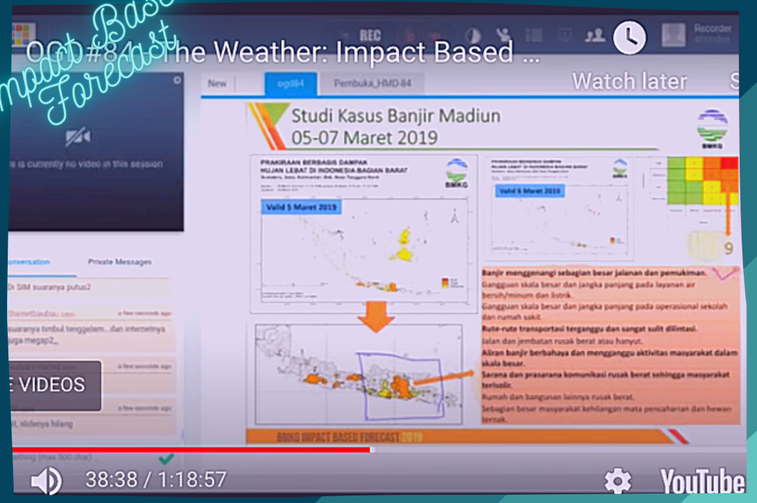
Tropical Cyclone

Updates on Weather Early Warning Procedure



Recent Weather modelling analysis

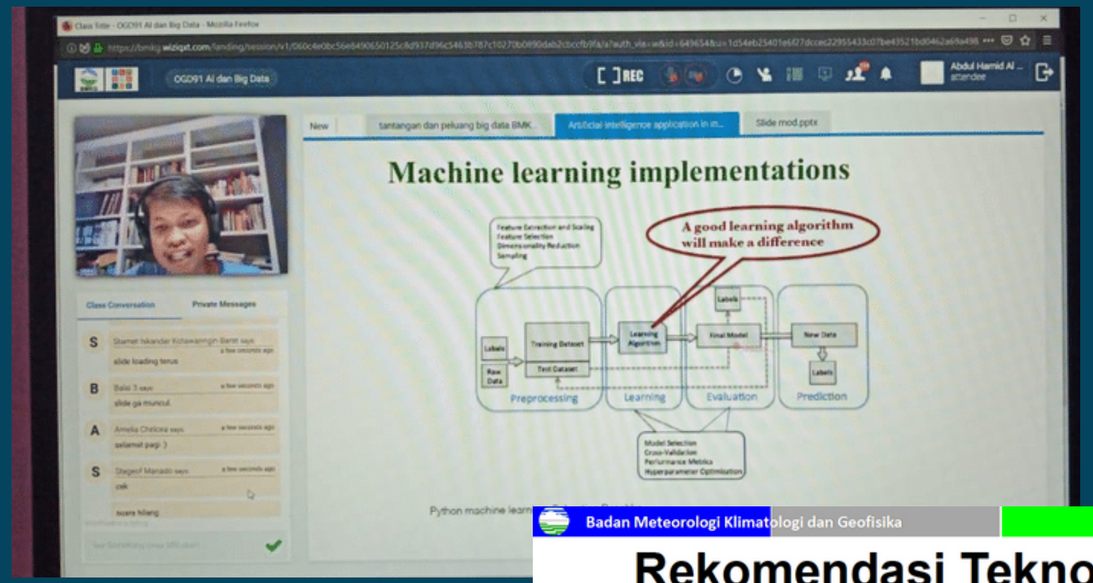
Impact Based Forecast

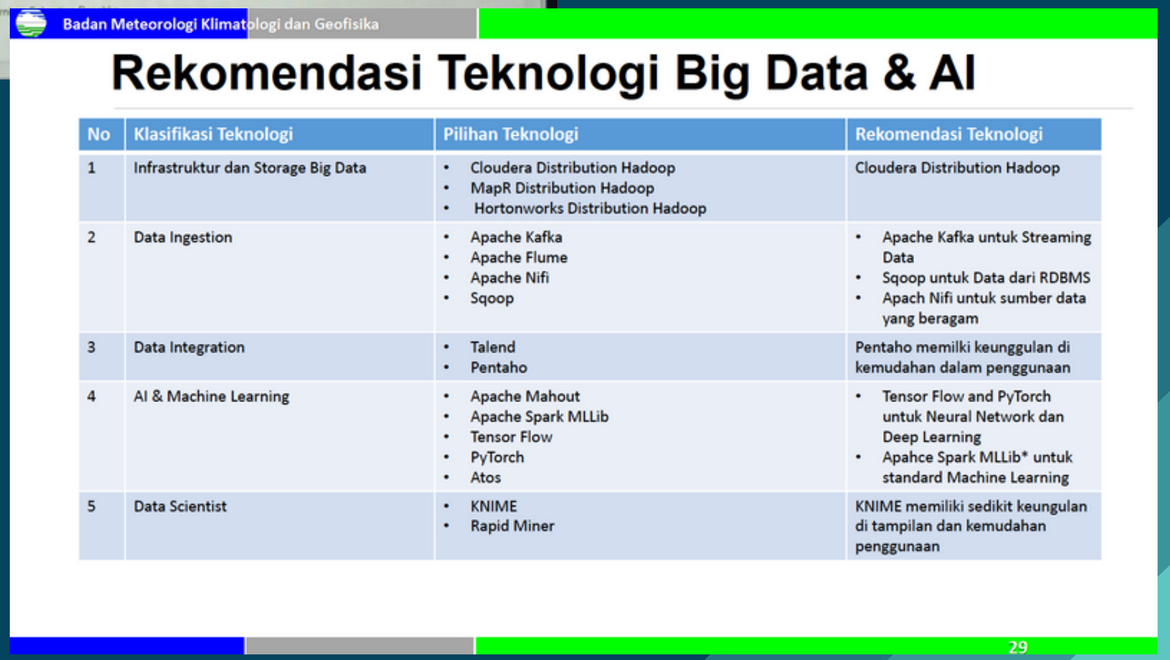


Int'l collaboration of OGD

Artificial Intelligence
OGD#91 2019

1. **Dr. Anton Wiranata (Principal data Scientist HP & Lecturer in Ohio State University, US)** presenting about Introduction to AI Application in Industry 4.0
2. **Iqbal, S.Kom, MTI (Head Division of BMKG Database Development)** presenting about Challenges and Opportunities for Big Data Implementation in BMKG)





No	Klasifikasi Teknologi	Pilihan Teknologi	Rekomendasi Teknologi
1	Infrastruktur dan Storage Big Data	• Cloudera Distribution Hadoop • MapR Distribution Hadoop • Hortonworks Distribution Hadoop	Cloudera Distribution Hadoop
2	Data Ingestion	• Apache Kafka • Apache Flume • Apache Nifi • Sqoop	• Apache Kafka untuk Streaming Data • Sqoop untuk Data dari RDBMS • Apach Nifi untuk sumber data yang beragam
3	Data Integration	• Talend • Pentaho	Pentaho memilki keunggulan di kemudahan dalam penggunaan
4	AI & Machine Learning	• Apache Mahout • Apache Spark MLLib • Tensor Flow • PyTorch • Atos	• Tensor Flow and PyTorch untuk Neural Network dan Deep Learning • Apahce Spark MLLib* untuk standard Machine Learning
5	Data Scientist	• KNIME • Rapid Miner	KNIME memiliki sedikit keungulan di tampilan dan kemudahan penggunaan

Int'l collaboration of OGD

Climate Change Application

OGD#33 2017

1. **Dr. Julia Barrot & Dr. Sukaina Bharwani (Stockholm Environment Institute, Sweden, Earth Sciences Researcher),** presenting about Climate Knowledge Brokering: Concepts and Approaches for Increasing the Uptake of Climate Information.

The importance of climate information in decision-making

Near-term
- How are our water resources? Do we need to conserve water?
- When should we plant crops? What should we plant?

Medium-longer term
- How might climate change impact future water availability?
- How might climate change impact agricultural productivity?

Near-term
- What climate-related disasters might occur and when/where?
- How severe will they be?

Medium-longer term
- Are disasters likely to become more frequent/severe?
- Are disasters likely to strike new/different places compared to the past?

Barriers to using climate information

Supply-side barriers; Information is perceived by the user as not being...

- *Accurate/reliable* – they do not think the information is (consistently) correct.
- *Legitimate/credible* – they do not think they can **trust** the information.
- *Salient* – they do not see how the information is relevant to them.
- *Accessible* – they cannot (easily) access the the information.
- *Valuable/useful* – they do not think the information is useful in their decision-making.
- *Usable* – they do not see how they can use the information, or find it difficult to use.
- *Timely* – the information is not delivered/accessible when they need it most.
- Provided at an *appropriate scale* – the scale that the information is provided at is not useful (it is too board or too narrow for their decision-making).
- Associated with *excessive uncertainty* – the level of uncertainty might inhibit the use of the information in their decision-making, or their lack of understanding of uncertainty may make them distrust the information.

Low/no regrets decision-making & early planning

No-regret adaptation (IPCC): Adaptation policies, plans or options that "generate net social and/or economic benefits irrespective of whether or not anthropogenic climate change occurs".

Low-regret options (DFID, 2014): Promising 'early' adaptation options, including those that address current adaptation needs, but also future-orientated, low-cost options that build resilience, flexibility or robustness, as well as capacity.

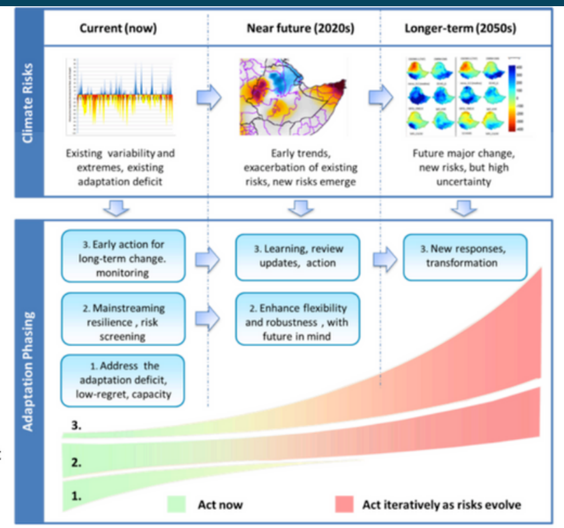
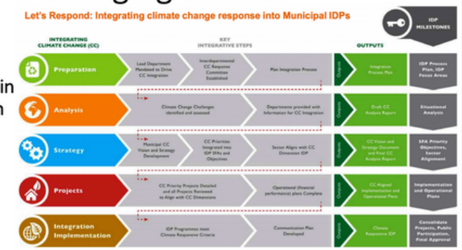


Figure 1: Categorisation of adaptation pathways. Source: Watkiss, 2014 (DFID, 2014: IDRC, 2015)

After Watkiss et al., 2015

Example: Rapid growth in a changing climate

- **Decision maker:** Urban planner for a fast-growing city
- **Decision context:** Planning for big changes in development paths and climate trends with limited resources to address them.
- **Activity:** Infrastructure planning
- **Objective:** Climate-resilient development
- **Time-scale:** 2-20 years
- **Resolution:** Various



From the 'Let's Respond Toolkit' http://www.letsrespondtoolkit.org/

Examples of Information needed:
- How will climate change affect our city infrastructure? Who and what will be most impacted?
- Will the infrastructure investments we are making now withstand these changes?

Short term (next week): Are there extreme events we need to prepare for?
Medium term (next season/year): Which infrastructure projects do we approve?
Longer term (coming years): Which parts of the city are vulnerable to future climate impacts?

THE INDELIBLE OGD#100 ADVERTISEMENT

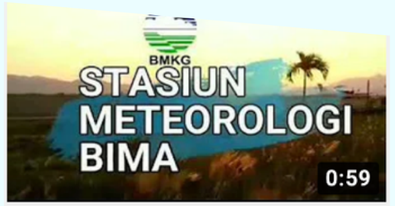
TESTIMONY VIDEOS ON OGD

22 Videos from BMKG Stations On Instagram with hastag

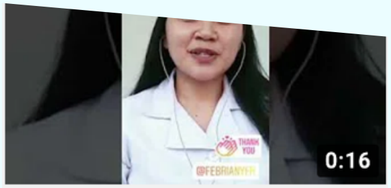
#OGD100
#TestimoniOGD100
#OnlineGroupDiscussion
#pusdiklatbmkg
#pusdiklat
#bmkg
#elearningbmkg
#diklat
#pusdiklatbmkg2020
#widyaiswarabmkg
#bmkgcorpu

Stasiun Meteorologi Zainudin for OGD 100

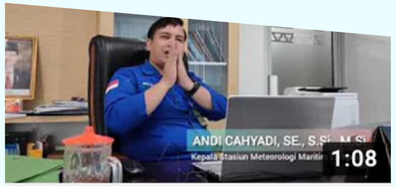
Stamet Samrat Manado for



Stasiun Meteorologi Bima for



Febriani from Staklim for OGD100



Kepala stasiun meteorologi for OGD100

OAW KOTOTABANG for OGD

Stasiun Meteorologi Kertajati

Kepala Stasiun Meteorologi Ngurah Rai Denpasar for...

PATRICK PARRISH, WMO

BODO ZESCHKE, BOM, AUSTRALIA

VESA NEUTOSVAARA, EUMETSAT, GERMANY

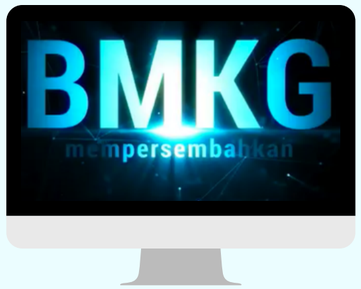
Other Special OGD's Testimony Videos from Our Remarkable International Colleagues!

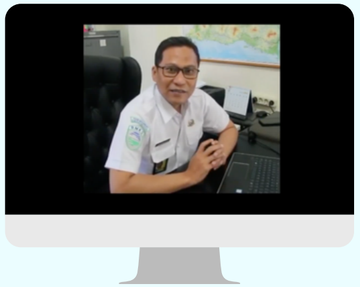
THE INDELIBLE OGD#100
MULTIMEDIA OPTIMIZATION

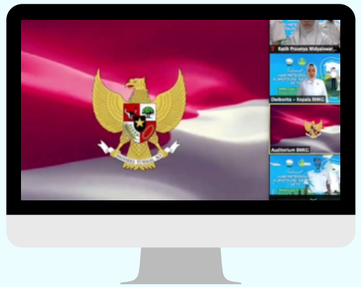
VIDEOS, FLYER/BANNER

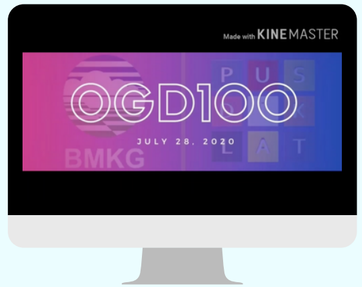
We were creating and editing 13 videos, many flyer and banner for advertising the event

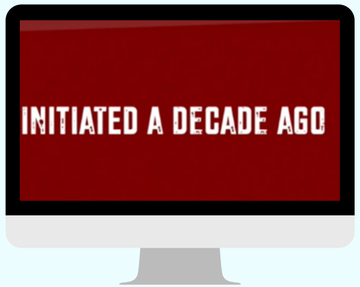
The event successfully held through great collaboration between BMKG ETR Team & the Communication Network Division of > 25 people.

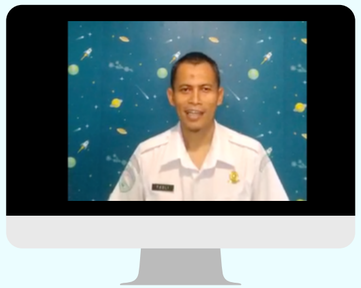






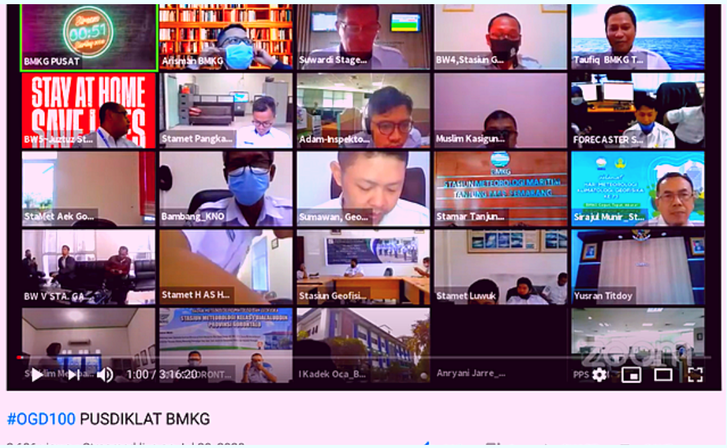






THE INDELIBLE OGD#100

THE EVENT



SPECIAL TOPICS

Presenting organization current issue of Value Transformation change into BMKG Corporate University: a learning organization declared by Head of BMKG

ZOOM & YOUTUBE

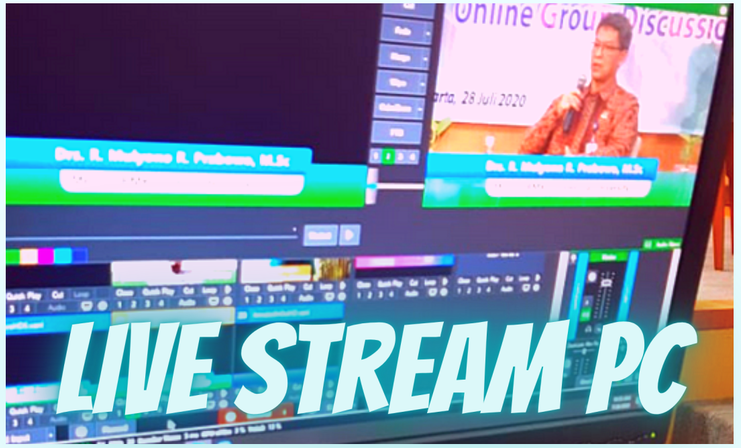
Utilizing Zoom Meeting with 418 users and live stream for 2 hours through Official BMKG Youtube Account wih 324 users. The Recording in YT has reach 2686 Views per Aug 11 at 1.49 PM.

1780 AUDIENCES

Internal and External BMKG resulting 1193 certificates!

THE INDELIBLE OGD#100

THE TEAM BEHIND THE SCENE



Way Forward

FUTURE PROJECTIONS

> INT'L COLLAB

Enhancing international collaboration with other NMHS by inviting presenters and participants

TOPICS

Escalate the topics into global weather and climate issues

NEW APPROACHES IN TECHNOLOGY

We are know migrating to upgrade our webinar platform of zoom meeting into zoom webinar. Also new approach in terms of joining our session.

FEEDBACK

Following up participants feedback in every session for the better future of OGD.

Get in Touch

WITH OUR OGD

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