

### NATIONAL FRAMEWORK FOR FLOOD DISASTER MANAGEMENT IN INDONESIA

11<sup>th</sup> GEOSS ASIA – PASIFIC SYMPOSIUM Kyoto, 24-26 October 2018

## OUTLINE

**Disasters in Indonesia** 

The Disaster Management Mechanism

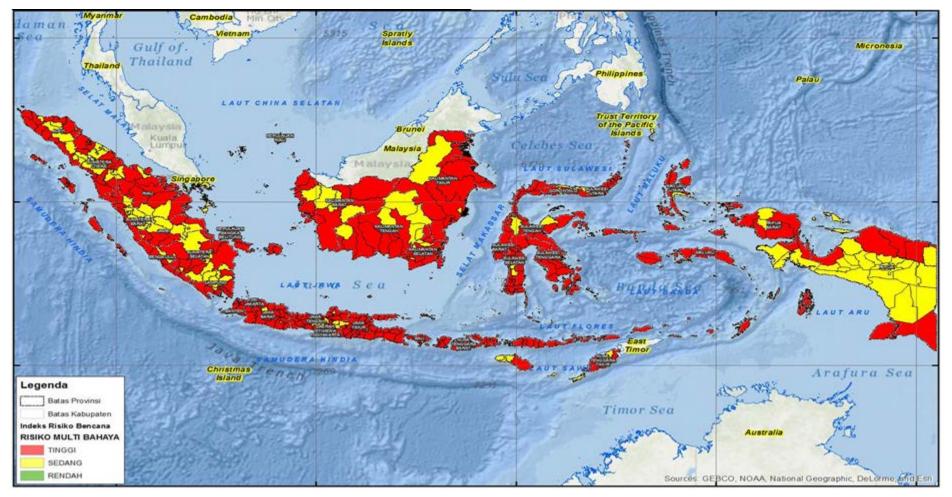
Current Status of Flood Early Warning Systems

**Currently and Activity Plan** 

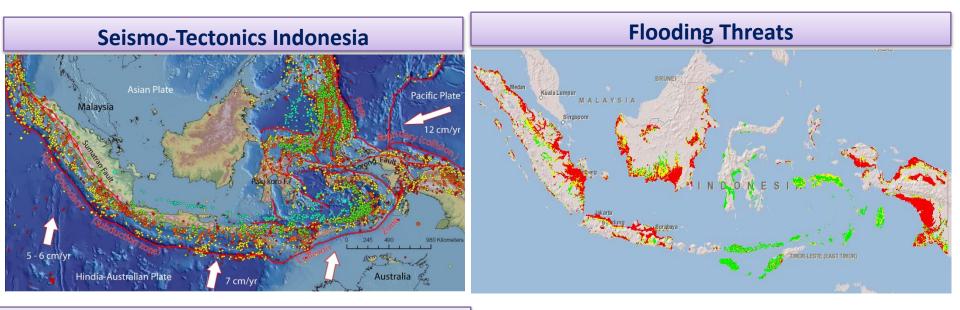
Follow up in The Future

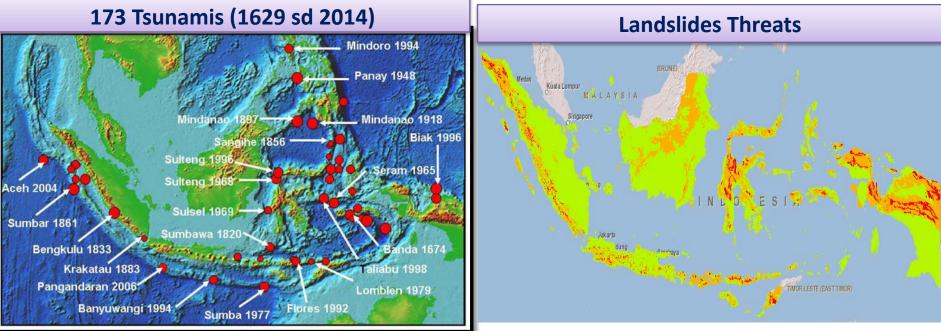
### **DISASTERS IN INDONESIA**

### Map of Disasters Risk Index in Indonesia



### Source: BNPB









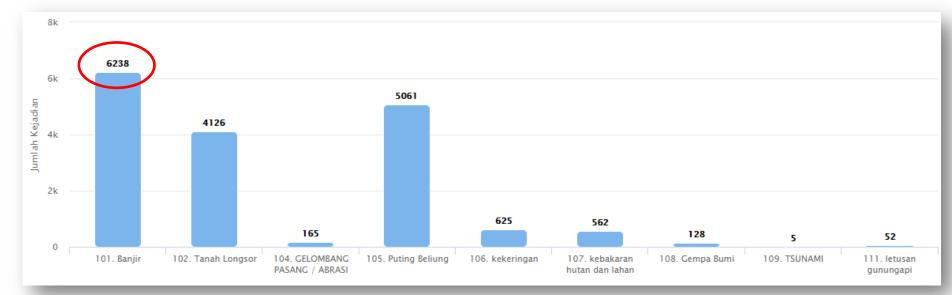


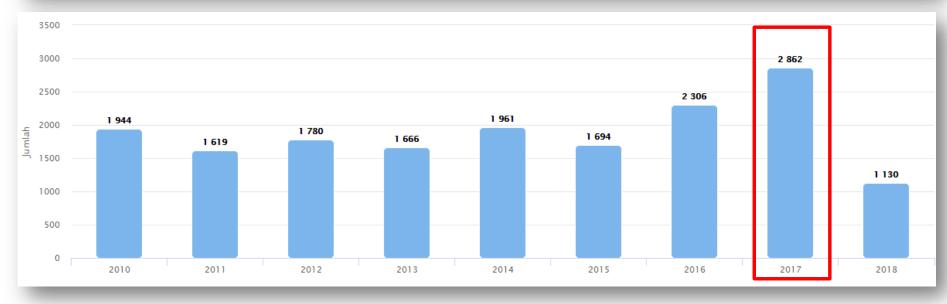


### Frequency of Disasters 2010 – Augst 2018

Rank	Disasters	Frequency
1	Flood	6258
2	Putting Beliung (tornado)	5061
3	Landslide	4126
4	Drought	625
5	Forest Fire	562
6	Tidal Wave/Abration	165
7	Earthquake	128
8	Volcanic Eruptions	52
9	Tsunami	5

Source:BNPB





- Flood is the most disaster occurred in 2010 Augst 2018
- So many disasters occurred in year 2017

Source: BNPB

### The Factors that Causes The Disasters

- ✓ The high rainfall
- ✓ The land conversion
- ✓ The deforestation
- ✓ The steep slope
- ✓ The condition of Geological and Geotechnical local soil
- The watershed characteristics and river morphology
- ✓ The ring of fire
- ✓ The high temperature
- ✓ Habits of humans

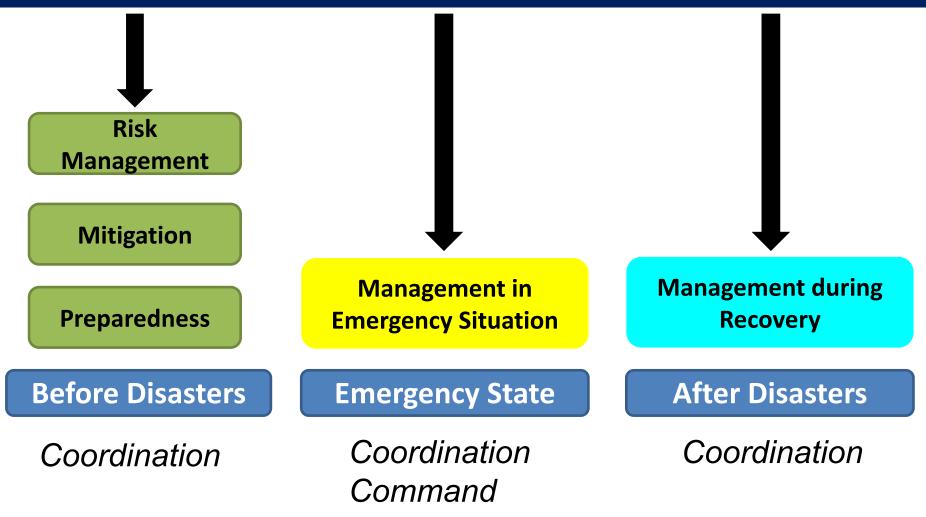








### THE DISASTERS MANAGEMENT MECHANISM IN INDONESIA



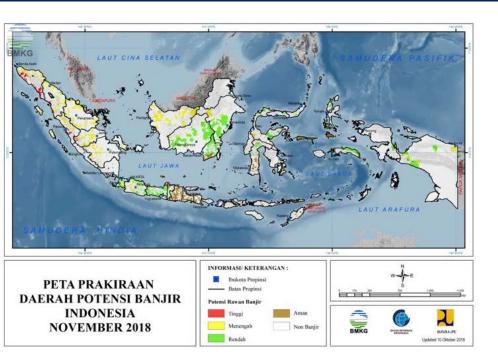
(Flood) Disaster Management need prediction information and early warning

Task and Functions of Ministries/ Institutions retated to Disaster Management Mechanism

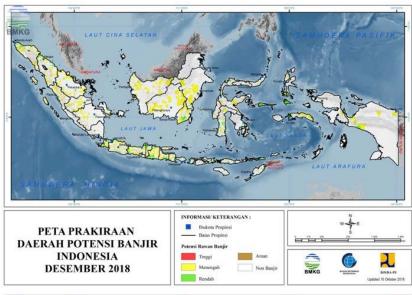
Before Disasters	Emergency State	After Disasters
<ul> <li>Disaster information services – BNPB, BIG</li> <li>MCG information services – BMKG</li> <li>Hotspot monitoring – LAPAN</li> <li>Broadcasting of disaster information - Kemenkominfo</li> </ul>	<ul> <li>Emergency disaster management – BNPB, Kemensos, Kemenkes</li> <li>Handling emergency infrastructure – Kemen PUPR</li> </ul>	<ul> <li>Rehabilitation of infrastructure in disaster area – BNPB, BIG, Kemen PUPR</li> <li>Revitalization of critical river basin – KLHK</li> <li>Rehabilitation of agriculture area – Kementan</li> <li>Rehabilitation epidemic of disease - Kemenkes</li> </ul>

Challenge: Need coordinations related to the task and functions of ministries and institutions

### **CURRENT STATUS OF FLOOD EARLY WARNING SYSTEM**



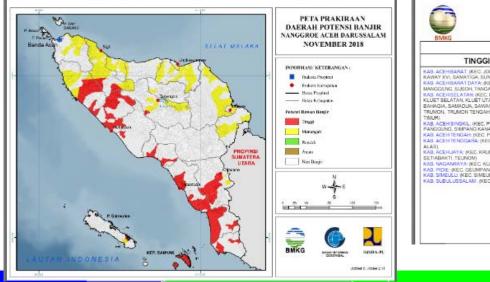
Information flood potential forecasts are made in the legend of high, medium, low, safe and no flood event





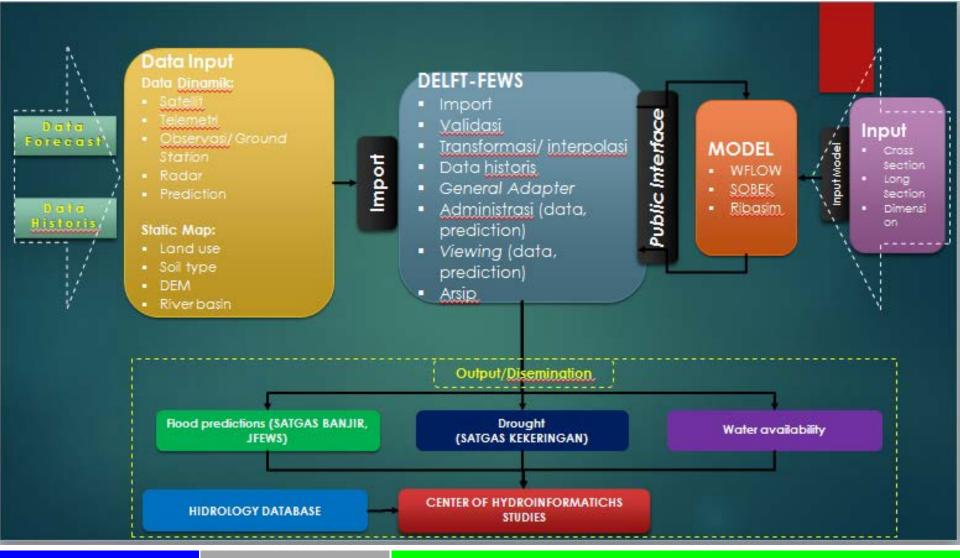
Flood potential forecast is the result of collaboration by 3 Agencies

Agencies	Provide
BMKG	Monthly rainfall forecast
Directorate General of Water Resources – Ministry of Public Works (PSDA-PUPR)	Information of flood prone areas
Geospatial Information Agency (BIG)	Base map (RBI, land system, land cover)

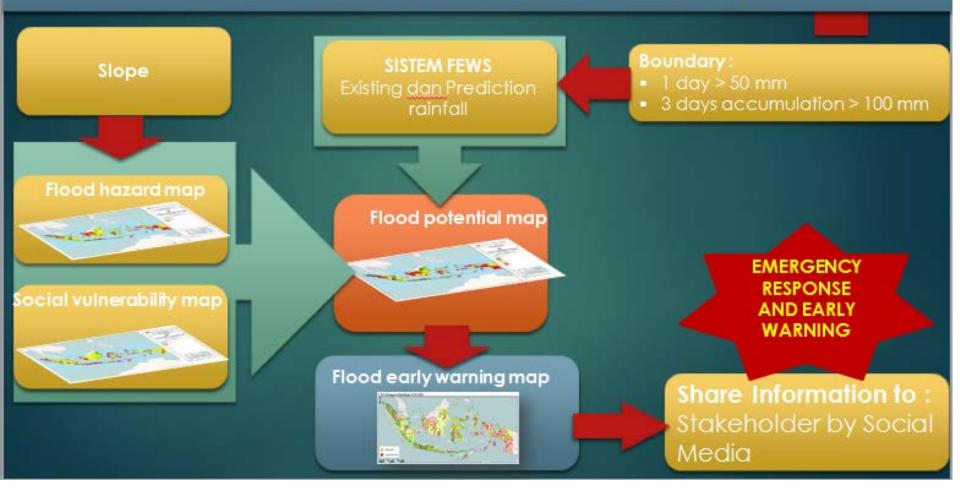


BMKG	NOVEMBER 2018	
	TINGKAT POTENSI BANJIR	
TINGGI	MENENGAH	RENDAH
KAWAY XV, SAMATIGA, SUNGAIMAS, WOYLA) KAB ACEUBART DAYA-IKEC KULABATEN MANGGENS, SUSICH TANGAN-TANGAN) KAB ACEUSEATAN IKE LEWIGNIGAN. KULAT SELATAN IKE LEWIGNIGAN. KULAT SELATAN IKE LEWIGNIGAN. TIAMAN, TUANAN TENANAN TENANN TIAMAN TIAMAN, TUANAN TENANAN TINANN TIAMAN KAB ACENTENDIGAN, IKEC GULAU PANGUNU, SIMPANI KANAN, SINGHLI KAB ACENTENDIGAN, IKEC BAMBEL, LAWE ALAS) CALATAN IKEC KULAUAN SELAKAN KAB MIGAMARAY IKEC KULANA SELMAGAN KAB SUBULISALAM, IKEC SIMPANG KIRI) KAB SUBULISALAM, IKEC SIMPANG KIRI)	KAB AGEHEBART (KEC SUNAAMAS) KAB AGUEBSAR (KEC IONANIAR) MESIDIAYA. SELUMEN/ KAB AGUESAR (KEC INANIAR) MESIDIAYA. SELUMEN/ KAB AGEHEBARAK (KEC INITANO, PEDASING, SILHINARA) KAB AGEHEBAGARI, KEC INITANO, PEDASING, SILHINARA) KAB AGEHEBARAK (KEC INITANO, PEDASING, SILHINARA) KAB AGEHEBARAK (KEC INITANO, PEDASING, SILHINARA) KAB AGEHEBARAK (KEC INITANO, PEDASILAY KANTAU SELAMAT, RANTO PEJRELLAN, SIMPANOLUM KAB AGEHEBARAK (KEC INITANA) KAB AGEHEBARAK (KEC INITANAK) KAB AGEHEBARAK (KEC INITANAK) KAB AGEHEBARAK (KEC INITANAKA) KAB AGEHARAK (KEC INITANAKAKA) KAB BURELIN, KEC INITANGAJAN KAB BURELIN, KEC INITANGAJAN KAB BURELINGE KANTANGAJAN KOTALANGSA, KEC INITANGAJAN KOTALANGSA, KEC INITANGSAJAN KAB BURELINGE KARE MAKAR, SAMALANGA NGA PODI, PECK KIALA MAKAR, SAMALANGA MITANA, PADANO INI ANDRA MAKAR SAMALANGA KAB AGEHARAK (KEC INITANGSAJAN) KAB BURELINGE KARE MAKAR, SAMALANGA MITANA, PADANO INI ANDRA MAKAR SAMALANGA MITANA PADANO INI ANGAJANA KAUBANANANGA KAB AGEHARAK (KEC INITANGSAJAN) KAB BURELINGKA (KEC INITANGSAJAN) KAB HORI, ANA KECI INITANGSAJAN MITANA PADANO INI ANGAJANA KAUBANA MAKAR SAMALANGA MITANA PADANO INI ANGAJANA KAUBANANA KAUSANA MITANA PADANO INI ANGAJANA KAUBANANANA KAB HORI JAYA (KECI MANDASA BARAT, LANGSATINJAN MITANA PADANO INI ANGAJANA KAUBANANANANANANA KAB HORI JAYA (KECI MANDASA BARAT, LANGSATINJAN MITANA PADANO INI ANGAJANA KAUBANANANA KAB HORI JAYA (KECI MANDASA BARAT, MANGSATINJAN MITANA PADANO INI ANGAJANA KAUBANA MALA MURATIGA, MITANA PADANO INI ANGAJANA KAUBANA MANANI MANA MIGA MITANA PADANO INI ANGAJANA KAUBANA MALA MURATIGA, MITANA PADANO INI ANGAJANA KAUBANA MALA MURATIGA, MITANA PADANO INI ANGAJANA MURA MIGA, MALA MURATIGA, MITANA PADANO INI ANGAJANA MURA MIGA MALA MURATIGA, MITANA MANDANI JANA MURATIGA MURA MIGA MITANA MANA MURA MIGA MIGA MUNA MITANA MUNANA MITANA MANANA MUNA MITANA MANA	_

# Scheme of The Central of Hydroinformatichs Studies - PUPR (DELFT - FEWS)



### TASK FORCE "FLOOD" PUPR



Flood Early Warning System is a software create by Deltares (Netherland) and developed by PUSAIR through the Joint Cooperation Program (JCP)

### **Flood Potential Information per District**

#### V. Peta Peringatan Dini Banjir 23-08-2018

13 Tabel Peringston Diai Banjir tiap Kabupaten dalam Wileyah Yungsi 23-08-2018



	Kennungen Jahr	Wase Singe	Kalvapater	Batus test tel	Nature Desired	Water Dearth Loop
10	End Salates'	Int all the actual values of the	And other default		Ranne Barge	
18	End Services	#3.4L43-0#GH8.	And ALEM SELENCE		Name Last	
18	Entrated	15443-040346	and with strengt		Baue Sale	
.74	Roll Survey and	THE RELATION CLARK FOCUME	AND DEPENDENT DESIGNATION.	Rane Gard		
14	Brill Survey 4	or the state of the party of	4.46 (483) (490)	Ranat Barge		
716	Birl Surates I	ters model-advances	Ave thread which	Rever Barty		
***	Bell Paper	ing quarker knots had admissible	448-493.8975413		Concession of the	No. of Concession, name
44	811.7944	ITS MARKENING THE ARREST	and contrasts			Intell States Intelligence
410	810-7994	ing sealable provide a feature of	40810,865		10000	Renter State
44	8110-Pages	and pressant the Course Benches.	448-1010			of the Local Division in which the local division in the local div
40	PUT Paret	Int DR.ANDEN-COCK-BREAM	ave econetra posoti;			In the local division in the local divisione
10	Bold Paper	In the second to prove devices	AND ADDRESS OF A			International Property lies:
-848	Prit-Ages	international and the control descents	AND MARKS			Intel Survey State
49	Buil Ages	on the Arel the price, deviate	end-returbs			and the second second
	and rank	orth \$250, AND \$16 DOLLAR BRIDGES.	ALL REPORTS		Raise Barge	Inc. in case
-447	put Ages	internet and the property described	AND INCOME		Revort Sank	Intelligencer Street
-	and Ages have	10.0464	A48-0000mg			fam fee
- 1011	Description of the language	VE INFORMATION	Kidl Advant			Twenty Name of Street, or other
46	Neurospe prote be tangete	HE HAPOLINERS	448-0674			Longe Street Street
-	Numerous posts to taques	International Advances	14200018		1	No. or Name
14	According a print the language	VE INFOST MINUT	And principals			frame frame
-0.0	Normal posts or talent	ing capito andra	sub-anama		1	Inc. in case of the local division of the lo
14	Normanger proved for Managime	and includes analyse	- tod holding -		the second s	Raise Base
24	Neverage proteitie hauste	WE HARDLINGER	4.4 40.04		A CONTRACTOR OF	The Real Property lies:
100	Neversign prints for talgette	10.0484/6549-005-08	ALM STREET	Rauge Barge	a second s	
4.0	Neurope provide tallgame	ing Analytican (KB and	Ave specied - etc.//we	Face Sept	and the second se	
14	Permanante promo de talegore	int bandhad	SUMBLE	fare been		Mark Street and
90	Versiange protected by Language	ing kining	this hold		Name and Address of the Owner, which the	Anton Bargh
4.4	Description of the langest	we assure that a second second second	AND TANKAR STREAM	face kep	Rane Sept	
++	Terrings proce by Laughter	with Base Brity Mr.	414 1004 (0004)	Ravel Settle		
18	Formerge anno le talquier	ed sales and take	448-4440	Name Sava	the second s	10.000
4.0	Television provide the language	101100401-00117-005	100,000,007	Name Anto		
42	Number of the local division of the local di		Kid Selfulut	Read Tests	THE REAL PROPERTY AND INCOMES	
4.1	Neveranger productor behavior	112-5648	And Made	Name And	Rave Sett	1.1

diama.						
-64	Kine organization for full-patient	12.66	NEWS SLOW	Kana tang	1.1	
16	Novemper, prime de laboures	IN TAXAL HELDI	46,429,834		Average	
84	Nonstyr, Jose & Bagin	IN YOCH JUST AND	10107-015	Nava Sara	faur lan	
- 61	NAMES OF A DESCRIPTION OF A DESCRIPTIONO	et fumilia esta	ALC: UNK	this last		
	To-energy proce to future	H1MMGURDS	101021303	face face		
- 60	Townships profes to long ter-	et transporta	101110	have been		

Des Fran Serie 7000 Rother One Hose Herse Services (\$1555 Per holds Annual Rev 2005 4 Keyro Ne 12 takan 2012 Texney Peerspon Waland Teague Person N. S. 1992 M 2011 Design Opposes dar Ten Drug Dat Petitisan Teles Desertions Mileyan Dasar

#### Toe Net Balai Hidrologi dan Tata Ko-Pasilikong 101

March & Jurnis 30, Bendary 4022 Juleness end portpair p.p.d. New -0.3.3983 Fer -0.3.3983

#### Share by Media Social

#### Whatsapp Group

#### SATGAS Banjir dan Longsor

Bik BMKG, Døder, Hita, Jambi, Mporla,

Selamat pagi. Berikut kami sampaikan laporan satgas banjir 23 Agustus 2018 beserta prediksi 24 Agustus 2018 dan 25 Agustus 2018. Der be





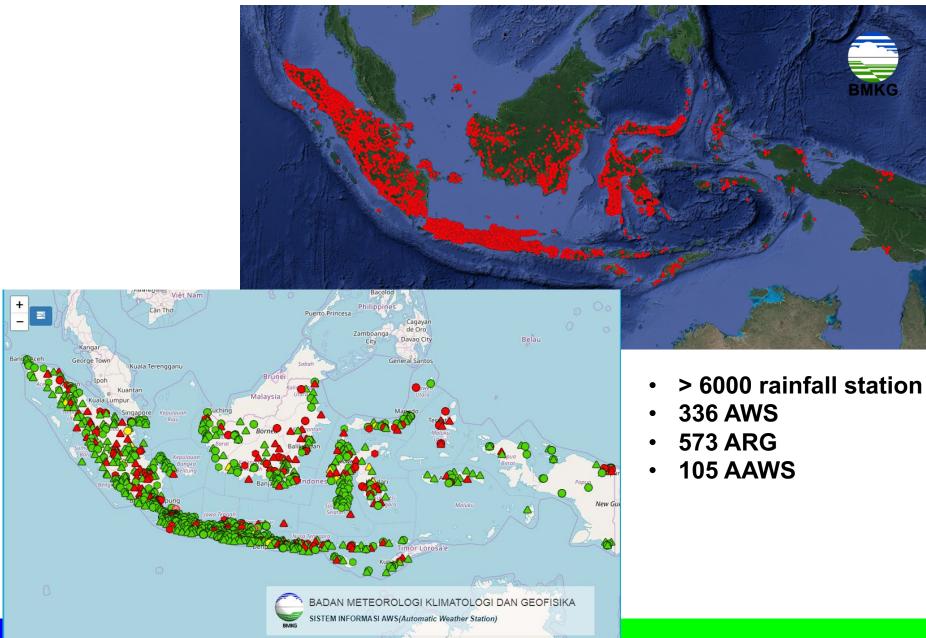
#### Type a message

#### 14

Data Input	Forecat data	PIC
	Observation data	BMKG
	NWP (National Weather Prediction)	BMKG
	GWP (Global Weather Prediction)	ВМКС
	ECMWF (European Centre for Medium- Range Weather Forecast)	BMKG
	GFS (Global Forecast System)	NASA
	Access-A, R, T	NASA

Historical data	PIC
TRMM (Tropical Rainfall Measuring Mission)	NASA
GPM (Global Precipitation Measurement)	NASA
Radar AWS	BMKG
Radar	BPPT
Ground Station/Observasi	BMKG/BBWS/BWS/Dinas PU
Telemetri	BBWS/BWS, Dinas PU, PUSAIR SEBA

### Data Input and evaluation (observation)



### **CURRENT ACTIVITY AND ACTIVITY PLANNING**

BMKG	PUPR
Coordination with PUPR, BIG "Flood potential forecast"	Coordination with BMKG, BIG "Flood potential forecast"
Coordination with BNPB about MHEWS	JCP3 J-FEWS
JCP3 climate change	Development web integration about The Central of Hydroinformatichs Studies
SATREPS (Science and Technology Research Partnership for Sustainable Development) about MHEWS (proposal)	etc
etc	

### FOLLOW UP (IN MY OPINION)





# **Thank You**



tri.nurmayati@bmkg.go.id +62 81319092003