

UNITED NATIONS/AUSTRIA SYMPOSIUM

"Space Applications for Sustainable Development Goal 13: Climate Action"

1 SEPTEMBER 2020 – Session 1

13 CLIMATE
ACTION



Climate Change in Indonesia's New Developmentalism

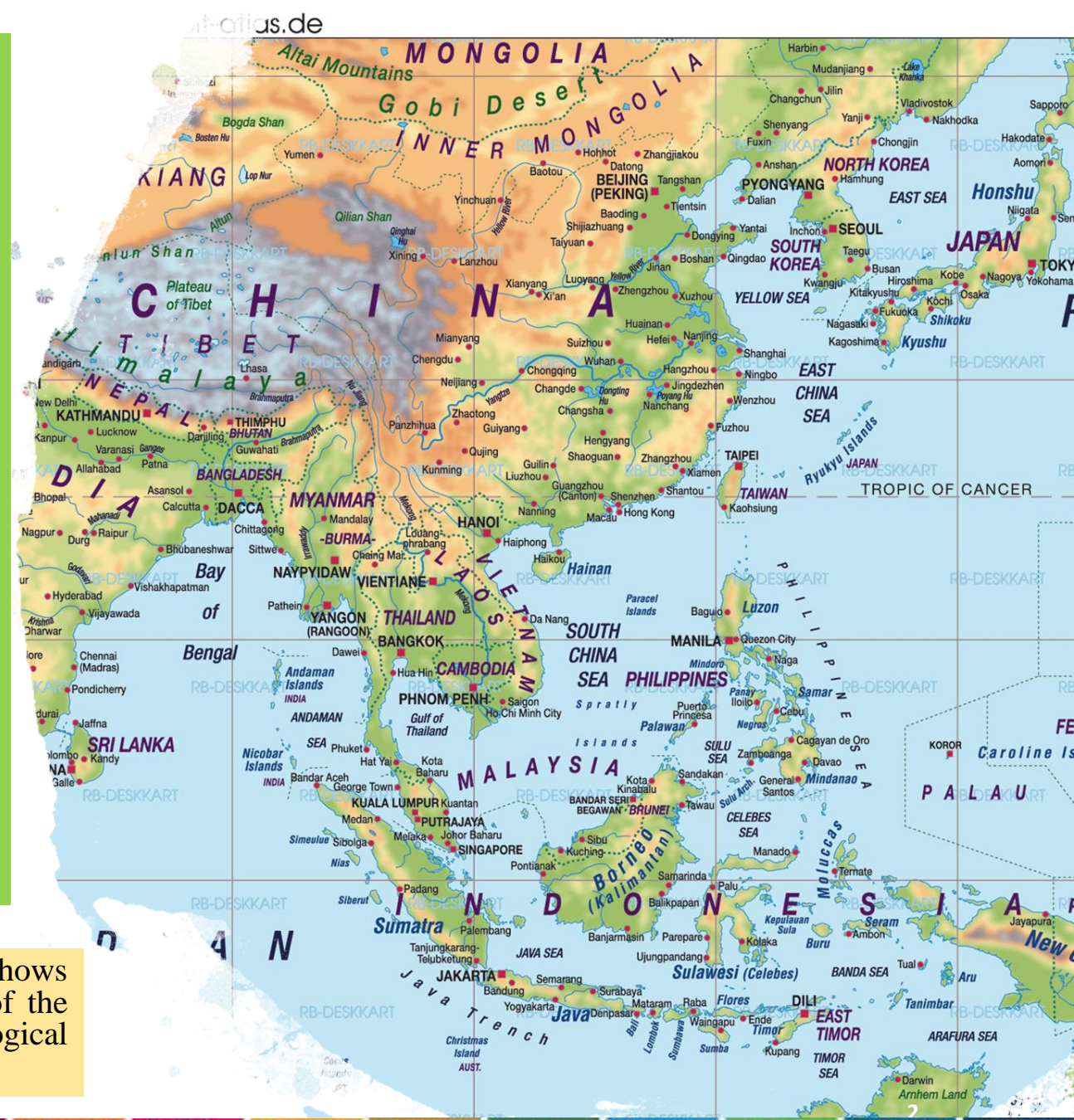
Yunita Permatasari

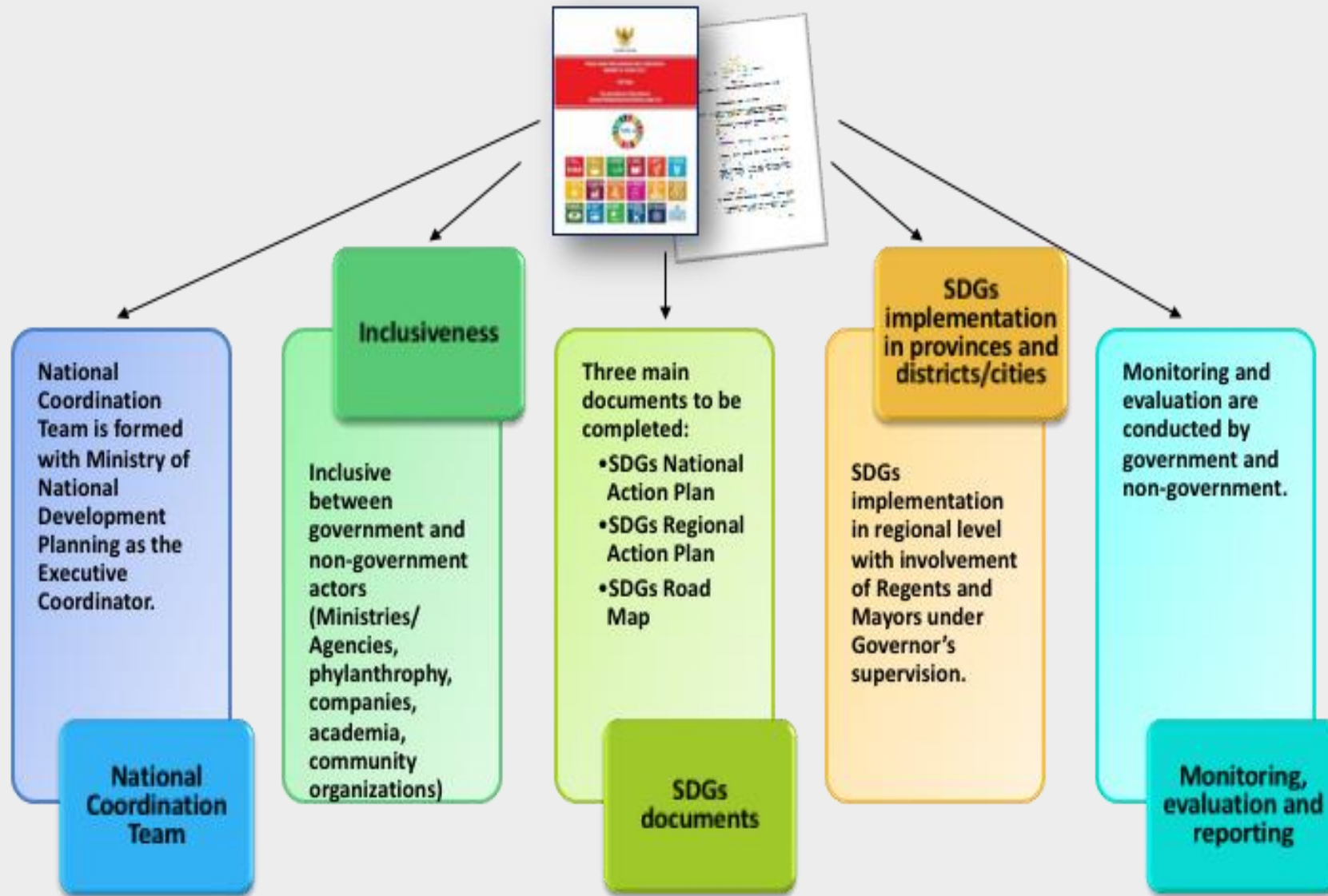
Researcher at Indonesian National Institute of Aeronautics and Space (LAPAN)

yunita.permatasari@lapan.go.id

- Indonesia faces the same climate change threat mostly as Pacific countries. Indonesia's geographic position is very vulnerable to impact, especially in coastal areas (IPCC, 2001).
- Virtue signaling behavior based on real emission reductions can be carried out by developing and middle-income countries such as Indonesia (World Bank 2010). Indonesia uses low-carbon development methods as the main key. Low-carbon development is not a choice between economic development or environmental protection. However, to make development sustainable without reducing the quality of the environment which results in even higher economic development. Indonesia focuses on three aspects that affect carbon emissions; forests (eradicating deforestation and promoting reforestation), renewable energy, transportation (DW, 2018).
- Indonesia uses space applications in the development, especially providing Earth observation satellite data that is accurate and efficient and develops atmospheric research to monitor levels of CO₂ and greenhouse gases.
- Indonesia's space development is developed with disaster risk mitigation standards due to climate change.

The concept of new developmentalism from Christopher M. Dent which shows that state development can continue to be relevant in the development of the current agenda setting with a combination of state capacity and ecological modernization.





Source: Min. National Development Planning

- **The Presidential Regulation No. 59/2017** is the government policy on the implementation of SDGs achievements:
 - **Document of SDGs National Action Plan (2017-2019)** was published on 10 Jan 2018.
 - **Documents of SDGs Regional Action Plan (2017-2019)** was published on 10 Jul 2018.
 - **Roadmap of SDGs Indonesia (2017-2030)** was launched during HLPF on SDGs in New York (16-18 Jul 2019).
- **Mainstreaming SDGs into:**
 - **The Government Work Plan (2018-2019)**
 - **The National Midterm Development Plan (2020 – 2024)**



Presidential Regulation No. 59/2017 on Implementation of SDGs Achievement



Climate change is one of priorities area of Indonesia's space applications for achieving resilient and sustainable development

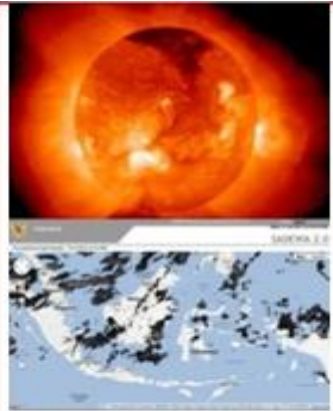
Activities

Monitoring of Disaster Risk Indices, such as Standardized Precipitation Index, Enhanced Vegetation Index, Fire Danger Rating System etc.

Challenges

Integration the Disaster Risk Indices into national risk disaster system.

- National Medium-Term Development Plan Target 2015-2019 formed inventory and MRV greenhouse emission reporting on document biennial update report
- National target (2015 - 2019) - To decrease the Disaster Risk Indices through national and regional risk reduction strategy



**Space and
Atmospheric Sciences**



**Aeronautics and Space
Technology**

- Rocket
- Satellite
- Aeronautics



Remote Sensing


- National Remote Sensing Data Bank
- National Earth Observation System



**Aerospace Policy
Studies**

LAPAN (National Institute of Aeronautics and Space) is national focal point for Indonesia space activities include the use and development space applications and technology with its derivation geospatial information systems, etc.





Returning the environment by increasing the use of efficient, clean, and waste reduction technologies

Indonesia's development based on comprehensive and strategic environmental analysis through government cooperation with research institutes, developers, international organizations and the private sector

LAPAN provides Earth observation satellite data for measurement, reporting, verification (MRV) in the implementation of reducing emissions from Deforestation and Forest Degradation (REDD +) and supports the Indonesian National Carbon Accounting System (INCAS).

Indonesia's forest monitoring system is known as SIMONTANA. It is available online at <http://geoportal.menlhk.go.id/arcgis/home/>, coupled with the WebGIS at <http://webgis.dephut.go.id/>

Climate Change Knowledge Center on <http://ditjenppi.menlhk.go.id/kcpi/index.php>

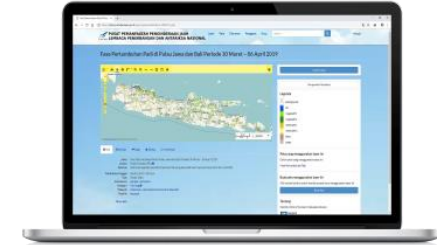


Space Application for National Forest Monitoring System

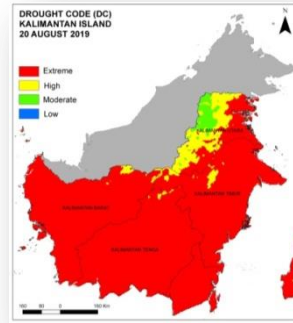
Natural resources and environmental information



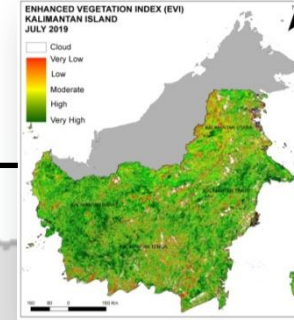
Natural resources, environmental and disaster monitoring information



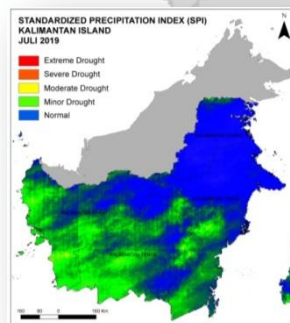
<https://spbn.pusfatja.lapan.go.id>



DC monitoring
20 August 2019



EVI monitoring
July 2019



SPI monitoring
July 2019





doi:10.1017/S0022292412001001



1990s = period of NFI, 2000-2009 = period of limited Landsat data used, >2009 = period of free download Landsat data



BERANDA

PROFIL

FAQ

KONTAK KAMI

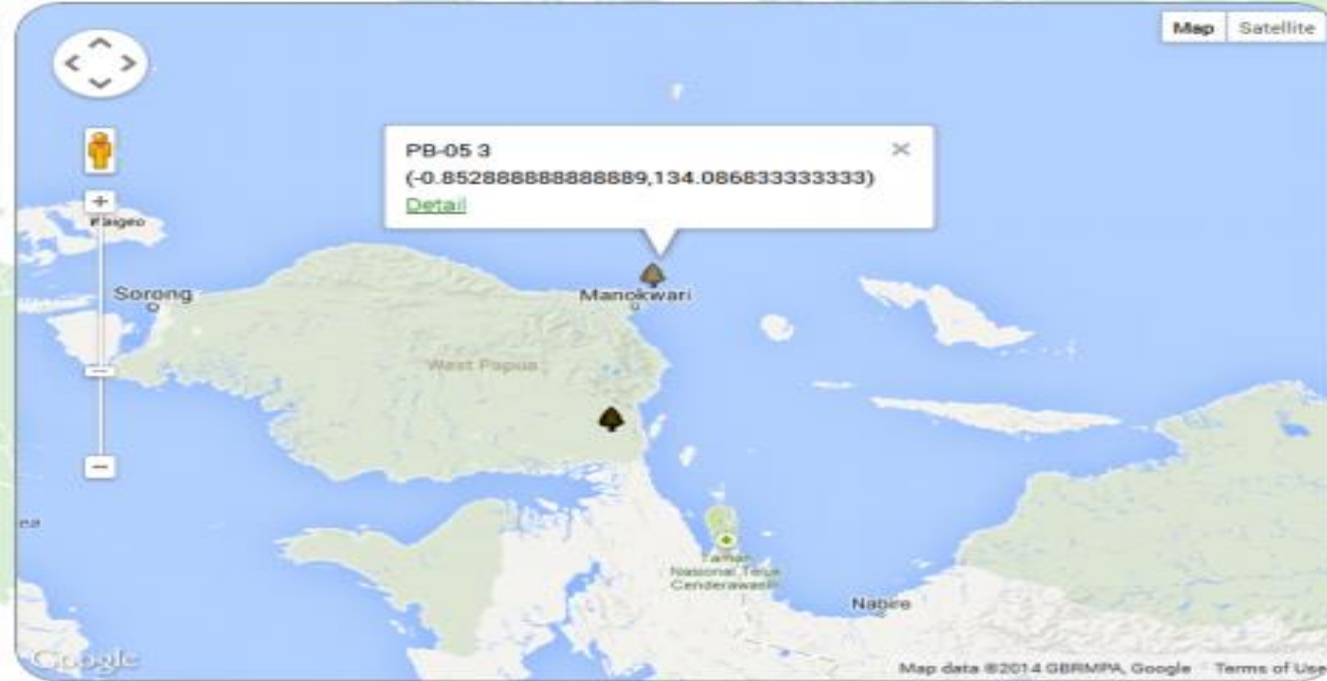
Legenda Peta

Layer

☒ NFI

Tipe Hutan

- Belum Diketahui
- Hutan Lahan Kering Primer
- Hutan Lahan Kering Sekunder
- Hutan Rawa Primer
- Hutan Rawa Sekunder
- Hutan Mangrove Primer
- Hutan Mangrove Sekunder
- Hutan Tanaman
- Semak/Belukar
- Savana
- Belukar Rawa
- Rawa



Pencarian

Tahun :

~Semua Tahun~
2012
2013

Lokasi:

~Semua Lokasi~
Bali
Banten
Bengkulu
DI Yogyakarta

Tipe Hutan:

~Semua Tipe~
Belum Diketahui
Hutan Lahan Kering Primer
Hutan Lahan Kering Sekunder
Hutan Rawa Primer

CARI DATA

RESET DATA

BERANDA

PROFIL

FAQ

KONTAK KAMI

Legenda Peta

Layer

☒ NFI

Tipe Hutan

- Belum Diketahui
- Hutan Lahan Kering Primer
- Hutan Lahan Kering Sekunder
- Hutan Rawa Primer
- Hutan Rawa Sekunder
- Hutan Mangrove Primer
- Hutan Mangrove Sekunder
- Hutan Tanaman
- Semak/Belukar
- Savana
- Belukar Rawa
- Rawa



Sebaran Diameter dan Karbon Total

DATA SEBARAN DIAMETER	
Diameter (cm)	Jumlah Individu
0 - 9 (per 25 m ²)	4
5.01 - 10 (per 25 m ²)	0
10.01 - 15 (per 100 m ²)	1
15.01 - 20 (per 100 m ²)	0
20.01 - 25 (per 400 m ²)	3
25.01 - 30 (per 400 m ²)	1
35.01 - 35 (per 400 m ²)	0
35.01 - 60 (per 400 m ²)	1
60.01 - 80 (per 400 m ²)	2
> 80 (per 400 m ²)	1
Total	13

Total Plot : 6

Tahun : 2013

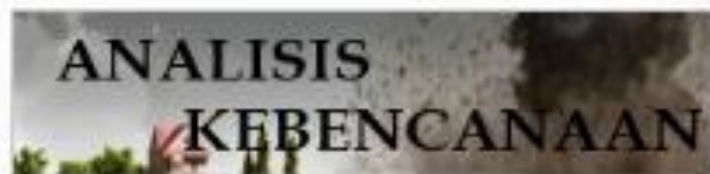
Lokasi: Seluruh Lokasi

Tipe: Seluruh Tipe Hutan

No	Kode Plot	Kabupaten	Provinsi	Posisi (Latitude, Longitude)	Tanggal Pengamatan	Tipe Hutan	2013									
							Pohon					Necromass	Tumbuhan Bawah	Serasah	Tanah	Total
							Pohon	Pancang	Tiang	Akar	Semai					
1	PB-01-1	Teluk Bintuni	Papua Barat	-2.010000000000007, 133.85	11-11-2013	Hutan Lahan Kering Sekunder	464.667 (ton/ha)	1.016 (ton/ha)	3.918 (ton/ha)	0.017 (ton/ha)	0 (ton/ha)	0 (ton/ha)	1.665 (ton/ha)	9.544 (ton/ha)	0 (ton/ha)	480.827 (ton/ha)
2	PB-01-2	Teluk Bintuni	Papua Barat	-2.010000000000007, 133.85	11-11-2013	Hutan Lahan Kering Sekunder	337.711 (ton/ha)	0 (ton/ha)	13.952 (ton/ha)	0.013 (ton/ha)	0 (ton/ha)	0.088 (ton/ha)	0.884 (ton/ha)	19.716 (ton/ha)	0 (ton/ha)	372.364 (ton/ha)
3	PB-01-3	Teluk Bintuni	Papua Barat	-2.010000000000007, 133.85	11-11-2013	Hutan Lahan Kering Sekunder	159.710 (ton/ha)	0.252 (ton/ha)	20.667 (ton/ha)	0.007 (ton/ha)	0 (ton/ha)	0 (ton/ha)	2.006 (ton/ha)	2.920 (ton/ha)	0 (ton/ha)	185.572 (ton/ha)
4	PB-05-1	Manokwari	Papua Barat	-0.853722222222222, 134.086827777778	11-11-2013	Hutan Lahan Kering Primer	1109.415 (ton/ha)	0.390 (ton/ha)	3.147 (ton/ha)	0.044 (ton/ha)	0 (ton/ha)	0 (ton/ha)	0.561 (ton/ha)	3.861 (ton/ha)	0 (ton/ha)	1177.418 (ton/ha)

Total Plot : 6
Tahun : 2012, 2013, 2014
Lokasi: Seluruh Lokasi
Tipe: Seluruh Tipe Hutan

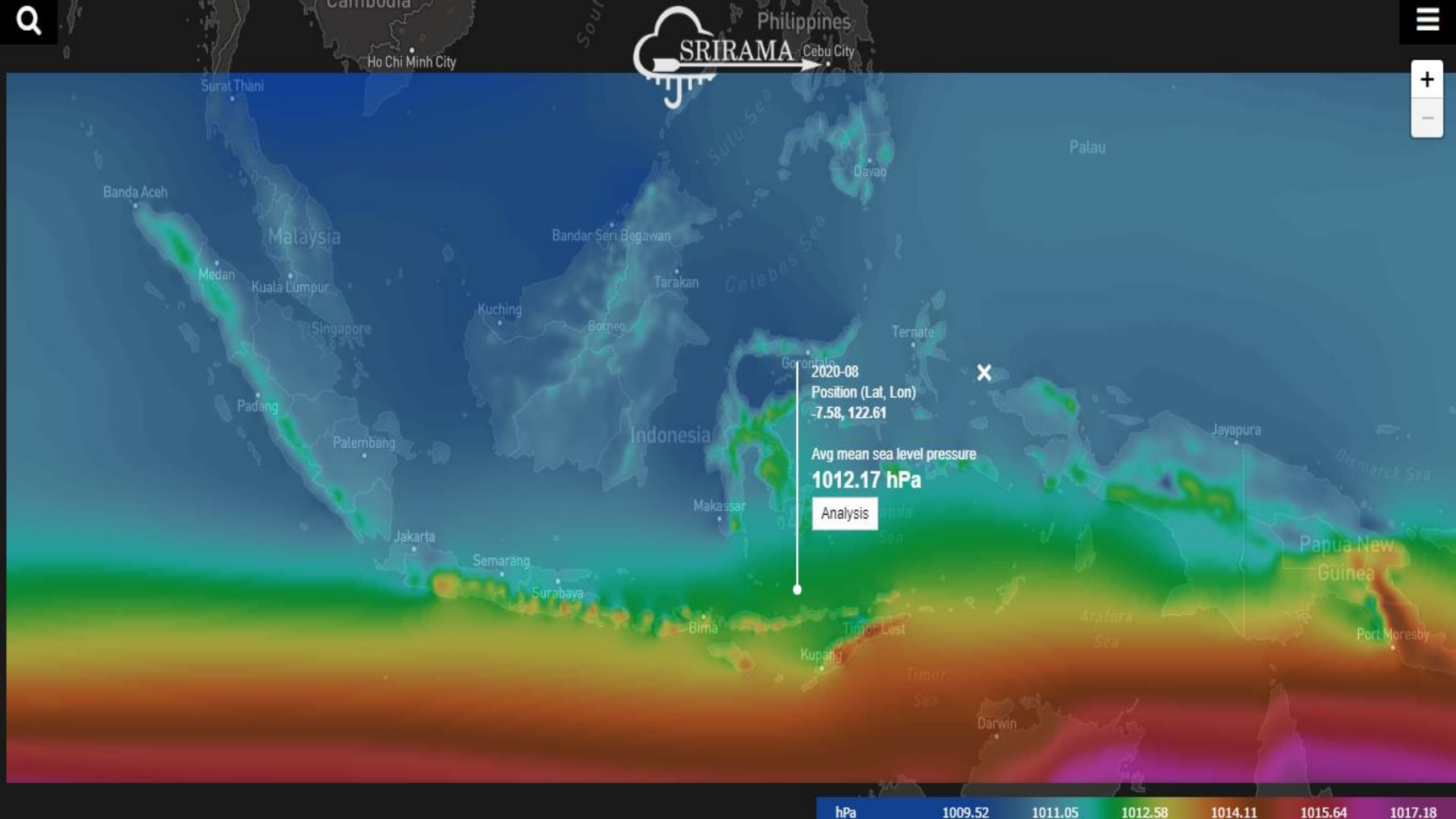
Tutup



DATA CATALOG (LANDSAT, MODIS, etc.)

SATELLITE IMAGERY GALERY (VERY HIGH, HIGH, LOW)





Peta Satelit



Landsat Catalog

SATELLITE :

Satellite.. ▼ Level.. ▼

BOUNDING BOX :

Up-left Lat.
Up-left Long.
low-right Lat.
Low-right Long.

☒ show/hide bounding box

DATE :

From: To:

CLOUD COVER :

≤ 100%

PATH/ROW

RESULT



The Indonesian government is transforming its space development objectives through indices and standardized systems for mitigating disaster risks due to climate change. As well as making a green space development strategy in the plan of action both nationally and regionally. The implication of this result is that space development can continue in the face of climate change challenges.



Thank You – Terima Kasih

Yunita Permatasari

National Policy on International Fora Research Group

Center of Aerospace Policy Studies

National Institute of Aeronautics and Space (LAPAN)

Jakarta, Indonesia

✉ yunita.permatasari@lapan.go.id

