SPATIAL DATA UTILIZATION TO MONITOR MINERAL AND COAL MINING

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- mining concessions
- forest area
- administrative boundaries
- mineral & coal potentials
CURRENT USE OF SPATIAL DATA FOR MINE MONITORING

- High spatial resolution of RGB Images & DEM
- UAV platform is preferable

Land clearing, pit, disposal, infrastructure lateral progress

Pit, disposal, stockpile progress (cut & fill)

Slope geometry & road grade evaluation
CURRENT USE OF SPATIAL DATA FOR MINE MONITORING

- Multispectral Images
- Satellite platform is preferable

mine rehabilitation/reclamation progress
environmental impact
mine water management
1. The analysis consists of identifying illegal mining location and calculating the area of land disturbance

2. The illegal mining in Borneo is estimated about 146,870.6 Ha
Locations of illegal mining activities are almost in all provinces of Indonesia.
Legal mining land occupation

Safety hazard and risk (causing fatality)

Landscape change and environmental degradation

Forest destruction

Potential escalation of social and security disruptions

Economic loss of more than 113 million USD (2019)
CHALLENGES & OPPORTUNITIES OF UTILIZING SPATIAL DATA FOR ILEGAL MINING

01 Cloud cover

02 Spatial resolution

03 The use of other available spatial data

04 Further analysis (e.g. environmental degradation, identification of mining commodities, economic lost)

05 Spatial database development (pit & disposal, infrastructure, reclamation)
CURRENT & FUTURE DEVELOPMENTS

01  Mobile apps. for reporting and mapping Illegal Mining (Minerba Online Reporting System for Illegal Mining/MORSI)

02  Formalization of artisanal mining (dedicated area of 58.025 ha)

03  Task Force for handling the Illegal Mining (identification & monitoring, law enforcement, mine rehabilitation)
THANK YOU

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