Land Acression and Sedimentation Monitoring on Cirebon-West Java Using Sentinel 2A/B Within 2018-2019 Period

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Key words: Remote sensing; Young surveyor; Land Accretion; Marine Remote Sensing

SUMMARY

Land Accretion and Land Abrasion is the most crucial problems in Indonesia, besides starvation and food problem, it consists of how people live and have their life. Land accretion which occurs as the realm of Cirebon regencies has a valuable economic prospect and also it has a controversial issue when the land use especially land accretion falls into wrong authorities which does not have any responsibility to this land.

Land Accretion is a natural-phenomena which occur because of coastal erosion activity on headland feature on coastal morphology because of dynamic phenomena occurred by sea characteristics and also because of coastal sedimentation activity on the gulf. The parameters that used to measure the sedimentation on this area are using the TSS (Total Suspended Solid) and (Total Suspended Material) which counted in mg/L on suspension in dimension.

To achieve the measurement on the suspended materials, there are two observations used on this method the first one was using the delft 3D model on this model, some earth phenomena like wind waves, waves acceleration and MetOcean data were used to make a sophisticated model about the suspended materials on the coastal area, especially in Cirebon's coastal district. Besides using the delft 3D model, marine remote sensing was used to make a change detection map using the optical band of Sentinel-2A/B, the total suspended material and total suspended solid can be measured by calculating TSS and TSM using B4 (red band) on Sentinel 2A/B which has a big correlation between the delft 3D model and suspended material from TSS and TSM calculation.

The aim of this research is to redefine the boundary between the accreted land for cadastre purpose and to know the cause of the land accretion based on the delft 3D model and the authority which has a responsibility with the evaluation of land accretion trend

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