

**THE EFFECT OF EL NINO/SOUTHERN OSCILLATION (ENSO) AND
INDIAN OCEAN DIPOLE (IOD) PHENOMENOM TO DROUGHT
IN SUBDAS BLUWEK, JIPURAPAH VILLAGE AND KLITIH VILLAGE,
PLANDAAN SUB DISTRICT, JOMBANG DISTRICT, EAST JAVA PROVINCE**

By:

David Arthur Lawang

114110060

ABSTRACT

The phenomenon of El Nino/Southern Oscillation (ENSO) and Indian Ocean Dipole (IOD) is a climate anomalies that occurred in Indonesia. This climate led to little rain cloud in the surrounding area. It has also become a cause of occurrence of drought in the rainy season and extreme drought during the dry season. In the area of research, the incidence of droughts occur every year. This study aims to find out is there any influence and the influence of ENSO and IOD against drought in the study area, and how the impact of derivatives and apply management to reduce the impact which will result from the drought.

To find out the drought in the area of research, I used drought index Standardized Precipitation Index (SPI) and the Palmer Drought Several Index (PDSI). Regression analysis was performed to determine how much influence ENSO and IOD to rainfall and drought index. Then I do analysis of water carrying capacity compare with water need, with using using Thornthwaite water balance. So, we can know, whether the existing water resources can fulfill the water needs or not. Based on analysis of the carrying capacity of the water, through the approach of rain made referrals plan management in the area of research.

The influence of ENSO and IOD of each variable, namely precipitation and drought index showed a correlation ranged from 0.7 to 0.8 were included in a strong and very strong correlation. So it can be seen, there is a strong influence of ENSO and IOD to drought in the study area. Value determination showed an average of about 60% incidence of droughts in the study area that affected by ENSO and IOD. This causes the water availability in certain months can not fulfill the water needs of the population. So that required treatment with a variety of approaches, one of which technology approach to doing rainwater harvesting (PAH) scale household use tanks by the Indonesian National Standard (SNI).

Keywords: Drought, El Nino/Southern Oscillation (ENSO), Indian Ocean Dipole (IOD), Standardized Precipitation Index (SPI), Palmer Drought Several Index (PDSI)