

Zonasi Kerentanan Produktivitas Jagung Akibat Fluktuasi Neraca Air Lahan Dan Dinamika Iklim Di Propinsi Gorontalo

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ABSTRAK

Kerentanan berupa koreksi perubahan produksi jagung jika terjadi cekaman air akibat fluktuasi keseimbangan air dan dinamika iklim di Provinsi Gorontalo. Penelitian ini bertujuan untuk mengetahui kerentanan produktivitas jagung akibat fluktuasi neraca air dan dinamika iklim di Provinsi Gorontalo. Penelitian ini dilakukan dari bulan Mei sampai Oktober 2017. Lokasi penelitian terletak antara $0^{\circ}19'$ - $1^{\circ}15'$ Lintang Utara dan $121^{\circ}23'$ - $123^{\circ}43'$ Bujur Timur. Terdapat 4 lokasi mewakili kabupaten yakni Kab Gorontalo (Bumela), Kab Boalemo (Dulupi), Kab Bone Bolango (Suwawa) dan Kab Pohuwato (Marisa). Data yang digunakan dalam penelitian ini adalah data iklim harian selama 20 tahun (19976 sampai 2016) meliputi curah hujan, radiasi matahari, suhu udara maksimum dan minimum, lamanya penyinaran, kelembaban dan kecepatan angin. Data luas tanam, luas panen (produksi) dan gagal panen jagung (puso) di Provinsi Gorontalo dalam 20 tahun terakhir. Data pendukung adalah peta administrasi Provinsi Gorontalo, peta zona agroklimat. Penelitian ini menggunakan metode analisis model neraca air lahan dimana analisis metode evapotranspirasi menggunakan metode FAO Penman Monteith. Umumnya Propinsi Gorontalo memiliki periode bulan defisit pertama yakni bulan Juli, Agustus, September, Oktober dimana pada periode ini berpotensi terjadi kerentanan produksi jagung akibat kekurangan pasokan air. Periode bulan surplus pertama yakni November, Desember, Januari dimana pada periode ini berpotensi terjadi resistensi produksi jagung akibat ketersediaan air. Periode defisit kedua yakni Februari, Maret dimana pada periode ini berpotensi kurang rentan karena periode defisit berlangsung singkat dibanding periode bulan defisit pertama. Periode surplus kedua yakni April, Mei, Juni dimana periode ini berpotensi kurang resisten karena jumlah maupun durasi curah hujan relatif berkurang dibanding periode surplus pertama. Kerentanan dan resistensi produksi jagung dipengaruhi oleh jumlah pasokan dan durasi (lamanya periode) curah hujan wilayah serta penerapan teknologi adaptasi terhadap bencana kekeringan dan banjir.

Kata Kunci: Kerentanan Produksi, Neraca Air, Jagung

Vulnerability of Maize Productivity Based on Water Balance and Climate Dynamics Fluctuations in Gorontalo Province

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ABSTRACT

There is a vulnerability with correction in maize production if happened water stress due to fluctuations in water balance and climate dynamics in Gorontalo Province. This study aims to determine the vulnerability of maize productivity based on fluctuations in water balance and climate dynamics in Gorontalo Province. The study was conducted from May to October 2017. The study sites are located between $0^{\circ}19'$ - $1^{\circ}15'$ North Latitude and $121^{\circ}23'$ - $123^{\circ}43'$ East Longitude. There are 4 locations that represent the regency of Gorontalo (Bumela), Kab Boalemo (Dulupi), Bone Bolango (Suwawa) and Kab Pohuwato (Marisa). The data used in this study is daily climate data for 20 years (1997 to 2016) involved rainfall, solar radiation, maximum and minimum air temperature, duration of transmission, humidity and wind speed. Data on planting area, harvested area (production) and corn harvest failure (puso) in Gorontalo Province in the last 20 years. Supporting data is the administrative map of Gorontalo Province, map of agroclimate zone. This research uses the method of analysis of land water balance model where evapotranspiration method analysis using FAO Penman Monteith method. Generally, Gorontalo Province has the first deficit month period in July, August, September, October where during this period there is potential vulnerability of maize production due to water shortage. The period of the first month of surplus is November, December, January where during this period there is potential for corn production resistance due to water availability. The second deficit period is February, March where during this period potentially less vulnerable due to short deficit period compared to period of first deficit month. The second surplus period is April, May, June where this period is potentially less resistant because the number and duration of rainfall is relatively less than the first surplus period. The susceptibility and resistance of maize production is influenced by the amount of supply and duration (duration of period) of regional rainfall and the application of adaptation technology to drought and flood disasters.

Keywords : Vulnerability productivity, water balance, climate dynamics