21 JANUARY 2020

PRELIMINARY SATELLITE-DERIVED DROUGHT ASSESSMENT IN MEKONG DELTA REGION, SOUTH VIETNAM. Version 02

STATUS: Evidences of drought detected in the South Vietnam. Some indication of vegetation stress conditions observed.

FURTHER ACTION(S): CONTINUE MONITORING & CONDUCT A DETAILED ASSESSMENT FOR FURTHER VALIDATION
OVERVIEW / BASED ON AOIs ASSESSED

Date of assessment validity: 21 January 2020

Impact and severity*:
- undetected
- limited impact potentially detected
- significant impact potentially detected

Potentially affected elements at risk
(indicate all that are applicable):
- agriculture
- other vegetations
- other: [ ]

Data sources:
1. FAO Agricultural Stress Index System (ASIS)
2. Mekong River Commission Near Real Time Hydrological Monitor
3. ClimateEngine
4. Global Agricultural & Disaster Assessment System (GADAS)
5. Regional Drought and Crop Yield Information System (RDCYIS), ADPC SERVIR-Mekong
6. DroughtWatch and CropWatch (RADI/ESCAP Drought Mechanism)

* disclaimer (i.e. A detailed assessment has yet to be done and validated with field-based and satellite-based information)
Vegetation Conditions (NDVI) from the FAO Agricultural Stress Index System

The Normalized Difference Vegetation Index (NDVI) measures the “greenness” of vegetation cover and is used to indicate the density and health of vegetation.

The map represents deviation of vegetation condition from average condition of that season.

The values in below normal (negative vegetation) condition marked in the light to dark red shades marks the areas with stressed vegetation.

Source: FAO
Drought Intensity Maps from the FAO Agricultural Stress Index System

(1) Drought intensity maps from October 2019 to January 2020 shows poor vegetation health indicating drought like conditions.

(2) The maps suggest that below normal conditions could be observed indicating the severity.

Source: FAO
Map of Dekad Rainfall Anomaly indicating Meteorological Drought

Rainfall deficit happened from July of 2019 until November in Mekong River Delta.

Source: DroughtWatch

Source: UNESCAP Regional Drought Mechanism
Drought Situations Observed from Climate Engine

NDVI Percent Difference from Average (MODIS Terra/Aqua 16-Day)
2019-10-13 to 2020-01-09, Mean, vs. 2000 – 2019

3-months Vegetation anomaly observation in the Mekong river delta region pinpoints vegetation unhealthy vegetation in the Kien Giang, Ca Mau, Bac Lieu, SocTrang, Tra Vinh, Tien Giang provinces

Source: Climate Engine
Drought Situations Observed from Climate Engine

3-months Standardized Precipitation Index (SPI) derived from CHIRPS

3-months Standardized Precipitation Index (SPI) derived from CHIRPS data also points towards a drought situation with the SPI values ranging from -1.2 to -2.0 further indicating severe conditions.

Source: Climate Engine
Mekong River Commission Near-Real Time Hydrometeorological Monitoring

Near-real time observations seen from one of the hydrometeorological stations of Mekong River Commission (MRC) shows near-normal conditions as of last 30-days.
Indication of Soil Moisture Deficit as Observed from GADAS

A gradual decline in soil moisture during the period from October 2019 to January 2020 indicates towards soil moisture deficit in the region. Gradual decline in soil moisture suggests that the region may have suffered from prolonged dry spells.

- Moisture deficit will have direct impact on the rice growing areas with areas likely to decline.
- Rice production will be affected.

Source: USDA - FAS
Drought Forecast from Regional Drought and Crop Yield Information System (RDCYIS)

3-months forecast derived Standardized Precipitation Index (SPI) confirms that the possibility of drought-like conditions may continue for a longer period. SPI until March shows that conditions could be below normal indicating that the drought is likely to continue.

Source: SERVIR-Mekong
SUMMARY OF PRELIMINARY OBSERVATIONS AND FURTHER ACTIONS

Date of assessment validity: 21 January 2020

Preliminary observations, impact and severity *:

- Evidences of drought detected in South Vietnam near the Mekong River Delta.
- Most drought monitoring tools and models gave indication of the possibility of an ongoing drought in the region.
- Model forecast suggest that there is a likely possibility that the conditions may continue over a prolong period.
- This is an initial assessment based on the available tools and resources; however a detailed quantitative assessment needs to be done to confirm the exact nature of drought occurring in the region be it meteorological, hydrological or agricultural drought.
- Further assessment should integrate ground based observed information and satellite data to validate the exact nature of drought conditions.

Further/ anticipated actions from UNOSAT:

- no impact detected/ discontinue monitoring over specific AOI
- potential impact detected  
  - continue monitoring over specific AOIs
  - full assessment to be conducted
- more data and/or information needed to confirm impact

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