



PREPAREDNESS MEASURES FOR THE EL NIÑO PHENOMENON 2019

Memorandum Circular No. 2019-64
May 3, 2019

1.0 Background

- 1.1 Based on PAGASA's El Niño Advisory No. 1 dated February 20, 2019:
 - 1.1.1 PAGASA's climate monitoring and analyses indicate that the unusually warm sea surface temperatures (SST) in the Central and Eastern Equatorial Pacific (CEEP) which started since November 2018 is expected to become a full blown El Niño;
 - 1.1.2 Rain analyses for the past three months showed that impacts of below normal conditions in provinces of Western Mindanao and Ilocos Norte were already experienced and are expected to continue;
 - 1.1.3 El Niño is anticipated to be weak and likely result to below normal rainfall conditions in different parts of the country in the coming months;
 - 1.1.4 Impacts also include slightly warmer surface temperatures in varying degrees from place to place and from time to time;
 - 1.1.5 With these developments, PAGASA's El Niño Southern Oscillation (ENSO) Alert System from the El Niño Watch issued since July 2018 was upgraded to El Niño Advisory;
 - 1.1.6 PAGASA ENSO Alert System Status.
- 1.2 PAGASA set the following criteria in assessing the possible effect for El Niño:
 - 1.2.1 **Dry condition** - two (2) consecutive months of below normal (21%-60% reduction from average) rainfall conditions;
 - 1.2.2 **Dry spell** - three (3) consecutive months of below normal (21%-60% reduction from average) rainfall conditions; or two (2) consecutive months of way below normal (more than 60% reduction from average) rainfall conditions;
 - 1.2.3 **Drought** - three (3) consecutive months of way below normal (>60% reduction from average); or five (5) consecutive months of below normal (21%-60% reduction from average) rainfall condition.

- 1.3 PAGASA has assessed the effects of El Niño for the months of January and February 2019:
 - 1.3.1 January 2019, 3 Provinces has experienced “Dry Condition”, 4 Provinces with “Dry Spell”, and 1 Province with “Drought”;
 - 1.3.2 February 2019, 34 Provinces has experienced “Dry Condition”, 11 Provinces with “Dry Spell”, and 5 Province with “Drought”;
- 1.4 PAGASA has provided the El Niño Outlook from March to June 2019, on which the increasing number of provinces will gradually be affected, and iimpacts becoming severe in March and April 2019 (as to warmer temperature and prolonged drought conditions over a larger area). But PAGASA emphasized on the “log time” or re-emergence of the effects of El Niño on the succeeding months; and
- 1.5 PAGASA has provided the possible Sectoral Impacts of El Niño:
 - 1.5.1 **Agriculture** – decline in soil moisture availability; decline in crop production due to delayed onset of rainy season; and increase in pests and diseases;
 - 1.5.2 **Water Resources** – reduced streamflows and groundwater due to less rainfall; reduced water supply and quality which may affect dams, irrigation and power generation; over-extraction of groundwater; and less rainfall will have a negative impact on forest resources;
 - 1.5.3 **Marine Resources** – fish kills and red tide; decline in fish production;
 - 1.5.4 **Human Health** – less water for hygiene and sanitation; higher cost of drinking water due to reduced supply; increased of pulmonary diseases due to poorer air quality caused by forest fires and haze; increase in tropical diseases such as malaria, dengue and skin diseases due to drier conditions and/or warmer air temperature; and increase in food-borne diseases such as salmonellosis due to higher temperature;
 - 1.5.5 **Environment** – land or soil degradation due to loss of vegetation; increase in forest or peat land fires; poor air quality due to occurrence of smoke, haze and forest fires;
- 1.6 In reference to the agreements reached during the NDRRMC Technical Management Group Meeting for El Niño last March 5, 2019, held at National Disaster Risk Reduction Management Council (NDRRMC) Operations Center, Camp General Emilio Aguinaldo, Quezon City.

2.0 Purpose

The purpose of this Circular is to mitigate and prepare for the ongoing and potential adverse effects of the El Niño over the country.

3.0 Scope/Coverage

All Provincial Governors, City and Municipal Mayors, Punong Barangays, DILG Regional Directors, ARMM Regional Governor and all others concerned.

4.0 Policy Content and Guidelines

- 4.1 The Department encourages all Local Chief Executives to take precautionary measures within your respective areas of responsibility:
 - 4.1.1 Curb illegal water connections and encourage the prudent use of water, which include using brooms instead of water hose in cleaning sidewalks and driveways, fixing leaky faucets, using a pail or a bucket instead of a hose in cleaning cars, using recycled or leftover water for house plants, and water gardens during the coolest part of the day;
 - 4.1.2 Allow water concessionaires and water utilities to conduct emergency repair of leaks prior to securing the necessary excavation permit, provided the said permit shall be secured within a reasonable period from the commencement of the repair works;
 - 4.1.3 Lift the application of number-coding schemes, as applicable, with respect to the water tankers that will be used by water concessionaires and water utilities to immediately address the water supply needs of their affected customers;
 - 4.1.4 Implement and update existing contingency plans related to El Niño Phenomenon;
 - 4.1.5 Coordinate with the Regional Office of the National Economic and Development Authority for planning and aligning actions to be undertaken in reference to the Roadmap for Addressing the Impact of El Niño (RAIN);
 - 4.1.6 Coordinate with the Philippine Council for Agricultural, Aquatic, and Natural resources Research and Development (PCAARRD) through their respective Regional Office of the Department of Science and Technology for possible and available technology that could help mitigate the effects of El Niño in local agriculture and commerce;
 - 4.1.7 Conduct mass Information, Education, and Communication campaigns in communities on the following:

- 4.1.7.1 Read monthly climate advisories issued by PAGASA and get updates from Local Disaster Risk Reduction and Management Councils (LDRRMC);
- 4.1.7.2 Check and immediately fix water leaks or report problems to appropriate authorities;
- 4.1.7.3 Maximize rainwater harvesting and storage;
- 4.1.7.4 Implement water conservation measures;
- 4.1.7.5 Cooperate on local measures to help manage the impacts of El Niño;
- 4.1.7.6 Get crop insurance and check advisories from local agricultural officials;
- 4.1.7.7 Set air conditioning units between 22°C to 25°C;
- 4.1.8 Disseminate and implement water conservation tips to all concerned:
 - 4.1.8.1 Turn off faucet while brushing teeth. Better yet, use a glass;
 - 4.1.8.2 Remove all leftover food before washing the dishes. Wash them using a small basin. Store and reuse the final rinse water to flush toilets;
 - 4.1.8.3 Store and reuse laundry water to clean floors, flush toilets, etc;
 - 4.1.8.4 Water plants early in the morning or late in the afternoon to minimize evaporation;
 - 4.1.8.5 Do not hose down your vehicle. Clean using a wash cloth and pail;
 - 4.1.8.6 Use water efficient gadgets such as high pressure low volume hoses and showerheads, faucets with aerators and double flush toilets.
- 4.2 Ensure that the occurrence of El Niño shall not in any way be used as a pretext for unreasonable commercial gain through the hoarding, and increasing of prices of water/drinking water. The LGU is directed to curb and curtail unnecessary stocking of water to the detriment of others. That in the event of water shortage, in no case shall a person or entity be allowed to take more water than what is necessary for beneficial use, thereby depriving the others of access to water.
- 4.3 Report any manifestation of El Niño to the National Disaster Risk Reduction and Management Council, through the Local DRRM Council;
- 4.4 All LGUs may utilize part of the seventy percent (70%) allocation for disaster preparedness and part of thirty percent (30%) quick respond fund from the five percent (5%) Local Disaster Risk Reduction and Management Fund (LDRRMF), subject to the usual accounting and auditing rules and

regulations. Moreover, the use of said funds should be in accordance with NDRRMC-DBM-DILG Joint Memorandum Circular No. 2013-1, dated March 25, 2013;

- 4.5 The Bureau of Fire Protection is directed to:
- 4.5.1 Refrain from unnecessarily drawing water from fire hydrants, and to limit the same only for purposes of extinguishing fires; and
 - 4.5.2 Allow water concessionaires and water utilities free use of fire trucks for tinkering operations in view of the significant number of household that are and will be affected and the limited availability of water tankers;
- 4.6 All DILG Regional and Provincial Directors are hereby directed to cause the widest dissemination of this Memorandum Circular.
- 4.7 For proper documentation, all activities should be documented and attached in the final report to be submitted to the Municipal/City/Provincial/Regional Disaster Risk Reduction and Management Offices for consolidation.

5.0 Effectivity

This Memorandum Circular shall take effect immediately.

6.0 Approving Authority


EDUARDO M. AÑO
Secretary



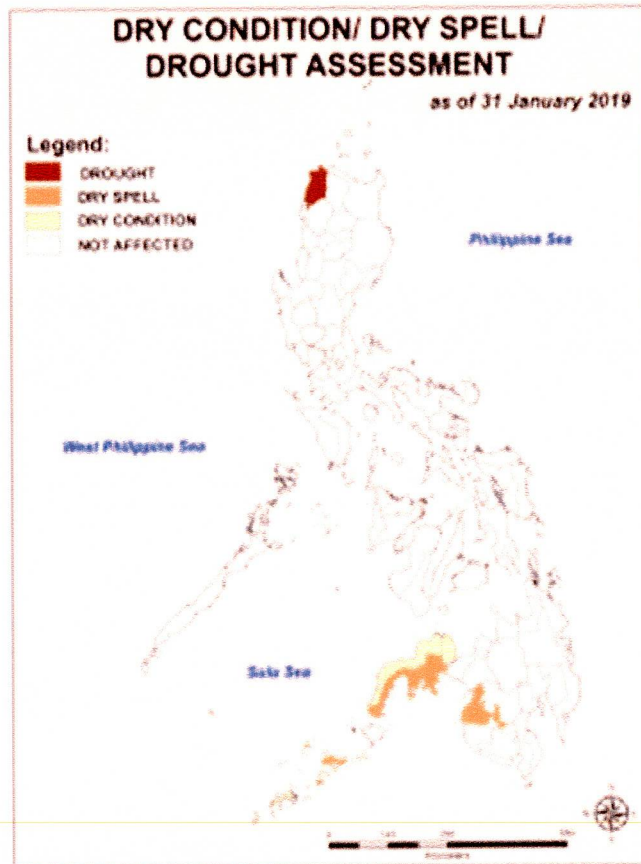
7.0 Feedback

For related queries, kindly contact your respective Regional Disaster Risk Reduction and Management Council (RDRRMC).

8.0 Annexes

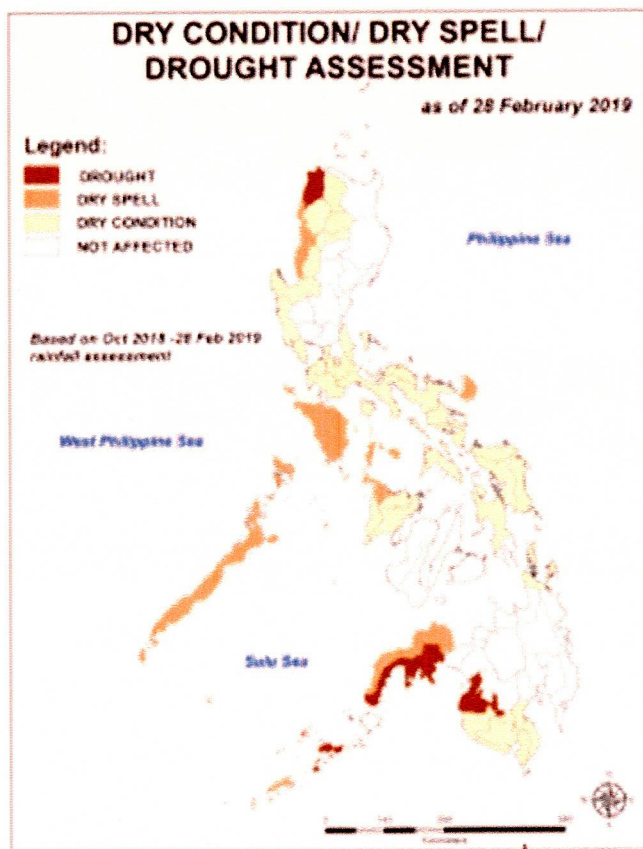
- Annex A: Dry Spell/Drought Assessment the January and February 2019
- Annex B: Dry Spell/Drought Outlook for March to June 2019
- Annex C: Rainfall Forecast from March to August 2019

ANNEX A: DRY SPELL/DROUGHT ASSESSMENT THE JANUARY AND FEBRUARY 2019 (Source: PAGASA)



NOTE: Based on September 2018– 31 January 2019 observed monthly rainfall

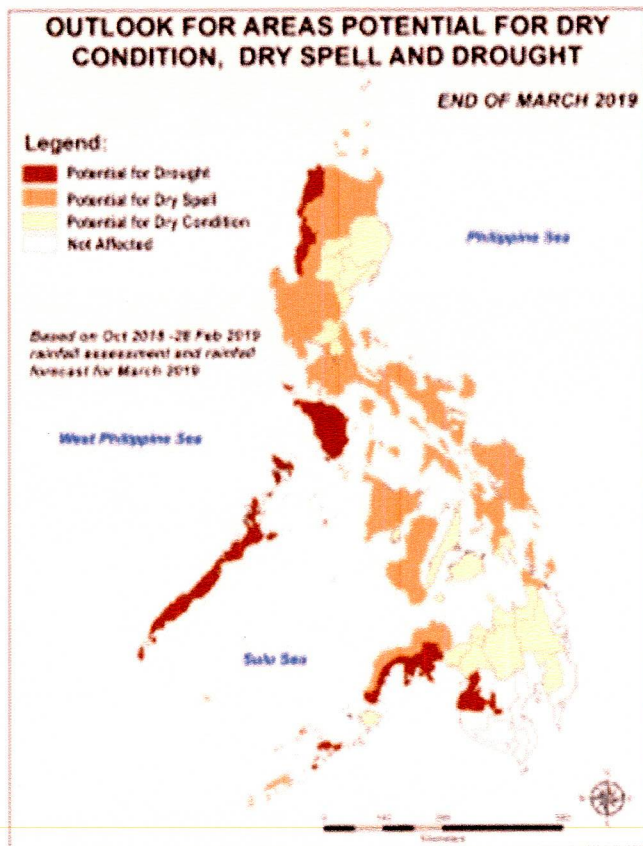
OVER DIFFERENT PROVINCES As of January 31, 2019 (ACTUAL)	
PROVINCES THAT EXPERIENCED DRY CONDITION (3)	
LUZON (0)	NONE
VISAYAS (0)	NONE
MINDANAO (3)	ZAMBOANGA DEL NORTE, MISAMIS OCCIDENTAL, TAWI-TAWI
PROVINCES THAT EXPERIENCED DRY SPELL (4)	
LUZON (0)	NONE
VISAYAS (0)	NONE
MINDANAO (4)	ZAMBOANGA DEL SUR, ZAMBOANGA SIBUGAY, MAGUINDANAO, SULU
PROVINCES THAT EXPERIENCED DROUGHT (1)	
LUZON (1)	ILOCOS NORTE
VISAYAS (0)	NONE
MINDANAO (0)	NONE



NOTE: Based on October 2018 – 28 February 2019
observed monthly rainfall

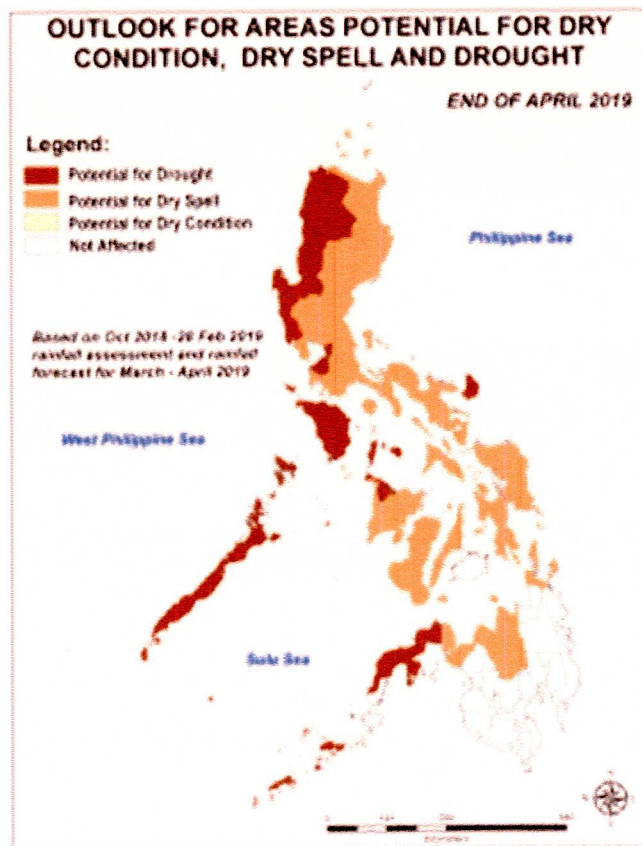
OVER DIFFERENT PROVINCES AS OF February 2019 (ACTUAL)	
PROVINCES THAT EXPERIENCED DRY CONDITION (34)	
LUZON (19)	ABRA, BENGUET, KALINGA, APAYAO, MOUNTAIN PROVINCE, PANGASINAN, BATAAN, ZAMBALES, METRO MANILA, BATANGAS, CAVITE, LAGUNA, QUEZON, MARINDUQUE, ALBAY, CAMARINES NORTE, CAMARINES SUR, MASBATE, SORSOGON
VISAYAS (8)	ANTIQUE, CAPIZ, ILOILO, BIURAN, EASTERN SAMAR, LEYTE, NORTHERN SAMAR, SAMAR (WESTERN SAMAR)
MINDANAO (7)	DAVAO DEL SUR, DAVAO OCCIDENTAL, SOUTH COTABATO, SARANGANI, SULTAN KUDARAT, DINAGAT ISLANDS, SURIGAO DEL NORTE
PROVINCES THAT EXPERIENCED DRY SPELL (11)	
LUZON (7)	ILOCOS SUR, LA UNION, OCCIDENTAL MINDORO, ORIENTAL MINDORO, ROMBLON, PALAWAN, CATANDUANES
VISAYAS (3)	AKLAN
MINDANAO (3)	ZAMBOANGA DEL NORTE, MISAMIS OCCIDENTAL, TAWI-TAWI
PROVINCES THAT EXPERIENCED DROUGHT (5)	
LUZON (1)	ILOCOS NORTE
VISAYAS (0)	NONE
MINDANAO (4)	ZAMBOANGA DEL SUR, ZAMBOANGA SIBUGAY, MAGUINDANAO, SULTAN

ANNEX B: DRY SPELL/DROUGHT OUTLOOK FOR MARCH TO JUNE 2019 (Source: PAGASA)



OUTLOOK OVER DIFFERENT PROVINCES By End of March 2019	
PROVINCES THAT ARE POTENTIAL FOR DRY CONDITION (21)	
LUZON (7)	IFUGAO, ISABELA, NUEVA VIZCAYA, QUIRINO, BULACAN, AURORA, RIZAL
VISAYAS (5)	GUIMARAS, BOHOL, CEBU, SIKULOR, SOUTHERN LEYTE
MINDANAO (9)	BUKIDNON, CAMIGUIN, LANAO DEL NORTE, MISAMIS ORIENTAL, COMPOSTELA VALLEY, AGUSAN DEL NORTE, AGUSAN DEL SUR, BASILAN, LANAO DEL SUR
PROVINCES THAT ARE POTENTIAL FOR DRY SPELL (41)	
LUZON (25)	ABRA, BENGUET, KALINGA, APAYAO, MOUNTAIN PROVINCE, PANGASINAN, CAGAYAN, BATAAN, NUEVA ECUIA, PAMPANGA, TARLAC, ZAMBALES, METRO MANILA, BATANGAS, CAVITE, LAGUNA, QUEZON, MARINDUQUE, ROMBLON, ALBAY, CAMARINES NORTE, CAMARINES SUR, CATANDUANES, MASBATE, SORSOGON
VISAYAS (11)	AKLAN, ANTIQUE, CAPIZ, ILOILO, NEGROS OCCIDENTAL, NEGROS ORIENTAL, BIURAN, EASTERN SAMAR, LEYTE, NORTHERN SAMAR, SAMAR (WESTERN SAMAR)
MINDANAO (5)	ZAMBOANGA DEL NORTE, MISAMIS OCCIDENTAL, DINAGAT ISLANDS, SURIGAO DEL NORTE, TAWI-TAWI
PROVINCES THAT ARE POTENTIAL FOR DROUGHT (10)	
LUZON (6)	ILOCOS NORTE, ILOCOS SUR, LA UNION, OCCIDENTAL MINDORO, ORIENTAL MINDORO, PALAWAN
VISAYAS (0)	NONE
MINDANAO (4)	ZAMBOANGA DEL SUR, ZAMBOANGA SIBUGAY, MAGUINDANAO, SULU

12% OF THE COUNTRY WILL LIKELY EXPERIENCE DROUGHT;
49% OF THE COUNTRY WILL LIKELY EXPERIENCE DRY SPELL



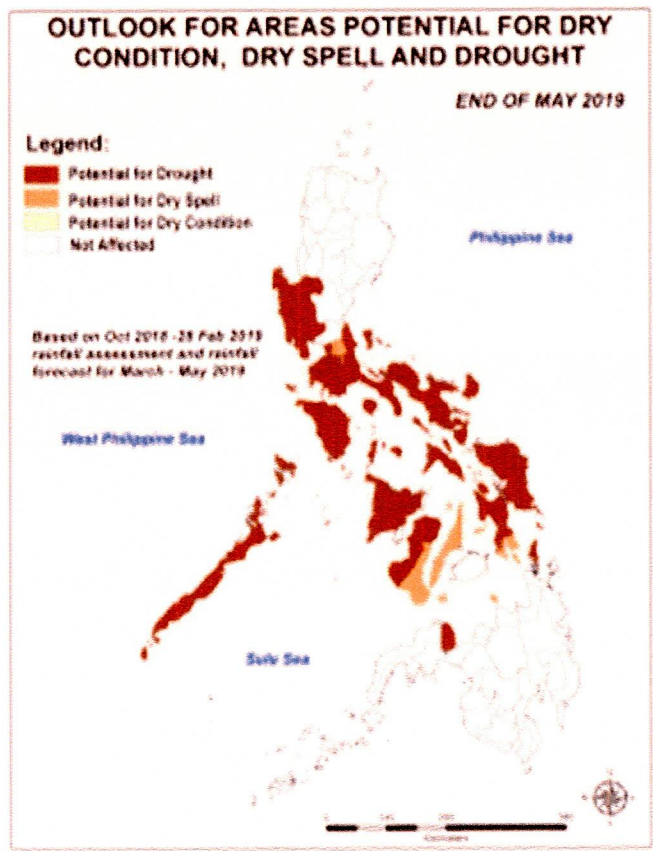
OUTLOOK OVER DIFFERENT PROVINCES By End of April, 2019

PROVINCES THAT ARE POTENTIAL FOR DRY CONDITION (0)	
LUZON (0)	NONE
VISAYAS (0)	NONE
MINDANAO (0)	NONE

PROVINCES THAT ARE POTENTIAL FOR DRY SPELL (42)	
LUZON (21)	IFUGAO, CAGAYAN, ISABELA, NUEVA VIZCAYA, QUIRINO, BATAAN, BULACAN, NUEVA ECISA, PAMPANGA, TARLAC, AURORA, BATANGAS, LAGUNA, RIZAL, QUEZON, MARINDUQUE, ALBAY, CAMARINES NORTE, CAMARINES SUR, MASBATE, SORSOGON
VISAYAS (14)	ANTIQUE, CAPIZ, GUIMARAS, ILOILO, NEGROS OCCIDENTAL, NEGROS ORIENTAL, CEBU, SIKIUDOR, BILIRAN, EASTERN SAMAR, LEYTE, NORTHERN SAMAR, SAMAR (WESTERN SAMAR), SOUTHERN LEYTE
MINDANAO (7)	BUKIDNON, CAMIGUIN, LANAO DEL NORTE, MISAMIS OCCIDENTAL, MISAMIS ORIENTAL, DINAGAT ISLANDS, SURIGAO DEL NORTE

PROVINCES THAT ARE POTENTIAL FOR DROUGHT (22)	
LUZON (17)	ABRA, BENGUET, KALINGA, APAYAO, MOUNTAIN PROVINCE, ILOCOS NORTE, ILOCOS SUR, LA UNION, PANGASINAN, ZAMBALES, METRO MANILA, CAVITE, OCCIDENTAL MINDORO, ORIENTAL MINDORO, ROMBLON, PALAWAN, CATANDUANES
VISAYAS (1)	AKLAN
MINDANAO (4)	ZAMBOANGA DEL NORTE, ZAMBOANGA SIBUGAY, SULU, TAW-TAWI

26% OF THE COUNTRY WILL LIKELY EXPERIENCE DROUGHT;
51% OF THE COUNTRY WILL LIKELY EXPERIENCE DRY SPELL



OUTLOOK OVER DIFFERENT PROVINCES By End of May, 2019

PROVINCES THAT ARE POTENTIAL FOR DRY CONDITION (0)	
LUZON (0)	NONE
VISAYAS (0)	NONE
MINDANAO (0)	NONE

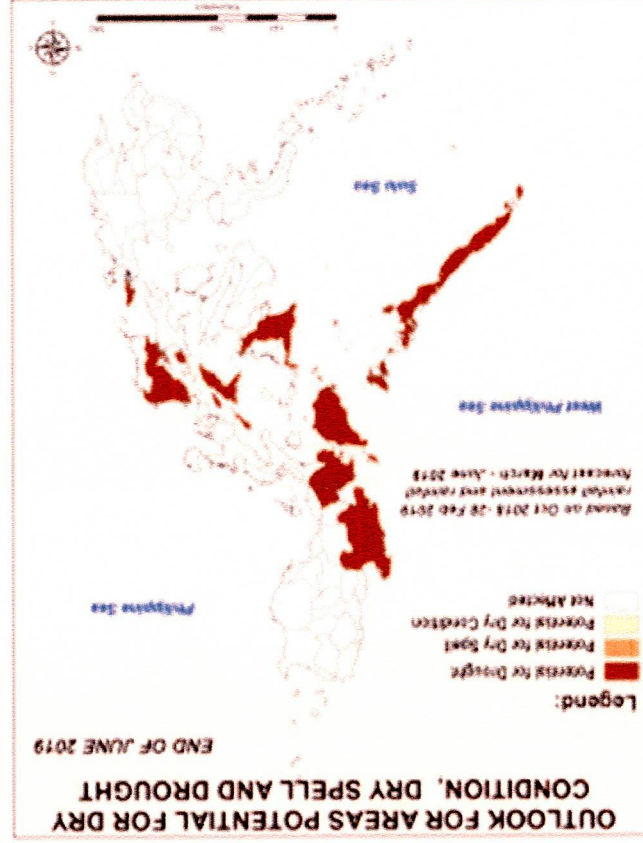
PROVINCES THAT ARE POTENTIAL FOR DRY SPELL (6)	
LUZON (1)	RIZAL
VISAYAS (4)	NEGROS ORIENTAL, CEBU, SIKHOP, SOUTHERN LEYTE
MINDANAO (1)	CAMIGUIN

PROVINCES THAT ARE POTENTIAL FOR DROUGHT (33)	
LUZON (21)	PANGASINAN, BATAAN, PAMPANGA, TARLAC, ZAMBALES, METRO MANILA, BATANGAS, CAVITE, LAAGUNA, QUEZON, MARINOUQUE, OCCIDENTAL MINDORO, ORIENTAL MINDORO, ROMBLON, PALAWAN, ALBAY, CAMARINES NORTE, CAMARINES SUR, CATANDUANES, MASBATE, SORSOGON
VISAYAS (10)	AKLAN, ANTIQUE, CAPIZ, ILOILO, NEGROS OCCIDENTAL, BILIRAN, EASTERN SAMAR, LEYTE, NORTHERN SAMAR, SAMAR (WESTERN SAMAR)
MINDANAO (2)	MISAMIS OCCIDENTAL, DINAGAT ISLANDS

40% OF THE COUNTRY WILL LIKELY EXPERIENCE DROUGHT;
7% OF THE COUNTRY WILL LIKELY EXPERIENCE DRY SPELL

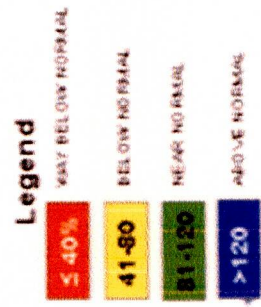
24% OF THE COUNTRY WILL LIKELY EXPERIENCE DROUGHT

OUTLOOK OVER DIFFERENT PROVINCES	
By End of June, 2019	
PROVINCES THAT ARE POTENTIAL FOR DRY CONDITION (0)	
LUZON (0)	NONE
VISAYAS (0)	NONE
MINDANAO (0)	NONE
PROVINCES THAT ARE POTENTIAL FOR DRY SPELL (0)	
LUZON (0)	NONE
VISAYAS (0)	NONE
MINDANAO (0)	NONE
PROVINCES THAT ARE POTENTIAL FOR DROUGHT (20)	
LUZON (14)	PANGASINAN, BATAAN, PAMPUNGA, TARIAC, ZAMBALES, METRO MANILA, BATANGAS, CAVITE, LAGUNA, RIZAL, OCCIDENTAL MINDORO, ORIENTAL MINDORO, PALAWAN, MASBATE
VISAYAS (5)	ANTIQUE, ILOILO, BILIRAN, NORTHERN SAMAR, SAMAR (WESTERN SAMAR)
MINDANAO (1)	DINAGAT ISLANDS



ANNEX C: RAINFALL FORECAST FROM MARCH TO AUGUST 2019 (Source: PAGASA)

Monthly Rainfall Forecast



Rainfall Condition (based on recent conditions):

March – August 2019

