Drought Situation Report
Pakistan

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CURRENT SITUATION
Pakistan is one of the most vulnerable countries due to climate change. The Global Climate Risk Index (GCRI) has ranked Pakistan in the top 10 countries adversely affected by climate change. Due to La-Nina the climatic condition of Pakistan has adversely affected since October 2020.

PRECIPITATION
The country overall received below normal (-33.2%) rainfall during (Oct-20 to Apr-21). The main thrust was in Balochistan (-63.3%) and Sindh (-77.3%) while it remained above normal during November throughout the country. It is also expected that from February to June 2021, most of the country will experience dry spell.

TEMPERATURE
Gradual increase in temperature is expected in next two to three months which will negatively affect the agro-climatic conditions in Balochistan and Sindh.

DROUGHT OUTLOOK
Since last year, due to deficient rainfall, moderate drought like condition has emerged in most of the central and southern districts of Balochistan and South Eastern districts of Sindh.

AGRICULTURE
The continuous drier conditions in Balochistan and Sindh particularly, may increase the water requirements for the standing crops and orchards.

MARKET SITUATION
The markets prices of essentially food commodities generally remain stable during the first quarter of the year (Jan-March 2021). On a month on month basis, in April 2021 the average retail price of wheat flour remained unchanged, while it registered a decrease of 4 percent in Karachi.

FOOD SECURITY SITUATION
According to the FS and livelihood assessment that was conducted in most of the drought vulnerable areas of Balochistan and Sindh, Overall, around two-fifth (43 percent) of the surveyed households reported their household livelihood/income was severely affected by locust infestation and 26 percent reported moderately affected. In case of impact of monsoon rains/flooding on household livelihood/income, 37 percent of the surveyed households reported it is severely affected and 26 percent reported moderately affected. Furthermore, 31 percent of the surveyed households reported their household livelihood/income was severely affected by COVID-19.

Special points of interest:
- The drought conditions have emerged in the drought vulnerable areas of Pakistan
- Below normal rainfall causes drought like conditions in Balochistan and Sindh
- Gradual increase in temperature would also negatively impact the agro-climatic condition of most vulnerable areas
- Forecast of rainfall is Low to Below normal from April to June
- Prices of some food commodities registered significant increase while other remain stable
In Pakistan, droughts occur some four out of 10 years, with Balochistan and Sindh provinces being one of the most vulnerable to hydrological threats due to arid climatic conditions. The primary source of 85% of the population of Balochistan’s income is agriculture. This province has faced many severe droughts in the past which had a drastic impact on livelihoods and its economy. Moreover, frequent droughts along with high water withdrawal have led to considerable declines in the water table. Heatwaves have also worsened in this region, which has increased the frequency of drought events and their severity. Changes in climatic conditions may have a substantial impact on the hydrological cycle of Balochistan. Climate change is likely to disrupt the typical seasonal conditions in Balochistan and Sindh, which results in an intense and longer summer, while the winters are expected to become shorter.

**Current Situation**

The most districts of west to south west Balochistan are winter rainfall dominant and rainfall amount lies between 71 to 231mm. Due to deficient winter rainfall, moderate drought like condition has emerged over most of the central and southern districts of Balochistan (Fig-1). The moderate drought is prevailing in Chagi, Gawadar, Harnai, Kech, Kharian, Mastung Nushki, Pishin, Panjgur, Kalat, Quetta and Washuk. According to the climatological normal (1981-2010), Sindh province remains dry during October to May, whereas, the rainy season prevails from June to September. The moderate drought conditions are prevailing in south eastern parts of Sindh (Fig-1).

Keeping in view the climatology and current seasonal forecast, drought conditions may exacerbate and affect the agriculture and live-stock in the vulnerable districts. Dry conditions will cause water stress in the cultivated lands/areas due to limited supply of irrigation water for crops.

**Drought outlook of Pakistan**

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Precipitation

The distribution of rainfall in Pakistan varies on wide ranges, mostly associated with the monsoon winds and the western disturbances, but the rainfall does not occur throughout the year. Winter precipitation (December to March) are mainly received from western disturbances entering from Iran and Afghanistan. As predicted by Pakistan Meteorological Department (PMD), the country overall received below normal (-31.0%) rainfall during (Oct-20 to Jan-21). The main thrust was in Balochistan (-73.2%) and Sindh (-70.2%), and this phenomena of below normal rainfall has continued since the start of this year to date, across the country. The most districts in west to south west Balochistan are winter rainfall dominant and rainfall amount lies between 71 to 231mm. During the first dekadal pf of March 2021, few good rains were reported from the agricultural plains of Upper Khyber Pakhtunkhawa and AJK and some regions of Punjab.

“Below normal rainfall causes drought like conditions in Balochistan and Sindh”
IRI Multi-Model Probability Forecast for Precipitation and Temperature

IRI probabilistic seasonal climate forecast product is based on a re-calibration of model output from the U.S. National Oceanographic and Atmospheric Administration (NOAA)’s North American Multi-Model Ensemble Project (NMME).

Precipitation forecasts for Apr-Jun and May-Jul show enhanced probabilities of below-normal precipitation for all the provinces in Pakistan.

In Apr-Jun, May-Jul, Jun-Aug, and Jul-Sep enhanced probabilities of above-normal temperatures are forecast for all the provinces of Pakistan.

Balochistan - Seasonal Agro-Climate outlook (21st March- 31st August 2021)

This forecast is a careful estimation of aforementioned weather parameters averaged over a specific area.

Central Baluchistan may receive only a single spell of rainfall in the mid of June, however the later period may have fewer rains. Accordingly, the continuous drier condition may increase the water requirements for the standing crops and orchids. The minimum temperature starts with 17°C then will continue increasing till 25°C during the June and would finally approaches 22°C at the end. In the same way, maximum temperature would follow the seasonal pattern starting from 30°C (end of March), may increase up to 41°C and then following the season may end with 36°C (end of August).

North-Eastern Baluchistan would receive 1-2 spells of light rainfall mainly in the 3rd week of March and second decade of June. Based on consistent dry conditions, the water requirements may be increased for the Wheat crop which is harvested in the start of June.

The minimum temperature may start with 15°C, gradually rise up to 25.0°C and approaches 17°C at the end of August. Maximum temperature would follow the seasonal pattern starting from 23°C (end of March) and ends at 40°C.
Sindh - Seasonal Agro-Climate outlook (21st March- 31st August 2021)

Seasonal climate outlook for the specified period is based on the forecast system. The outlook is depicted in figures in terms of daily fluctuations of Maximum and Minimum Temperatures and Precipitation with a focus on major agriculture zones. The main purpose of seasonal outlook is to facilitate agriculture community for pre-planning their field activities as per expected weather conditions. Dry/wet spells during the season as well as periods of are highlighted. This forecast is a careful estimation of aforementioned weather parameters averaged over a specific area. Upper Sindh is expected to have dry conditions during the whole period. The continuous dry period would increase the water requirements for the Kharif crops. The minimum temperature may be around 24°C at start; it would gradually rise up to 32°C in May/June and then approaches 26°C at the end of August. The maximum temperature may begin with 35°C, following the season it will increase till 48°C and finally ends with around 38°C(end of August).

Lower Sindh would receive several spells of light rainfall starting from 2nd week of June till the end of August, however, no rainfall expected before that. Besides, fewer rains, the continuous dry period till the start of June may increase the water requirement of Kharif crop. The minimum temperature may be around 22°C at the end of March, gradually increase up to 27°C at the start of June and finally approaches 25°C at the end of the period. The maximum temperature may begin with 35°C (end of March), with the same pattern it will rise till 42°C and as per seasonal pattern finally ends with around 34°C(end of August).

Normalized Difference Vegetation Index eMODIS 250m( NDVI, 11-20 April)

Anomalies represent a subtraction of the median NDVI values (2003-2017) for a 10-day period from current-year values for the same period, rendering an image where negative values portray less vigorous vegetation than average, and positive values represent areas that are more vigorous in the current year.
Market Situation

The markets prices of essentially food commodities generally remain stable during the first quarter of the year (Jan-March 2021). On a month on month basis, in April 2021 the average retail price of wheat flour remained unchanged, while it registered a decrease of 4 percent in Karachi. The average retail price of rice basmati registered a negligible increase of 1 percent on a month on month basis in April 2021. While it generally remained stable during the first quarter of the year 2021.

The market price of chicken remained much volatile during the first three months of the year. Compared to January 2021, in April the price of chicken registered a significant increase of 31 percent. While the price of chicken on a month on month basis has registered a decline of 7 percent in April 2021.

The price of cooking oil and vegetable ghee also registered an increase of 11 and 12 percent respectively in April 2021 compared to its price in January 2021. On a month on month basis, however, the prices has registered an increase of one percent each in April 2021.

The price of lentil masoor generally remained stable, compared to January 2021, the price has registered an increase of about 3 percent in April 2021. While it remained unchanged compared to its price in the previous month.
The price of refined sugar remained somewhat volatile and registered an increase of about 10 percent in April 2021 compared to its price in January 2021. On a month on month basis, the price of sugar registered an increase of about 3 percent.

**Terms of Trade (ToT)**

The average Terms of Trade, which reflects the purchasing capacity of poor households remained at 18.49 kilo of wheat flour with one day of wage. This ratio is almost the same compared to previous month.

**Food Security Situation**

FAO and WFP in collaboration with Food Security and Agriculture Working Group (FSAWG) jointly conducted the Food Security and Livelihood Assessment (FSLA) in 21 most locust prone/affected districts across three provinces (10 districts of Balochistan, 02 of Punjab and 09 of Sindh) to understand the food security and livelihood situation of the households in the areas affected by multiple shocks including locust, COVID-19 pandemic and monsoon rains/flooding etc. and to determine the critical livelihood and food security related needs of the affected communities/households. The assessment was conducted in October/November 2020.

Overall, agriculture and livestock based activities are reported as primary source of livelihood by most of the surveyed households (60 percent), whereas non-agriculture wage labor and other sources (small business/self-employed, medium to large business, government employee, NGO/private employee, petty trade, pension allowance, charity/zakat/gifts, and home-based work like handicraft) are primary source of livelihood for 20 percent of the surveyed households.

Overall, around two-fifth (43 percent) of the surveyed households reported their household livelihood/income was severely affected by locust infestation and 26 percent reported moderately affected. In case of impact of monsoon rains/flooding on household livelihood/income, 37 percent of the surveyed households reported it is severely affected and 26 percent reported moderately affected.

"Because of multiple shocks, higher percentage of HHs experience food insecurity in drought affected areas"
Furthermore, 31 percent of the surveyed households reported their household livelihood/income was severely affected by COVID-19 followed by 30 percent reported moderately affected. More than half of the surveyed households (53 percent) reported reduction in their income due to COVID-19/lockdown.

Because of overlapping shocks (COVID-19 pandemic, monsoon rains/flooding and desert locust), overall around two-third (62 percent) of the surveyed households are moderately or severely food insecure, whereas around two-fifth (43 percent) are severely food-insecure based on Food Insecurity Experience Scale (FIES). In terms of impact of COVID-19 on food insecurity, the analysis of FIES data shows that apparently COVID-19 has contributed to high prevalence of food insecurity as overall around half (48 percent) of the surveyed households are moderately or severely food insecure because of COVID-19, whereas one-third (33 percent) are severely food-insecure.

Around two-third (64 percent) of surveyed households have poor food consumption and 26 percent are using high level of coping strategies such as taking loan, sale of livestock and productive assets, most of which are considered harmful and will deteriorate their already unstable livelihoods in the long term.

Food Security & Agriculture Working Group

Co-led by the Food and Agriculture Organization of the United Nations (FAO) and World Food Programme (WFP), the global Food Security Cluster (gFSC) is committed to saving lives through the coordination of appropriate, efficient and well-resourced food security responses in major emergencies.

The gFSC was created in 2010 and has over 40 partners including NGOs, donors and UN agencies – with the International Committee of the Red Cross (ICRC) as an observer. It provides support to 27 countries.

In Pakistan, FS&AWG comprised of members of the co-lead agencies, Govt organizations, Donor agencies, National and International NGO’s constitutes a platform which is largely focused on ensuring that country-level operations are well staffed and equipped to respond to food security crises.

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