World Food Programme

Seasonal Monitor

ASIA-PACIFIC, MAY 2023

REGIONAL BUREAU FOR ASIA AND THE PACIFIC

Note: Countries in the region have been classified into three zones according their geographical location (latitude, longitude) and climate (rainfall and temperature). This classification do not correspond to any official subregions or categories

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1. Climate Overview

Summary

Hazards

In May 2023, heavy rains caused **floods** in Afghanistan, Indonesia, Pakistan, and Papua New Guinea. **Cyclone Mocha** affected 1.3 million people in Rakhine State, Myanmar, and 780,000 people including 536,999 Rohingya refugees and 243,000 Bangladeshis across the coast of Cox's Bazar, Bangladesh. The indirect influence of Cyclone Mocha caused floods in India and Sri Lanka. **Cyclone Mawar** affected over 64,000 people in Regions I, II, III, Mimaropa, VII, and Cordillera Administrative Region (CAR) in the Philippines.

February-May 2023 Rainfall

Drier-than-average conditions continued in Afghanistan, Kyrgyz Republic, northern Pakistan, and Tajikistan. The harvesting of winter barley and wheat crops began, and planting of spring season crops continued under mixed weather conditions in these countries.

There was moderate to heavy rainfall in some parts of eastern Bangladesh, southern and northeastern India, northern Myanmar, central and southern Philippines, and southern Sri Lanka. Harvesting of dry season rice finished, and planting of wet season rice began under favourable weather conditions except in flood-affected areas.

Higher-than-average rainfall was observed across Fiji and Indonesia.

Short Term Forecast (1-10 June 2023)

Below-average rainfall conditions are forecast for northern Afghanistan, Bangladesh, India, Indonesia, western Kyrgyz Republic, Lao PDR, Myanmar, Nepal, northern Pakistan, western Tajikistan, and Timor Leste.

Higher-than-average rainfall conditions are forecast in northeastern Cambodia, Fiji, southern Papua New Guinea, the Philippines, southern Sri Lanka, and southern Solomon Islands.

Seasonal Outlook (June-August 2023)

Higher-than-normal rainfall is likely in Cambodia, southern Lao PDR, southern Myanmar, the Philippines, southern and eastern Papua New Guinea, Sri Lanka, southern Solomon Island, and Tajikistan.

Drier conditions are projected in Bangladesh, western and northern India, Indonesia, western Nepal, Kiribati, Pakistan, Timor-Leste, and Tuvalu.

Higher-than-normal temperatures are likely across many parts of Asia and the Pacific due to the development of El Niño conditions.

Estimated crop production (2023)

2023/2024 agricultural prospects (rice, wheat, barley, maize) are generally favourable in the region, except Bangladesh, Bhutan, Lao PDR, Myanmar, and Sri Lanka. In Bangladesh, wheat outputs are anticipated to be below the five-year average due to reductions in the area planted and yield, driven by land use conversion from wheat to fruits and vegetables (higher profitability of the latter). Maize outputs are expected to be well below the five-year average in Bhutan, Lao PDR, Myanmar, and Sri Lanka due to limited availability and high prices of agricultural inputs, leading to reductions in the area planted and yield. In Afghanistan, a severe outbreak of Moroccan locusts was observed across eight provinces in May, and there is a high risk of locust infestations of about 1.2 million metric tons of wheat.

La Niña/El Niño Outlook

El Niño is anticipated in June-August 2023 (86 percent possibility), and it is likely to continue in September-November 2023 (84 percent possibility) (Figure 1)[1]. El Niño contributes to drier conditions over South and Southeast Asia during the monsoon season (July-September) and wetter conditions in some parts of the Philippines and the western coastal region of Southeast Asia. If the onset of El Niño happens during June-September 2023, dry conditions are forecast in Papua New Guinea, Timor Leste, large parts of Indonesia, and southern Philippines, while Sri Lanka, northern and central Philippines may experience above-average rainfall.

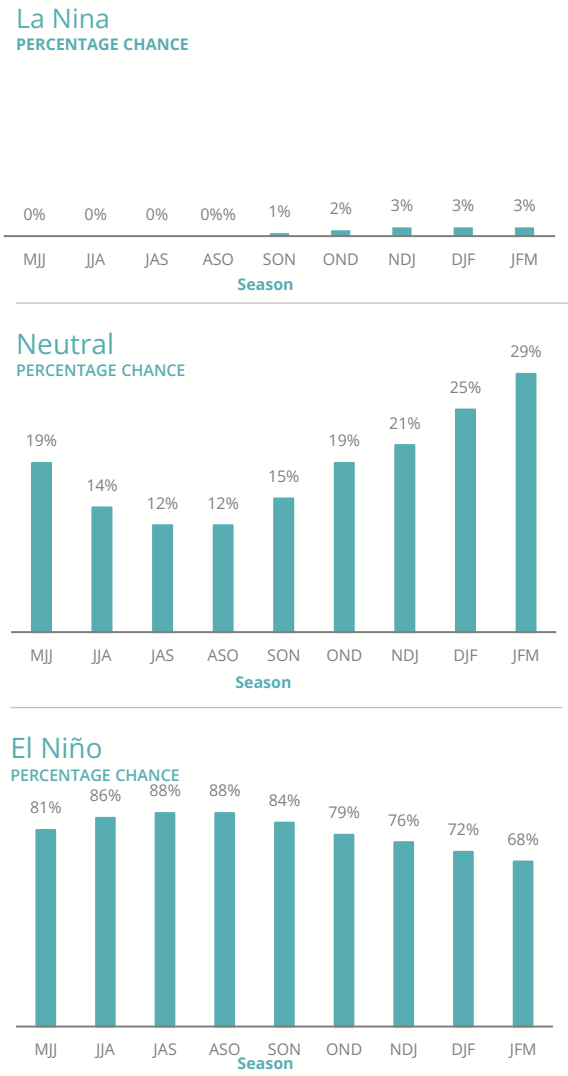
During the forecast period, rainfall is likely to be above average (60-80 percent possibility of exceeding median rainfall) in Cambodia, southern Lao PDR, southern Myanmar, the Philippines, southern and eastern Papua New Guinea, Sri Lanka, southern Solomon Islands, and Tajikistan. Rainfall is likely to be near normal conditions across major parts of Afghanistan, Bhutan, DPR Korea, Kyrgyz Republic, and major parts of Lao PDR.[2]

Sea surface temperatures in May 2023 continued warming in the central to eastern Pacific.[3] Warmer-than-normal sea surface temperatures are likely over most parts of the eastern equatorial Pacific Ocean from June to August.

Seasonal Outlook

There is an increased chance of below-average rainfall during June-August 2023 in Bangladesh, western and Northern India, parts of Indonesia, western Nepal, Kiribati, Pakistan, Timor Leste, and Tuvalu.

FIGURE 1: IRI/CPC PROBABILISTIC ENSO OUTLOOK (RELEASED 19 MAY 2023)



[1] Source: IRI Climate Forecasts

Zone 1

Afghanistan

Kyrgyz Republic

Pakistan

Tajikistan

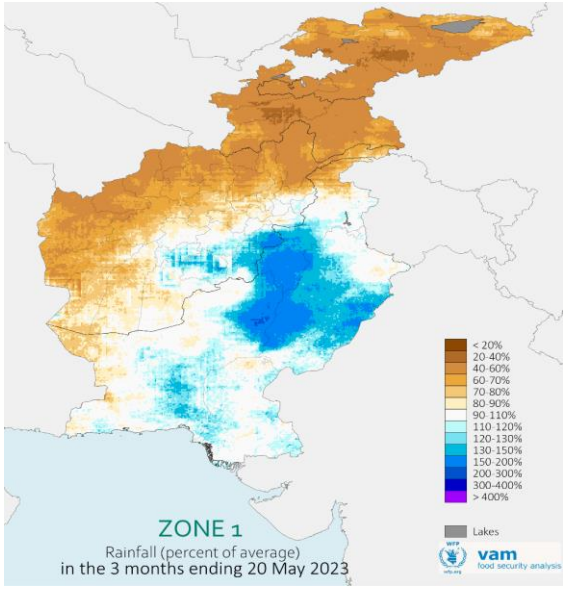
Zone 1: Rainfall Performance

Drier-than-average conditions were experienced in most of Zone 1

RAINFALL AS A PERCENT OF AVERAGE, FEBRUARY-MAY 2023

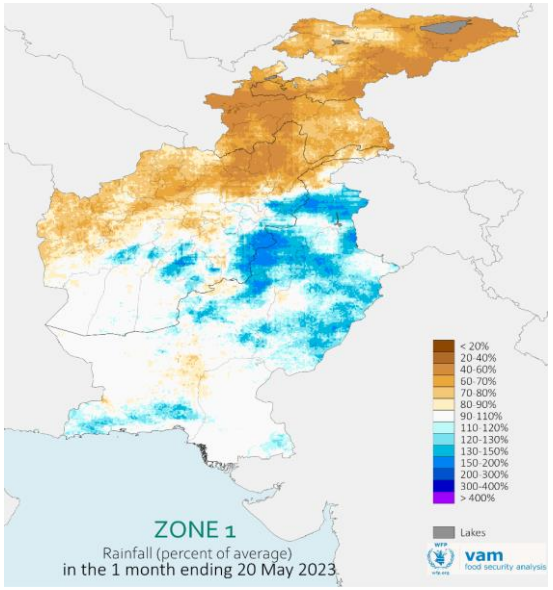
MAP 1: LAST THREE MONTHS

20 FEB 2023 — 20 MAY 2023



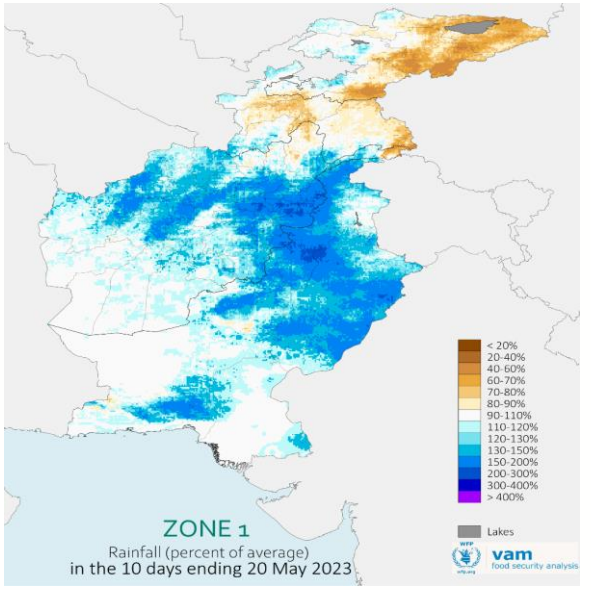
MAP 2: LAST MONTH

20 APR 2023 - 20 MAY 2023



MAP 3: LAST TEN DAYS

11-20 MAY 2023



In **February-May 2023**, drier-than-average conditions were observed in major parts of Afghanistan, Kyrgyz Republic, northern Pakistan, and Tajikistan with less than 50 mm of average monthly rainfall (Map 1).

In the last month, **20 April-20 May 2023**, drier-than-average conditions continued in western Afghanistan, Kyrgyz Republic and Tajikistan, but light rainfall (100-150 mm of average monthly rainfall) was observed in some parts of eastern Afghanistan and northern Pakistan (Map 2). In the last ten-day rainfall period, **11-20 May 2023**, light rainfall (30-80 mm) was observed across major parts of Zone 1 (Map 3).

In **Afghanistan**, heavy rains and flash floods on 24 May 2023 killed at least 5 people in Ghor Province (central Afghanistan), with more than 100 houses and 200 ha of farmlands damaged [4].

In **Pakistan**, as of 27 May 2023, avalanches killed at least 11 people with 13 people injured in northern of Gilgit-Baltistan region.[5]

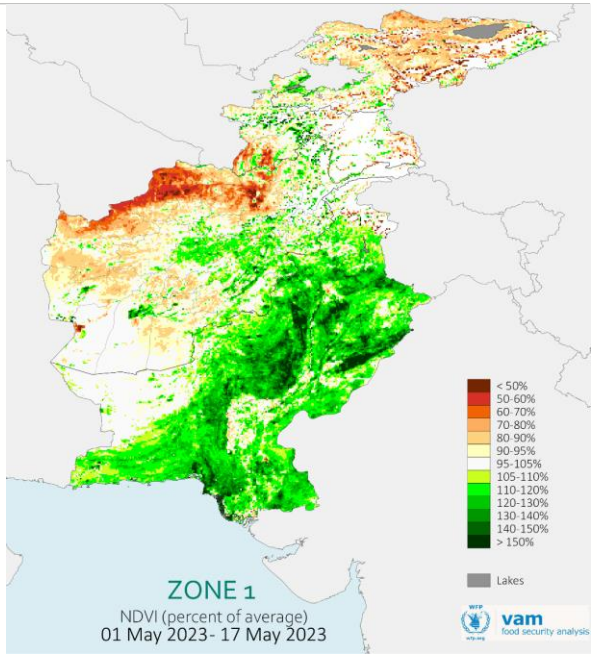
Zone 1: Vegetation and Crop Conditions

A below-average vegetation index for 1-17 May 2023 was observed across Afghanistan, Kyrgyz Republic, and Tajikistan. Above-average vegetation continued in mountainous areas of Afghanistan and major parts of Pakistan.

In Afghanistan, below-average vegetation with less than 50 percent of average was observed in some northern and western parts due to below-average rainfall (Map 4).

This zone had below-average vegetation index across many countries in recent weeks

MAP 4: **NORMALIZED DIFFERENCE VEGETATION INDEX (NDVI),1 – 17 MAY 2023**



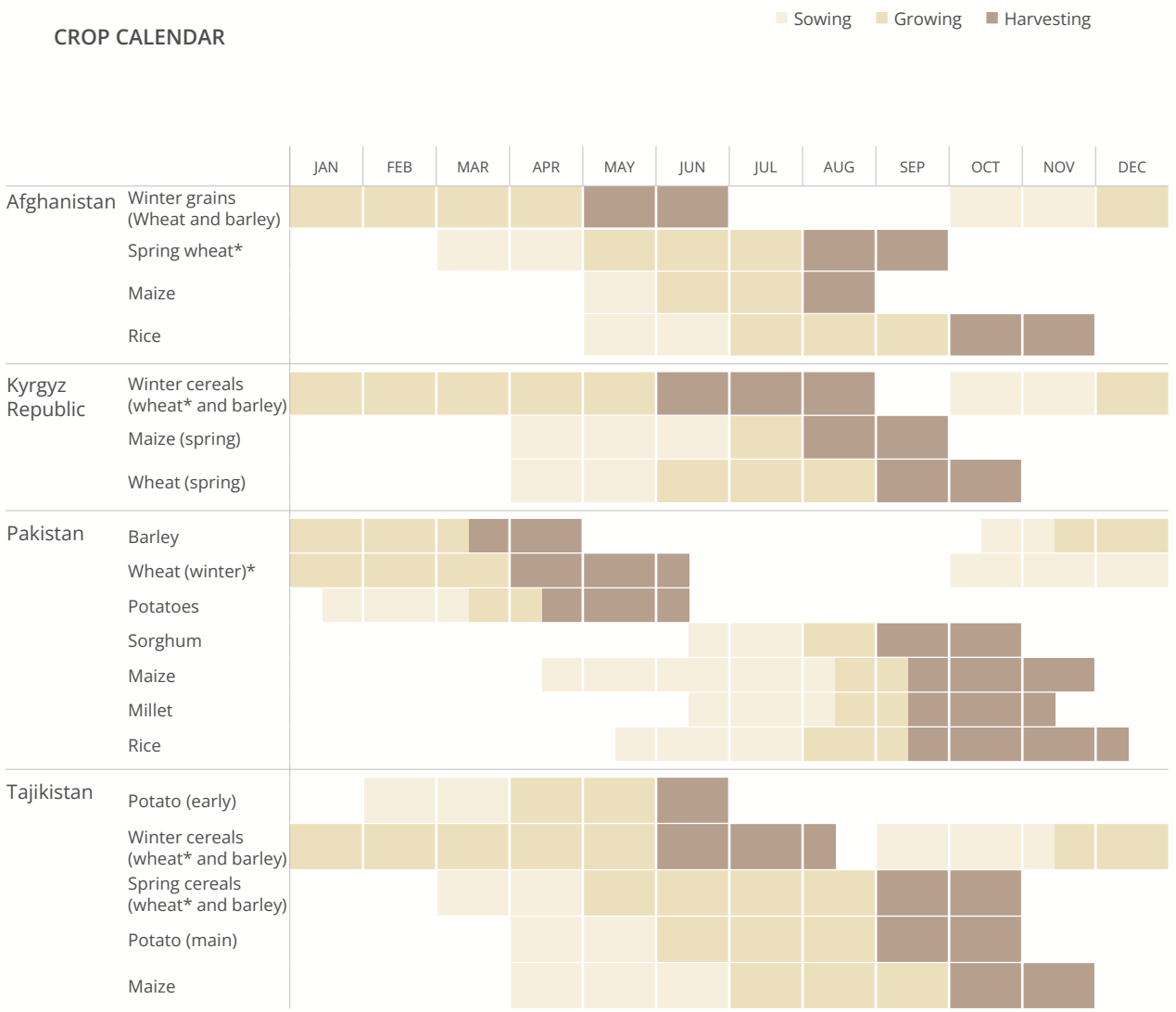
In **Afghanistan**, harvesting of winter wheat and barley began, and planting of spring season crops (wheat, maize, rice) continued in May 2023 under light-to-moderate rainfall conditions across central, northeastern, and eastern parts, while below-average rainfall conditions were observed in western and northern parts.[6] The 2023/24 output of wheat is expected at 4.8 million tonnes, 3.4 percent higher than the five-year average for 2018-2022.[7] A severe outbreak of Moroccan locusts was observed across eight provinces. There is a high risk of locust infestations of about 1.2 million metric tonnes of wheat.[8]

In the **Kyrgyz Republic**, the growing of winter wheat and barley crops continued in May 2023 under light-to-moderate rainfall conditions in some northern and southern parts, while dry weather conditions were observed in the eastern and western parts of the country. Planting of spring wheat and maize continued in May 2023.[9] The 2023/24 output of wheat is expected at 570,000 tonnes, 1.8 percent higher than the five-year average for 2018-2022 due to a larger area planted.[10]

In **Pakistan**, winter wheat and barley harvesting continued in May 2023 under good weather conditions. Planting of spring maize and rice began under light-to-moderate rainfall conditions in most parts of the country.[11] The 2023/24 output of wheat is expected at 26.81 million tonnes, 4.3 percent higher than the five-year average for 2018-2022 due to the lingering impacts of extensive flooding in 2022.[12] There is a low risk of locust infestations during growing and harvesting periods.[13]

In **Tajikistan**, the growing of winter wheat and barley continued in May 2023 under mixed weather conditions. Spring wheat planting is underway in May, with concerns of abnormal dryness across the country.[14] The 2023/24 output of wheat is expected at 800,000 tonnes, 1.8 percent higher than the five-year average for 2018-2022.[15]

CROP CALENDAR

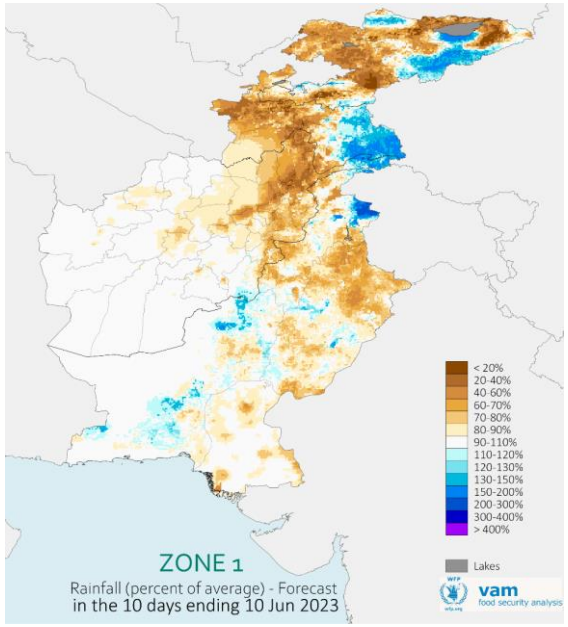


Source: FAO/GIEWS, FEWSNET. Periods are rounded to half-months.

Zone 1: Climate Outlook, June to August 2023

Drier-than-average-conditions are expected across Zone 1 in the short-term

MAP 5: SHORT-TERM RAINFALL FORECAST AS A PERCENT OF AVERAGE, 1-10 JUN 2023

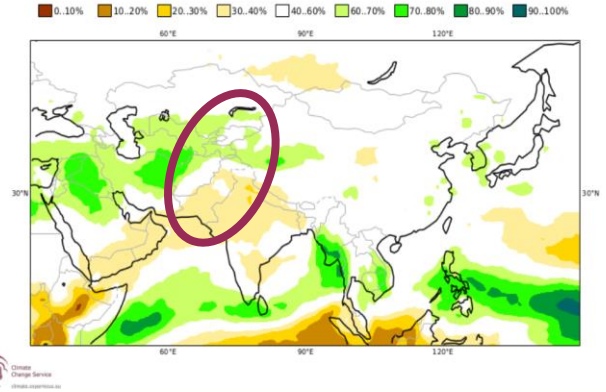


The short-term forecast for 1-10 June 2023 (Map 5) shows average to below-average rainfall across major parts of Zone 1, light rainfall conditions are likely in some parts of the eastern Kyrgyz Republic, northern Pakistan, and eastern Tajikistan.

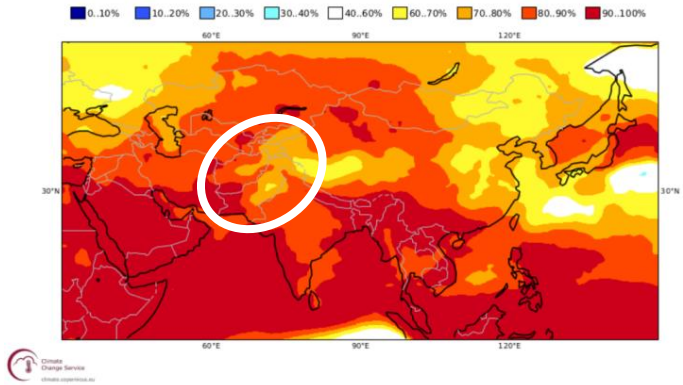
Rainfall during June-August 2023 (Map 6) is likely to be near-average to above-average (60-80 percent possibility of exceeding the median rainfall) across Afghanistan, the Kyrgyz Republic, and Tajikistan. In contrast, major parts of Pakistan are likely to experience slightly below-average rainfall.

During the forecast period, air temperature (Map 7) will likely be above normal across western and southern Afghanistan, western Kyrgyz Republic, southern and western Pakistan, and western Tajikistan (>80 percent possibility of exceeding the median temperature).

MAP 6. LONG TERM RAINFALL FORECAST JUN-AUG 2023, PRECIPITATION > MEDIAN, %.



MAP 7. LONG TERM TEMPERATURE FORECAST JUN-AUG 2023, 2m TEMPERATURE > MEDIAN, %



Map 6: C3S multi-system seasonal forecast probability (precipitation > median), nominal forecast, ECMWF/Met Office/Meteo-France/CMCC/DWD/NCEP/JMA/ECCC MJJ 2023
Map 7: C3S multi-system seasonal forecast probability (2m temperature > median), nominal forecast, ECMWF/Met Office/Meteo-France/CMCC/DWD/NCEP/JMA/ECCC MJJ 2023

Zone 2

Bangladesh

Bhutan

Cambodia

DPR Korea

India

Lao PDR

Myanmar

Nepal

Philippines

Sri Lanka

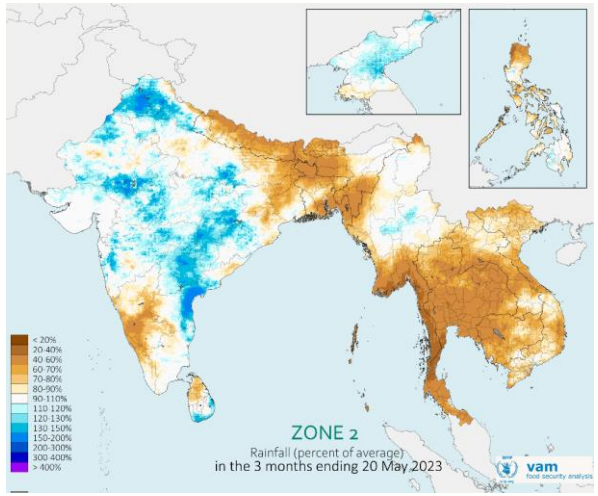
Zone 2: Rainfall Performance

Rainfall varied greatly in different countries across Zone 2

RAINFALL AS A PERCENT OF AVERAGE, FEBRUARY-MAY 2023

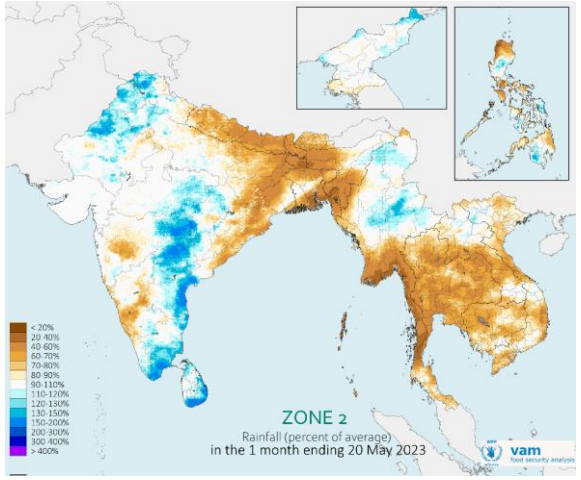
MAP 8: LAST THREE MONTHS

20 FEB 2023 — 20 MAY 2023



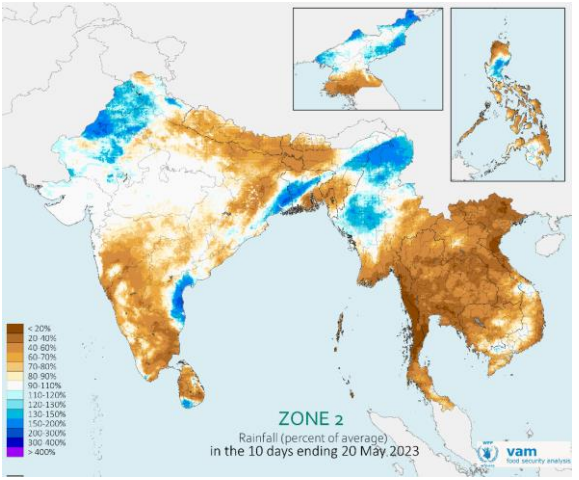
MAP 9: LAST MONTH

20 APR 2023 - 20 MAY 2023



MAP 10: LAST TEN DAYS

11-20 MAY 2023



Drier-than-average conditions in February-May 2023 (Map 8) were observed across major parts of Zone 2 with less than 50 mm of average monthly rainfall, while rainfall was moderate to heavy (300-800 mm of average monthly rainfall) in some parts of eastern Bangladesh, southern and northeastern India, northern Myanmar, central and southern Philippines, and southern Sri Lanka.

Light to moderate rainfall was observed **in 20 April-20 May 2023** in major parts of Zone 2, while heavy rainfall was observed in some parts of eastern Bangladesh, northeastern India, northern Myanmar, central and southern Philippines, and southern Sri Lanka (Map 9).

Above average rainfall (150-300 mm of average monthly rainfall) in **11-20 May 2023** was observed in northern and central Philippines, and light rainfall was observed in some parts of eastern Bangladesh, northern Myanmar, northeastern India, and southwestern Sri Lanka (Map 10).

In **Bangladesh**, Cyclone Mocha from 13-14 May 2023 caused very heavy rains and strong winds across the coast of Cox's Bazar. As of 24 May 2023, about 780,000 people including 536,000 Rohingya refugees and 243,000 Bangladeshis were affected.[16]

In **India**, heavy rains caused by the indirect influence of Cyclone Mocha on 14 May 2023 affected 3,000 people in Mizoram State in the northeastern part of the country, and 600 people were displaced.[17]

In **Myanmar**, Cyclone Mocha on 14 May 2023 caused heavy rains, strong winds, and landslides in Rakhine state, as of 23 May 2023, about 1.33 million people were affected and 283,421 houses were damaged.[18]

In **the Philippines**, Typhoon Mawar on 27 May 2023 caused heavy rains and strong winds across Luzon and Visayas regions, over 64,000 people in Regions I, II, III, Mimaropa, VII, and CAR were affected.[19]

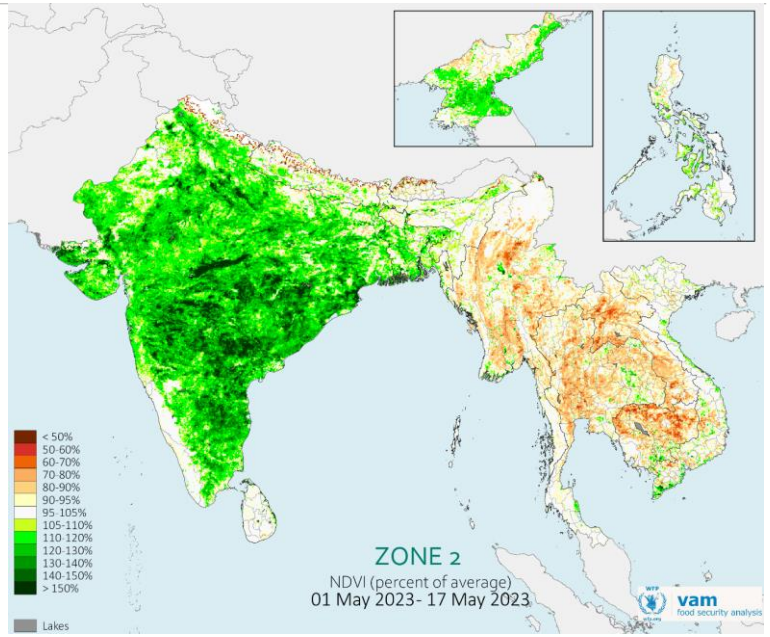
In **Sri Lanka**, heavy rains on 14 May 2023 were caused by the indirect influence of Cyclone Mocha, about 2,000 people were affected in southern parts of the country.[20]

Zone 2: Vegetation and Crop Conditions

An above-average vegetation index for 1-17 May 2023 was observed in major parts of Bangladesh, southern and eastern DPR Korea, India, and central Philippines due to above-average rainfall between January-April 2023. In contrast, below-average vegetation continued in some parts of northern Bhutan, Cambodia, Myanmar, northern Nepal, and Lao PDR due to below-average rainfall during the dry season (October-April), above-average temperature, and the end of the growing season (Map 11).

Vegetation index varied greatly in different countries across Zone 2 in recent weeks

MAP 11: NORMALIZED DIFFERENCE VEGETATION INDEX (NDVI),1– 17 MAY 2023

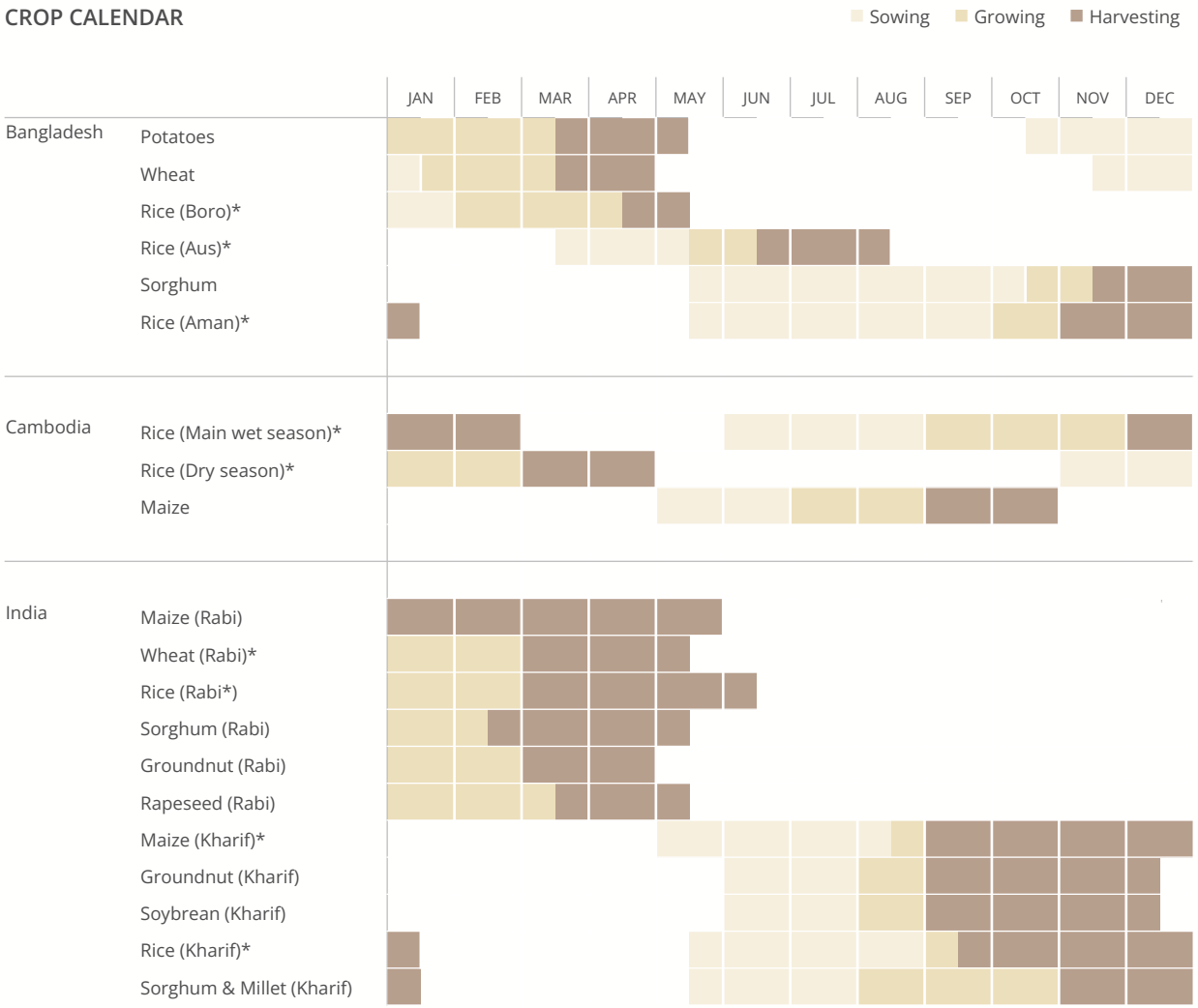


In **Bangladesh**, about 95 percent of Boro season rice farmland was harvested to avoid crop damage before Cyclone Mocha hit on 14 May 2023.[21] Sowing of Aus season rice continued in May 2023 under light-to-heavy rainfall.[22] The 2023/24 output of rice is expected at 37 million tonnes, 4.2 percent higher than the five-year average for 2018-2022.[23]

In **Cambodia**, the sowing of wet-season rice began in May 2023 during the late rainy season. Early growing of wet-season rice condition is in growth retardation due to poor rain and low irrigation water supply.[24] The 2023/24 output of rice is estimated at 6.2 million tonnes, 7.6 percent higher than the five-year average for 2018-2022.[25]

In **India**, harvesting of Rabi crops (rice, wheat, maize, sorghum, rapeseed) continued in May 2023, while land preparation and sowing of Kharif crops (rice and maize) began in some planted areas under light-to-moderate rains. The 2023/24 output of rice is expected at 133 million tonnes, 7.1 percent higher than the five-year average for 2018-2022.[26]

CROP CALENDAR



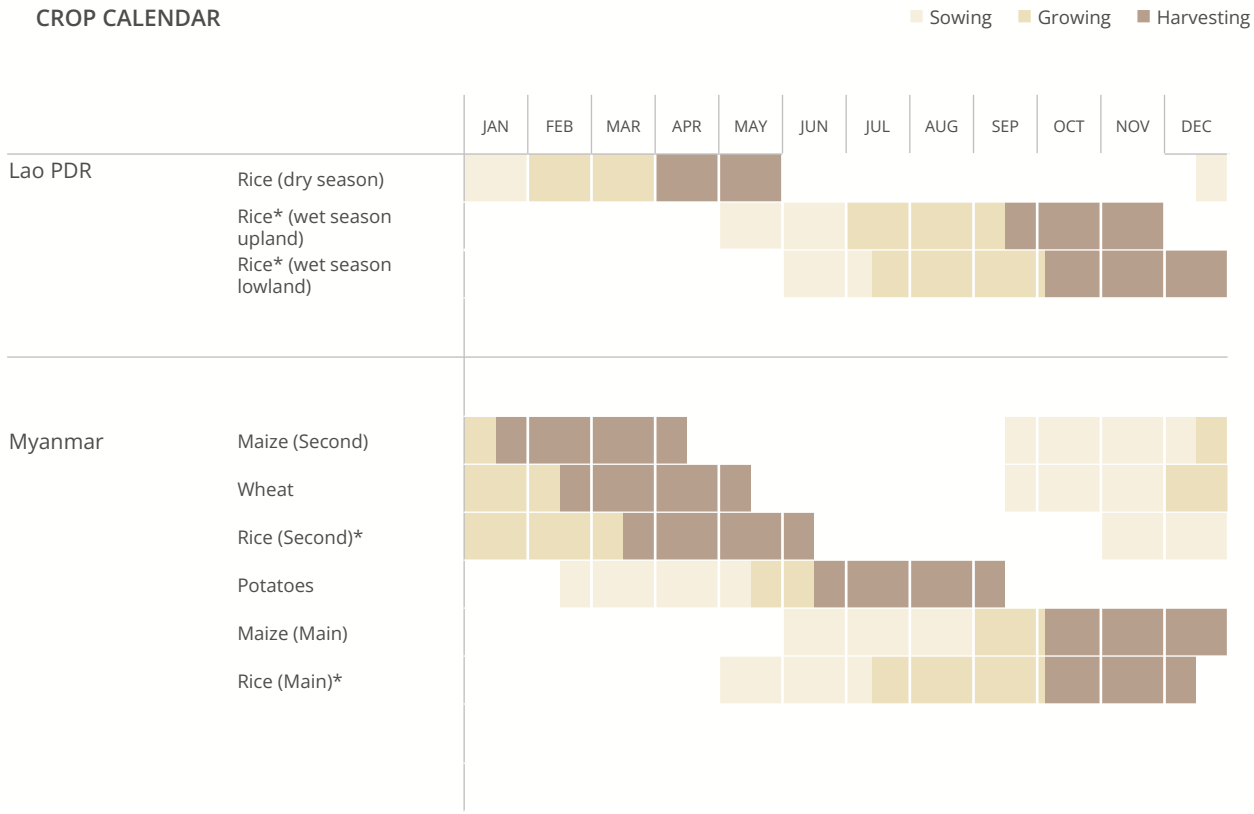
Source: FAO/GIEWS, WFP CFSAM. Periods are rounded to half-months.

In **Lao PDR**, the harvesting of dry-season rice finished in May 2023 under unusually high-temperature conditions, and the yield is estimated at 4.5 tonnes per ha which is lower than the five-year average for 2017-2021 (4.8 tonnes per ha).[27] Land preparation and sowing of wet-season rice began in May 2023 under poor rain and low irrigation water supply. The 2023/24 output of rice is estimated at 1.96 million tonnes, 7.9 percent higher than the five-year average for 2018-2022.[28]

In **Myanmar**, the harvesting of dry-season rice continued in May 2023 under good weather conditions, except for flooded affected areas in Rakhine State caused by Cyclone Mocha between 13-14 May 2023,[29] and over 327,000 ha of cropland areas were inundated in Rakhine State.[30] The 2023/24 output of rice is estimated at 12.5 million tonnes, 0.2 percent lower than the five-year average for 2018-2022 [31].

In **Bhutan**, the growing of main-season maize and rice continued in May 2023 continued under good weather conditions.[32] The 2023/24 output of maize is estimated at 31,000 tonnes, 24.4 percent lower than the five-year average for 2018-2022 due to a reduction in the planted areas and remained stable from the previous year.[33]

CROP CALENDAR



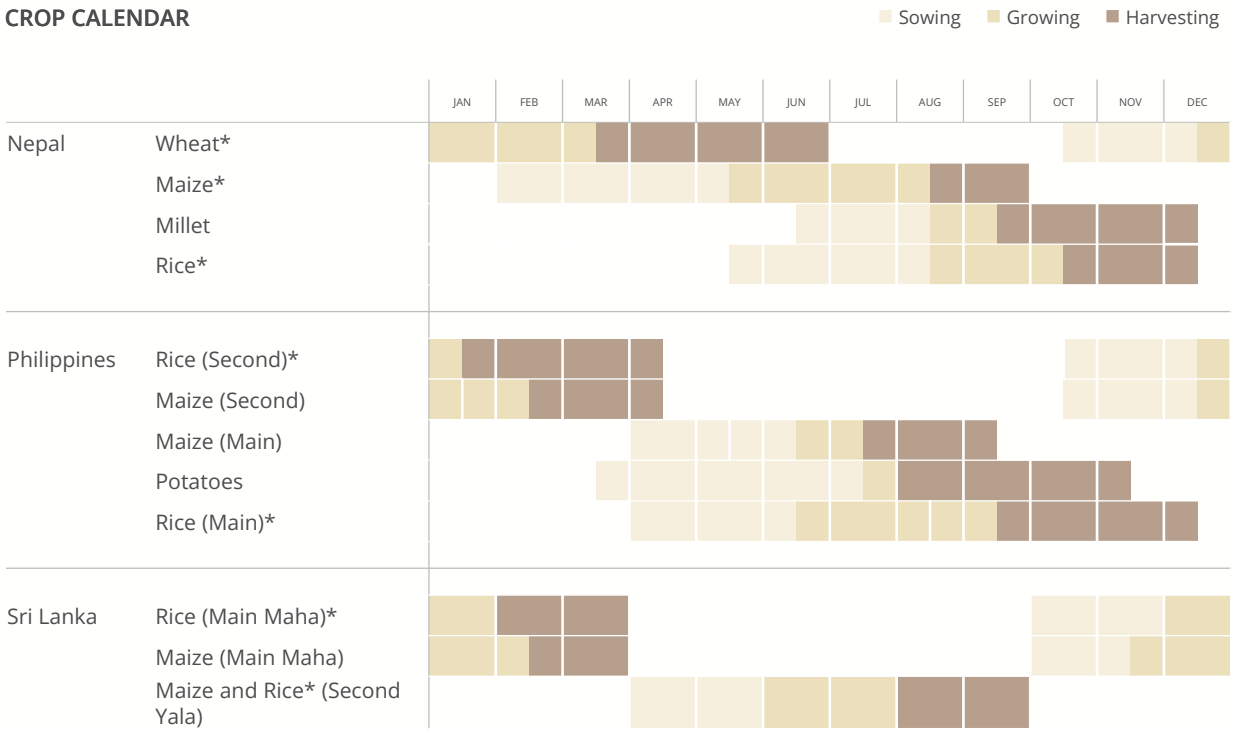
Source: FAO/GIEWS, WFP CFSAM. Periods are rounded to half-months.

In **Nepal**, the harvesting of winter wheat continued in May 2023 under good weather conditions, and the planting of maize finished in May. The 2023/24 output of rice is expected at 3.65 million tonnes, 1.4 percent higher than the five-year average level (2018-2022).[34]

In **the Philippines**, the harvesting of dry-season rice finished in May 2023, while land preparation and sowing of wet-season rice continued in May under good weather conditions.[35] The 2023/24 output of rice is expected at 12.6 million tonnes, 2.9 percent higher than the five-year average for 2018-2022.[36]

In **Sri Lanka,** planting of Yala season maize and rice finished in May 2023 under good weather conditions except in flood-affected areas in some southern parts of the country. The total 2023/24 output of rice is estimated at 3.06 million tonnes, 0.4 percent higher than the five-year average for 2018-2022 due to increased planted areas and improved supply of chemical fertilizers.[37]

CROP CALENDAR

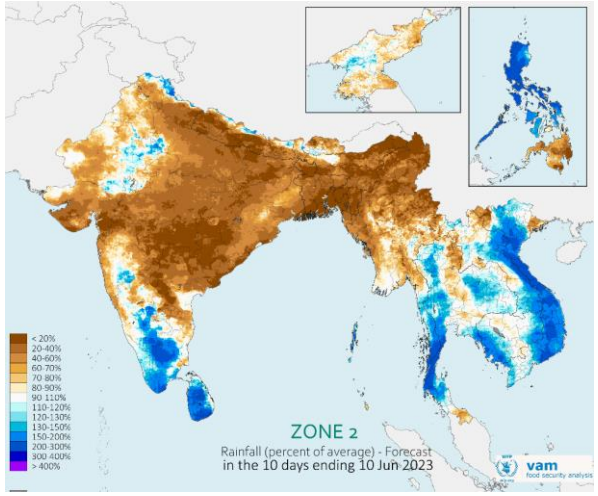


Source: FAO/GIEWS, WFP CFSAM. Periods are rounded to half-months.

Zone 2: Climate Outlook, June to August 2023

Drier-than-average conditions are expected across many countries in the short term

MAP 12: SHORT-TERM RAINFALL FORECAST AS A PERCENT OF AVERAGE, 1-10 JUN 2023

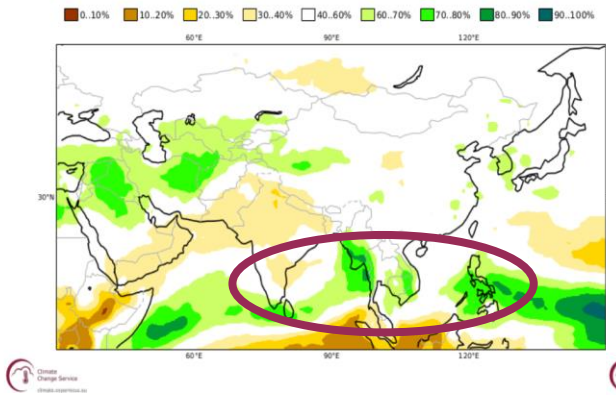


The short-term forecast during 1-10 June 2023 indicates drier-than-average conditions in major parts of Bangladesh, Bhutan, India, Lao PDR, Myanmar, and Nepal. In contrast, there is an increased chance of above-average rainfall in northeastern Cambodia, central and southern Lao PDR, southern Myanmar, central and northern Philippines, and southern Sri Lanka (200-300 mm of average monthly rainfall) (Map 12).

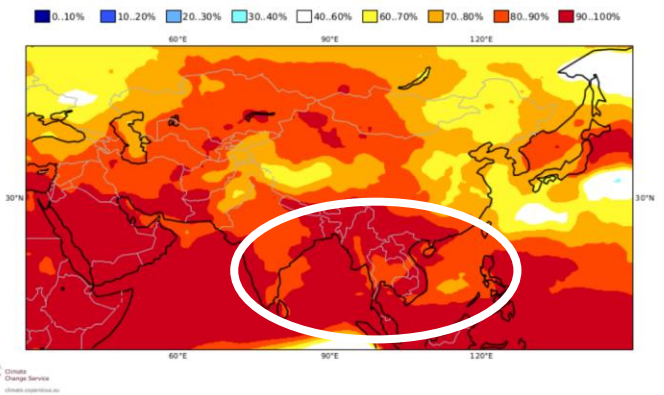
Rainfall during June-August 2023 is likely to be above normal conditions (60-80 percent possibility of exceeding the median rainfall) in Cambodia, southern Lao PDR, southern Myanmar, the Philippines, and Sri Lanka. In contrast, rainfall is likely to be slightly below the normal conditions (30-40 percent possibility) in Bangladesh, western and northern India, and western Nepal (Map 13).

Air temperature during June-August 2023 is likely to be above the normal conditions (>90 percent possibility of exceeding the median temperature) across major parts of Zone 2, particularly in Bangladesh, Bhutan, Cambodia, northeastern India, northern Lao PDR, Nepal, and the Philippines (Map 14).

MAP 13. LONG TERM RAINFALL FORECAST JUN-AUG 2023, PRECIPITATION > MEDIAN, %



MAP 14. LONG TERM TEMPERATURE FORECAST JUN-AUG 2023, 2m TEMPERATURE ABOVE MEDIAN, %



Map 13: C3S multi-system seasonal forecast probability (precipitation > median), nominal forecast, ECMWF/Met Office/Meteo-France/CMCC/DWD/NCEP/JMA/ECCC MJJ 2023
Map 14: C3S multi-system seasonal forecast probability (2m temperature > median), nominal forecast, ECMWF/Met Office/Meteo-France/CMCC/DWD/NCEP/JMA/ECCC MJJ 2023

Zone 3

Fiji

Indonesia

Kiribati

Papua New Guinea

Timor-Leste

Tuvalu

Vanuatu

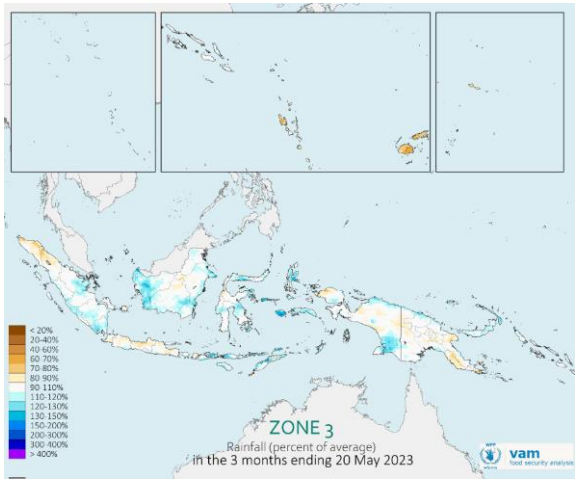
Zone 3: Rainfall Performance

Rainfall varied greatly in different countries across Zone 3

RAINFALL AS A PERCENT OF AVERAGE, FEBRUARY-MAY 2023

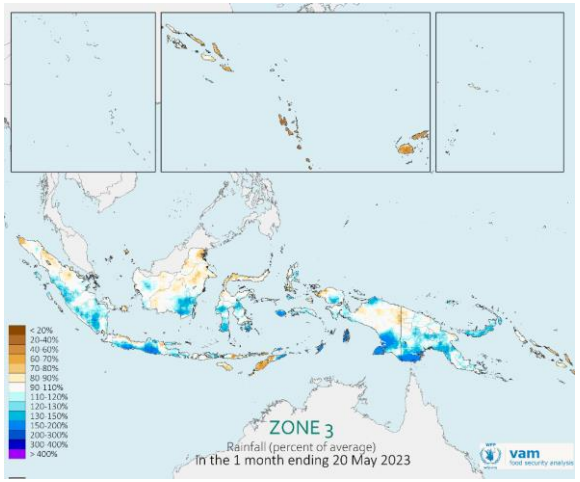
MAP 15: LAST THREE MONTHS

20 FEB 2023 — 20 MAY 2023



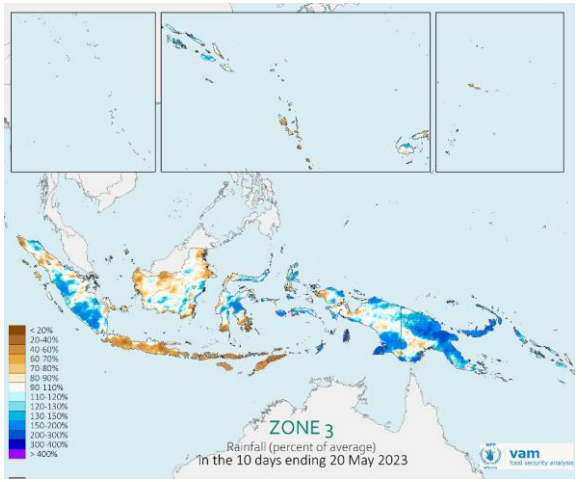
MAP 16: LAST MONTH

20 APR 2023 - 20 MAY 2023



MAP 17: LAST TEN DAYS

11-20 MAY 2023



Rainfall during February-May 2023 was higher than average (500-800 mm of average monthly rainfall) across Zone 3 with high risks of floods in Indonesia and Papua New Guinea (Map 15). In contrast, drier-than-average conditions were observed in some parts of Kiribati, Nauru, and Tuvalu.

During **20 April-20 May 2023** (Map 16), above-average rainfall (more than 400 mm of average monthly rainfall) continued in central and eastern Indonesia, central and eastern Papua New Guinea, and eastern Timor-Leste.

Wetter-than-average conditions (150-300 mm of average monthly rainfall) continued across some parts of Indonesia, central and eastern Papua New Guinea, and central Timor-Leste during **11-20 May 2023** (Map 17). In contrast, drier-than-average conditions were observed in some parts of Kiribati and Tuvalu.

In **Indonesia**, heavy rains in May 2023 caused floods and landslides in Java, Kalimantan, Lampung, Sumatra, and Sulawesi.[38, 39] About 9,000 people were affected and more than 3,400 houses were damaged in West Java.

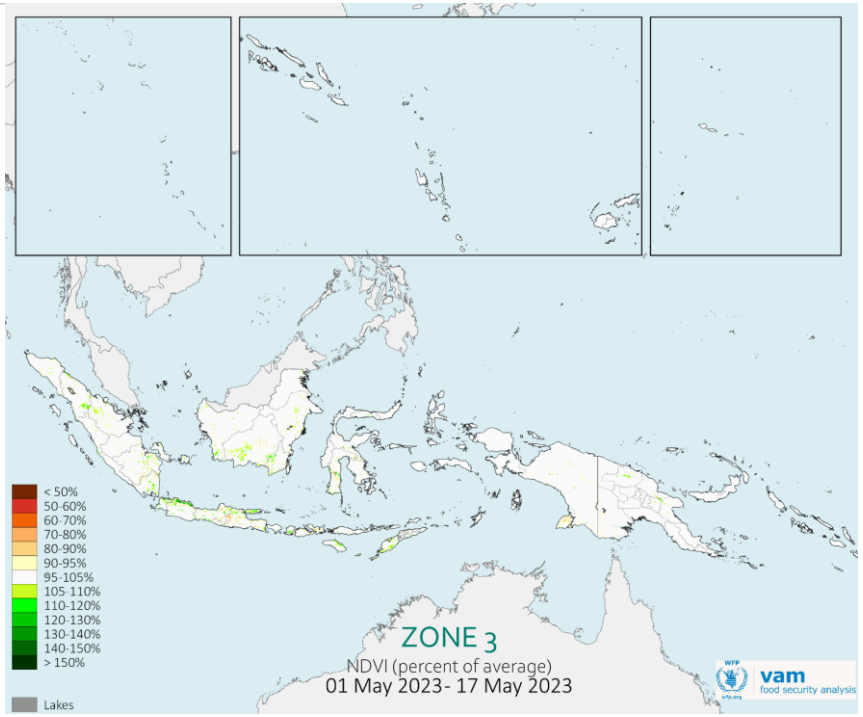
In **Papua New Guinea**, heavy rains in early May 2023 caused floods and landslides in parts of West New Britain province, and 1,250 households were displaced.[40]

Zone 3: Vegetation and Crop Conditions

Near-average vegetation conditions were observed in most parts of Zone 3 between 1-17 May 2023. Only a few areas in Indonesia and Timor-Leste have above-average vegetation conditions as heavy rains during the last three months improved crop growth conditions (Map 18).

This zone had an average vegetation index in recent weeks

MAP 18: NORMALIZED DIFFERENCE VEGETATION INDEX (NDVI), 1 – 17 MAY 2023



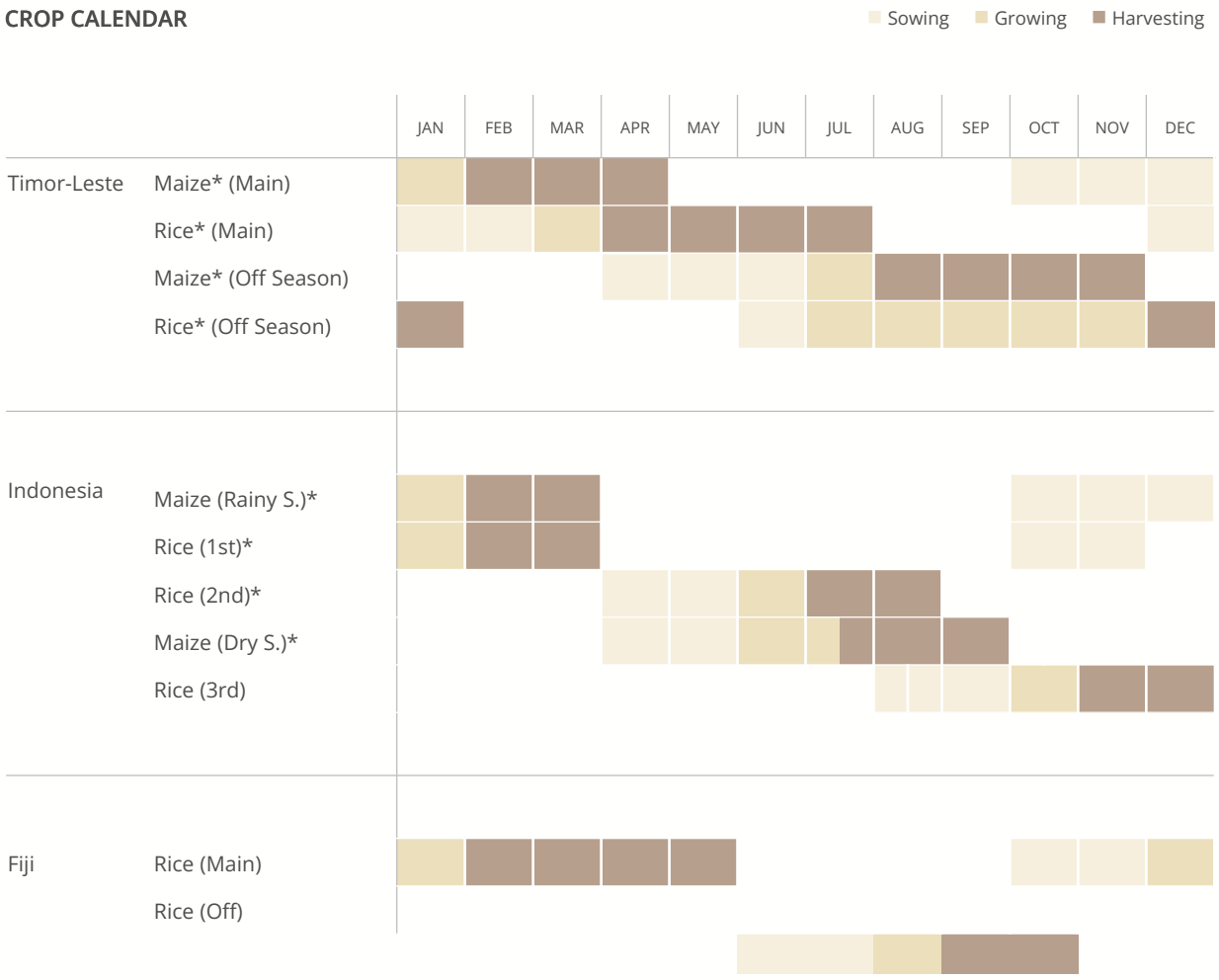
In **Fiji**, the planting of cane continued in May 2023 under good weather conditions, as adequate water supply and harvesting of main rice were completed in May.[41] The 2023 output of cane is forecast to decrease from the previous year due to a decrease in cane production (by 30,306 ha) caused by the unavailability of high-quality seeds cane.[42]

In **Indonesia**, the planting of dry-season rice continued in May 2023 under below-average rainfall conditions[43]. The 2023/24 rice production is expected at 34 .35 million tons, 0.3 percent higher than the five-year average level for 2018- 2022.[44]

In **Papua New Guinea**, the growing of main food crops (banana, sweet potato, and taro) in May 2023 continued under average-to-below-average rainfall conditions, and some parts of the eastern and western regions experienced severe drought conditions in May.[45,46] The 2023/24 output of palm oil is expected at 800,000 tonnes, 14.3 percent higher than the five-year average level for 2018-2022.[47]

In **Timor-Leste**, the harvesting of main rice and planting of off-season maize continued in May 2023 under good weather conditions. Drier-than-average conditions are likely across most parts of the country during May to August as dry season and remaining El Niño conditions. The total 2022/23 output of rice is estimated at 86,000 tonnes. Since 2018, on average, about 130,000 tonnes of rice have been imported each year.[48]

CROP CALENDAR



Source: FAO/GIEWS, WFP CFSAM, USDA. Periods are rounded to half-months.

Zone 3: Climate Outlook, June to August 2023

Drier-than-average conditions are expected across many countries in the short-term

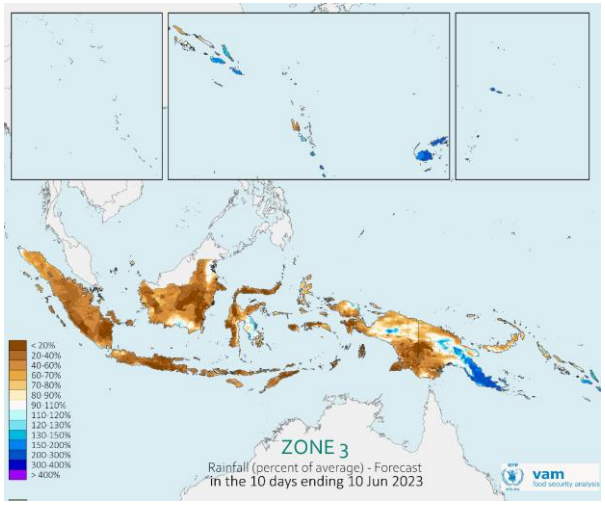
The short-term forecast during 1-10 June 2023 indicates that wetter-than-average conditions (100-200 mm of average monthly rainfall amount) are likely in Fiji, some parts of Indonesia (southern Sulawesi, western Papua), southern Papua New Guinea, and southern Solomon Islands. In contrast, drier-than-average conditions are likely across major parts of Indonesia, and Timor-Leste (Map 19).

Forecasts for June-August 2023 show above-average rainfall conditions (60-80 percent possibility of exceeding the median rainfall average) in southern and eastern Papua New Guinea, and southern Solomon Islands.

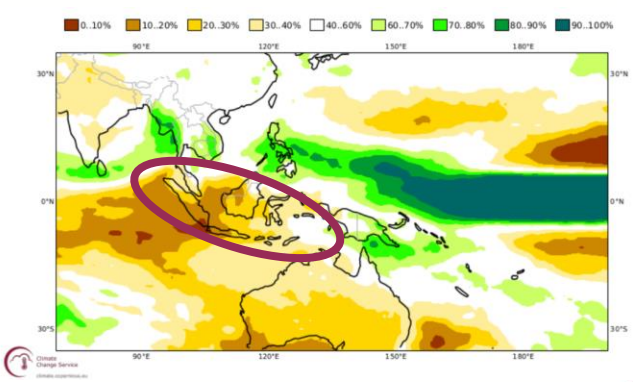
In contrast, major parts of Indonesia, Timor-Leste, and the Central Pacific Island States (Kiribati and Tuvalu) are likely to experience below-average rainfall (Map 20).

Air temperature during June-August 2023 is likely to be higher than average across this zone (greater than 80 percent possibility of exceeding the median temperature) (Map 21).

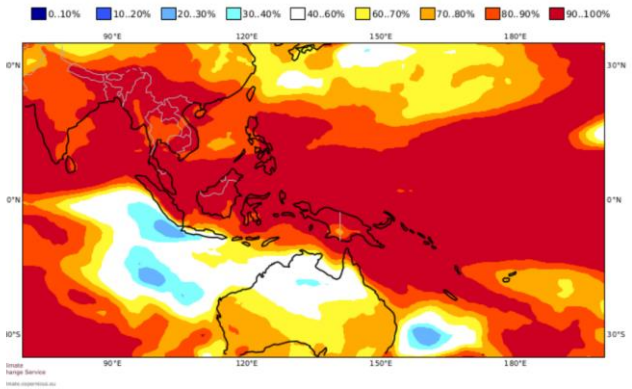
MAP 19: SHORT-TERM RAINFALL FORECAST AS A PERCENT OF AVERAGE, 1-10 JUN 2023



MAP 20. LONG TERM RAINFALL FORECAST JUN-AUG 2023, PRECIPITATION > MEDIAN, %



MAP 21. LONG TERM TEMPERATURE FORECAST JUN-AUG 2023, 2m TEMPERATURE ABOVE MEDIAN, %



Map 20: C3S multi-system seasonal forecast probability (precipitation > median), nominal forecast, ECMWF/Met Office/Meteo-France/CMCC/DWD/NCEP/JMA/ECCC MJJ 2023
Map 21: C3S multi-system seasonal forecast probability (2m temperature > median), nominal forecast, ECMWF/Met Office/Meteo-France/CMCC/DWD/NCEP/JMA/ECCC MJJ 2023

Areas of Concern

Climate-related concerns

Potential drivers of Food Insecurity in May 2023

Rainfall Seasonal Patterns

Climate-related concerns

RECENT CLIMATE HAZARDS (MAY 2023)

Afghanistan – Floods (May 2023)
Heavy rains and flash floods killed at least 5 people, with over 100 houses and 200 ha of farmlands damaged in Ghor Province [49].

Bangladesh – Cyclone (May 2003)
Cyclone Mocha caused heavy rains and strong winds across the coast of Cox's Bazar. About 780,000 people in 33 Rohingya refugee camps and Bangladeshi communities were affected.[50]

India – Floods (May 2023)
The indirect influence of Cyclone Mocha caused heavy rains in the northeastern part. About 3,000 people were affected, with 600 people displaced in Mizoram State.[51]

Indonesia – Floods (May 2023)
Heavy rains caused floods and landslides in Java, Lampung Kalimantan, Sumatra, and Sulawesi. About 9,000 people were affected, with more than 3,400 houses damaged in West Java.[52,53]

Myanmar – Cyclone (May 2023)
Cyclone Mocha caused heavy rains, strong winds, and landslides in Rakhine State. About 1.33 million people were affected, with 283,421 houses damaged [54].

Pakistan – Avalanches (May 2023)
Avalanches killed at least 11 people with 13 people injured in northern of Gilgit-Baltistan region.[55]

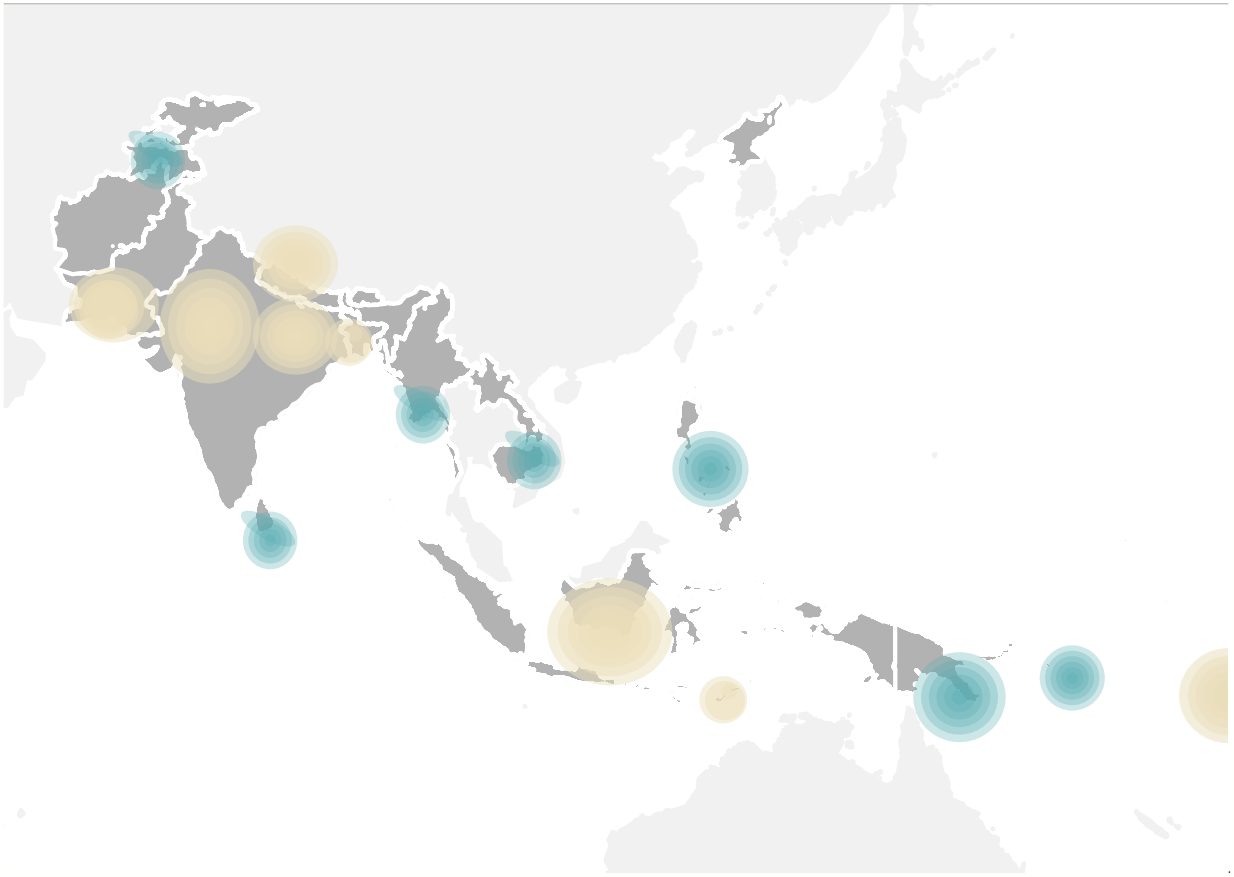
Papua New Guinea – Floods (May 2023)
Heavy rains caused floods and landslides in parts of West New Britain province, about 1,250 households were displaced [56].

Philippines – Cyclone (May 2023)
Typhoon Mawar caused heavy rains and strong winds across various regions, over 64,000 people in Regions I, II, III, Mimaropa, VII, and CAR were affected [57].

Sri Lanka – Floods (May 2023)
The indirect influence of Cyclone Mocha caused floods in the southern part, about 2,000 people were affected.[58]

Climate-related concerns

SEASONAL OUTLOOK (JUNE-AUGUST 2023)



Wetter than normal rainfall: Wetter conditions are likely in Cambodia, southern Lao PDR, southern Myanmar, the Philippines, southern and eastern Papua New Guinea, southern Solomon Islands, Sri Lanka, and Tajikistan.

Lower than normal rainfall: Drier conditions are projected in Bangladesh, western and northern India, Indonesia, Kiribati, western Nepal, Pakistan, Timor-Leste, and Tuvalu.

Cyclone activity: El Niño is anticipated during June-August 2023 and the potential for the formation of low-to-moderate tropical cyclones near the eastern seaboard of northern Luzon of the Philippines on 7-13 June.[59]

Graphics on this map are only for illustrative purposes, and do not represent any specific values.

Potential Drivers of Food Insecurity in May 2023

Country	Rainfall Performance (11-20 May 23)	Short-Term Forecast (1-10 Jun 23)	Long-Term Forecast (Jun-Aug23)	Projected Crop Production 2023		Conflict / Displacement	Inflation (%)		Inflation Date	Food Inflation (%)		Food Inflation Date	Currency Exchange (YoY, %, May)		Moderate or Severe Food Insecurity (%)
Afghanistan				W	▲		3.5	↔	Feb'23	3.1	↔	Feb'23	0.8	▼	35%[a]
Bangladesh				R	▲		9.9	▲	May '23	9.2	↔	May '23	-18.6	↔	31%[b]
Bhutan				M	▼		3.3	↔	Apr '23	1.8	▲	Apr '23	-4.7	▲	
Cambodia				R	▲		1.1	▲	Apr'23	2.3	▼	Apr'23	-1.4	▼	6%[c]
DPR Korea				NA			NA			NA			NA		
Fiji				NA			2.0	▲	Mar '23	5.3	▲	Mar '23	-2.2	▲	1.4%[d]
India				R	▲		4.7	▼	Apr '23	3.8	▼	Apr '23	-5.9	▲	
Indonesia				R	↔		4.0	▼	May'23	4.3	▼	May '23	-1.1	▲	
Kyrgyz Rep				W	▲		10.7	▼	Apr '23	8.9	▼	Apr '23	-7.7	▼	12%[e]
Laos				R	▲		39.9	↔	Apr '23	52.2	↔	Apr '23	-25.9	▲	13.5%[f]
Myanmar				R	↔		19.6	↔	Jul '22	18.4	↔	Jul '22	-11.6	▲	27%[g]
Nepal				R	▲		7.8	↔	Apr '23	6.9	▲	Apr '23	-5.9	▲	
Pakistan				R	▲		38.0	↔	May'23	48.7	↔	May'23	-32.0	▲	29%[h]
Philippines				R	▲		6.1	▼	May'23	7.4	▼	May'23	-5.9	↔	15%[i]
Sri Lanka				R	↔		25.2	▼	May'23	21.5	▼	May'23	13.4	▲	17%[j]
Tajikistan				W	▲		3.4	▼	Apr '23	3.7	▼	Apr '23	12.0	▼	18%[k]
Timor Leste				R	▲		8.1	▼	Apr'23	9.2	▼	Apr'23	NA		20%[l]

LEGEND

RAIN PERFORMANCE

- Rainfall>140percent = heavy rainfall
- Rainfall 110-140percent = slight to moderate rainfall
- Rainfall 90-110percent = normal condition
- Rainfall 60-90percent = slight to moderate drought
- Rainfall < 60percent = severe drought

Abnormally high/low amounts of rain can affect crop production and lead to food insecurity.

CROP PRODUCTION

- Severe drought's effect on crop production
- Extensive floods effect on crop production
- High prices of agricultural inputs effect on crop production
- Locust outbreaks effect on crop production
- Shortage of farm workers
- 2022/23 outputs of rice/wheat crops increased by more than 5 percent *from the five-year average level (2017-2021)*
- ▼ 2022/23 outputs of rice/wheat crops decreased by more than 5 percent
- ↔ 2022/23 outputs change of rice/wheat crops between -5 percent to 5 percent

W Wheat **B** Barley
R Rice **M** Maize

INFLATION/FOOD INFLATION (Month-on-Month)

- ▲ (Food) inflation rate change increased by more than 5 percent
- ▼ (Food) inflation rate change decreased by lower than 5 percent
- ↔ (Food) inflation rate change between -5 percent to 5 percent

CURRENCY EXCHANGE (Year-on-Year)

- ▲ Exchange rate change increased by more than 5 percent
- ▼ Exchange rate change decreased by more than 5 percent
- ↔ Exchange rate change between -5 percent to 5 percent

CONFLICT AND DISPLACEMENT

- Conflict
- Displacement
- **NA :** updated data not available

[a] **Afghanistan**' IPC May-October 2023
[b] **Bangladesh** IPC May-September 2023, not representative at the national level (only hotspot areas covered)
[c] **Cambodia** Food Security and Nutrition Assessment Flood Prone Areas: October 2022
[d] **Fiji** Food Security Analysis Round Thirteen: September 2022
[e] **Kyrgyz Republic** Price Monitoring for Food Security: March 2023
[f] **Lao PDR** Food Security Monitoring: March/April 2023
[g] **Myanmar** DIEM Data in emergencies monitoring brief round 4: January 2023
[h] Pakistan IPC April-October 2023, not representative at national level. Only covered Balochistan, Khyber Pakhtunkhwa, and Sindh
[i] **Philippines** IPC April 2023
[j] **Sri Lanka** Crop and Food Security Assessment Mission: May 2023
[k] **Tajikistan** Quarterly Household Food Security and Market Update July-September 2022: October 2022
[l] **Timor Leste** IPC February 2023

RBB Countries Rainfall Seasonal Pattern

Year		2023																																		Average annual rainfall (mm)	Accumulative rainfall variation by May 2023(%)	Accumulative rainfall variation by May 2023(mm)
Month		JAN			FEB			MAR			APR			MAY			JUN			JUL			AUG			SEP			OCT			NOV			DEC					
Dekad (ten-day rainfall period)		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3			
Zone 1	Afghanistan																																					231.4	-36.87	-21%
	Kyrgyz Republic																																					394.5	-69.87	-41%
	Pakistan																																					227.0	1.58	2%
	Tajikistan																																					323.3	-86.28	-42%
Zone 2	Bangladesh																																					2,330.7	-122.81	-34%
	Bhutan																																					893.5	-50.73	-34%
	Cambodia																																					1,964.8	-83.71	-28%
	DPR Korea																																					941.9	17.11	13%
	India																																					1,098.9	-10.97	-11%
	Lao PDR																																					1,838.2	-71.21	-24%
	Myanmar																																					2,090.0	-43.59	-20%
	Nepal																																					1,384.7	-68.80	-40%
	Philippines																																					2,251.6	163.82	26%
	Sri Lanka																																					1,792.5	12.97	2%
Zone 3	Fiji																																					2,820.7	-59.99	-5%
	Indonesia																																					2,685.6	83.36	7%
	Timor-Leste																																					1,749.4	27.84	2%

Data source: WFP Dataviz Seasonal Explore

- **Very heavy rains, heavy rainfall period.** 10 daily rainfall > 3 times the average 10 daily contribution to annual rainfall.
- **Heavy rains; core rainfall period.** 10 daily rainfall > 2 times the average 10 daily contribution to annual rainfall.
- **Moderate rains; rainfall season.** 10 daily rainfall > 1 to 2 times the average 10 daily contribution to annual rainfall.
- **Light rains; starting/residual rainfall season**. 10 daily rainfall > 0.5 to 1 time the average 10 daily contribution to annual rainfall.
- **Dry season**; 10 daily rainfall <0.5 times the average 10 daily contribution to annual rainfall.

Rainfall > 100 mm

Sources

Rainfall time series for trend analysis and seasonal drought monitoring
CHIRPS (Climate Hazards Group InfraRed Precipitation with Station data) gridded rainfall dataset produced by the Climate Hazards Group at the University of California, Santa Barbara: (http://chg.geog.ucsb.edu/data/chirps/)

NDVI
MODIS NDVI CMG data made available by NOAA-NASA. (http://reverb.earthdata.nasa.gov/)

Seasonal Climate Forecast and ENSO Forecast
International Research Institute for Climate and Society (https://iri.columbia.edu/)

Crop monitoring
GEOGLAM Crop Monitor (https://cropmonitor.org/)

(Food) Inflation rate and currency exchange
Trading Economics (https://tradingeconomics.com)

Long-term precipitation and temperature forecasts
The Copernicus Climate Change Service (https://climate.copernicus.eu/charts/packages/c3s_seasonal/)

For more detailed information on seasonal forecast, please visit Seasonal: Rainfall and Vegetation: Visualizations - Dataviz | WFP - VAM

DISCLAIMERS: All climate content within this bulletin is based upon the most current available remote sensing data.
As the climate phenomena is a dynamic situation, the current realities may differ from what is depicted in this document.

Countries in the region have been classified into three zones according their geographical location (latitude, longitude) and climate (rainfall and temperature). This classification do not correspond to any official subregions or categories

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