Seasonal Monitor

Asia and the Pacific, July 2023

World Food Programme

I. Climate-related concerns
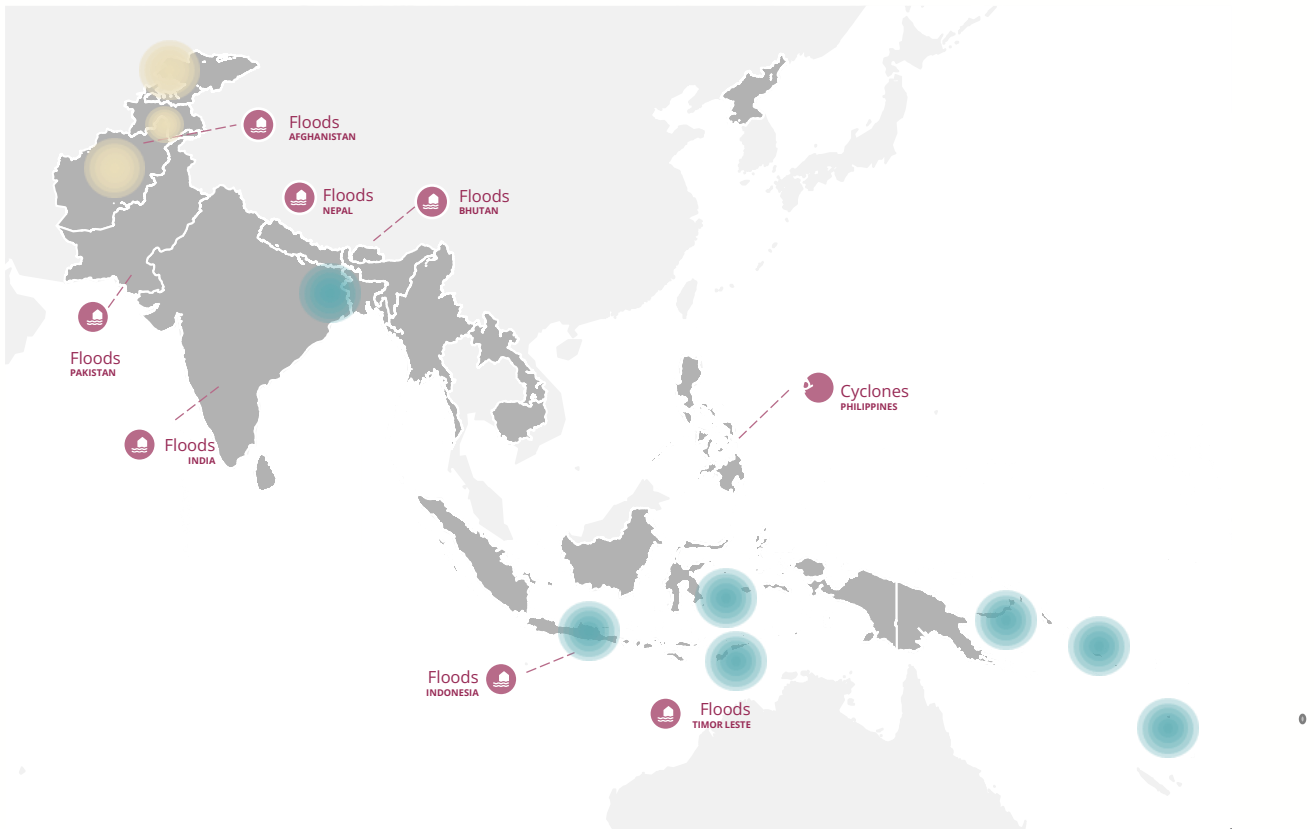
APRIL-JULY 2023 RAINFALL PERFORMANCE

There was moderate to heavy rainfall in northern India, Indonesia, Papua New Guinea, Solomon Islands, and eastern Timor-Leste. Growing wet season rice continued under good weather conditions except in flood-affected areas.

Drier-than-average conditions continued in western Afghanistan, the Kyrgyz Republic, and Tajikistan. Growing of spring season crops continued under drier than average conditions in these countries, with a high risk of locust infestations to crops.

RECENT CLIMATE HAZARDS (JULY 2023)

Afghanistan – Floods (July 2023)
Heavy rains and flash floods killed at least 12 people, with 40 people missing in Maidan Wardak Province. [1]

Bhutan – Floods (July 2003)
Heavy rains and landslides killed at least 6 people with 17 people missing in Lhuentse District in the northeastern part.[2]

India –Floods (July 2023)
Heavy rains caused floods in the northern and western parts of the country, affecting 66,231 people. [3]

Indonesia – Floods (July 2023)
Heavy rains caused floods and landslides in West Kalimantan, East Kalimantan, Papua, Central Sulawesi, and West Sumatra. [4] About 4,236 people (1,379 households) were affected in East Java. [5,6]

Nepal – Floods (July 2023)
Heavy rains caused floods in Koshi province, 40 households were displaced, with 95 houses damaged. [7]

Pakistan – Floods (July 2023)
Heavy rains and flash floods killed 150 people, with 468 houses damaged across seven provinces (Balochistan, Khyber Pakhtunkhwa, Punjab, Sindh, Gilgit Baltistan, AJ&K, ICT).[8]

Philippines – Cyclones (July 2023)
Cyclone Talim caused floods in eight provinces in the northern and northeastern parts of the country with 26,331 people (9,223 households) affected. [9] Cyclone Egay caused floods in six regions (5,6,10, CAR, CALABRZON, NCR), with 11,185 people (3,300 households) affected. [10]

Timor-Leste – Floods (July 2023)
Monsoon rains caused floods and landslides across nine municipalities (Lautem, Ainaro, Covalima, Manufahi, Manatuto, Ermera, Bobonaro, Baucau, and Viqueque), with 350 households affected and four people missing. [11]

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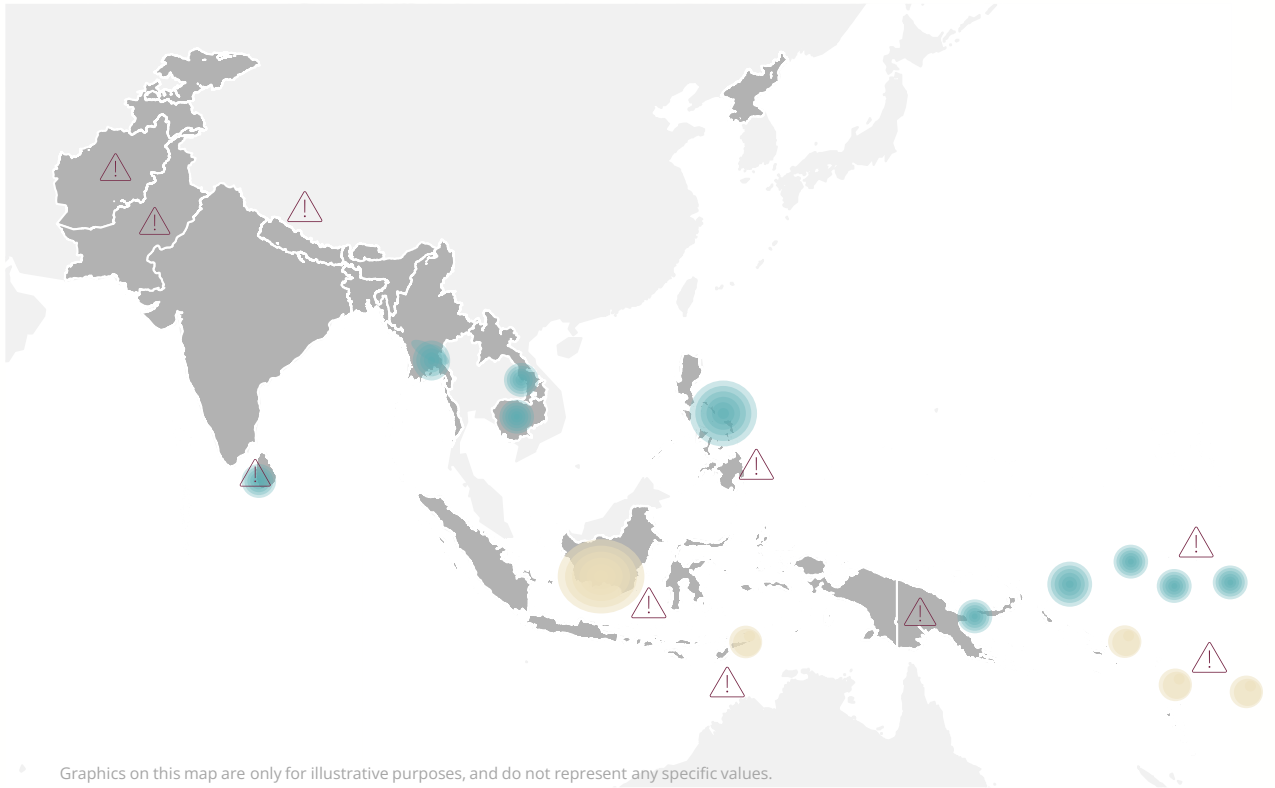
Graphics on this map are only for illustrative purposes, and do not represent any specific values.

SEASONAL OUTLOOK (AUGUST-OCTOBER 2023)

Higher than normal rainfall: Wetter conditions are likely in Cambodia, Kiribati, southern Lao PDR, southern Myanmar, Nauru, Papua New Guinea, central Philippines, Solomon Islands, southern Sri Lanka, and Tuvalu.

Lower than normal rainfall: Drier conditions are projected in Fiji, Indonesia, Timor-Leste, Tonga, and Vanuatu.

Cyclone activity: El Niño is anticipated from August to October 2023 and the potential for the formation of low to moderate tropical cyclones over western Luzon and Visayas in the Philippines from 2 to 8 August.[12]

Warmer than normal temperature; Warmer conditions are likely across major parts of Asia and the Pacific.

El Niño outlook

El Niño will continue in the next coming months (August to October 2023) at 96 percent possibility, and likely to continue until early 2024 (January-March 2024) at 79 percent possibility (Figure 1)[13]. El Niño contributes to drier conditions across South and Southeast Asia and western countries of the Pacific region during the monsoon season (August-October) and wetter conditions during January-April 2024 in Central Asia.

High risk of flood caused by impacts of El Niño conditions: Afghanistan, Sri Lanka, Pakistan, Kiribati, Tuvalu, and Solomon Islands

High risk of drought caused by impacts of El Niño conditions: Philippines (Mindanao), Papua New Guinea, Nepal, Indonesia, Timor Leste, Fiji, Tonga, and Vanuatu

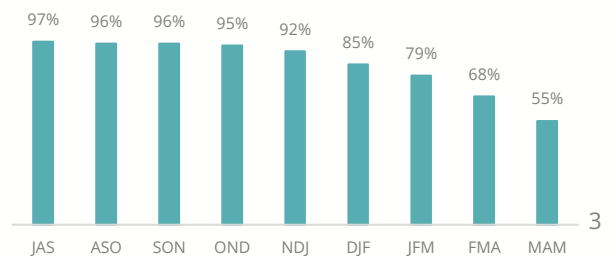## ESTIMATED CROP PRODUCTION (2023-2024)

2023/2024 agricultural prospects (rice, wheat, barley, and maize) are generally favourable in the region.

However, the strong impacts of El Niño this year are expected to have negative impacts on rainfall patterns and crop production in Afghanistan, Pakistan, and Sri Lanka with a high risk of floods, and drier than average conditions may reduce rice outputs in Indonesia, and Timor-Leste.

An outbreak of Moroccan locusts was observed across Afghanistan and the Kyrgyz Republic in July 2023. In the Kyrgyz Republic, the Moroccan locusts have been mating and egg-laying across the country. 38,780 hectares of farmlands have been treated by chemical methods during January-June 2023.

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

El Niño
PERCENTAGE CHANCE

[15] Source: IRI Climate Forecasts

III. Potential Drivers of Food Insecurity in July 2023

Country	Rainfall Performance (11-20 Jul 23)	Short-Term Forecast (1-10 Aug 23)	Long-Term Forecast (Aug-Oct23)	Projected Crop Production 2023	Conflict / Displacement	Inflation (%)	1M	Inflation Date	Food Inflation (%)	1M	Food Inflation Date	Currency Exchange (%, Jul) YoY	1M	Moderate or Severe Food Insecurity (%)
Afghanistan				🦗	W ▲	❄ 🏃	-2.8	▲	May'23	-5.8	▲	May'23	3.4	▼	35%[a]
Bangladesh					R ▲		9.7	↔	Jun '23	9.7	▲	Jun '23	-13.5	▲	31%[b]
Bhutan					NA		3.8	▲	Jun'23	4.7	▲	Jun'23	-3.2	▲	
Cambodia					R ▲		0.5	▼	May'23	2.2	↔	May'23	-1.1	▲	6%[c]
Fiji					NA		0.3	▼	Jul'23	8.0	▼	Jul'23	-1.0	▲	8%[d]
India					R ▲		4.8	▲	Jun'23	4.5	▲	Jun'23	-3.2	▲	
Indonesia				☀🏞	R ↔		3.1	▼	Jul'23	1.9	▼	Jul '23	-0.4	▲	
Kyrgyz Rep				🦗	W ▲		10.5	▼	Jun '23	6.7	▼	Jun'23	-7.6	▲	10%[e]
Laos					R ▲		27.8	↔	Jul '23	42.7	▼	Jun '23	-21.1	▼	13.3%[f]
Myanmar				💧	R ↔	❄ 🏃	19.6	↔	Jul '22	18.4	▲	Jul '22	-11.6	↔	27%[g]
Nepal				☀🏞	R ▲		6.83	↔	Jun '23	5.66	▼	Jun '23	-3.1	▲	14.3%[h]
Pakistan				💧	R ▲		28.3	↔	Jul'23	39.5	↔	Jul'23	-22.6	▲	29%[i]
Philippines					R ▲		4.7	▼	Jul'23	6.3	▼	Jul'23	-1.8	▲	15%[j]
Sri Lanka				🚜	R ↔		6.3	▼	Jul'23	-1.4	▼	Jul'23	12.0	▼	17%[k]
Tajikistan					W ▲		2.4	↔	Jun'23	1.1	▼	Jun'23	-6.6	▼	18%[l]
Timor Leste				☀🏞	R ▲		7.0	↔	Jun'23	8.0	↔	Jun'23	NA		20%[m]

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

CURRENCY EXCHANGE
- ▲ Exchange rate change increased by more than 5 percent in last month
- ▼ Exchange rate change decreased by more than 5 percent in last month
- ↔ Exchange rate change between -5 percent to 5 percent in last month

CONFLICT AND DISPLACEMENT
- ❄ Conflict
- 🏃 Displacement.7
- **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 Fourteen: March 2023
[e] **Kyrgyz Republic** Price Monitoring for Food Security: June 2023
[f] **Lao PDR** Food Security Monitoring: April/May 2023
[g] **Myanmar** DIEM Data in Emergencies Monitoring Brief round 4: January 2023
[h] **Nepal** Household Livelihoods, Food Security, and Vulnerability Survey round 8: April 2023
[i] **Pakistan** IPC April-October 2023, not representative at national level. Only covered Balochistan, Khyber Pakhtunkhwa, and Sindh
[j] **Philippines** IPC April 2023
[k] **Sri Lanka** Crop and Food Security Assessment Mission: May 2023
[l] **Tajikistan** Quarterly Household Food Security and Market Update July-September 2022: October 2022
[m] **Timor-Leste** IPC February 2023

Zone 1

Afghanistan, Kyrgyz Republic, Pakistan, and Tajikistan
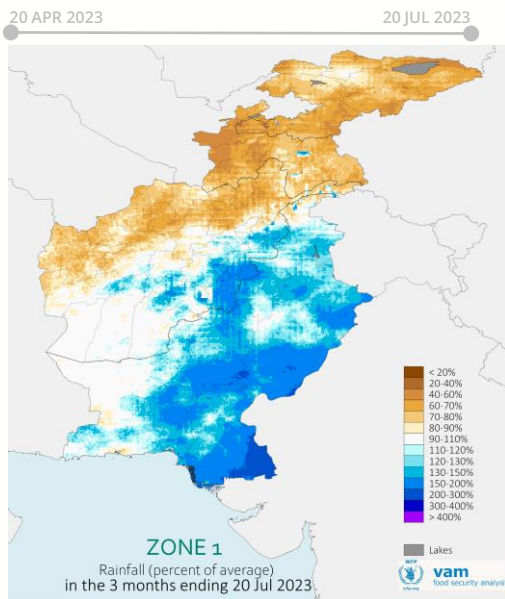
Rainfall Performance, April-July 2023

In **April-July 2023**, drier-than-average conditions remained in some parts of western Afghanistan, the Kyrgyz Republic, and Tajikistan with less than 50 mm of average monthly rainfall. Rainfall was moderate to heavy (400-700 mm of average monthly rainfall) in some parts of northern Pakistan (Map 1).

In the last month, **20 June-20 July 2023**, drier-than-average conditions continued in some parts of northern Kyrgyz Republic, but moderate to heavy rainfall (150-400 mm of average monthly rainfall) was observed in some parts of northern and southern Pakistan (Map 2).
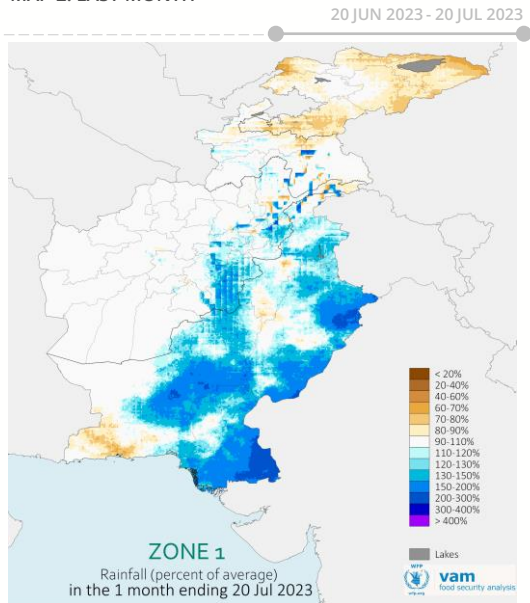
In **Afghanistan**, heavy rains caused flash floods across Maidan Wardak Province on 22 July 2023, at least 12 people were killed and 40 people are still missing. [14]

In **Pakistan**, heavy rains caused flash floods and landslides across seven provinces (Balochistan, Khyber Pakhtunkhwa, Punjab, Sindh, Gilgit Baltistan, AJ&K, ICT), from 25 June 2023 to 25 July 2023, 150 people were killed and 468 houses were damaged. [15]

MAP 1: LAST THREE MONTHS

20 APR 2023 — 20 JUL 2023

ZONE 1
Rainfall (percent of average)
in the 3 months ending 20 Jul 2023

MAP 2: LAST MONTH

20 JUN 2023 - 20 JUL 2023

ZONE 1
Rainfall (percent of average)
in the 1 month ending 20 Jul 2023

Vegetation Index

This zone had mixed conditions of vegetation index across many countries in recent weeks.

A below-average vegetation index from 18 June to 4 July 2023 was observed in some western and northern parts of Afghanistan, major parts of the Kyrgyz Republic, and western Tajikistan.

Above-average vegetation continued in some parts of eastern Afghanistan, major parts of Pakistan, and eastern Tajikistan (Map 3).

MAP 3: NORMALIZED DIFFERENCE VEGETATION INDEX (NDVI), 18 JUNE-4 JULY 2023

ZONE 1
NDVI (percent of average)
18 Jun 2023 - 04 Jul 2023

5
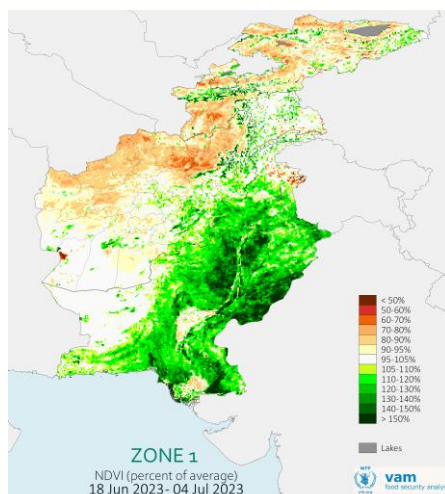
Zone 1

Afghanistan, Kyrgyz Republic, Pakistan, and Tajikistan

Crop Production

In **Afghanistan**, the growing of spring crops (wheat, maize) continued under drier-than-average conditions except for flood-affected areas in Maidan Wardak Province.[16] The 2023/24 wheat output is expected at 5.17 million mt, 11.4 percent higher than the five-year average for 2018-2022.[17] An outbreak of Moroccan locusts in July 2023 continued a critical situation in Ghor province, and about 42,726 hectares of farmlands across major parts of the country have been treated by chemical methods for locust control during January-June 2023.[18]

In the **Kyrgyz Republic**, the growing of spring crops (wheat, maize) continued under drier conditions across the country.[19] As of 31 July 2023, the 2023/24 output of wheat is expected at 570,000 mt — 1.8 percent higher than the five-year average for 2018-2022 due to larger area planted.[20] The Moroccan locusts in July 2023 continued mating and egg-laying in most parts of the country, and about 38,780 hectares of farmlands have been treated by chemical methods for locust control during January-June 2023. [21]

In **Pakistan**, the planting of spring crops (maize, rice, sorghum, millet) continued under good weather conditions except for flood–affected areas.[22] The 2023/24 output of wheat is expected at 28 million mt —8.9 percent higher than the five-year average for 2018-2022 due to above-average area planted and yields.[23]

In **Tajikistan**, the growing of spring cereals (wheat, barley) continued under drier conditions across major parts of the country. [24] The 2023/24 output of wheat is expected at 800,000 mt — 1.8 percent higher than the five-year average for 2018-2022.[25] The control operations of Moroccan locusts were completed in June across the country, and a total of 129,021 hectares of farmlands have been treated by chemical methods during January-June 2023.[26]

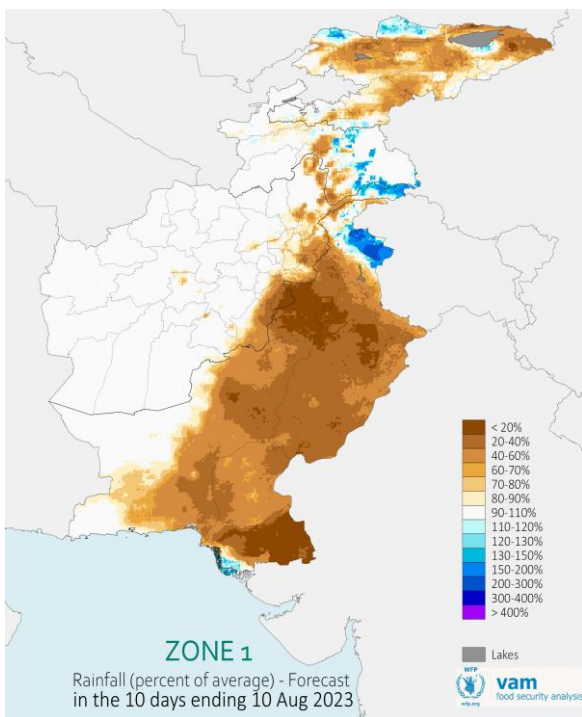# Zone 1

Afghanistan, Kyrgyz Republic, Pakistan, and Tajikistan

Climate Outlook, August to October 2023

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

The short-term forecast from 1 to 10 August 2023 (Map 4) shows average to below-average rainfall across major parts of Zone 1. Light rainfall conditions are likely in some parts of northern Kyrgyz Republic, northern Pakistan, and eastern Tajikistan.

Rainfall during August-October 2023 (Map 5) is likely to be near-average (40-60 percent possibility of exceeding the median rainfall) across Zone 1.

During the forecast period, air temperature (Map 6) will likely be above normal across Afghanistan, Kyrgyz Republic, northern and western Pakistan, and Tajikistan (>80 percent possibility of exceeding the median temperature).

MAP 4: SHORT-TERM RAINFALL FORECAST AS A PERCENT OF AVERAGE, 1-10 AUG 2023

MAP 5. LONG-TERM RAINFALL FORECAST AUG-OCT 2023, PRECIPITATION > MEDIAN, %.
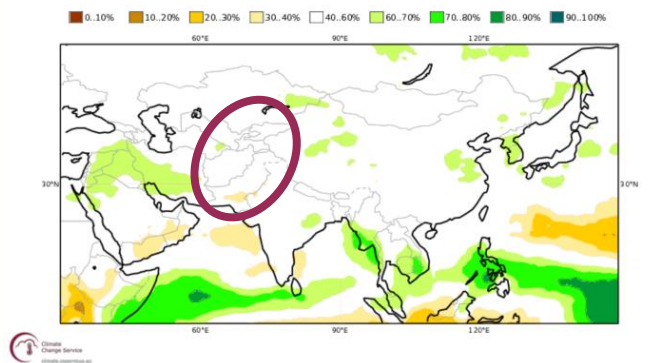
MAP 6. LONG TERM TEMPERATURE FORECAST AUG-OCT 2023, 2m TEMPERATURE > MEDIAN, %
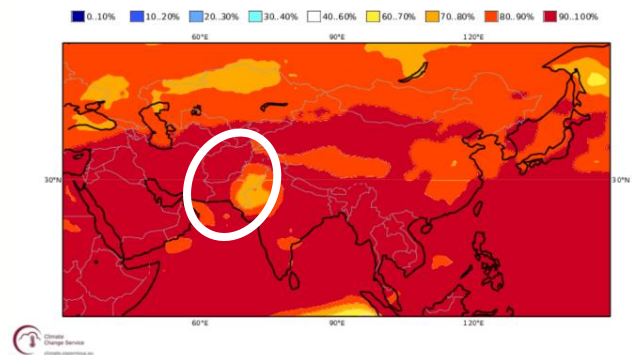
Zone 2

Bangladesh, Bhutan, Cambodia, India, Lao PDR, Myanmar, Nepal, Philippines, and Sri Lanka

Rainfall Performance, April-July 2023

The onset of wet season rainfall starts in South and Southeast Asia during the month of May-June. **Drier-than-average conditions in April-July 2023** (Map 7) were observed across some parts of Bangladesh, Nepal, and southern Myanmar, while rainfall was moderate to heavy (> 800 mm of average monthly rainfall) in some parts of northern India.

Light to moderate rainfall was observed on **20 June-20 July 2023** in major parts of Zone 2, while heavy rainfall was observed in some parts of northern and western India, and the Philippines, (Map 8).
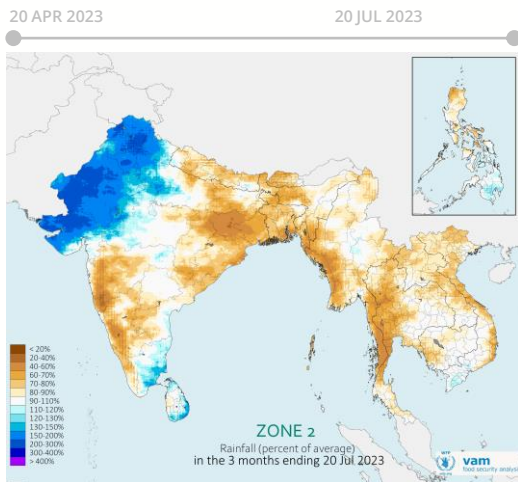
In **Bhutan**, heavy rains on 20 July 2023 caused flash floods and landslides in Lhuentse District in the northeastern part, at least 6 people were killed and 17 people are missing. [27]

In **India**, heavy rains in July 2023 caused floods and landslides in northern and western parts of the country, and as of 22 July 2023, about 66,231 people were affected. [28]
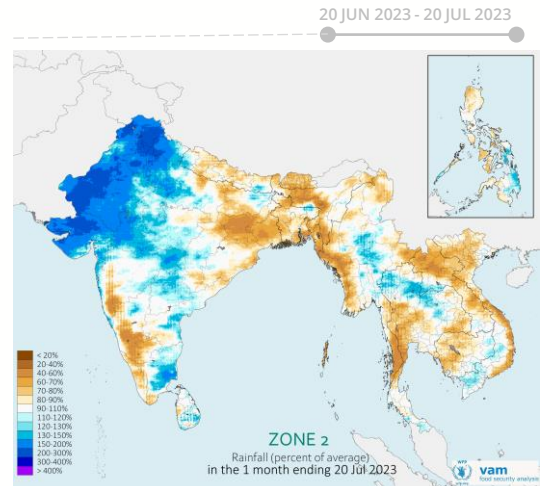
In **Nepal**, heavy rains in mid-July 2023 caused floods in the Morang District of Koshi Province, 40 households were displaced, and 95 houses were damaged. [29]

In the **Philippines**, cyclone Talim on 13-14 July 2023 caused heavy rains, landslides, and strong winds in eight provinces in northern and northeastern parts of the country, about 26,331 people (9,223 households) were affected. [30]. Heavy rains caused by cyclone Egay on 23 July 2023 affected about 11,185 people (3,300 households) in Regions V, VI, X, CAR, CALABARZON, and NCR. [31]

MAP 7: LAST THREE MONTHS

20 APR 2023 · 20 JUL 2023

ZONE 2
Rainfall (percent of average)
in the 3 months ending 20 Jul 2023

MAP 8: LAST MONTH

20 JUN 2023 - 20 JUL 2023

ZONE 2
Rainfall (percent of average)
in the 1 month ending 20 Jul 2023

Vegetation Index

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

An above-average vegetation index for 18 June to 4 July 2023 was observed in major parts of Bangladesh, western India, and eastern Sri Lanka due to above-average rainfall between January-June 2023.

In contrast, below-average vegetation continued in some parts of northern Bhutan, central Myanmar, northern Nepal, and central India, due to below-average rainfall and above-average temperature (Map 9).

MAP 9: NORMALIZED DIFFERENCE VEGETATION INDEX (NDVI), 18 June – 4 July 2023
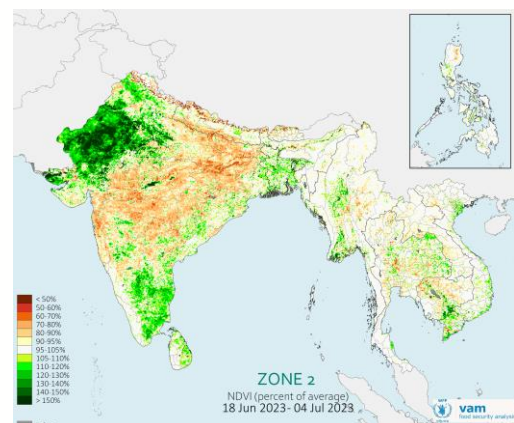
ZONE 2
NDVI (percent of average)
18 Jun 2023 - 04 Jul 2023

Zone 2

Bangladesh, Bhutan, Cambodia, India, Lao PDR, Myanmar, Nepal, Philippines, and Sri Lanka

Crop Production

In **Bangladesh**, growing of the Aus season rice in July 2023 was in the grain filling stage under good weather conditions due to enough water supply. The planting of the Aman season rice was in the seeding and transplanting stage under good weather conditions. [32] The 2023/24 output of rice is expected at 37 million mt — 4.2 percent higher than the five-year average for 2018-2022 due to expansion in planted areas. [33 & 34]

In **Cambodia**, growing of wet-season rice in July 2023 was in the flowering to grain filling stage under good weather conditions due to enough water supply and sunshine. [35] The 2023/24 output of rice is estimated at 6 million mt — 3.7 percent higher than the five-year average for 2018-2022. [36]

In **India**, planting of Kharif season crops (maize, rice, sorghum, and millet) continued in July 2023 under good weather conditions with enough irrigation water supply, except in flood-affected areas where many farmers have replanted their rice. [37] The 2023/24 output of rice is expected at 134 million tonnes — 7.2 percent higher than the five-year average for 2018-2022. [38]

In **Lao PDR**, planting of wet-season rice was in the seeding and tillering stage under good weather conditions with enough irrigation water supply in July 2023. [39] The 2023/24 output of rice is estimated at 1.96 million mt — 7.9 percent higher than the five-year average for 2018-2022. [40]

In **Myanmar**, the planting of wet-season rice finished in July 2023 with slightly lower planted areas than last year due to less availability of irrigation water supply. [41] The 2023/24 output of rice is estimated at 12.5 million mt — 0.2 percent lower than the five-year average for 2018-2022 [42].

In **Bhutan**, the growing of main-season maize and rice continued in July 2023 under light-to-moderate rains. [43] 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 a similar level to the previous year. [44]

In **Nepal**, planting of rice continued in July 2023 with lower planted areas than last year due to insufficient rainfall, particularly in southern plain areas as main rice plantation areas. The 2023/24 output of rice is expected at 3.65 million mt — slightly below the five-year average level (2018-2022). [45]

In the **Philippines**, growing of wet-season rice in July 2023 was in the maturing stage under good weather conditions. Typhoon Talim at the mid of July 2023 caused heavy rains and landslides across eight provinces in northern and northeastern parts, with no crop damage reported in these areas. [46] The 2023/24 output of rice is expected at 12.6 million mt — 2.9 percent higher than the five-year average for 2018-2022. [47]

In **Sri Lanka,** growing of Yala season maize and rice continued in July 2023 under average to slightly below average rainfall conditions. [48] The total 2023/24 output of rice is estimated at 3.06 million mt — 0.4 percent higher than the five-year average for 2018-2022 due to increased planted areas and improved supply of chemical fertilizers. [49]

# Zone 2

Bangladesh, Bhutan, Cambodia, India, Lao PDR, Myanmar, Nepal, Philippines, and Sri Lanka

Climate Outlook, August to October 2023

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

The short-term forecast during 1-10 August 2023 indicates light to moderate rainfall (150-300 mm of average monthly rainfall) in southern Bangladesh, northern Cambodia, northeastern India, northern Myanmar, southern Lao PDR, and northern Philippines (Map 10).
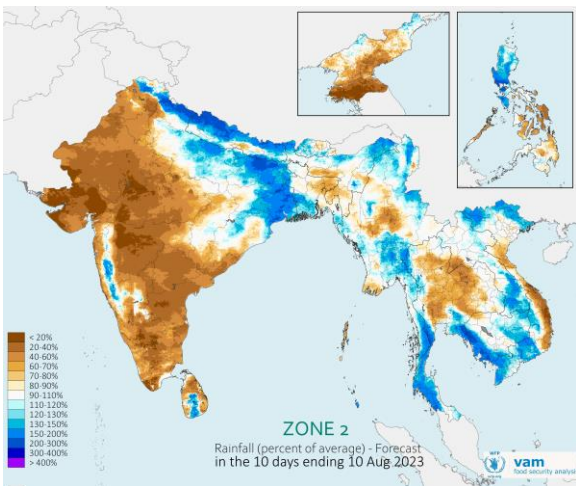
Rainfall during August-October 2023 is likely to be above normal conditions (70-80 percent possibility of exceeding the median rainfall) in Cambodia, southern Lao PDR, southern Myanmar, central Philippines, and southern Sri Lanka (Map 11).

Air temperature during August-October 2023 is likely to be above the normal conditions (>80 percent possibility of exceeding the median temperature) across major parts of Zone 2 (Map 12).

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

MAP 11. LONG-TERM RAINFALL FORECAST AUG-OCT 2023, PRECIPITATION > MEDIAN, %
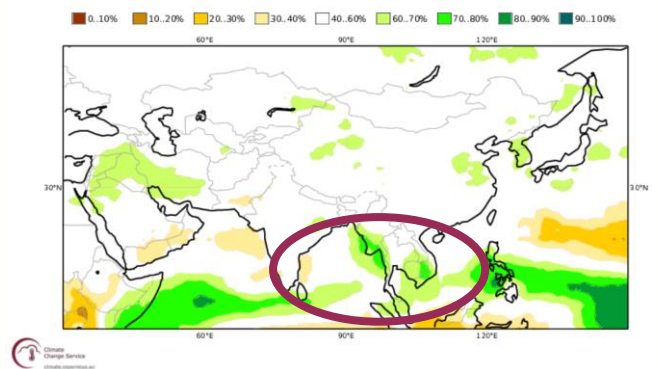
MAP 12. LONG TERM TEMPERATURE FORECAST AUG-OCT 2023, 2m TEMPERATURE ABOVE MEDIAN, %
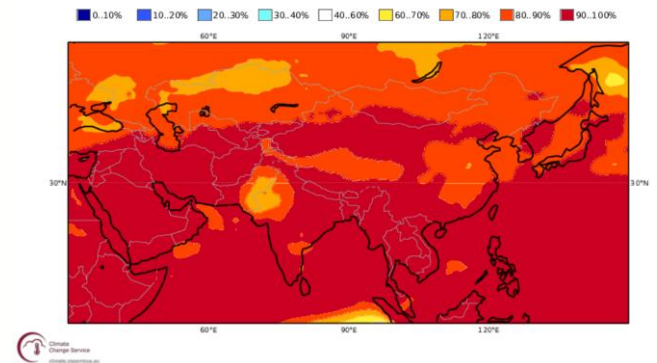
Map 13: C3S multi-system seasonal forecast probability (precipitation > median), nominal forecast, ECMWF/Met Office/Meteo-France/CMCC/DWD/NCEP/JMA/ECCC ASO 2023
Map 14: C3S multi-system seasonal forecast probability (2m temperature > median), nominal forecast, ECMWF/Met Office/Meteo-France/CMCC/DWD/NCEP/JMA/ECCC ASO 2023

Zone 3

Fiji, Indonesia, Kiribati, Papua New Guinea, Timor Leste, Tuvalu, Vanuatu
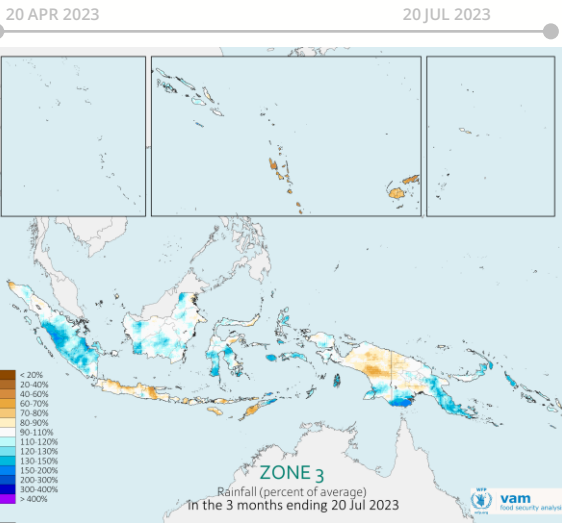
Rainfall Performance, April-July 2023

Rainfall during April-July 2023 was higher than average (500-800 mm of average monthly rainfall) across most parts of Indonesia, Papua New Guinea, Solomon Islands, and eastern Timor-Leste (Map 13).

During **20 June-20 July 2023** (Map 14), above-average rainfall (200-400 mm of average monthly rainfall) continued in central and eastern Indonesia, central and eastern Papua New Guinea, and Solomon Islands.
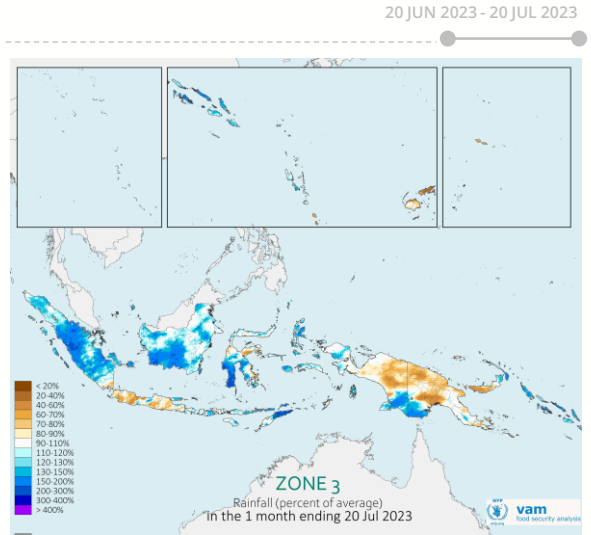
In **Indonesia**, heavy rains in July 2023 caused floods and landslides in West Kalimantan, East Kalimantan, Papua, Central Sulawesi, and West Sumatra.[50] In East Java, heavy rains affected about 4,236 people (1,379 households) and 1,169 houses were damaged. [51&52]

In **Timor-Leste**, monsoon rains in early July 2023 caused floods and landslides across four municipalities (Lautem, Ainaro, Covalima, and Manufahi), four people are missing and a number of bridges and roads were damaged. [53]

MAP 13: LAST THREE MONTHS

20 APR 2023   20 JUL 2023

ZONE 3
Rainfall (percent of average)
in the 3 months ending 20 Jul 2023

MAP 14: LAST MONTH

20 JUN 2023 - 20 JUL 2023

ZONE 3
Rainfall (percent of average)
in the 1 month ending 20 Jul 2023

Vegetation Index

This zone had an average vegetation index in recent weeks

Near-average vegetation conditions were observed in most parts of Zone 3 between 18 June to 4 July 2023. Only a few areas in northern Fiji, Indonesia, and Timor-Leste have above-average vegetation conditions as heavy rains during the last three months improved crop growth conditions except in flood-affected areas (Map 15).

MAP 15: NORMALIZED DIFFERENCE VEGETATION INDEX (NDVI), 18 June-4 July 2023

ZONE 3
NDVI (percent of average)
18 Jun 2023- 04 Jul 2023
Lakes
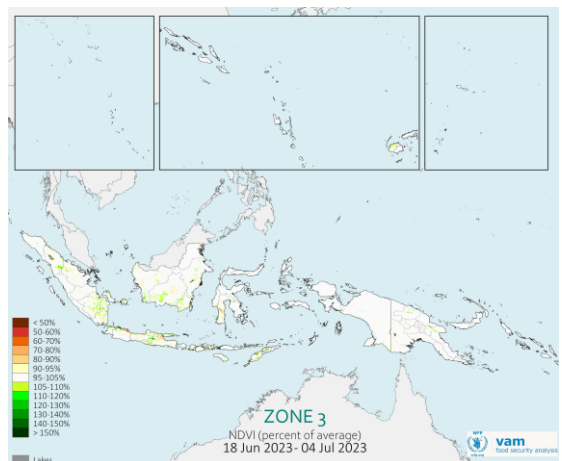
Zone 3

Fiji, Indonesia, Kiribati, Papua New Guinea, Timor Leste, Tuvalu, Vanuatu

Crop Production

In **Fiji**, harvesting of cane continued in July 2023 under light rainfall conditions. [54] The 2023 output of rice is estimated at 12,000 tonnes, and the yield is 2.5 tonnes per hectare. About 40,000 tonnes of rice is imported in 2023. [55]

In **Indonesia**, the harvesting of wet-season rice finished in July 2023, and growing of dry-season rice continued under good weather conditions and enough irrigation water supply, especially in the northern part of the country. [56] 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.[57]

In **Papua New Guinea**, the growing of main food crops (banana, sweet potato, and taro) in July 2023 continued under good weather conditions. [58] 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.[59]

In **Timor-Leste**, the growing of off-season maize and rice continued in July 2023 under dry weather conditions. The Ministry of Agriculture and Fisheries reported that the total 2022/ 23 output of rice is estimated at 86,000 tonnes, but the local rice production is not sufficient to meet the domestic consumption needs of 130,000 tonnes for the 1.3 million population. [60] As of 11 July 2023, the National Logistics Centre will import over 4,000 tons of rice (9 percent of the total 2023 rice imports) from Vietnam and India.[61]

Zone 3

Fiji, Indonesia, Kiribati, Papua New Guinea, Timor Leste, Tuvalu, Vanuatu

Climate Outlook, August to October 2023

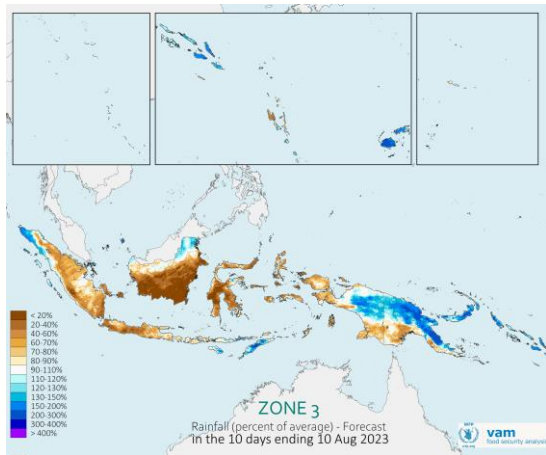**Wetter-than-average conditions are expected across many countries in the short-term**

The short-term forecast during 1-10 August 2023 indicates that above-average rainfall (150-300 mm of average monthly rainfall amount) is likely in Fiji, Papua of Indonesia, and northern and eastern Papua New Guinea. In contrast, major parts of Indonesia will experience drought conditions (Map 16).

Forecasts for August-October 2023 show above-average rainfall conditions (60-80 percent possibility of exceeding the median rainfall average) in some eastern parts of Papua New Guinea, and Solomon Islands.
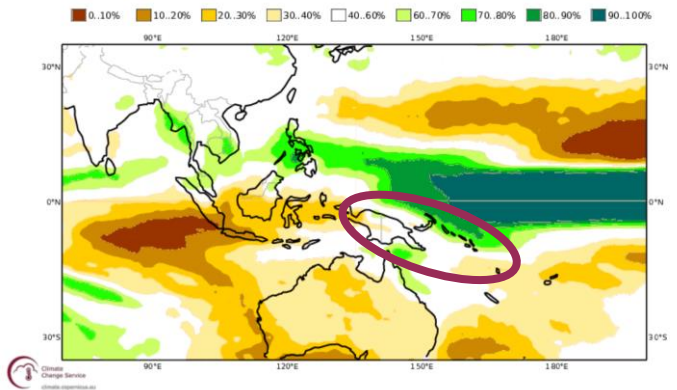
Islands closer to the Equator such as Kiribati, Nauru, and Tuvalu are likely to experience very wetter than average conditions (>90 percent possibility of exceeding the median rainfall average). In contrast, Fiji, Indonesia, Timor-Leste, Tonga, and Vanuatu are likely to experience below-average rainfall. In Papua New Guinea, below-average rainfall will start from September and continue until the end of year (Map 17).

Air temperature during August-October 2023 is likely to be higher than average across this zone (greater than 80 percent possibility of exceeding the median temperature) (Map 18).
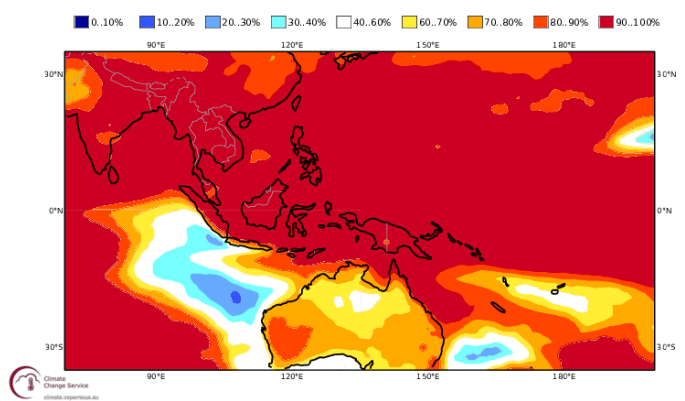
MAP 16: SHORT-TERM RAINFALL FORECAST AS A PERCENT OF AVERAGE, 1-10 AUG 2023

MAP 17. LONG-TERM RAINFALL FORECAST AUG-OCT 2023, PRECIPITATION > MEDIAN, %

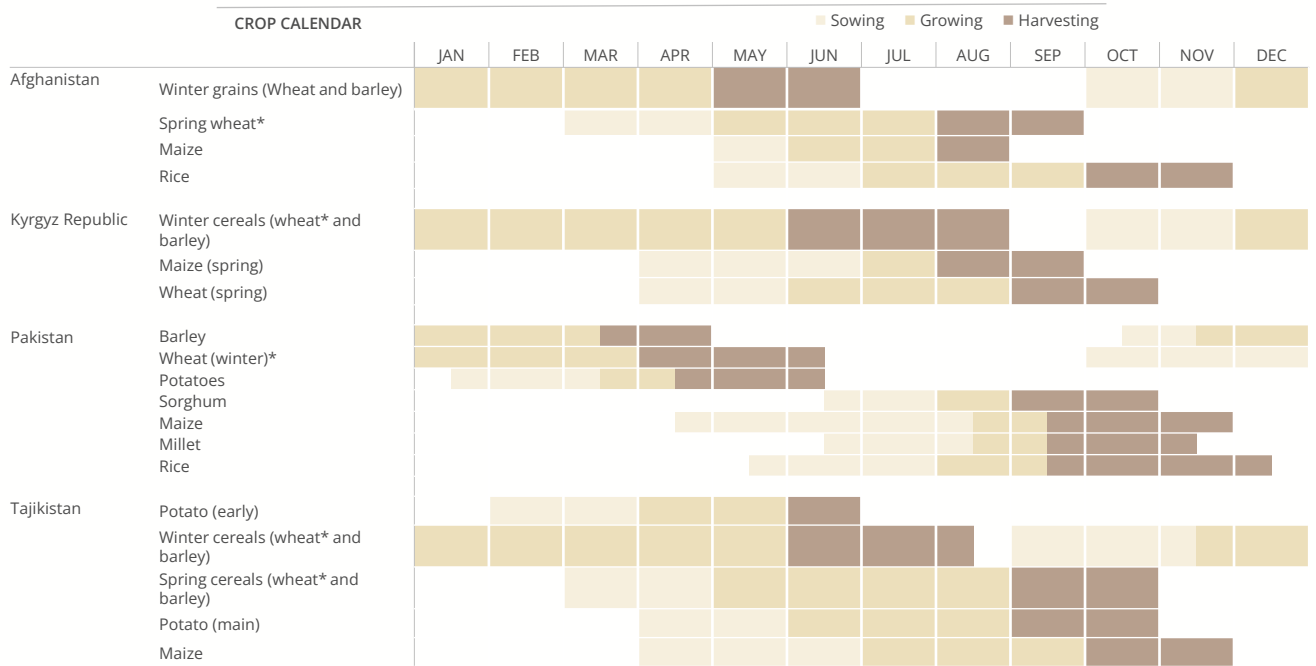**MAP 18. LONG-TERM TEMPERATURE FORECAST AUG-OCT 2023, 2m TEMPERATURE ABOVE MEDIAN, %**

Annexes

Crop Calendar

Zone 1: Afghanistan, Kyrgyz Republic, Pakistan, and Tajikistan

CROP CALENDAR		Sowing	Growing	Harvesting

Legend: ☐ Sowing ☐ Growing ■ Harvesting

Months: JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC

Afghanistan
- Winter grains (Wheat and barley)
- Spring wheat*
- Maize
- Rice

Kyrgyz Republic
- Winter cereals (wheat* and barley)
- Maize (spring)
- Wheat (spring)

Pakistan
- Barley
- Wheat (winter)*
- Potatoes
- Sorghum
- Maize
- Millet
- Rice

Tajikistan
- Potato (early)
- Winter cereals (wheat* and barley)
- Spring cereals (wheat* and barley)
- Potato (main)
- Maize

Zone 2: Bangladesh, Bhutan, Cambodia, India, Lao PDR, Myanmar, Nepal, Philippines, and Sri Lanka

CROP CALENDAR		Sowing	Growing	Harvesting

Legend: ☐ Sowing ☐ Growing ■ Harvesting

Months: JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC

Bangladesh
- Potatoes
- Wheat
- Rice (Boro)*
- Rice (Aus)*
- Sorghum
- Rice (Aman)*

Cambodia
- Rice (Main wet season)*
- Rice (Dry season)*
- Maize

India
- Maize (Rabi)
- Wheat (Rabi)*
- Rice (Rabi*)
- Sorghum (Rabi)
- Groundnut (Rabi)
- Rapeseed (Rabi)
- Maize (Kharif)*
- Groundnut (Kharif)
- Soybrean (Kharif)
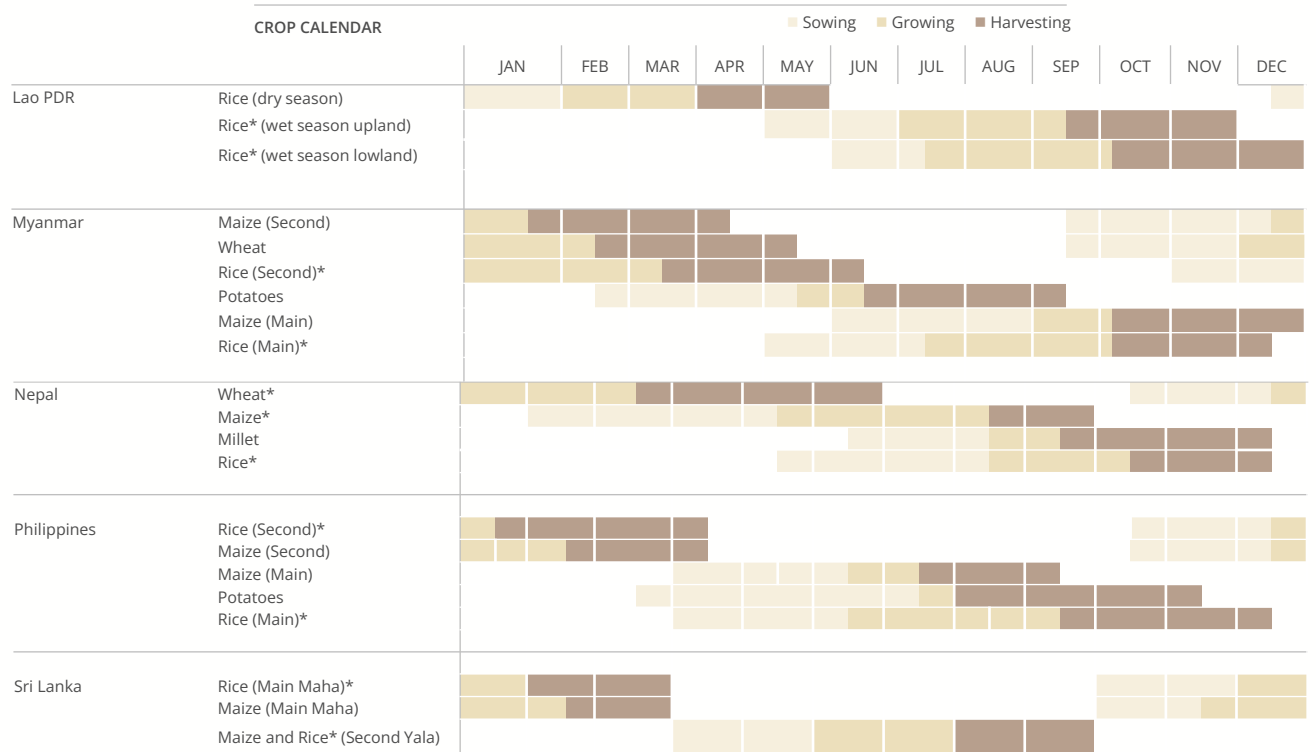- Rice (Kharif)*
- Sorghum & Millet (Kharif)
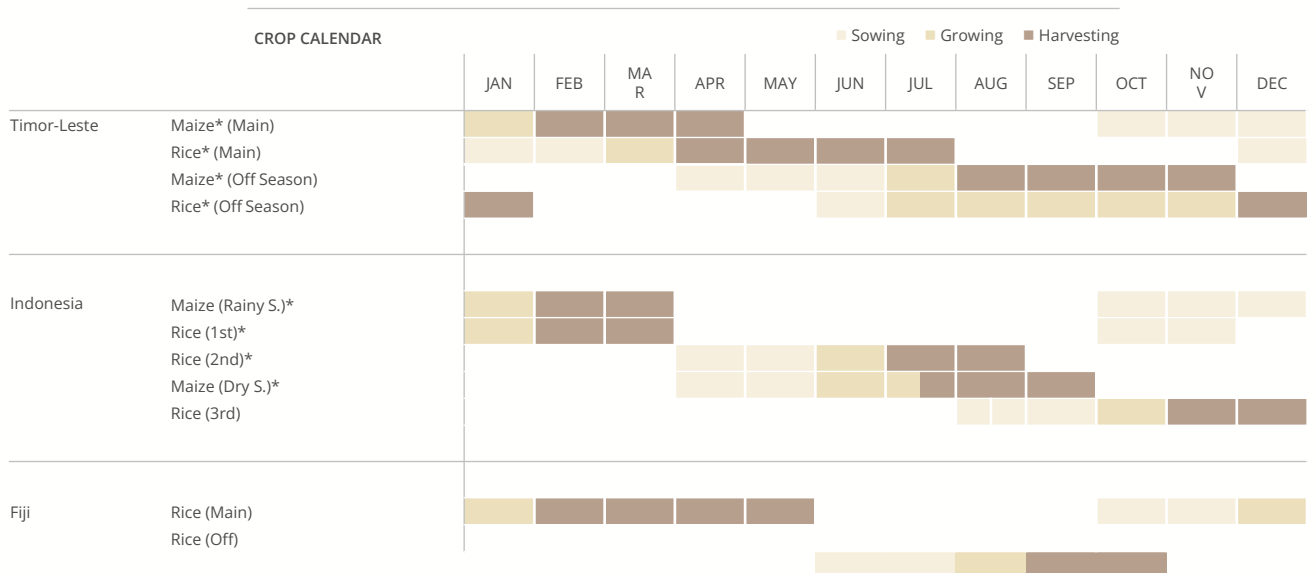
Source: FAO/GIEWS, FEWSNET. Periods are rounded to half-months.

Annexes

Crop Calendar

Zone 2: Bangladesh, Bhutan, Cambodia, India, Lao PDR, Myanmar, Nepal, Philippines, and Sri Lanka

CROP CALENDAR		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Legend: ■ Sowing ■ Growing ■ Harvesting

Lao PDR
- Rice (dry season)
- Rice* (wet season upland)
- Rice* (wet season lowland)

Myanmar
- Maize (Second)
- Wheat
- Rice (Second)*
- Potatoes
- Maize (Main)
- Rice (Main)*

Nepal
- Wheat*
- Maize*
- Millet
- Rice*

Philippines
- Rice (Second)*
- Maize (Second)
- Maize (Main)
- Potatoes
- Rice (Main)*

Sri Lanka
- Rice (Main Maha)*
- Maize (Main Maha)
- Maize and Rice* (Second Yala)

Zone 3: Fiji, Indonesia, Kiribati, Papua New Guinea, Timor Leste, Tuvalu, Vanuatu

CROP CALENDAR		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Legend: ■ Sowing ■ Growing ■ Harvesting

Timor-Leste
- Maize* (Main)
- Rice* (Main)
- Maize* (Off Season)
- Rice* (Off Season)

Indonesia
- Maize (Rainy S.)*
- Rice (1st)*
- Rice (2nd)*
- Maize (Dry S.)*
- Rice (3rd)

Fiji
- Rice (Main)
- Rice (Off)

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

Annexes

RBB Countries Rainfall Seasonal Pattern

Year		2023 (JAN–DEC, monthly dekads 1–3)	Average annual rainfall (mm)	Accumulative rainfall variation by July 2023(%)	Accumulative rainfall variation by July 2023(mm)
Zone 1	Afghanistan		231.4	-34.15	-19%
	Kyrgyz Republic		394.5	-87.04	-34%
	Pakistan		227.0	28.41	22%
	Tajikistan		323.3	-91.22	-38%
Zone 2	Bangladesh		2,330.7	-312.19	-26%
	Bhutan		893.5	-128.63	-26%
	Cambodia		1,964.8	-103.87	-12%
	India		1,098.9	-21.63	-5%
	Lao PDR		1,838.2	-148.35	-17%
	Myanmar		2,090.0	-197.55	-20%
	Nepal		1,384.7	-133.18	-20%
	Philippines		2,685.6	149.85	12%
	Sri Lanka		1,792.5	7.73	1%
Zone 3	Fiji		2,251.6	-106.26	-7%
	Indonesia		2,820.7	107.79	7%
	Timor-Leste		1,749.4	73.72	6%

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.
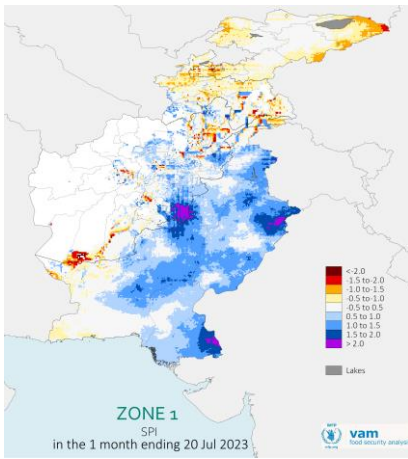□ **Dry season**; 10 daily rainfall <0.5 times the average 10 daily contribution to annual rainfall.

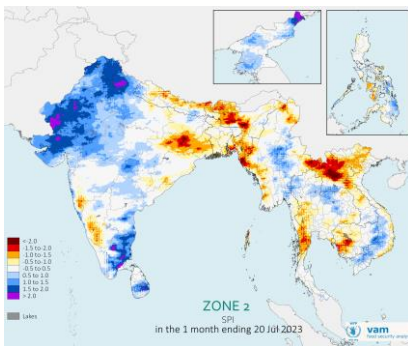⬥ Rainfall > 100 mm

Annexes

Standardized Precipitation Index, 10 Jun-20 Jul 2023

The maps (19, 20,21) show last month's standardized precipitation index (SPI). The SPI shows the experience of wet conditions on one or more time scales (blues-dark purple), and dry conditions (yellow-browns) in Asia and the Pacific.
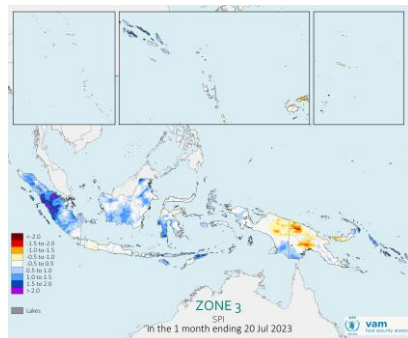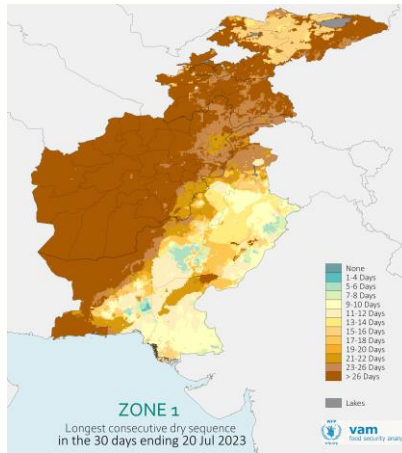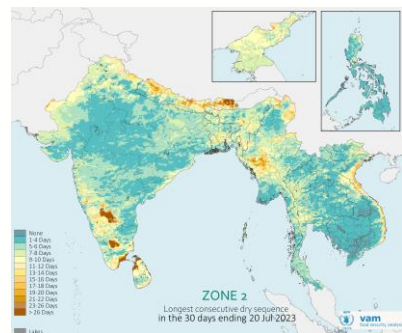
Longest Consecutive Dry Sequence, 10 Jun-20 Jul 2023

The maps (22, 23,24) show the longest consecutive dry sequence over the past month. Areas in green have experienced shorter dry sequences, while areas in brown have experienced longer ones.
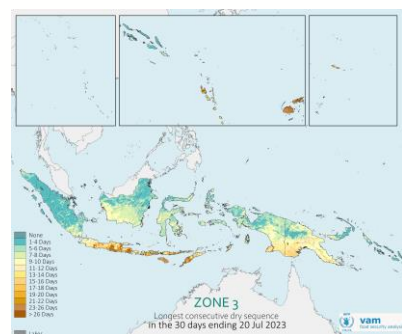
MAP 19: SPI ZONE 1 LAST MONTH

MAP 22: LONGEST CONSECUTIVE DRY SEQUENCE ZONE 1 LAST MONTH

MAP 20: SPI ZONE 2 LAST MONTH

MAP 23: LONGEST CONSECUTIVE DRY SEQUENCE ZONE 2 LAST MONTH

MAP 21: SPI ZONE 3 LAST MONTH

MAP 24: LONGEST CONSECUTIVE DRY SEQUENCE ZONE 3 LAST MONTH

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 to their geographical location (latitude, longitude) and climate (rainfall and temperature). This classification does not correspond to any official subregions or categories

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