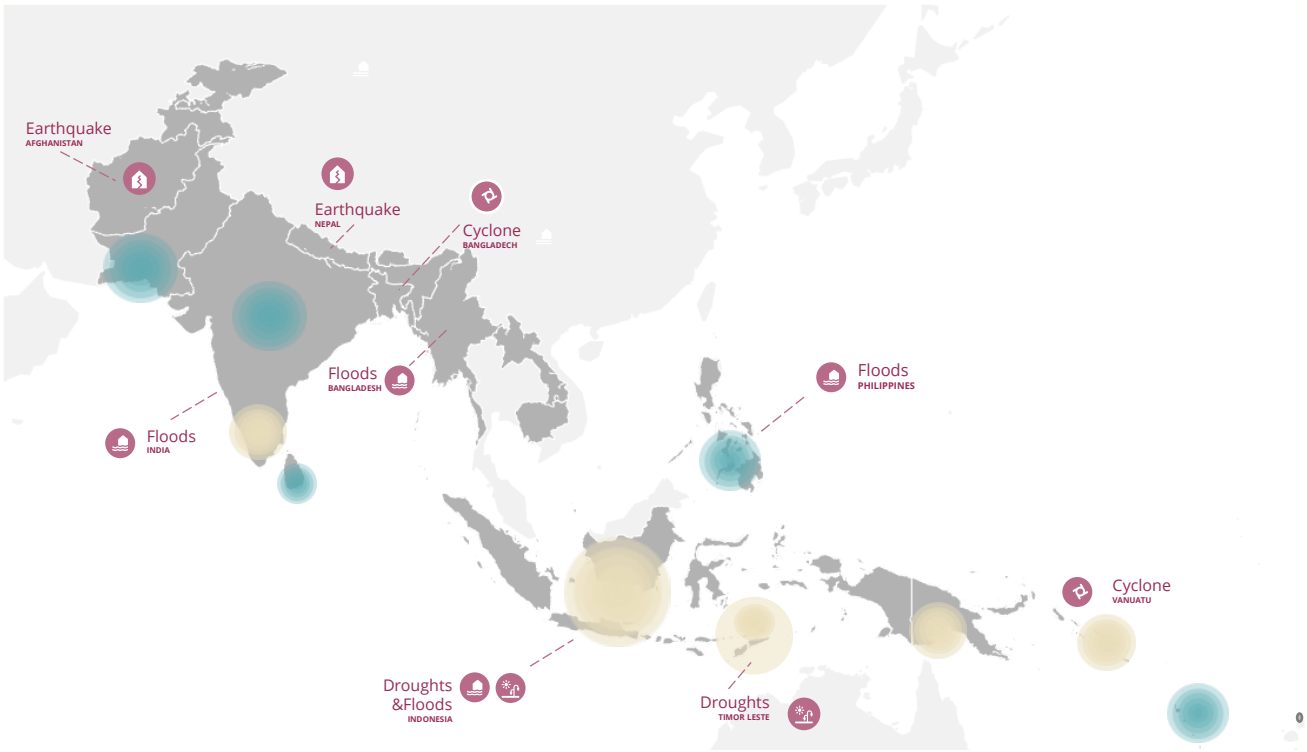
World Food Programme

Seasonal Monitor

Asia and the Pacific, October 2023

I. Climate-related concerns



SEPTEMBER AND OCTOBER 2023 RAINFALL PERFORMANCE

There was moderate to heavy rainfall in western and central India, northeastern and southeas southeastern Pakistan, southern Sri Lanka, and Solomon Islands.

Drier-than-average conditions continued in southern India, Indonesia, southern Papua New Guinea, Timor Leste, and Vanuatu due to the influence of an El Niño weather pattern.

RECENT CLIMATE AND NATURAL HAZARDS

Afghanistan – Earthquake (October 2023): Three 6.3 earthquakes and aftershocks hit Herat Province, western Afghanistan, resulting in 1,384 fatalities and affecting 43,395 people with more than 7,000 houses destroyed or damaged. Injil and Zinjadin are the worst affected districts. The Herat Earthquake Response Plan seeks $93.6 million to support 114,000 people affected by the earthquakes.[1]

Bangladesh – Cyclone (October 2023): Cyclone Hamoon caused floods in east-southeast of Chittagong City; 1.5 million people were affected and 273,000 people were displaced. [2]

India – Floods (October 2023): Heavy rains caused floods in Sikkim and West Bengal; 88,400 people were affected and 2,002 houses were damaged. [3]

Indonesia – Floods & Droughts (October 2023): Heavy rains, strong winds, and the overflowing of the Kreung Meureubbo River affected about 10,600 people in Aceh, Sumatra, South Kalimantan, South Sulawesi. While droughts affected about 186,000 people in Java. [4]

Myanmar –Floods (October 2023): Heavy rains caused floods in Bago, Mon and Yangon. About 26,700 people were displaced to 43 evacuation sites and 5 people died. [5]

Nepal-Earthquake (October 2023): The 5.3 magnitude earthquake affected 36,250 people (7,250 households) in Sudurpashim province, with 5,601 houses partially destroyed.[6]

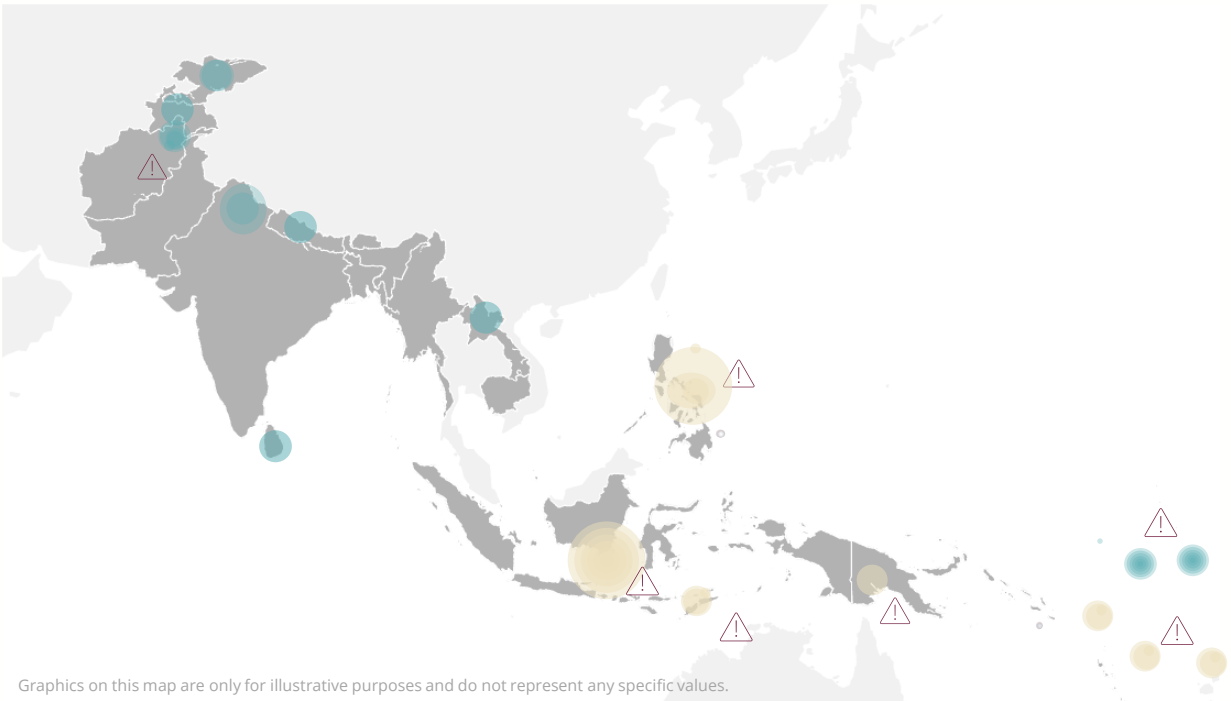
Pakistan – floods (September 2023): Heavy rainfall continued affecting Pakistan in September. Since the onset of monsoon, 394,314 individuals have been displaced in flood affected areas, mostly in Punjab. Punjab, Sindh, and Balochistan suffered the most damages to houses and shelters.[7]

Philippines – Floods (October 2023): Heavy monsoon rains caused floods in Region X and cyclone Koinu affected in Region 1,2, and 6.[8]

Timor Leste – Drought (October 2023): About 300,000 people are already experiencing food insecurity and severe droughts can add more pressure on vulnerable people. The forecast lower rains will likely impact the planting and development of 2024 main season rice and maize. [9]

Vanuatu – Cyclone (October 2023): Cyclone Lola caused floods in northern provinces, with about 25,000 people affected. [10]

II. Seasonal outlook



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

SEASONAL OUTLOOK (November 2023-January 2024)

Higher than normal rainfall: Light to moderate rainfall is expected in Afghanistan, northern India, Kyrgyz Republic, northern Lao PDR, Nepal, Pakistan, Tajikistan, southern Sri Lanka and some Pacific countries (Kiribati, Solomon Islands, and Tuvalu).

Lower than normal rainfall: Drier conditions are projected in Fiji, Philippines, major parts of Indonesia, southern Papua New Guinea, Samoa, and Timor Leste.

Cyclone activity: El Niño is anticipated from September to November 2023 and the cyclone activity is not expected in the final two weeks of October in the East Asia and Pacific region.[11]

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

El Niño outlook: Based on a consensus of dynamical and statistical models, El Niño will continue in the coming months (October 2023 to February 2024) at 100 percent possibility and is likely to continue until May 2024 with decreasing probability (Figure 1).[12] El Niño contributes to drier conditions across South and Southeast Asia and western countries of the Pacific region during September to November 2023 and wetter conditions during January to April 2024 in Central Asia.

High risks of flood caused by impacts of El Niño conditions: Afghanistan

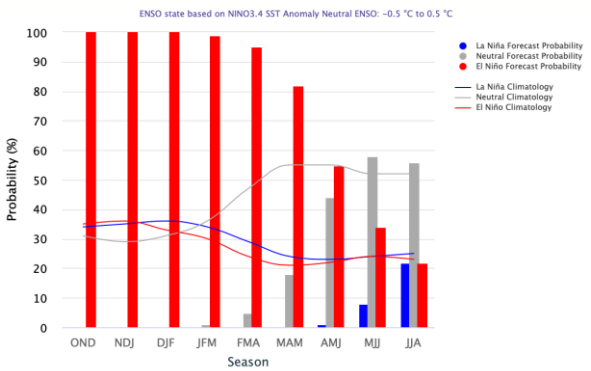
Expected high risks of drought caused by impacts of El Niño conditions in the final quarter of 2023: major parts of Indonesia, southern Papua New Guinea, Timor Leste, Fiji, and Samoa .[13]

ESTIMATED CROP PRODUCTION (2023-2024)

Agricultural prospects (rice, wheat, barley, and maize) for 2023/2024 are generally favourable in the region. Winter wheat harvesting in Central and South Asia was mostly completed last month, however, yields in Afghanistan and Kyrgyzstan were lower than average due to high temperatures and generally poor rainfall performance. Although there has been some slight drought damage in Indonesia, wet-season rice is growing well in the northern part of Southeast Asia, with the exception of Thailand. Cropping results in Nepal were influenced by erratic and insufficient precipitation in the main producing regions. [14]

However, the strong impacts of El Niño this year are expected to have negative impacts on rainfall patterns and crop production in the region with a high risk of floods and drought, which would cause a drop in crop yields. As pests and diseases thrive in hot and dry conditions, crop losses can also be expected to occur accordingly. The combined effects of reduced crop yields and increased crop losses increased prices and therefore challenges in household affordability, particularly for the most vulnerable. [15]

FIGURE 1: IRI/CPC PROBABILISTIC ENSO OUTLOOK (Released in October 2023)



[15] Source: IRI Climate Forecasts

Zone 1

Afghanistan, Kyrgyz Republic, Pakistan, and Tajikistan

Rainfall Performance, July-October 2023

From **July to October 2023**, Kyrgyzstan experienced less rainfall than the previous month. Generally, below-average rainfall was seen especially in the northern parts of the country. Rainfall was in above average in the southern parts of Pakistan when the previous three months were observed (Map 1).

In the last month, **10 September – 10 October 2023**, more rainfall was received in the southeast parts of the region.

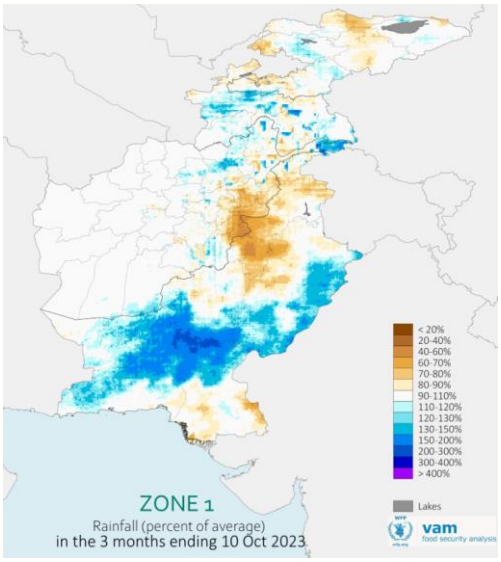
Kyrgyzstan experienced less rainfall while **Afghanistan**'s rainfall remained in the average range (Map 2).

Pakistan, received more rainfall in the northeastern and southern parts of the country in the 10 September – 10 October 2023, period, while the eastern and middle parts of the country received near-average rainfall.

Tajikistan experienced near-average rainfall in the past month.

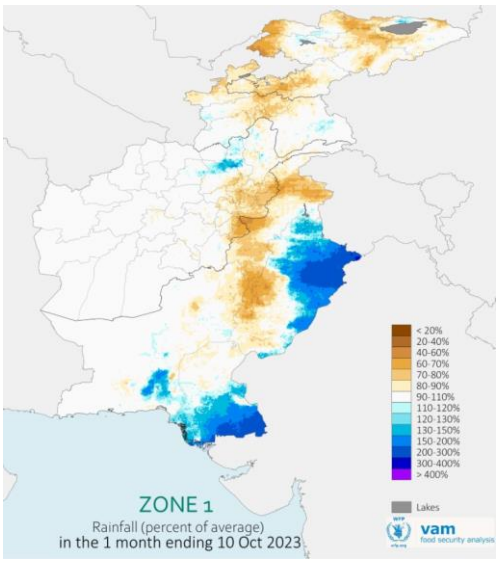
MAP 1: LAST THREE MONTHS

20 JULY 2023 — 10 OCT 2023



MAP 2: LAST MONTH

10 SEP2023 - 10 OCT2023



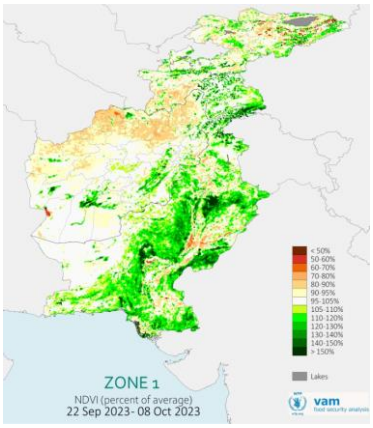
Vegetation Index

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

A below-average vegetation index from 22 September to 10 October 2023 was observed mostly in Afghanistan and some parts of Tajikistan.

Above-average vegetation continued in major parts of Pakistan, and Kyrgyz Republic, and minor parts of Tajikistan (Map 3).

MAP 3: NORMALIZED DIFFERENCE VEGETATION INDEX (NDVI), October 2023 COMPARISON



Zone 1

Afghanistan, Kyrgyz Republic, Pakistan, and Tajikistan

Crop Production

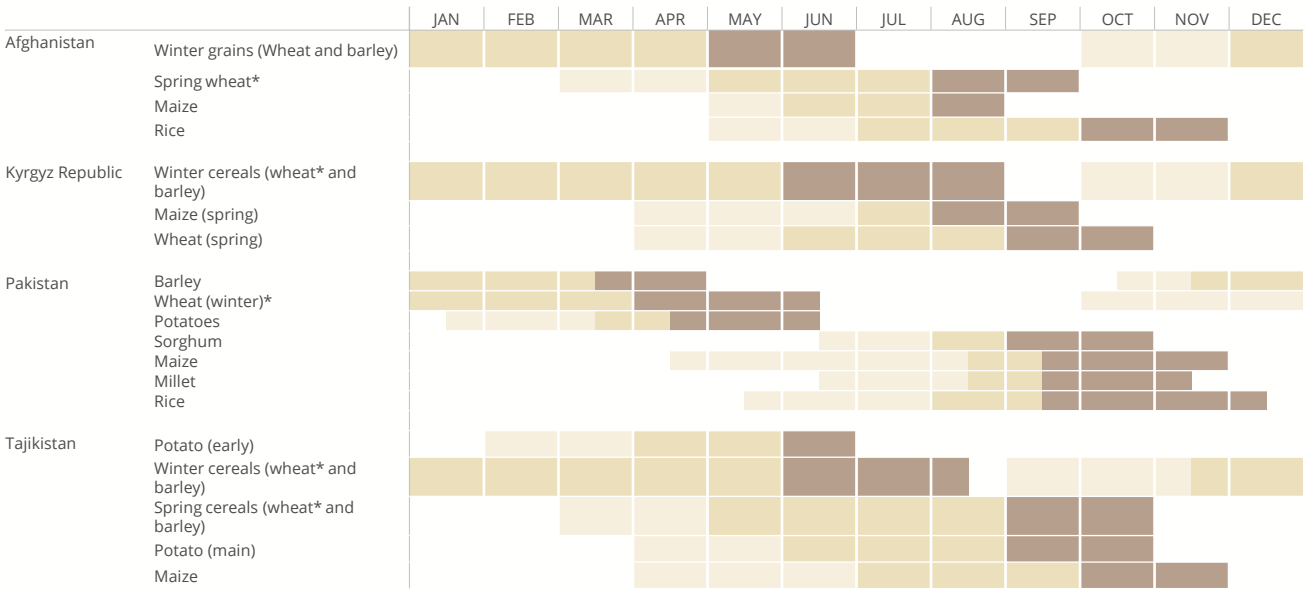
In **Afghanistan,** winter wheat harvesting mostly finalized in September with below-average yield and production outcomes, although better than last year. Second-season crops (e.g. maize and rice) have been impacted by drought in the northern and eastern parts of the country and production is expected to be below-average due to high temperatures and early snowmelt. Land preparation and planting of the winter wheat crop is underway until mid-November and of winter rainfed wheat from mid-November through December, depending on precipitation and availability of seeds and fertilizer. Traditional wheat varieties are used due to a shortage of improved seeds. Farmers are optimistic for the upcoming season especially in the north and northeastern provinces. However, high flood risk in early 2024 and pest diseases remain a concern. [16].

In **Kyrgyz Republic** winter wheat harvesting mostly finalized in September with poor end of season conditions. Dry conditions impacted spring wheat during part of the season; its harvest is nearing completion. Land preparation and planting of the winter wheat crop is underway. At the same time according to the Ministry of Agriculture, fodder crops production decreased by 30 percent in 2023 due to drought conditions and lack of irrigation water. Wheat gross production is expected to fall by 26.5 percent, while barley gross output may fall by 32.6 percent compared to the same period last year. Due to the higher planted area, wheat output in 2023/24 is predicted to be 520,000 mt, 7 percent lower than the 5-year average. During 2023, 48,280 hectares of cropland were treated with chemical locust control measures. [17]

In **Pakistan**, maize was harvested in September while Kharif (summer) season rice crops harvest started in October under favourable conditions. Planting of the Rabi season wheat crop will begin next month. Water storage is currently at optimal levels, and 2023/24 rice and wheat production are expected to be above-average. The 2023/24 output of rice is expected at 9 million mt – 20 percent higher than the five-year average. 2022/23 rice export estimate is reduced from 3.7 to 3.4 million tons. The 2023/24 rice export forecast is reduced to 4.8 million tons, in line with domestic supply expectations and overseas demand. The 2023/24 wheat supply and demand forecasts are unchanged. While the government has not yet issued any public tenders, private importers have bought at least 300,000 tons of Russian wheat. [18,19]

In **Tajikistan**, winter wheat harvest finalized, and spring wheat harvest is mostly completed under favourable conditions. Land preparation and planting of the winter wheat crop is underway. Tajikistan's 2023 wheat production is estimated at 800,000 mt, while barley production at 140,000 mt. confirming the growth of agricultural sector.[20]

CROP CALENDAR



Zone 1

Afghanistan, Kyrgyz Republic, Pakistan, and Tajikistan

Climate Outlook, October 2023 - January 2024

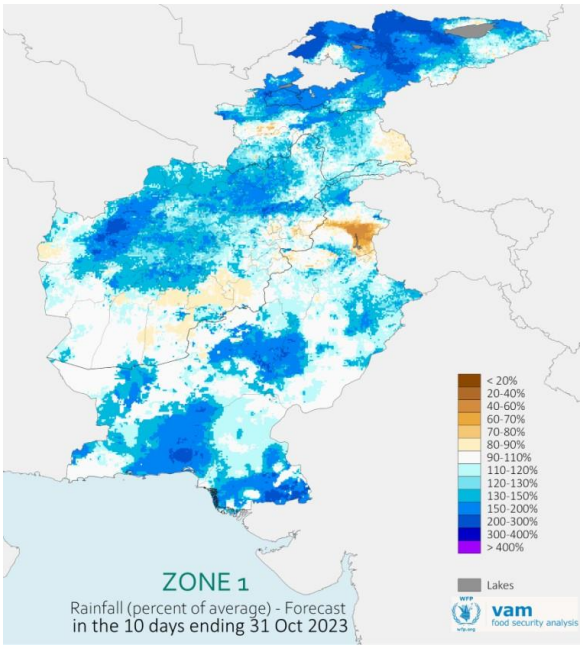
Normal to above-average rainfall with higher temperature conditions are expected across Zone 1 in the short term

The short-term forecast from 21 to 31 October 2023 (Map 4) predicts above-average rainfall across Kyrgyz Republic, northwest parts of Afghanistan, and major parts of Pakistan. Light rainfall conditions were likely in some parts of eastern Pakistan and eastern Tajikistan.

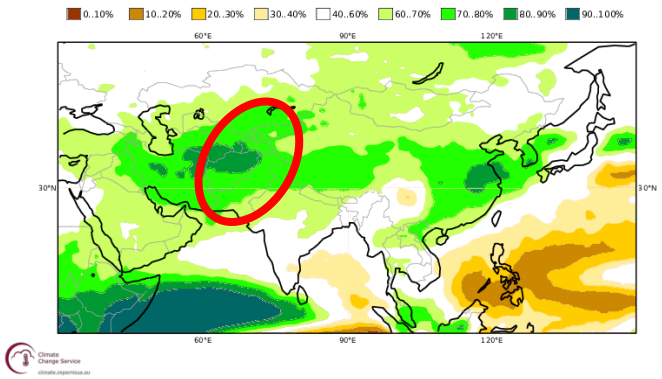
Rainfall during November 2023-January 2023 (Map 5) is likely to be light to moderate above average rainfall conditions across Afghanistan, Kyrgyz Republic, northern Pakistan, and Tajikistan (60-90 percent possibility of exceeding the median rainfall).

During the forecast period, air temperature (Map 6) will likely be above normal across Zone 1 (70-90 percent possibility of exceeding the median temperature).

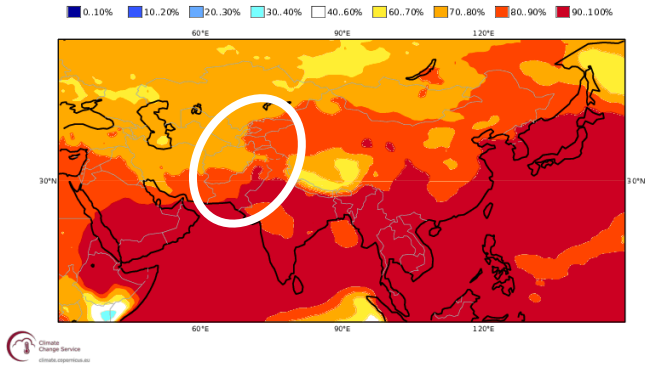
MAP 4: SHORT-TERM RAINFALL FORECAST AS A PERCENT OF AVERAGE, 21-31 OCT 2023



MAP 5. LONG-TERM RAINFALL FORECAST NOV 2023-JAN 2024, PRECIPITATION > MEDIAN, %.



MAP 6. LONG TERM TEMPERATURE FORECAST NOV 2023-JAN 2024, 2m TEMPERATURE > MEDIAN, %



Map 5: C3S multi-system seasonal forecast probability (precipitation > median), nominal forecast, ECMWF/Met Office/Meteo-France/CMCC/DWD/NCEP/JMA/ECCC Nov.23-Jan.24

Map 6: C3S multi-system seasonal forecast probability (2m temperature > median), nominal forecast, ECMWF/Met Office/Meteo-France/CMCC/DWD/NCEP/JMA/ECCC Nov.23-Jan.24

Zone 2

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

Rainfall Performance, July - October 2023

Below to near-average rainfall was experienced between July and October 2023 (Map 7) across major parts of northern and southern India, eastern and southern Myanmar, and northern Sri Lanka, while rainfall was above-average in some parts of western India. Rajasthan area in India received even less rainfall in the first decan of October.

The drier-than-average condition continued from **10 September to 20 October 2023** across southern India, while light to above-average rainfall was observed in western and central parts of India and southern parts of the Philippines (Map 8).

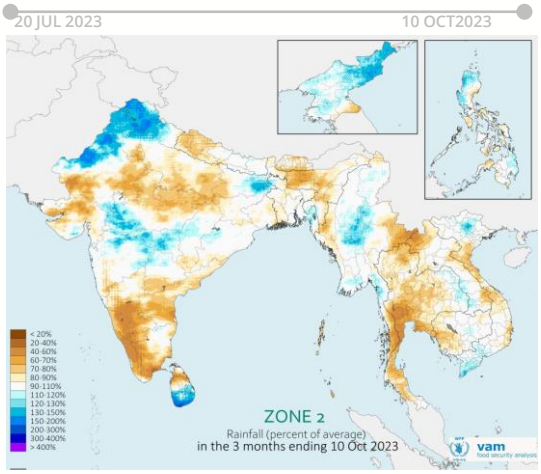
The monsoon season in South Asia has continued to cause flooding and landslides, affecting millions of people in Bangladesh, India, northern parts of the Philippines, and Nepal, especially in mid-September.

The conflict together with the weather conditions in Myanmar continues to displace people and disrupt humanitarian assistance. [21]

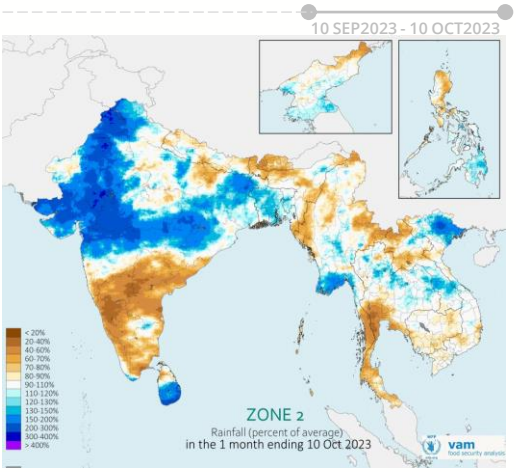
Vegetation Index

The vegetation index was above average in most parts of India, north of Nepal and of Bhutan. In South-East Asia and Philippines, NDVI is close to average conditions except in central Myanmar and south-east of Cambodia where the vegetation index can be seen above average.

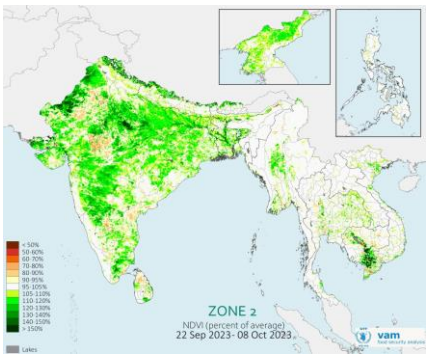
MAP 7: LAST THREE MONTHS



MAP 8: LAST MONTH



MAP 9: NORMALIZED DIFFERENCE VEGETATION INDEX (NDVI), OCTOBER 2023



Zone 2

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

Crop Production

In **Bangladesh**, The estimated 2023/24 cereal production will be 41.5 million metric tons (mt), a 1 percent increase from the previous year.[22] Sowing of both Aman season rice as well as sorghum crops continues under favourable conditions despite monsoon rains and flash flooding that caused widespread damage in Chattogram, Cox's Bazar, Rangamati, and Bandarban districts (Chattogram Division). Harvest is expected in November.

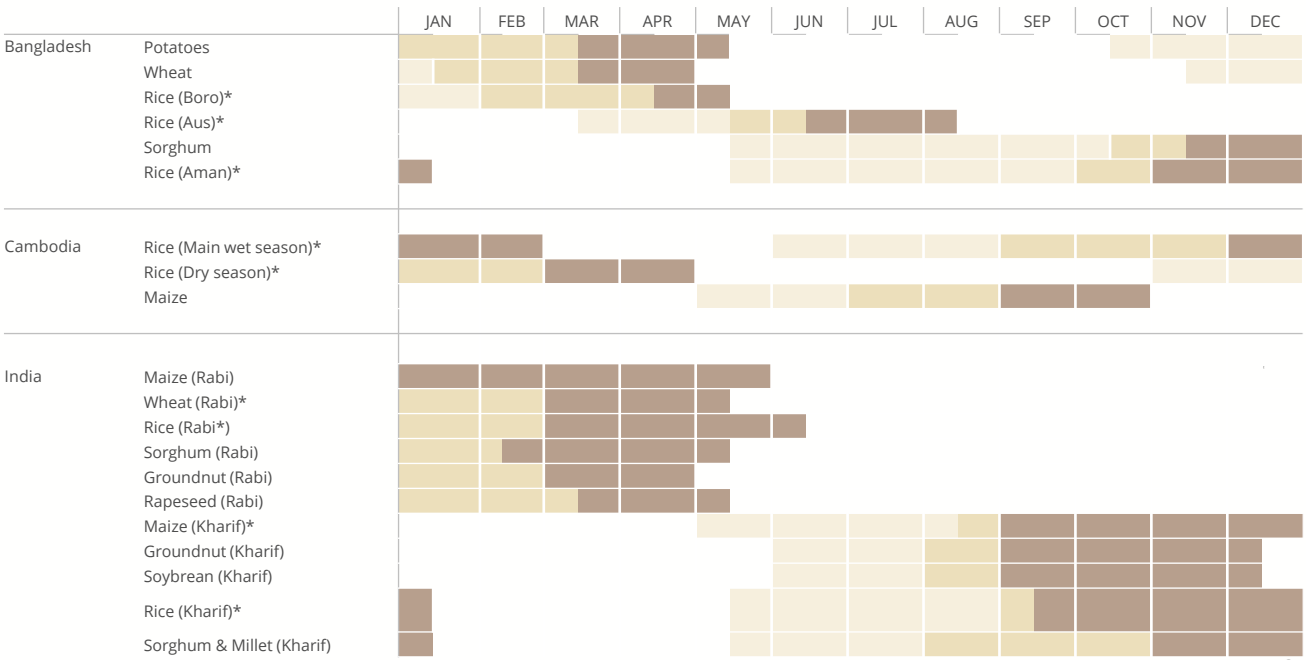
In **Bhutan**, harvesting of main season rice and maize crops, which make up 90 percent of annual production, is ongoing. Adequate rainfall has positively impacted yields, except some minor growing regions in the southwest and northeast where reduced rains affected plantings and yields as well as in the northeast where flash floods and landslides resulted in localized crop damage. However, despite favourable yields, rice and maize production are expected at a below-average level of 40,000 and 26,000 MT which will increase import requirements. [23]

In **Cambodia**, with 62 percent of the early rice harvested, the yield is slightly higher than last year. Also, the wet season rice planted area is 4 percent higher than last year and national plan. Despite a drought trend during the season, September rains allowed favourable growing conditions. However, heavy rains in central and west coast regions damaged 17 percent of the affected area. The government is distributing seeds for re-seeding. [24]

In **India**, the planting of Kharif season rice crops was in the tillering and transplanting stage under good weather conditions and expected to be harvested in November. The 2023/24 output of rice is expected at 132 million tonnes – 7 percent higher than the five-year average.[25] India's 2023/24 cereal production will be 310 million mt, a 1.5 percent increase from the previous year.

In **Lao PDR**, the planted area of wet season rice was 106% of the national production plan. [26] Wet-season rice grew under favourable conditions despite the monsoon heavy rainfall across central and southern parts of the country that resulted in flooding and landslides incidents since early August. Damages affected 190,467 hectares of agricultural lands, 106 barns for rice storage, and 79 irrigation systems, but with minor impact to wet-season output. In lowland areas, the irrigation water supply was adequate despite some flooding in late August. Some localized northern upland areas were affected by pest outbreaks but with no severe damage. The harvesting is progressing smoothly under good conditions. 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 [27], while the 2023/24 cereal production will be 1.8 million mt, a 1.0 percent increase from the previous year.[26]

CROP CALENDAR



Zone 2

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

Crop Production

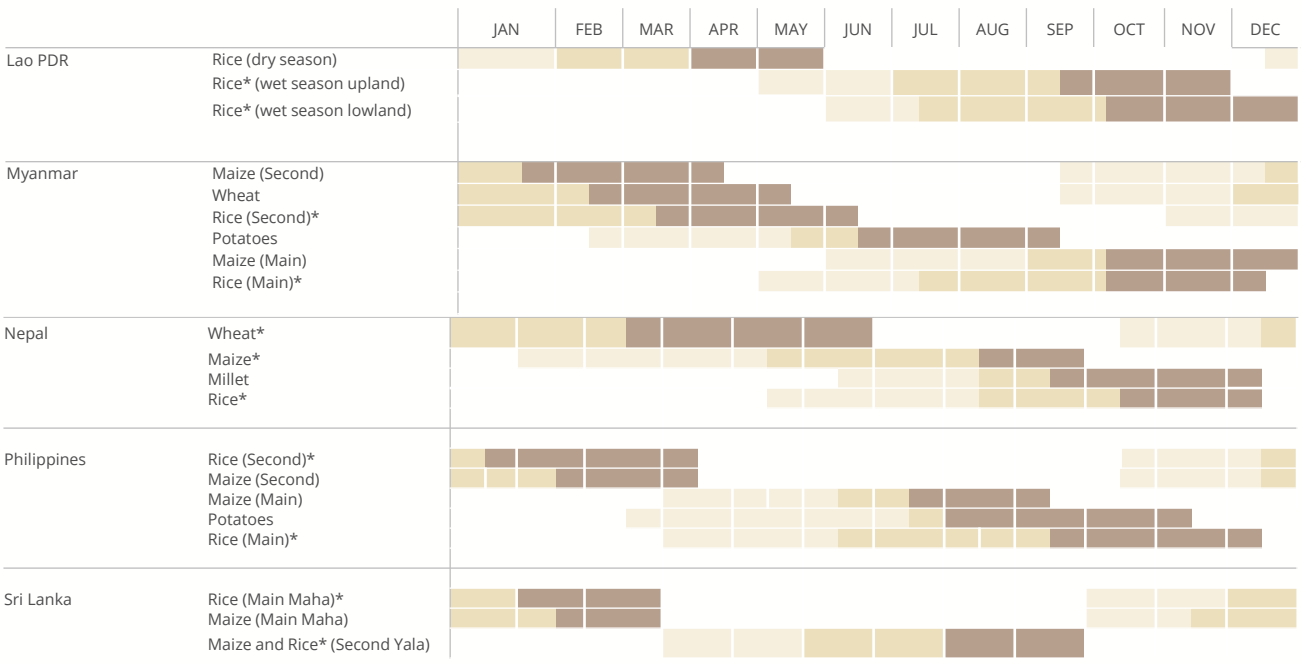
In **Myanmar**, the planting of wet season rice closed at 6.03 million hectares, accounting for 99.5 percent of the national and with slightly faster planting than last year. Crops are forming to maturity stage, and growing conditions are favourable. By September, 51 thousand hectares had been harvested of early wet season rice with a slightly higher yield than last year. In Bago and Yangon regions, 40 thousand hectares of wet season rice already at the maturity stage were affected by severe floods, with estimated significant loss of crop production. Replanting operations are underway for damaged fields. [28]

In **Nepa**l, maize harvest finalized under poor conditions and concerns for the ongoing rice development remain due to erratic and insufficient precipitation in major producing areas that impacted both sowing and yields. Reduced applications of costly agrochemicals further impacted yields. Cereal output for 2023 is estimated to be 5 percent below average, with 2.8 million tonnes of maize output forecast and 5.3 million tonnes of rice. [29] Land preparation and planting of wheat is underway. Forecasts of below-average precipitation through the end of the year in eastern areas may negatively influence planting and crop establishment. On the contrary, in western areas, rainfall is expected to be above-average with a likely positive impact on crops.

In the **Philippines**, In the Philippines, wet-season rice planted in April-May is now fully harvested with a slightly lower production output compared to the previous year due to the passage of three tropical cyclones and the enhanced southwest monsoon. Wet season rice planted from July to August is flowering stage under favourable growing conditions in most part of the country. The two tropical cyclones that passed through the country in the second half of September brought heavy rains in some parts of Luzon, but did no cause significant damage to rice output[30], The 2023/24 expected rice output 2.9 percent higher than the five-year average.[31] The Philippines' 2023 cereal production is expected to be 30.0 million mt, a 1.0 percent increase from the previous year.

In **Sri Lanka**, harvesting of Yala season maize and rice continues and crops in the southwest have recovered from drought-like conditions and water shortages in some reservoirs. Overall conditions are favourable, and harvesting activities will finalize in October. Land preparation and planting of Maha season rice and maize is underway. [32] 2023 cereal production is expected to be 3.5 million MT, a 0.5 percent decrease from the previous year. The total 2023/24 output of rice is estimated at 3.06 million mt – 0.4 percent higher than the five-year average - due to increased planted areas and improved supply of chemical fertilizers.[33]

CROP CALENDAR



Zone 2

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

Climate Outlook, November 2023-January 2024

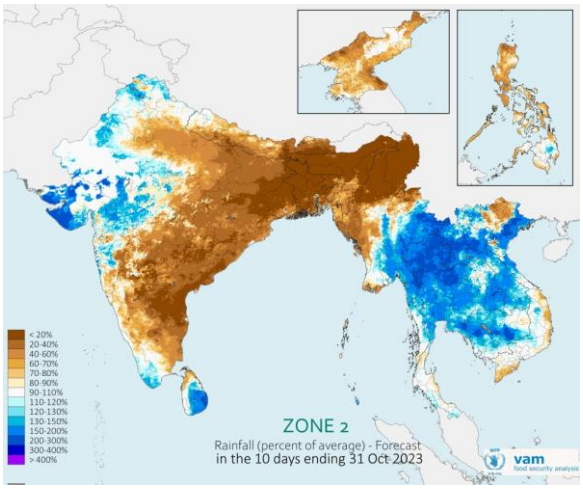
Mixed weather conditions are expected across zone 2 in the short term.

The short-term forecast for the last decan of October 2023 indicated that above-average rainfall was expected in Cambodia, Vietnam, Laos, and eastern Myanmar. Except for the western parts of India, all the remaining region is expected to have below-average rainfall (Map 10).

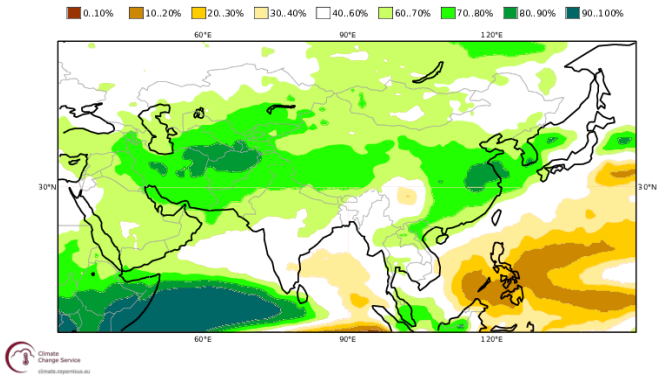
Rainfall during November 2023 and January 2024 is likely to be above average rainfall in northern India, northern Lao PDR, Nepal, and southern Sri Lanka, where there is a 60-80 percent possibility of exceeding the median rainfall. The Philippines is likely to receive below-average precipitation (Map 11).

Air temperature between November 2023 – January 2024 is likely to be above the normal conditions (>80 percent possibility of exceeding the median temperature) across major parts of Zone 2 (Map 12).

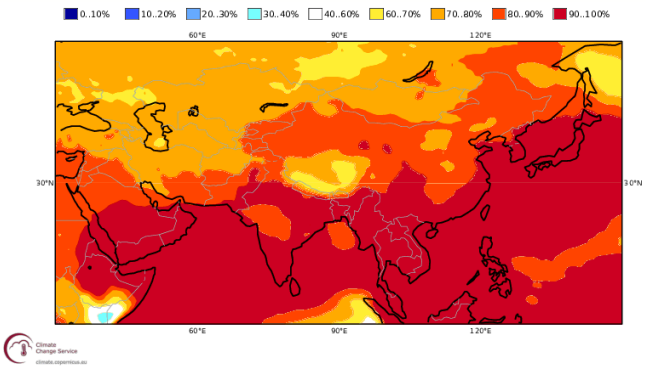
MAP 10: SHORT-TERM RAINFALL FORECAST AS A PERCENT OF AVERAGE, 21-31 OCT 2023



MAP 11. LONG-TERM RAINFALL FORECAST NOV 2023-JAN 2024, PRECIPITATION > MEDIAN, %



MAP 12. LONG TERM TEMPERATURE FORECAST NOV 2023-JAN 2024, 2m TEMPERATURE ABOVE MEDIAN, %



Map 11: C3S multi-system seasonal forecast probability (precipitation > median), nominal forecast, ECMWF/Met Office/Meteo-France/CMCC/DWD/NCEP/JMA/ECCC Nov.23-Jan.24
Map 12: C3S multi-system seasonal forecast probability (2m temperature > median), nominal forecast, ECMWF/Met Office/Meteo-France/CMCC/DWD/NCEP/JMA/ECCC Nov.23-Jan. 24

Zone 3

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

Rainfall Performance, July - October 2023

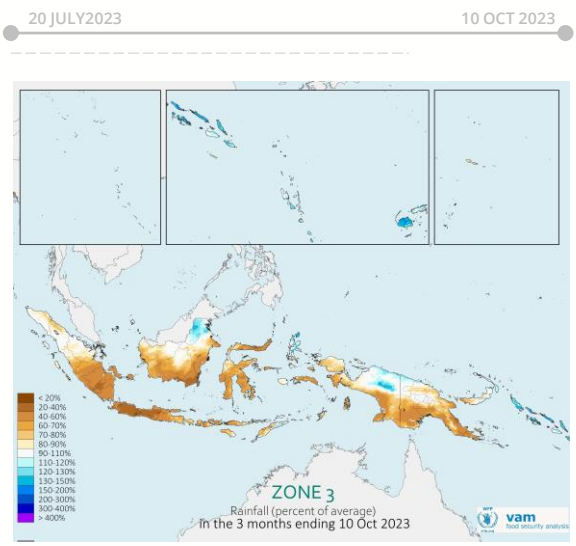
Rainfall during the last three months ending the 10th of October, has been lower than the average across most parts of Indonesia, southern half of Papua New Guinea and Samoa. On the opposite, rainfall was higher than average in Fiji, Solomon Islands, and Vanuatu (Map 13).

In the last month (**10th September-10th October),** rainfall was below average in most parts of Indonesia, as well as in Timor Leste, Samoa and Vanuatu. On the contrary, rainfall was higher than average in the northeast of Borneo and Papua and north half of PNG, also in Fiji and Solomon Islands, was Zone 3, with (Map 14).

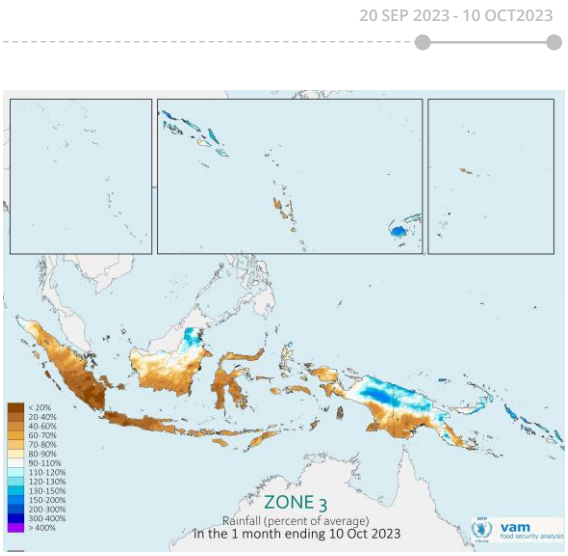
At the beginning of October, **Indonesia**, received less rainfall than in September 2023, causing drought in Lampung and South Sulawesi.[34] Approximately 210,000 people were affected and there were also reports of damage to homes, infrastructure, and crops, causing people to be displaced.

In **Papua New Guinea**, the northern parts received more rainfall, especially in the first decan of October, while the southern zone continued its dry pattern.

MAP 13: LAST THREE MONTHS



MAP 14: LAST MONTH

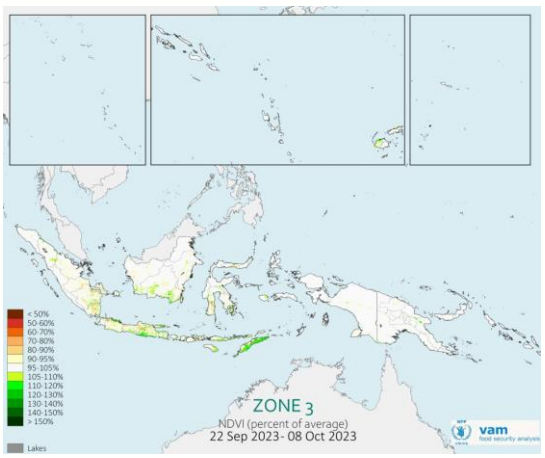


Vegetation Index

Near average vegetation index in recent weeks

Near-average vegetation conditions were observed in most parts of Zone 3. Vegetation index was slightly below average in areas of southern Sumatra, central Java and southern Sulawesi whereas NDVI was above average in Timor Leste and some areas of Java. (Map 15).

MAP 15: NORMALIZED DIFFERENCE VEGETATION INDEX (NDVI), 22 SEP - 8 OCT 2023



Zone 3

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

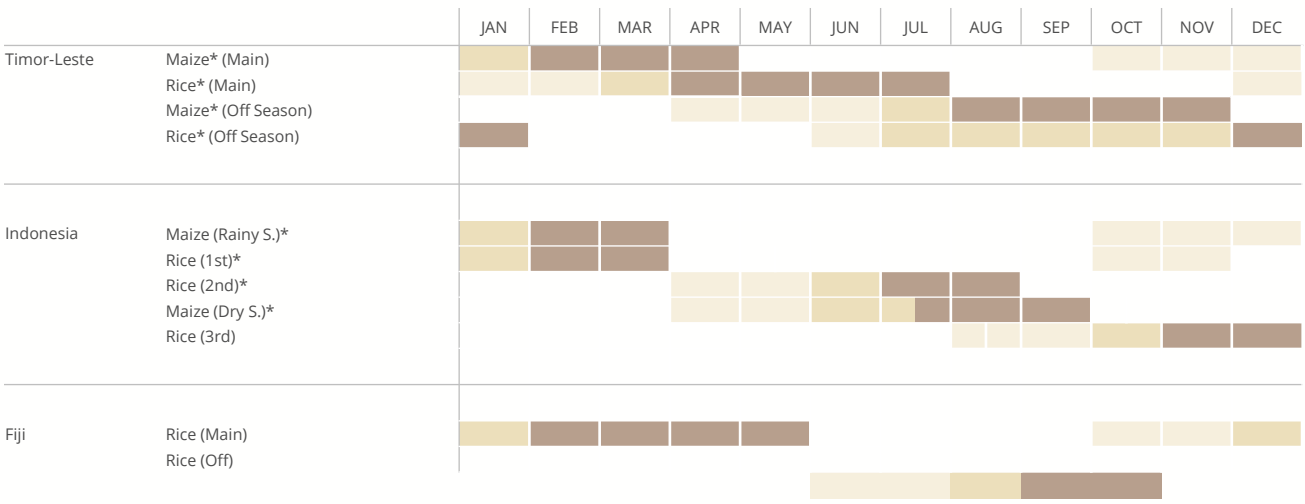
Crop Production

In **Fiji,** the 2023 output of rice is estimated at 12,000 tonnes, close to average, but the country imported 40,000 tonnes in 2023 to cover the gap in their needs. [35]

In **Timor Leste**, production of 2023 main cereals, mainly rice and maize, are estimated at an above-average level due to an expansion of sowings. Average yields are expected in most parts of the country except of late-planted rice crops in Viqueque and Manatuto municipalities. The 2023 minor off-season is ongoing, with maize crops being harvested, while paddy crops are between reproductive and ripening stages. Weather conditions have been supporting above-average sowings and benefitting crop development. The below-average precipitation and elevated temperatures forecast for October 2023- February 2024 are likely to affect yields of late-planted 2023 off-season crops and planting and development of 2024 main crops. Cereal import requirements in the 2023/24 marketing year (April/March) are forecast at 200 000 tonnes above-average; imports of rice, which account for 80 percent of the annual imports, are anticipated to be 14 percent above the average. [36]

In **Indonesia**, planting of wet-season rice is complete with a total planted area 5.3 percent lower than last year due to less precipitation and planting delays. The dry season rice planted in irrigated rice fields in the northern regions of Java and Bali in August and September is in fairly good growing condition. In Sumatra and Sulawesi, the rainfall in late September and early October helped recover water shortage and the drought has not caused significant damage to rice growing. In the fourth month of harvest of dry season rice, 3.2 million hectares have been harvested, 4.9 percent less than last year with forecast of yield slightly lower than last year due to the drought. A prolonged dry season connected to the current El Niño event has resulted in drought conditions in localized sub-districts located in Central Papua Province. However, the minor drought damage is currently not a significant concern for rice development. The forecast of a moderate to strong El Niño event is expected to impact much of the country through November with below-normal precipitation expected, and the conditions may result in water scarcity in Java, Bali, and southern Sumatra.[37]

CROP CALENDAR



Zone 3

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

Climate Outlook, October 2023-January 2024

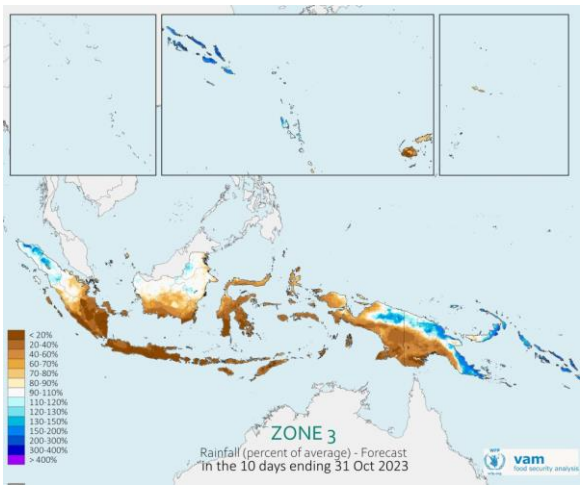
Drier-than-average conditions are expected across most Pacific countries

The short-term **forecast until 31 October** indicates drier than average conditions in major parts of Indonesia, southwestern half of Papua New Guinea, also in Timor Leste, Fiji and Samoa. On the opposite, above average rainfall is expected in northern Sumatra, and north-eastern part of Papua and of Papua New Guinea, as well as in Solomon Islands and Vanuatu (Map 16).

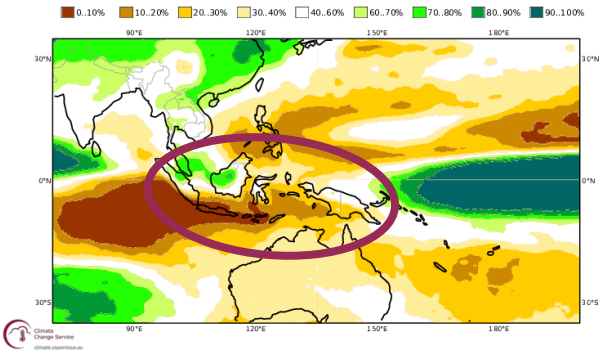
The **long-term forecast** shows a similar situation to the short-term, which is expected to continue with drier than average conditions until early 2024 in major parts of Indonesia, southern Papua New Guinea, Timor Leste, Fiji, and Samoa (Map 17). The Solomon Islands and Vanuatu are likely to receive light to median rainfall.

Air temperature during November 2023-January 2024 is expected to be higher than average (>80 percent possibility of exceeding the median temperature) across major parts of Zone 3 (Map 18).

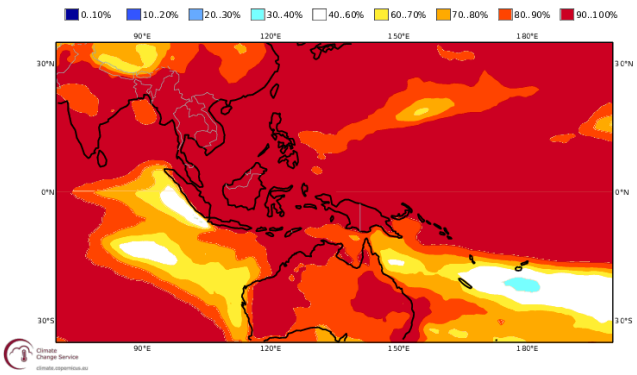
MAP 16: SHORT-TERM RAINFALL FORECAST AS A PERCENT OF AVERAGE, 21-31 OCT 2023



MAP 17. LONG-TERM RAINFALL FORECAST NOV 2023-JAN 2024, PRECIPITATION > MEDIAN, %



MAP 18. LONG-TERM TEMPERATURE FORECAST NOV 2023-JAN 2024, 2m TEMPERATURE ABOVE MEDIAN, %



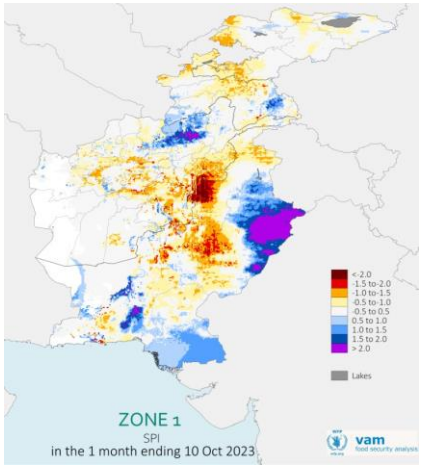
Map 17: C3S multi-system seasonal forecast probability (precipitation > median), nominal forecast, ECMWF/Met Office/Meteo-France/CMCC/DWD/NCEP/JMA/ECCC Nov. 23-Jan.24
Map 18: C3S multi-system seasonal forecast probability (2m temperature > median), nominal forecast, ECMWF/Met Office/Meteo-France/CMCC/DWD/NCEP/JMA/ECCC Nov.23-Jan.24

Annexes

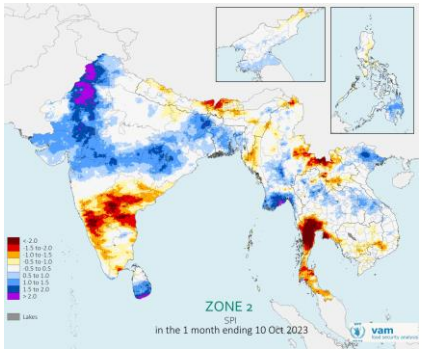
Standardized Precipitation Index, 20 Sep - 10 Oct 2023

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.

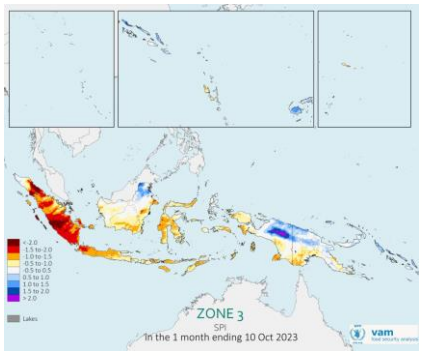
MAP 19: SPI ZONE 1 LAST MONTH



MAP 20: SPI ZONE 2 LAST MONTH



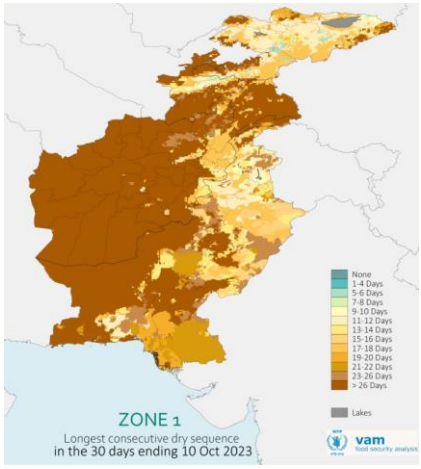
MAP 21: SPI ZONE 3 LAST MONTH



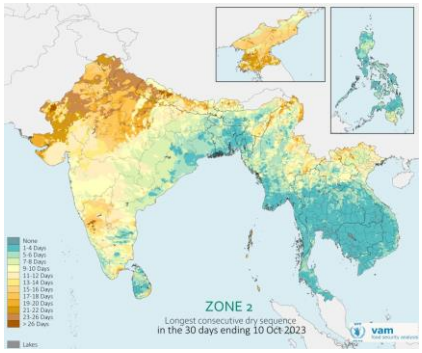
Longest Consecutive Dry Sequence, 20 Sep – 10 Oct 2023

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.

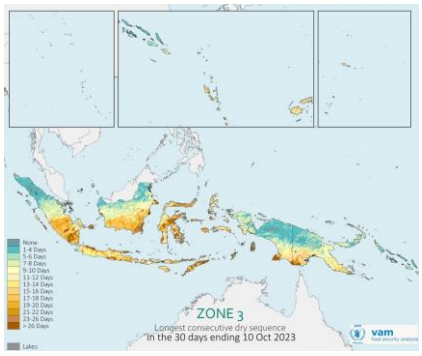
MAP 22: LONGEST CONSECUTIVE DRY SEQUENCE ZONE 1 LAST MONTH



MAP 23: LONGEST CONSECUTIVE DRY SEQUENCE ZONE 2 LAST MONTH



MAP 24: LONGEST CONSECUTIVE DRY SEQUENCE ZONE 3 LAST MONTH



Annexes

RBB Countries Rainfall Seasonal Pattern

Year		2023																																					Average[1] annual rainfall (mm)	September 2023 rainfall compared to September average[1] (%)	Accumulative rainfall variation by September 2023 (%)
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																																					264	-23%	-28%
	Kyrgyz Republic																																					431	9%	-34%
	Pakistan																																					266	0.2%	13%
	Tajikistan																																					355	-15%	-36%
Zone 2	Bangladesh																																					2,368	-11%	-14%
	Bhutan																																					924	-49%	-21%
	Cambodia																																					2,025	-8.2%	-7%
	India																																					1,144	19%	-2%
	Lao PDR																																					1,906	-11%	-11%
	Myanmar																																					2,147	-4%	-10%
	Nepal																																					1,410	-16%	-14%
	Philippines																																					2,752	-1%	13%
	Sri Lanka																																					1,867	38%	40%
Zone 3	Fiji																																					2,323	61%	8%
	Indonesia																																					2,883	-20%	0%
	Timor-Leste																																					1,776	-51%	13%

Data source: *WFP Dataviz Seasonal Explore*

[1] Long term average (1994-2013)

■ **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 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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