



REPUBLIC OF NAMIBIA

Ministry of Works and Transport Namibia Meteorological Service

Statement on the 2024/25 rainfall season and advisory

PART I: Review of 2023/24 Rainfall Season

1. Rainfall Performance

The 2023/24 rainfall season was characterized by false onset and poorly distributed rainfall with the bulk of the country reporting below-average rainfall. This was further aggravated by the fact that some regions were observing the fifth successive year of drought (Erongo, Omusati, and Kunene), while others were affected by the second successive year of drought (Karas, Hardap, Khomas, and parts of Omaheke). Extended dry spells within the rainy season led to crop failure necessitating drought relief in all regions of the country.

2. Temperature Performance

Namibia's average temperature for 2023 was a modest warming of 21.5°C, being 0.3°C above the 1991-2020 long-term temperature average. The bulk of the warming was observed during April, October, and November. November 2023 was the warmest month during the year at 25.6°C, 1.7°C above the 1991-2020 average followed by October 2023 with 24.8°C or 1.1°C above the 1991-2020 long-term average. In the absence of meaningful rain, scoring temperatures were the order of the day with February 2024 two degrees above average, while March, April, and May were 2.7°C, 1.6 and 2.4 °C above average respectively. It is necessary to note that, the warming temperatures also have a negative impact on the agricultural sector of the nation.

PART II: 2024/25 Seasonal Forecast

1. Climate Drivers for 2024/25 Rainfall Season

The El-Nino Southern Oscillation (ENSO) sea surface temperatures observed over the equatorial Pacific Ocean is in its Neutral state, supported by below-average subsurface temperatures. The projections show that a weak La Nina is expected to develop during the September 2024 to November 2024 period over the equatorial Pacific Ocean and lingering through the December 2024 to February 2025 period.

Furthermore, the Indian Ocean Dipole (IOD) is currently neutral and projections suggest that the IOD is likely to remain neutral till January 2025. The current warmer-

than-average global temperature patterns, are unprecedented and may not be reliable for ENSO and IOD predictions.

2. 2024/25 Rainfall Definitions and Prediction

Statistical and Dynamic climate prediction models were used to determine the likelihood of above-normal, normal, and below-normal rainfall for Namibia for the overlapping three-month periods i.e. October-November-December (OND) and January-February-March (JFM). Above-normal rainfall is defined as the wettest third of recorded rainfall amounts recorded in 30 years (e.g. 1981 – 2010); Below-normal is defined as the driest third of rainfall amounts, and Normal is the middle third, centered on the climatological mean.

The three main forecast classes are subdivided into four categories, i.e above-normal, normal-to-above, normal-to-below, and below-normal, differing in probabilities of rainfall in each of the three tercile categories as per the figure legend.

2.1 October-November-December (OND) 2024

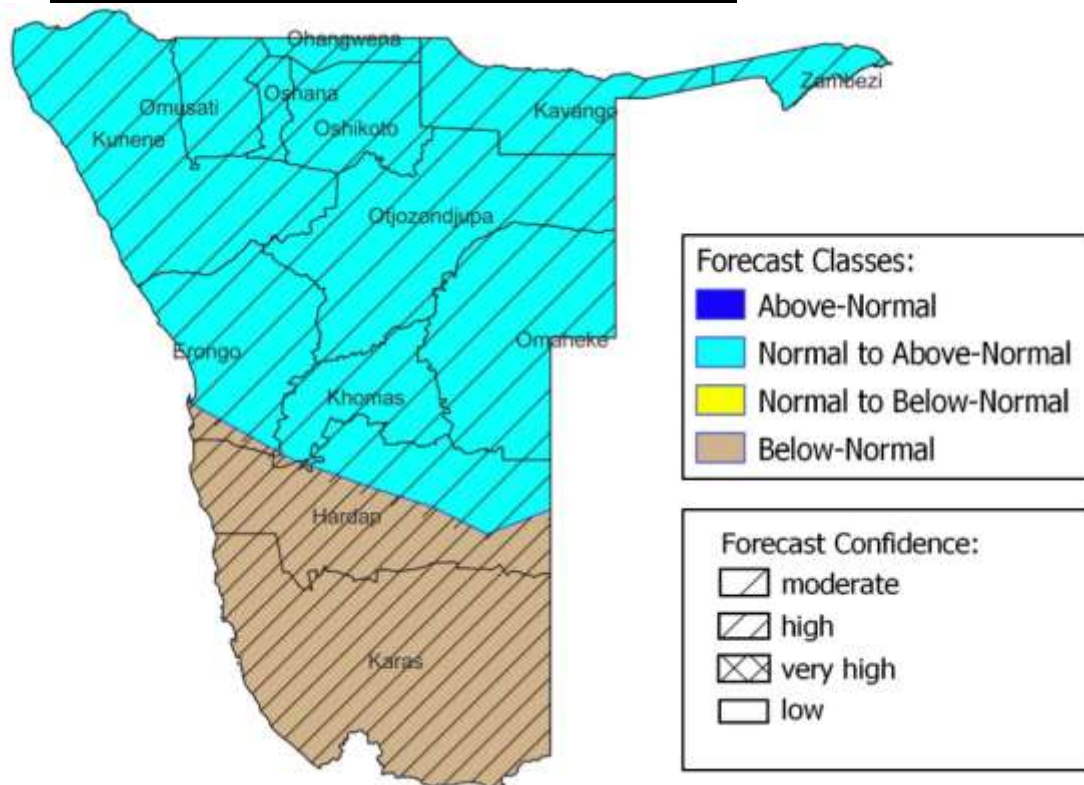


Figure 1: Rainfall forecast for OND 2024

The Karas and bulk of the Hardap region have a high likelihood of below-normal rainfall. The remainder of the country including the North-eastern Hardap region have a high likelihood of above-normal rainfall. (Figure. 1)

Based on analysis by international forecast centres, there will be a slow start to the season in October, however, increased rainfall is expected for the remainder of the period for the country.

2.2 January-February-March (JFM) 2025

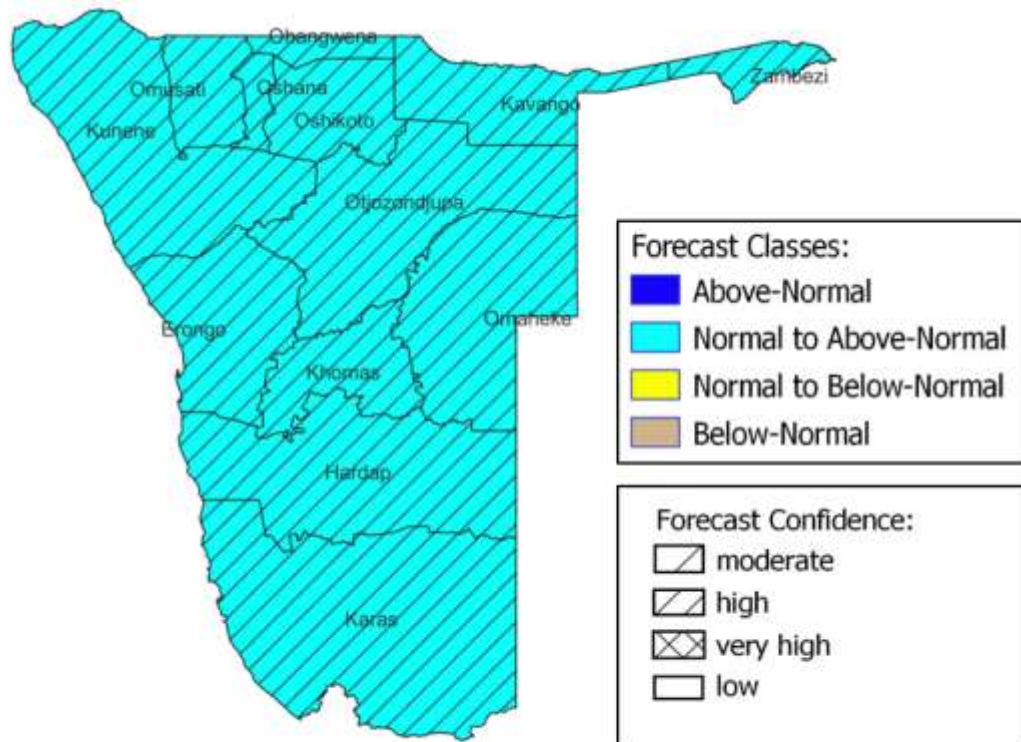


Figure 2: Rainfall Forecast for JFM 2025

The second part of the season is expected to have high chances of normal to above-normal rainfall for the entire country. (Figure 2)

PART III: Impacts & Advise based on 2024/25 Climate Outlook

This section deals with the expected impacts the 2024/25 Rainfall forecast will have on various Namibian society and community sectors.

(i) Water Sector

The weather forecast presents a mixed outlook for the upcoming season, with expectations of normal to above-normal rainfall in most parts of the country, contrasting with a drier period in the southern regions. This calls for a proactive approach to water management, emphasizing the importance of regular monitoring of water bodies to mitigate the risks associated with flash floods and droughts. It is crucial to update regional contingency plans to respond effectively to potential floods. Communities, especially farmers, are encouraged to harness the wet conditions through enhanced rainwater and floodwater harvesting, as well as efficient dam storage practices. In anticipation of water scarcity, southern regions should prioritize water conservation and manage water demand carefully. Securing additional water resources, such as through the development of infrastructure like borehole drilling, and water transfers, including desalination, is recommended to ensure a reliable water supply.

(ii) Agricultural Sector

The forecast for normal to above-normal rainfall in most parts of the country could positively impact agriculture by boosting crop yields, improving grazing conditions, and replenishing water resources. Both, livestock and crop farmers are encouraged to prepare for a potentially favorable rainfall season. Specifically, crop farmers should take advantage of the rainfall during the first months of the season and optimally cultivate their crop fields. Furthermore, crop farmers should utilize various seed varieties at their disposal to maximize the benefits of the expected rainfall.

Livestock farmers on the other hand may also consider restocking their herds, as the improved rainfall is likely to lead to better grazing conditions. However, it also poses risks such as flooding, water logging, increased crop pests, and livestock diseases. However, in the northwestern regions of the country, farmers should prepare for the possibility of drought.

(iii) Disaster Risk Reduction

The Office of the Prime Minister as the coordinating institution for disaster risk management recognizes the importance of early action and preparedness in mitigating the potential impacts of this forecast. Below, we have outlined the anticipated impacts and the corresponding advisories that should be considered, and they are as follows:

1. Flooding

- (i) Anticipated Impact:** Widespread and localized flooding is expected in low-lying areas, river basins, and urban centers with inadequate drainage systems. Localized flooding could damage property, submerge fields, displace people, and hinder transport.
- (ii) Potential Areas:**
 - **Zambezi Region:** Regularly experiences flooding during the rainy season due to its proximity to the Zambezi River.
 - **Kavango East and Kavango West Regions:** Flood-prone due to the Kavango River and the flat terrain.
 - **Oshana, Oshana, Oshana, and Oshikoto Regions** (Cuvelai-Etosha Basin): Known for seasonal flooding and the presence of oshanas (shallow, seasonal floodplains).
- (iii) Recommended Advisory:**
 - Issue **flood alerts** to communities at risk, especially those living near rivers, lakes, and flood-prone areas.
 - Encourage local authorities to **clear drainage systems** and ensure the functionality of flood control infrastructure.
 - Ensure that the Ministry of Agriculture, Water and Land Reform strengthens water harvesting techniques (excavation of earth dams).
 - Pre-position emergency relief supplies in flood-prone regions and ensure that **evacuation plans** are in place.

2. Public Health Risks

- (i) **Anticipated Impact:** A rise in waterborne diseases due to stagnant water and poor sanitation, especially in flood-prone areas. Increased risk of **waterborne diseases** such as cholera due to contaminated water supplies. Stagnant water may also lead to a surge in **mosquito-borne diseases** like malaria.
- (ii) **Potential Areas:**
 - **Northern Regions (Oshana, Ohangwena, Omusati, Oshikoto, Kavango East, Kavango West and Zambezi):** Where poor sanitation and stagnant water after flooding can increase the risk of cholera, typhoid, and other waterborne diseases.
 - **Urban areas** with inadequate drainage systems such as **Windhoek informal settlements**.
- (iii) **Recommended Advisory:**
 - The Ministry of Health and Social Services should intensify **public health campaigns** on the importance of boiling or treating drinking water and good hygiene practices.
 - Advise the public to avoid **stagnant water** to prevent mosquito breeding, and distribute mosquito nets in high-risk areas.
 - Mobilize medical supplies and personnel to be on standby for potential outbreaks.

3. Agricultural Disruptions

- (i) **Anticipated Impact:** Excessive rainfall could cause **waterlogging** in agricultural fields, resulting in crop damage and soil erosion, which may impact food security.
- (ii) **Potential Areas:**
 - **Northern Crop-Growing Regions:** Including **Omusati, Ohangwena, Oshana, Oshikoto, Zambezi, Kavango East and Kavango West** where rain-fed agriculture is predominant.
 - **Central and Southern Regions** that practice livestock farming, where prolonged rain could affect grazing lands.
- (iii) **Recommended Advisory:**
 - Collaborate with the MAWLR to advise farmers on improving **field drainage** and planting **flood-resistant crops**.
 - Provide technical support to **protect topsoil** through terracing and cover cropping to prevent erosion.
 - Monitor crop conditions closely and support **early harvesting** where possible.

4. Infrastructure and Transportation Disruption

- (i) **Anticipated Impact:** Heavy rainfall may damage roads, bridges, and other infrastructure, leading to transportation delays and the isolation of certain communities.
- (ii) **Potential Areas:**
 - **Roads** may become inaccessible due to heavy rains and flooding in flood-prone regions.

- **Key highways** such as the Trans-Caprivi Highway, may be affected by rising river levels.
- (ii) **Recommended Advisory:**
- The Ministry of Works and Transport and the Roads Authorities should be on alert to address **road damage** and ensure that key routes remain passable.
 - Advise the public on **alternative transportation routes** in case of disruptions and increase readiness for **rapid repair of critical infrastructure**.
 - Consider pre-positioning heavy equipment in strategic locations to respond to infrastructure damage.

5. Power and Communication Outages

- (i) **Anticipated Impact:** Heavy rainfall and flooding may disrupt power lines, telecommunication networks, and other critical services.
- (ii) **Potential Areas:**
- **Urban centers and rural communities** across **Zambezi, Kavango, and Northern Regions**, where power grids and communication networks are vulnerable to extreme weather conditions.
- (ii) **Recommended Advisory:**
- The Ministry of Mines and Energy should assess the **vulnerability of networks** and prepare for potential disruptions.
 - Encourage citizens to maintain **emergency supplies**, including alternative light sources, backup communication tools, and essential medical supplies.
 - Reinforce contingency plans for **rapid restoration of power and communication** networks in affected areas.

Conclusion

This forecast was produced by the Namibia Meteorological Service, in collaboration with the respective divisions in the Office of Prime Minister, and the Ministry of Agriculture, Water and Land Reform which are responsible for the advisory and mitigation of the associated risks.