



# SMI CASE STUDY

APRIL 2023



# GENERAL INFORMATION

**Date:** 15 December 2022

**Risk area:** -27.65, 29.05 ( Kalkfontein)

**Policy risk period:** 1st October 2022 12th December 2022

**Reporting interval:** Per decade (10 daily)

**This report:** 7 decades (21st September 2022 10th December 2022)



# SMI – TERMINOLOGY

**Risk Area:** The 0,1 degree by 0,1 degree grid cell selected by the insured where the cropping fields are located. The grid cell is indicated by a coordinate, for example -27.35, 25.25

**Risk Period:** The total period selected by the insured customer for which insurance cover is provided.  
Decade: One Decade is a estimated 10 day interval during which soil moisture is observed via satellite. A decade reading is noted as of the 1st, 11th, and 21st of every month with a risk period consisting of 5 decades.

**Soil Moisture Value:** The average moisture of the soil observed by the satellite during a decade for the selected risk area. A decade measurement is calculated as an average of all soil moisture readings within a decade as:

decade for 1st of a month is an average of all readings from 1st to 10th inclusive,  
decade for 11th of a month is an average of all readings from 11th to 20th inclusive, and  
decade for 21st of a month is an average of all readings from 21st to the last day of the month inclusive.

**Historical Average Soil Moisture Value:** The average moisture of the soil observed by the satellite during a decade for the selected risk area from 2007 till 2022. For example the Average Soil Moisture Value for Decade 1, 1st January to 10th January, from 2007 until 2022.



**Soil Moisture Anomaly:** The percentage irregularity within a given Soil Moisture Value per decade. We expect the Soil Moisture Values to achieve a certain value, but for an uncertain reason, the value does not achieve.

**Cumulative Average Soil Moisture Value:** The average moisture of the soil observed by the satellite already observed during the Risk Period. This value will change incrementally with each report received.

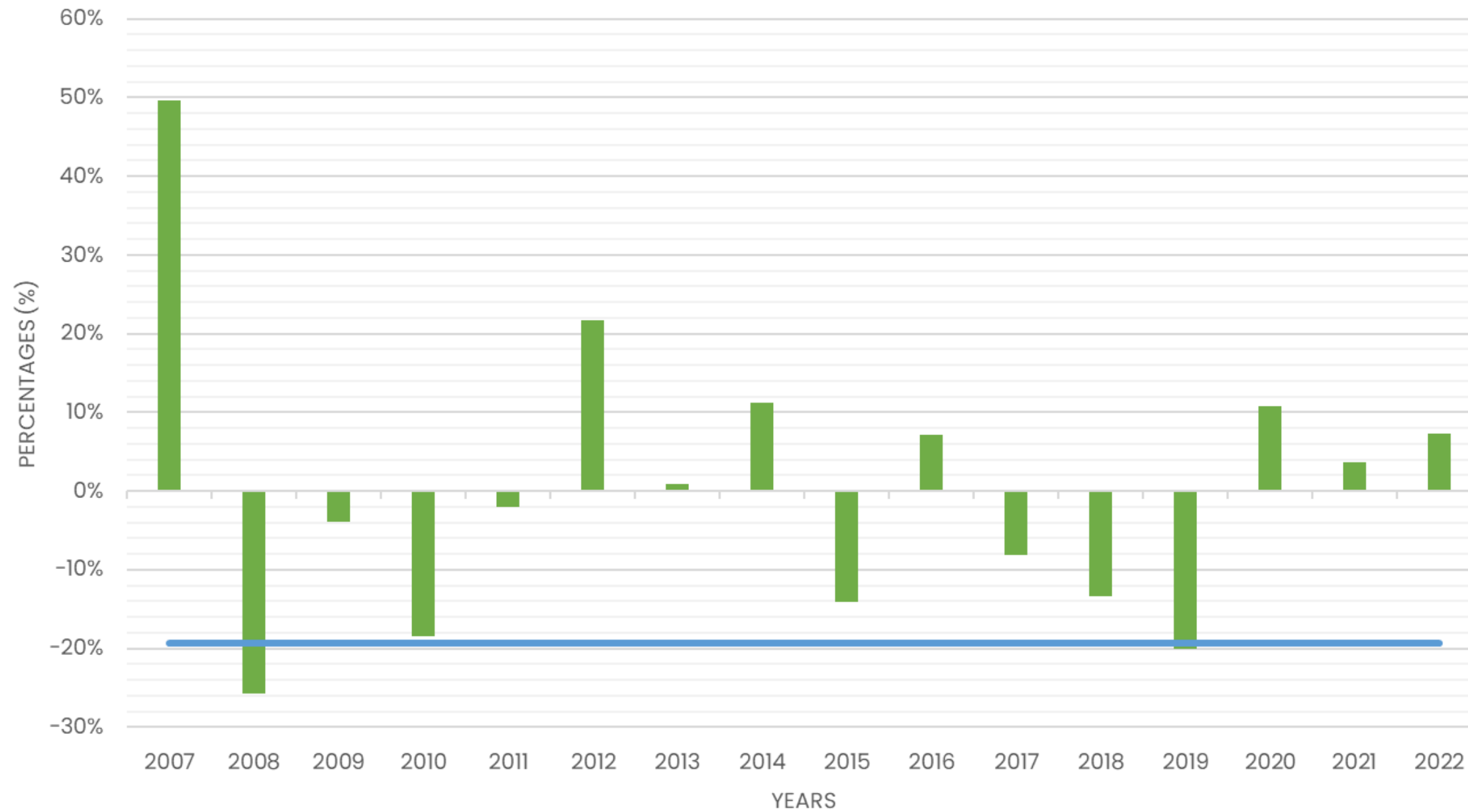
**Cumulative Average Soil Moisture Anomaly:** The percentage irregularity within a given Soil Moisture Value already observed during the Risk Period. This value will change incrementally with each report. The cumulative Average Soil Moisture Anomaly at the end of the Risk Period will be used to calculate a potential claim.

**Trigger Point:** The Soil Moisture Anomaly percentage point at which a claim will trigger. In the case of this policy, the Soil Moisture Anomaly must reflect a deficit in soil moisture against the Historical Average Soil Moisture Value.

**Reporting Interval:** This report will be generated per decade throughout the Risk Period to reflect the Cumulative Average Soil Moisture Anomaly.



# HISTORICAL SMI ANOMALY OVER YOUR RISK PERIOD



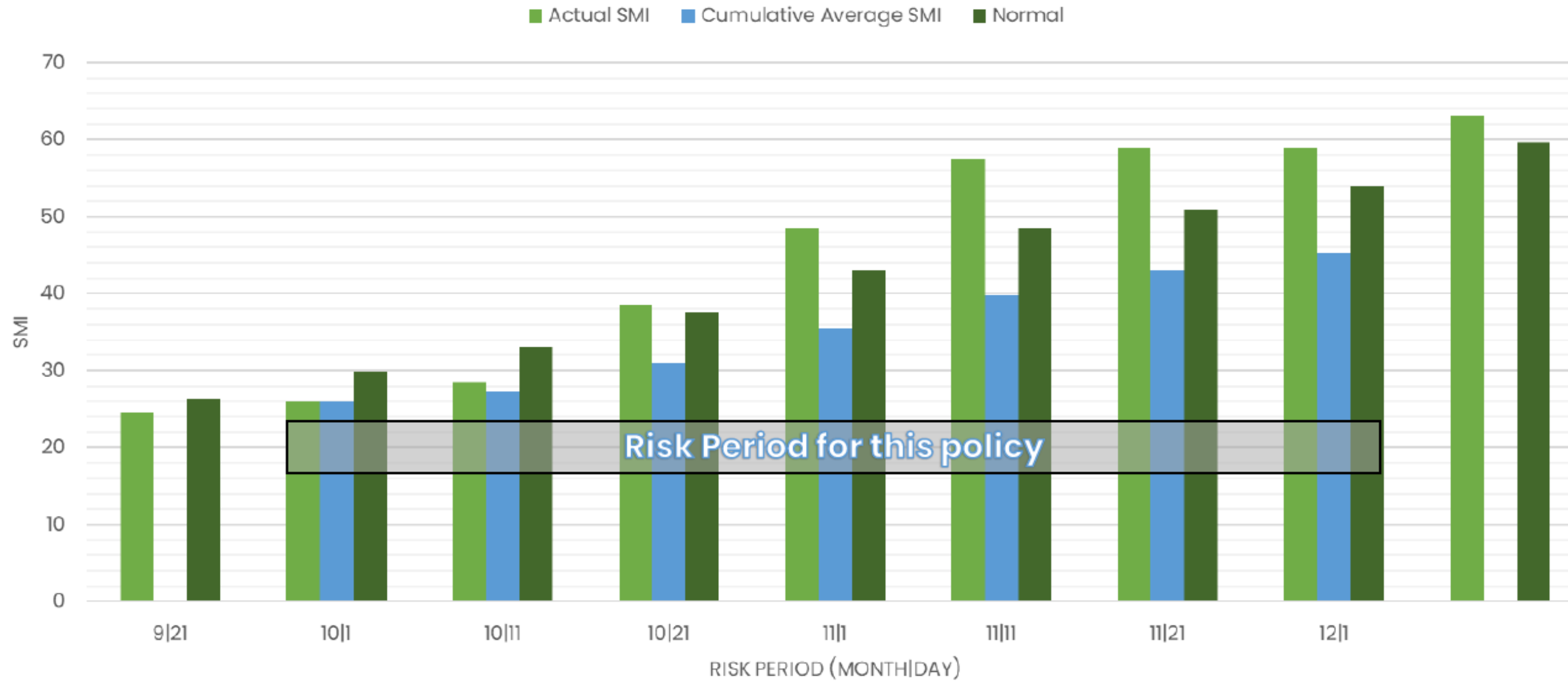
● Soil Moisture Anomaly from 2007 to 2022 for the chosen area and risk period applicable to this policy.

- Above average soil moisture: 2007, 2012, and 2014.
- Below average soil moisture: 2008, 2010, and 2019.

● Average anomaly across the period from 2007 to 2022. This indicates the TRIGGER POINT for a claim on this policy.



# SMI OVER YOUR RISK PERIOD



● Actual soil moisture normalized values for the decades immediately preceding and proceeding the risk period of this insurance policy.

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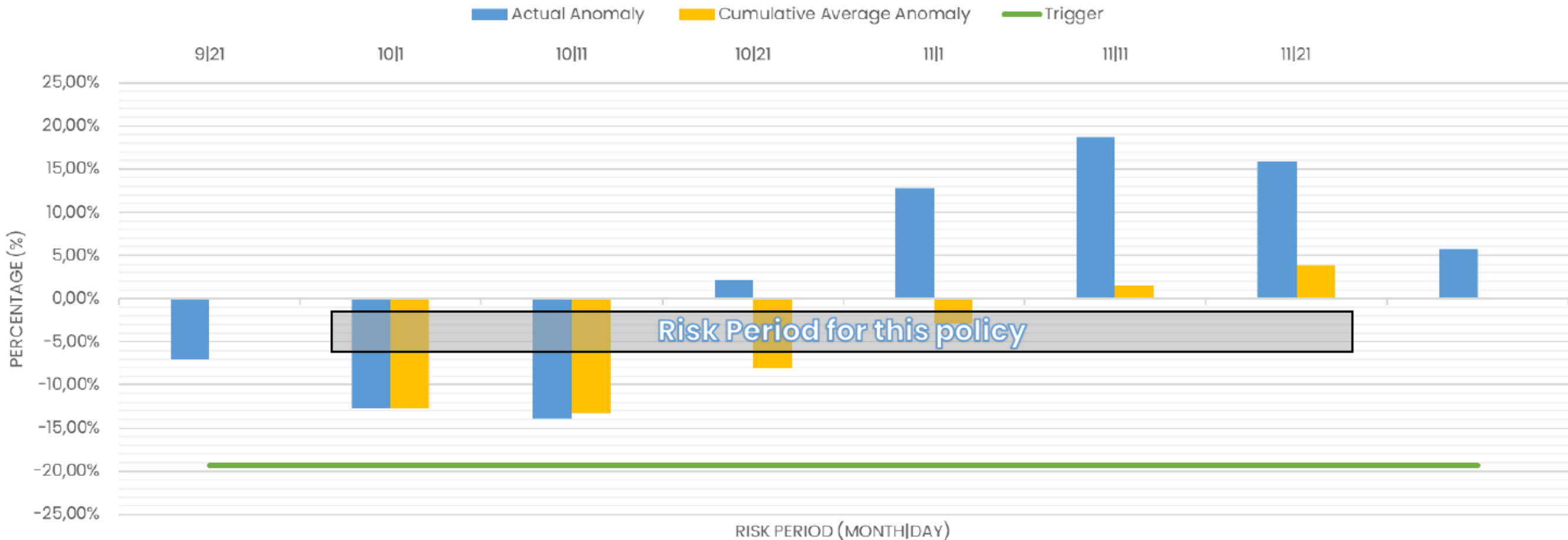
● Cumulative average soil moisture. In this case, it considers all 7 decades of the risk period:

- (21st September 2022 10th December 2022)

- **Current Status:** An increase in soil moisture from the normal value for the risk period.



# SMI ANOMALY OVER YOUR RISK PERIOD



- Soil moisture anomaly from the decades immediately preceding and proceeding the risk period of this insurance policy.
- Cumulative average soil moisture anomaly for the whole risk period for this insurance policy.

● The TRIGGER POINT for a claim on this insurance policy.

**Current status:** The cumulative average soil moisture anomaly for the whole risk period reflects a surplus of 3,85% from normal and difference of 23,90% above the policy trigger point.

**CAUTION:** This policy will trigger a claim when the cumulative average soil moisture anomaly across all FIVE (5) decades is below the trigger point.



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