



African Centre of
Meteorological
Applications for
Development
1985-2019



AFRICAN CENTRE OF
METEOROLOGICAL APPLICATIONS FOR DEVELOPMENT
African Institution under the aegis of UNECA and WMO

TECHNICAL NOTE **ON SEASONAL CLIMATE FORECAST** **FOR SON_OND_NDJ_2021/2022** **Issued on _2021**

	Name	Position
Prepared by	Maimuna Borno Maoro Beavogui	Climate Expert
Supervised by	Mr. Hubert Kabengela	Supervisor
Reviewed and verified by	Dr. Andre Kamga	DG ACMAD

OUTLINE

I.ANALYSIS OF CLIMATE VARIABILITY AND TRENDS

II.IDENTIFICATION OF ANALOG YEARS

III.SELECTION OF WET AND DRY YEARS

IV.GLOBAL SST AND PRECIPITATION COMPOSITE ANALYSIS

V.ANALYSIS OF CUMULATIVE ESTIMATED PRECIPITATION

**VI.GENERATION AND ANALYSIS OF STATISTICAL FORECAST WITH CLIMATE
PREDICABILITY TOOLS**

**VII.ANALYSIS OF EACH GLOBAL PRODUCING CENTRES FOR LONG RANGE
FORECAST**

**VIII. ANALYSIS OF WMO LEAD CENTRES FOR LONG RANGE FORECATS
MULTIMODEL PRODUCTS**

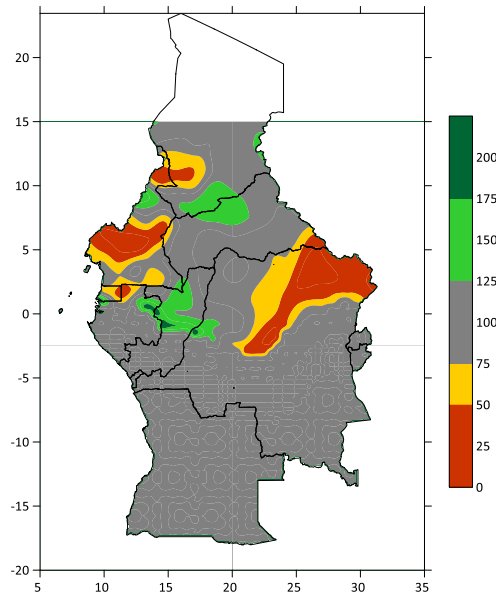
**IX.COMBINATION OF OUTPUTS FROM STEP 1 TO STEP 8 AND GENERATION OF
THE CONSENSUS FORECAST**



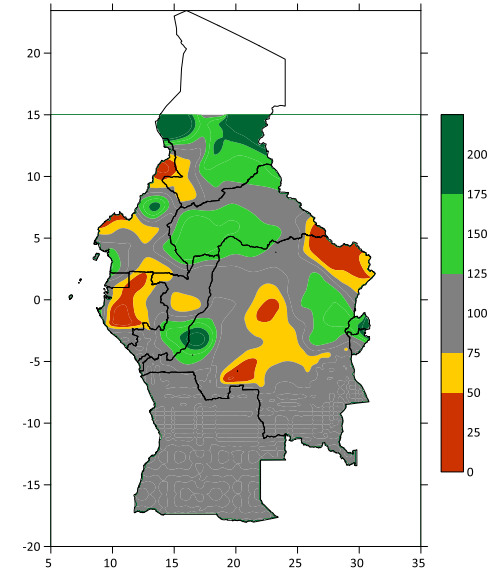
ANALYSIS OF CLIMATE VARIABILITY AND TRENDS

Recorded Rainfall Anomaly in Different Temporal Scale

LAST 7 DAYS PRECIPITATION IN PERCENT OF AVERAGE
FROM 27 JUN-26 SEP 2021



LAST 30 DAYS PRECIPITATION IN PERCENT OF AVERAGE
FROM 27-28 SEP 2021



LAST 7 DAYS PRECIPITATION IN PERCENT OF AVERAGE
FROM 22-28 SEP 2021

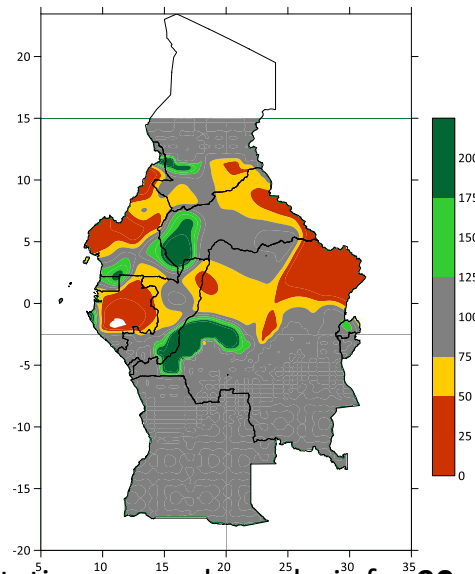


Figure: Gauge-based long term precipitation anomaly analysis for **90-days** (top left pannel: **30-days** (top right pannel) and **7-days** (bottom) based on 1991-2020 climatological period

LAST RECORDED RAINFALL ANOMALY ESTIMATES BASED ON RF2 DATASET

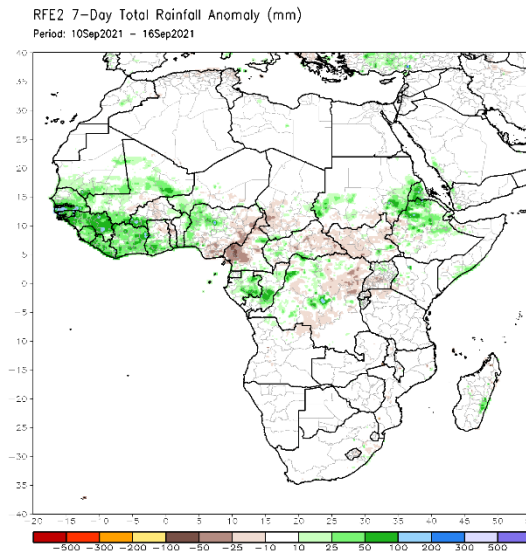
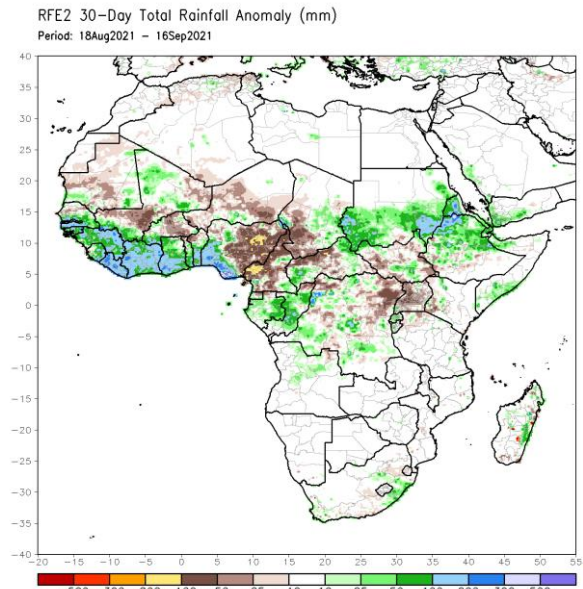
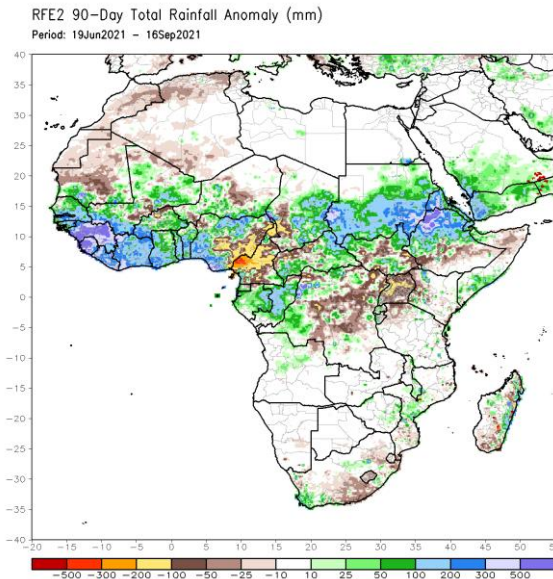
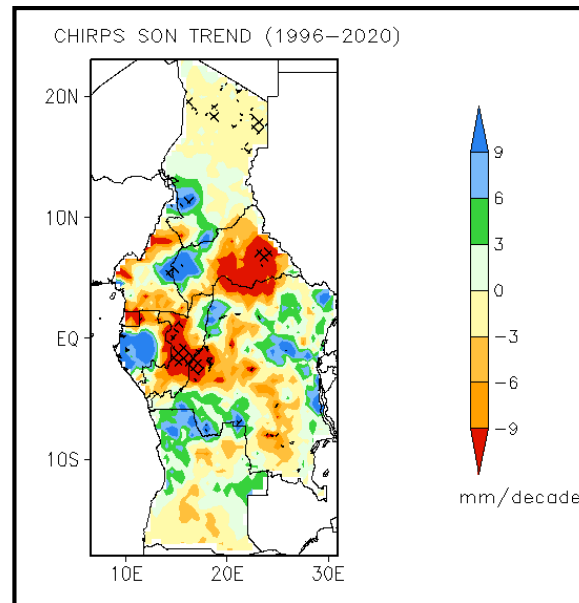
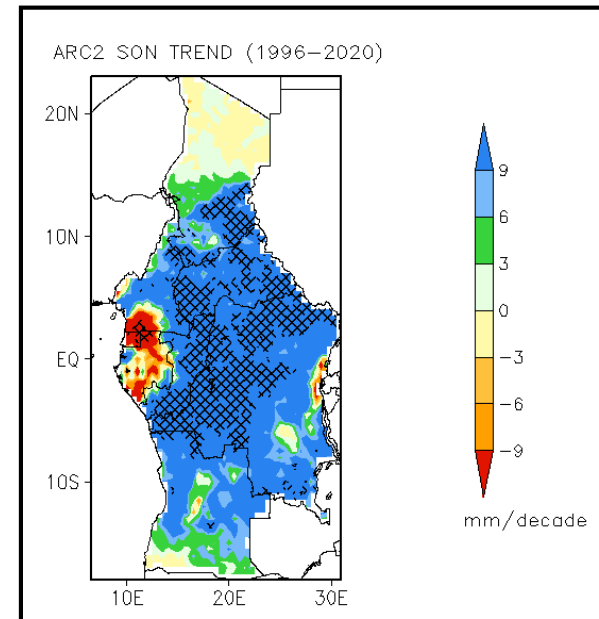
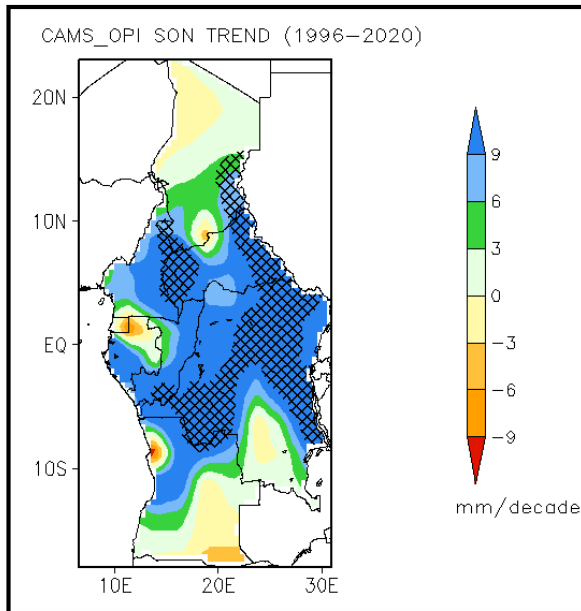
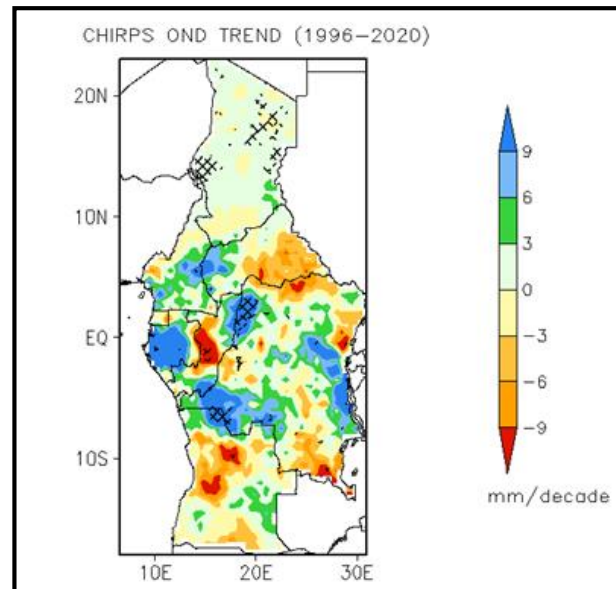
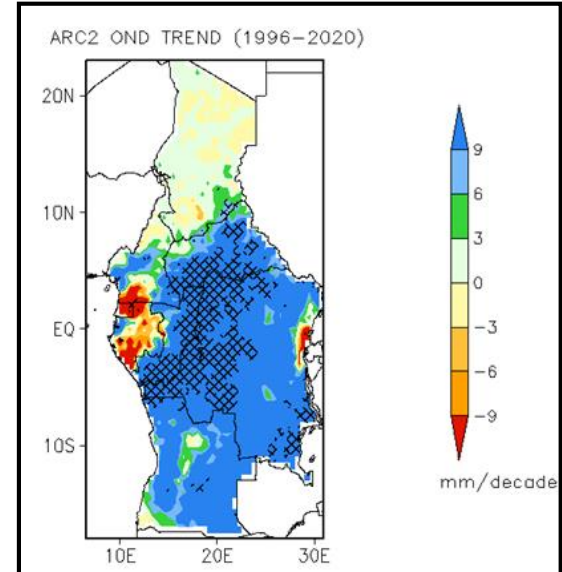
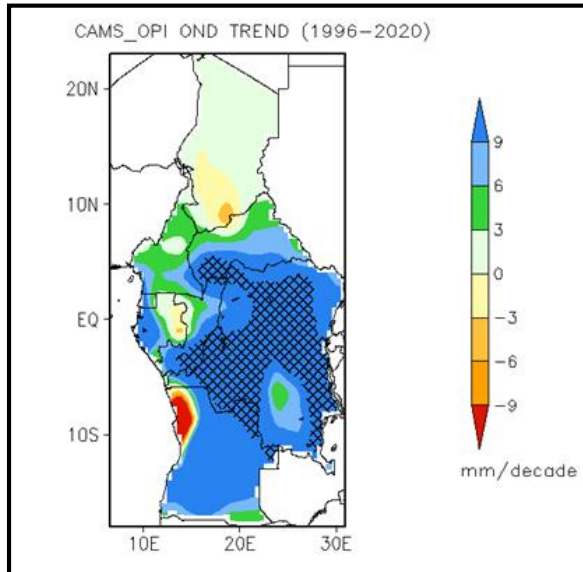


Figure: RFE2-based long term precipitation anomaly analysis for **90-days** (top left) **30-days** (top right) and **7-days** (bottom) based on 1991-2020 climatological period

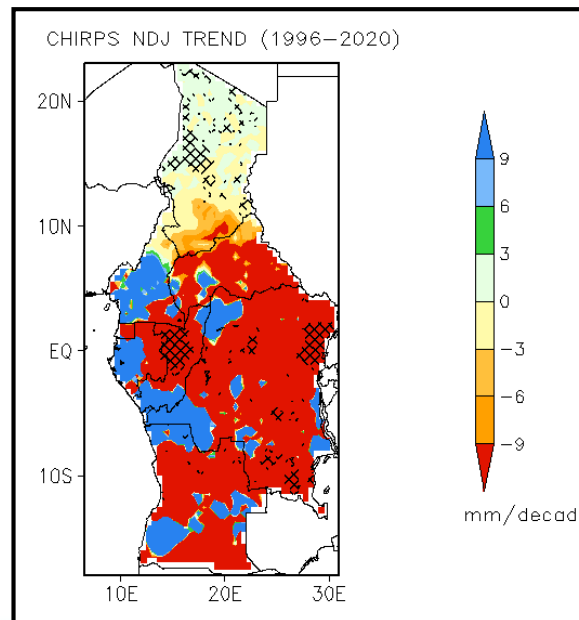
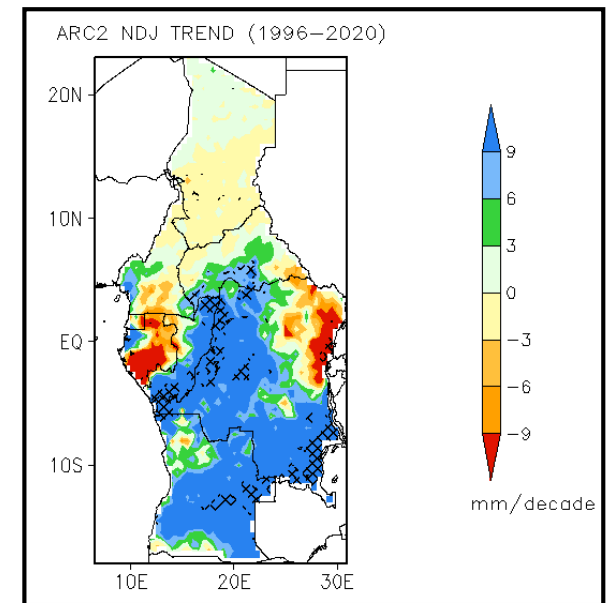
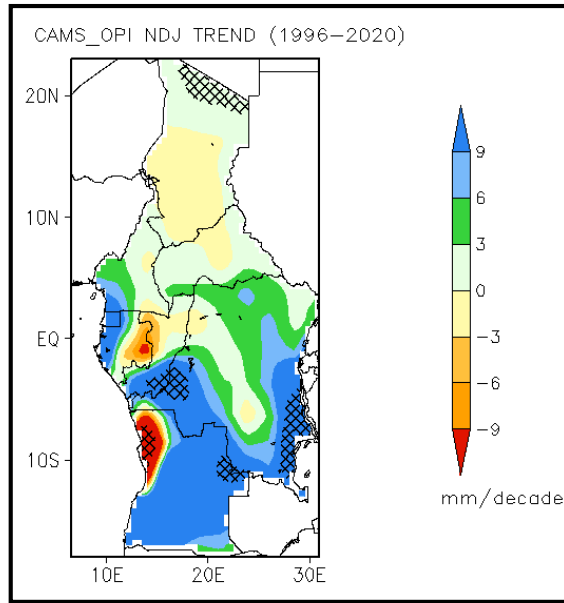
PRECIPITATION TREND FOR SON OVER CENTRAL AFRICA, GENERATED WITH CAMS, ARC2 AND CHIRPS DATASETS FOR THE PERIOD: 1996-2020



PRECIPITATION TREND FOR OND OVER CENTRAL AFRICA, GENERATED WITH CAMS, ARC2 AND CHIRPS DATASETS FOR THE PERIOD: 1996-2020



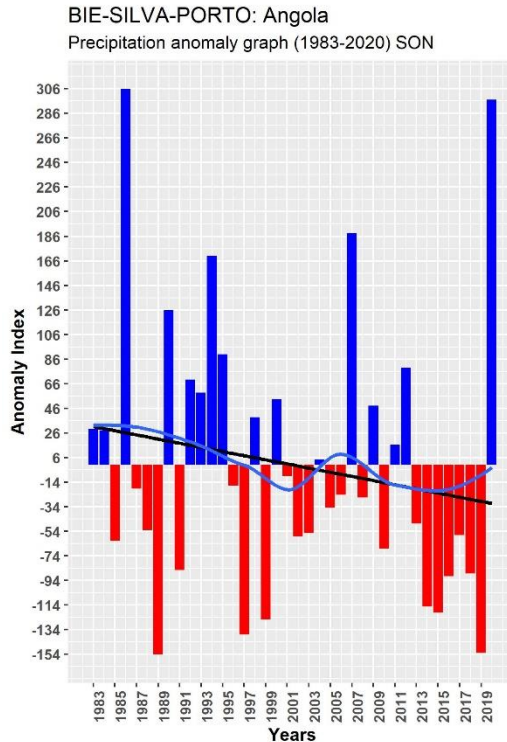
PRECIPITATION TREND FOR NDJ OVER CENTRAL AFRICA, GENERATED WITH CAMS, ARC2 AND CHIRPS DATASETS FOR THE PERIOD: 1996-2020



CENTRAL-AFRICA (SON) 2021

CLIMATE VARIABILITY AND TRENDS ANALISYS (TIME SERIES): SON
Anomaly Graphs

Angola: Station BIE-SILVA-PORTO



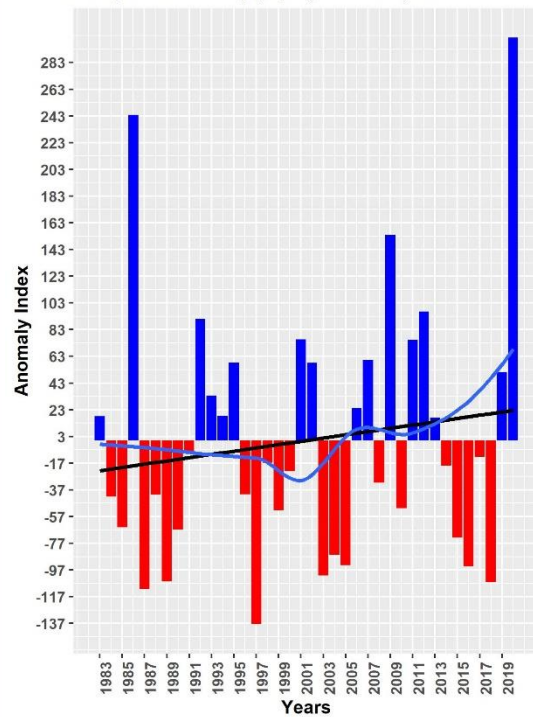
Wet_Year	Percentage
1986	186.5
1990	135.6
1994	148
1995	125.4
2007	153.3
2020	184

Dry_Year	Percentage
1989	56.4
1997	61
1999	64.5
2014	67.4
2015	66
2016	74.5
2019	56.8

Figure a - c: Climate variability and trend anomaly graph (a): Wet years above 125% (b): and Dry years lower than 75% (c)

Angola:Station CAZOMBO

CAZOMBO: Angola
Precipitation anomaly graph (1983-2020) SON

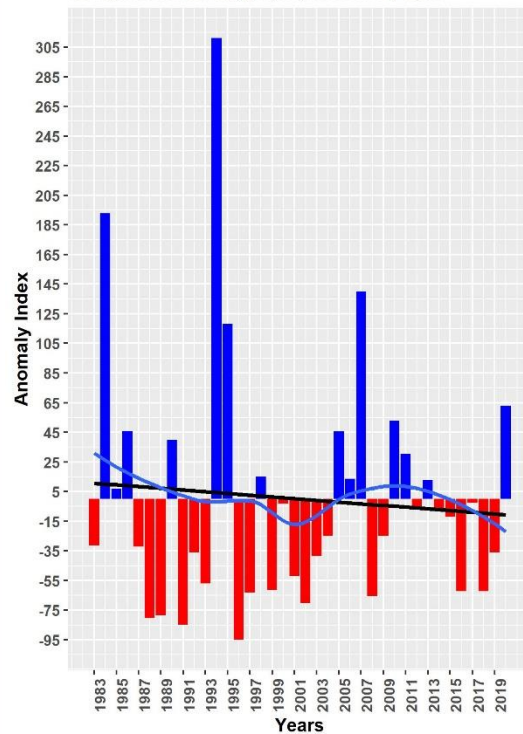


Wet_Year	Percentage
1986	172.8
1992	127.2
2009	146.1
2012	128.9
2020	190.2

Dry_Year	Percentage
1987	66.8
1989	68.5
1997	58.9
2003	69.8
2004	74.4
2005	72.1
2016	71.9
2018	68.3

Angola:Station LUANDA

LUANDA: Angola
Precipitation anomaly graph (1983-2020) SON



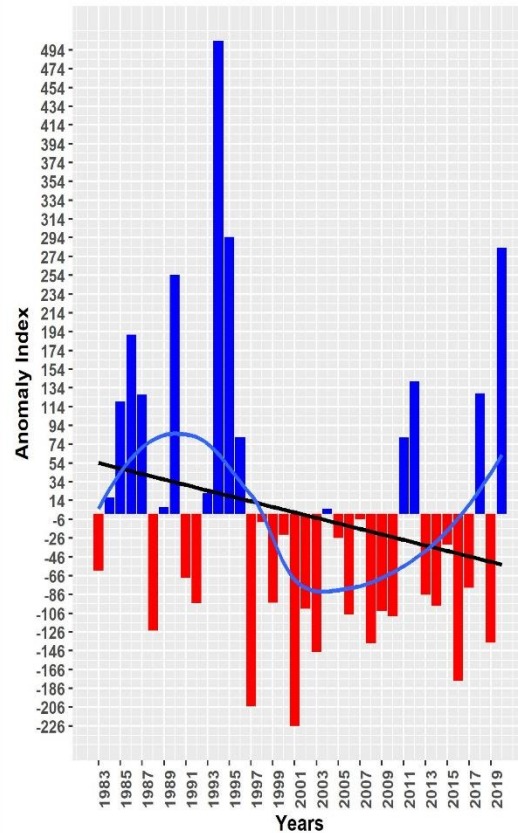
Wet_Year	Percentage
1984	300.4
1986	147.6
1990	141.2
1994	423.3
1995	222.7
2005	147.5
2007	245.6
2010	154.8
2011	131.5
2020	165.3

Dry_Year	Percentage
1983	67.4
1987	66.5
1988	16.5
1989	18.5
1991	11.8
1992	62.6
1993	40.9
1996	1.2
1997	34.5
1999	36.3
2001	45.8
2002	27
2003	60
2004	73.9
2008	32
2009	74.1
2016	35.4
2018	35.5
2019	62.5

Angola: Station NEGAGE

NEGAGE: Angola

Precipitation anomaly graph (1983-2020) SON

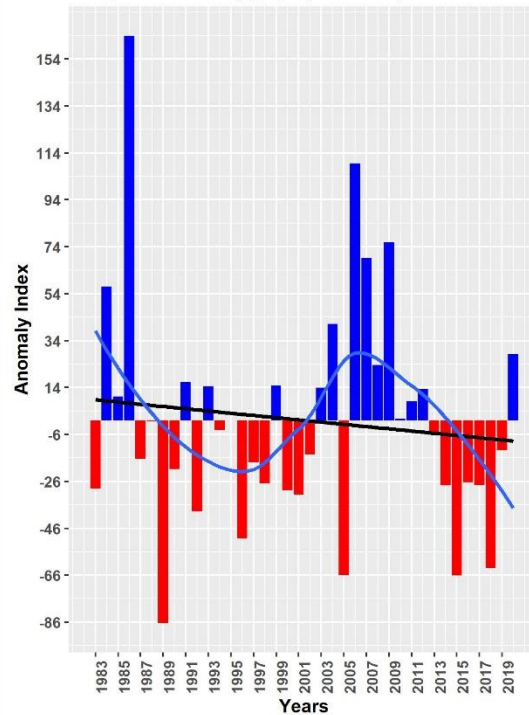


Wet_Year	Percentage
1985	126.7
1986	142.7
1987	128.3
1990	157
1994	212.8
1995	166
2012	131.6
2018	128.7
2020	163.3

Dry_Year	Percentage
1988	72.1
1997	54.1
2001	49.4
2003	67.1
2008	69.1
2016	60.1
2019	69.2

Angola:Station PEREIRA-DE-ECA

PEREIRA-DE-ECA: Angola
Precipitation anomaly graph (1983-2020) SON

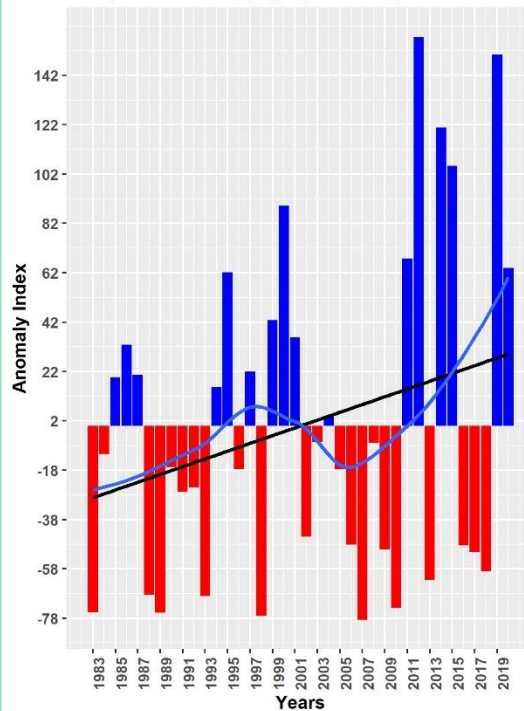


Wet_Year	Percentage
1984	166
1986	289.9
2004	147.5
2006	226.8
2007	180
2008	127.3
2009	187.9
2020	132.7

Dry_Year	Percentage
1983	66.3
1989	0
1992	55.2
1996	41.8
1998	68.8
2000	65.5
2001	63.4
2005	23.7
2014	68
2015	23.5
2016	69.5
2017	68
2018	27.2

Burundi:Station BUJUMBURA

BUJUMBURA: Burundi
Precipitation anomaly graph (1983-2020) SON

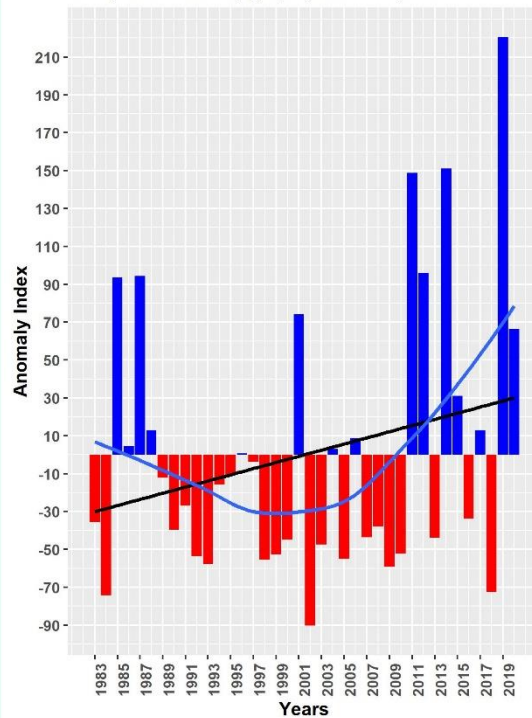


Wet_Year	Percentage
2000	134.9
2011	126.5
2012	161.6
2014	147.3
2015	141.1
2019	158.8

Dry_Year	Percentage
1983	70.5
1988	73.2
1989	70.4
1993	73
1998	69.9
2007	69.3
2010	71.2

Burundi:Station MUYINGA

MUYINGA: Burundi
Precipitation anomaly graph (1983-2020) SON

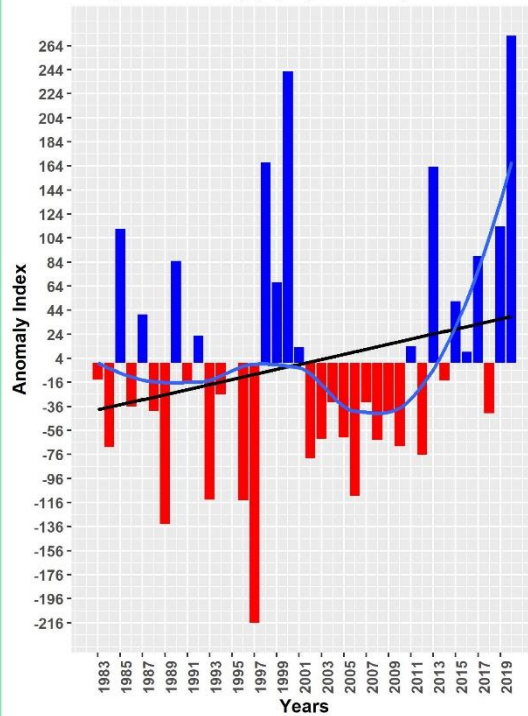


Wet_Year	Percentage
1985	143.9
1987	144.2
2001	134.7
2011	169.6
2012	145
2014	170.7
2019	203.3
2020	131.1

Dry_Year	Percentage
1984	65.2
1992	74.9
1993	73
1998	74
2002	57.7
2005	74.2
2009	72.3
2018	66

Cameroon:Station BATOURI

BATOURI: Cameroon
Precipitation anomaly graph (1983-2020) SON



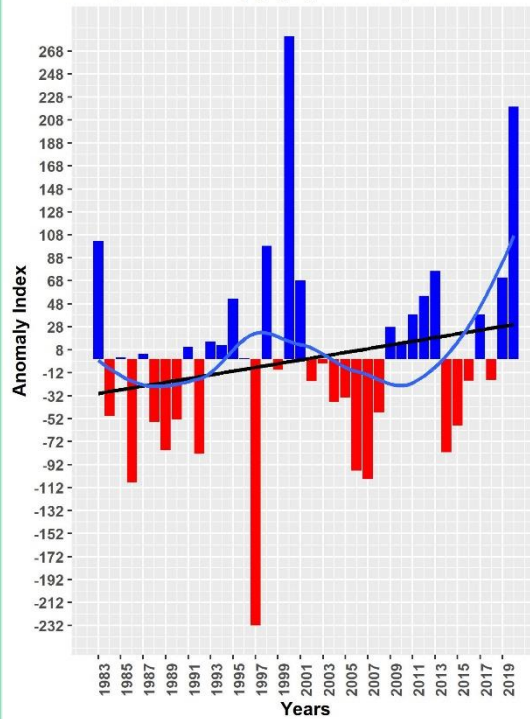
Wet_Year	Percentage
1998	132
2000	146.6
2013	131.4
2020	152.3

Dry_Year	Percentage
1989	74.3
1997	58.5

Cameroon:Station LOMIE

LOMIE: Cameroon

Precipitation anomaly graph (1983-2020) SON



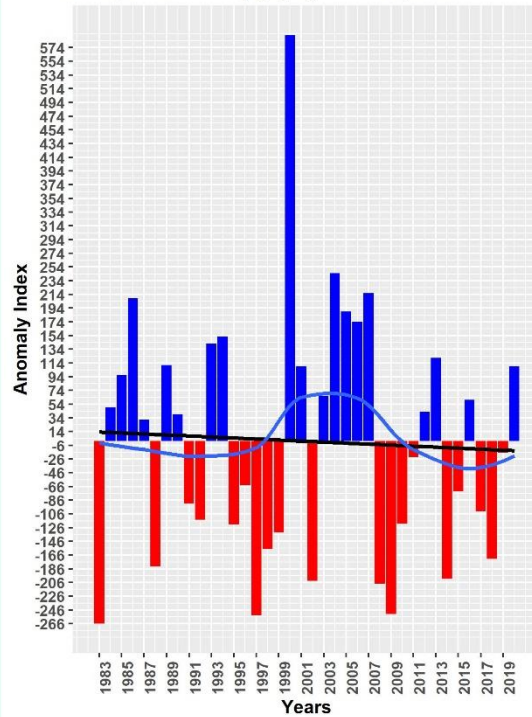
Wet_Year	Percentage
2000	153.3
2020	141.6

Dry_Year	Percentage
1997	56

Cameroon:Station MAMFE

MAMFE: Cameroon

Precipitation anomaly graph (1983-2020) SON



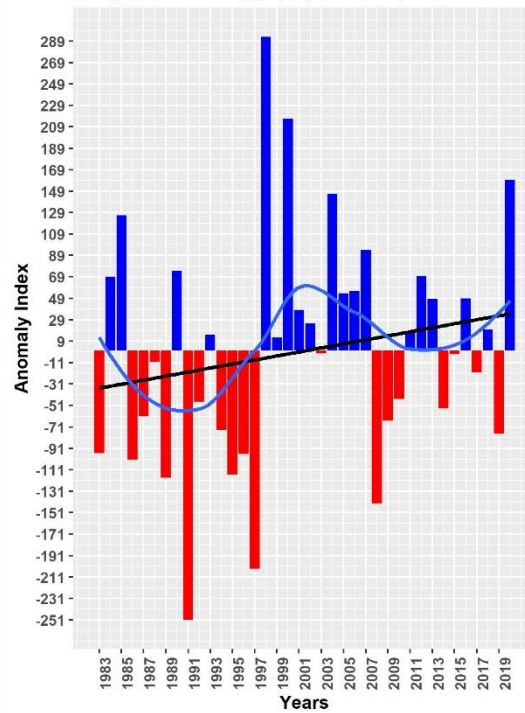
Wet_Year	Percentage
1986	126.7
2000	176
2004	131.4
2007	127.7

Dry_Year	Percentage
1983	65.9
1997	67.5
2002	73.8
2008	73.3
2009	67.7
2014	74.2

Cameroon:Station YAOUNDE

YAOUNDE: Cameroon

Precipitation anomaly graph (1983-2020) SON



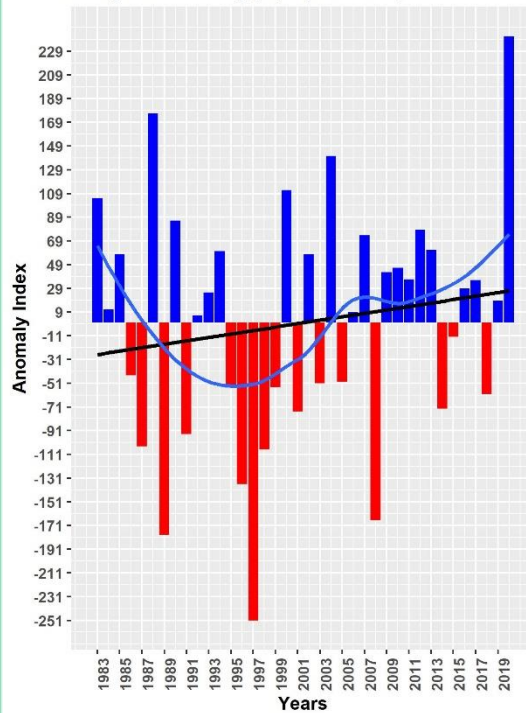
Wet_Year	Percentage
1998	157.3
2000	142.3
2004	128.6
2020	131.2

Dry_Year	Percentage
1991	51
1997	60.2
2008	72.2

Cameroon:Station YOKO

YOKO: Cameroon

Precipitation anomaly graph (1983-2020) SON

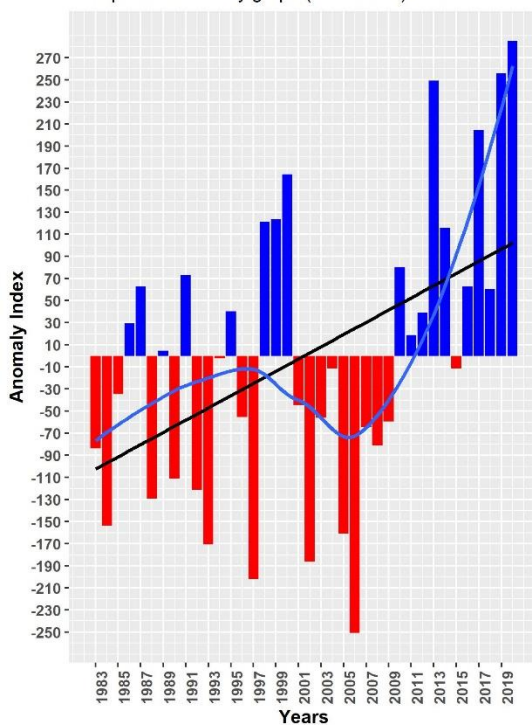


Wet_Year	Percentage
1988	135.4
2004	128.2
2020	148.6

Dry_Year	Percentage
1989	64.1
1996	72.7
1997	49.6
2008	66.6

Centrafrique:Station BERBERATI

BERBERATI: Centrafrique
Precipitation anomaly graph (1983-2020) SON

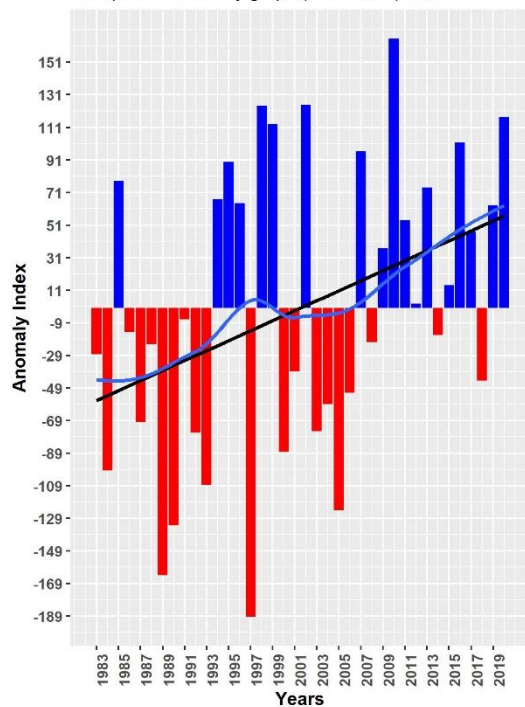


Wet_Year	Percentage
2000	130.5
2013	146.3
2017	138
2019	147.5
2020	153.1

Dry_Year	Percentage
1984	71.4
1993	68.2
1997	62.5
2002	65.3
2005	70.1
2006	53.4

Centrafrique:Station BOSSANGOA

BOSSANGOA: Centrafrique
Precipitation anomaly graph (1983-2020) SON

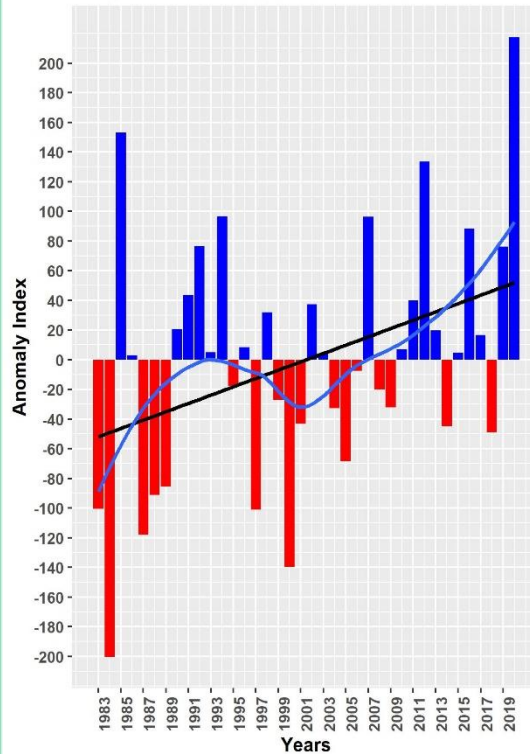


Wet_Year	Percentage
1998	132.3
1999	129.4
2002	132.5
2007	125
2010	143
2016	126.5
2020	130.5

Dry_Year	Percentage
1984	74.1
1989	57.3
1990	65.3
1993	71.7
1997	50.7
2005	67.8

Centrafrique:Station N_DELE

N_DELE: Centrafrique
Precipitation anomaly graph (1983-2020) SON

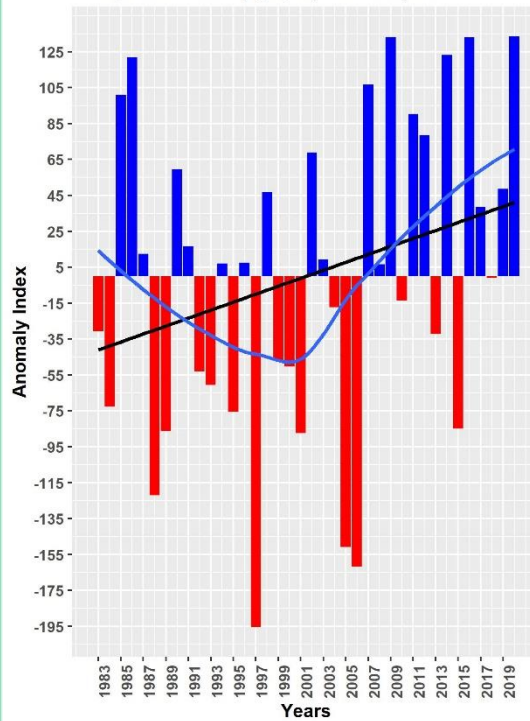


Wet_Year	Percentage
1985	133.9
2012	129.5
2020	148.2

Dry_Year	Percentage
1984	55.6
1987	73.8
2000	69.1

Centrafrique:Station YALINGA

YALINGA: Centrafrique
Precipitation anomaly graph (1983-2020) SON

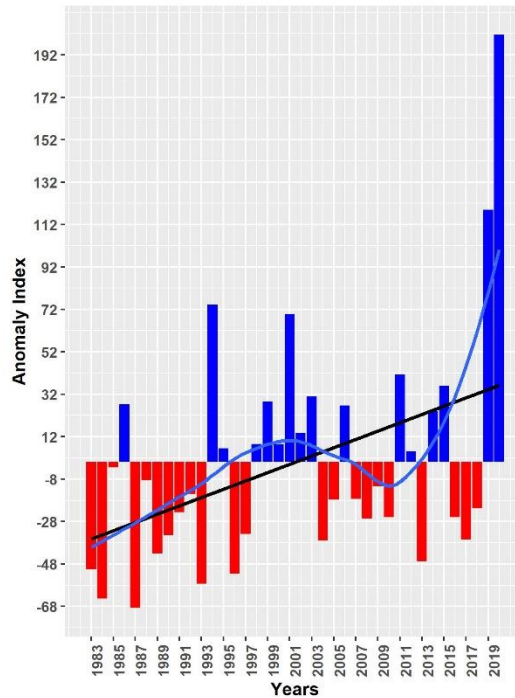


Wet_Year	Percentage
1986	127.7
2009	130.3
2014	128
2016	130.2
2020	130.4

Dry_Year	Percentage
1988	72.2
1997	55.5
2005	65.7
2006	63.2

Chad:Station BOKORO

BOKORO: Chad
Precipitation anomaly graph (1983-2020) SON

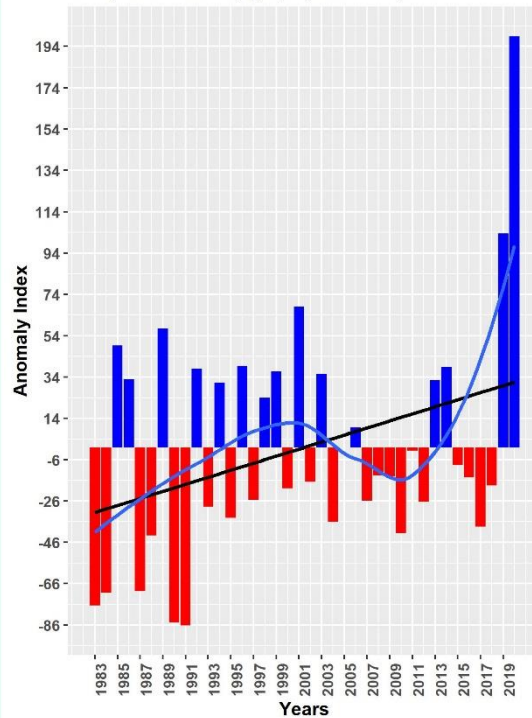


Wet_Year	Percentage
1994	154.4
2001	151.1
2011	130.4
2015	126.3
2019	187.2
2020	247.7

Dry_Year	Percentage
1983	62.9
1984	52.8
1987	49.6
1989	68.5
1990	74.7
1993	58
1996	61.5
2004	72.9
2013	65.8
2017	73.3

Chad:Station BOUSSO

BOUSSO: Chad
Precipitation anomaly graph (1983-2020) SON



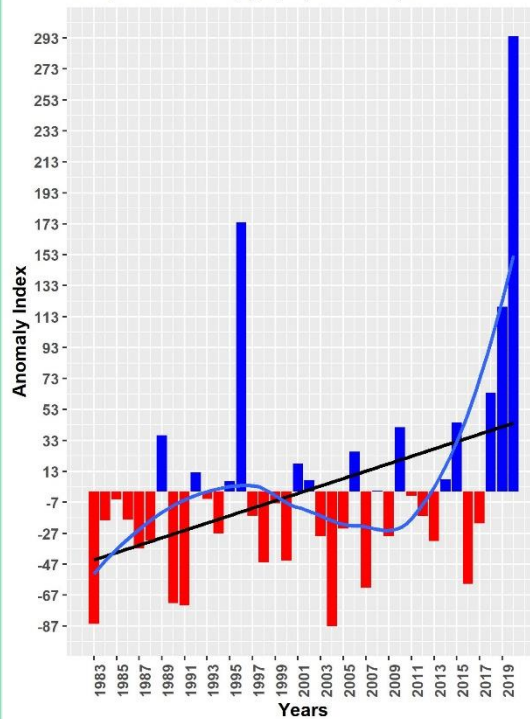
Wet_Year	Percentage
1989	126.9
2001	131.8
2019	148.4
2020	193.1

Dry_Year	Percentage
1983	64.2
1984	67.1
1987	67.4
1990	60.3
1991	59.6

Chad:Station GOZ-BEIDA

GOZ-BEIDA: Chad

Precipitation anomaly graph (1983-2020) SON

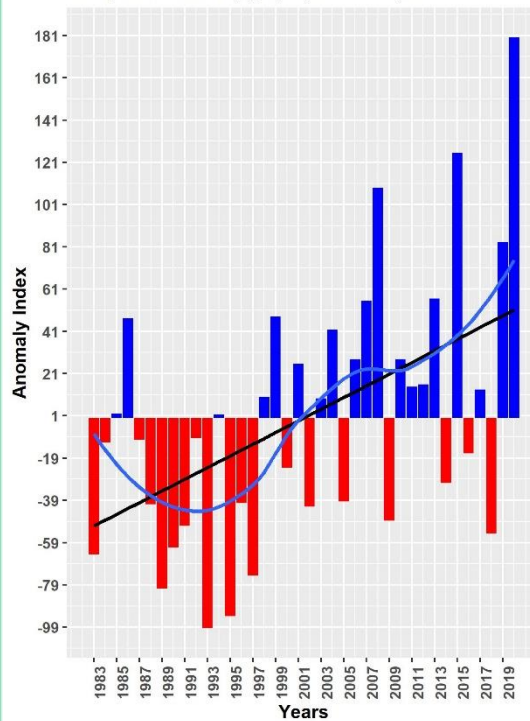


Wet_Year	Percentage
1996	198.7
2015	125.3
2018	136.1
2019	167.6
2020	266.8

Dry_Year	Percentage
1983	51.4
1990	59.1
1991	58.2
1998	74
2000	74.6
2004	50.5
2007	64.6
2016	66.1

Chad:Station MOUNDOU

MOUNDOU: Chad
Precipitation anomaly graph (1983-2020) SON



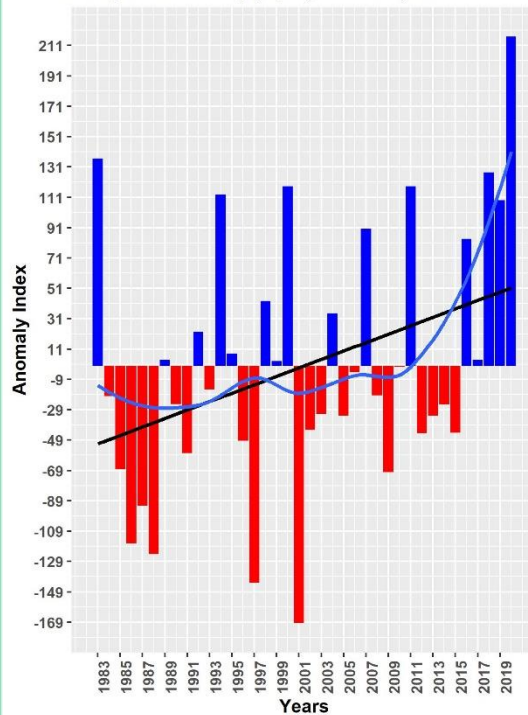
Wet_Year	Percentage
2008	141.6
2015	147.9
2019	131.9
2020	168.9

Dry_Year	Percentage
1989	69.1
1993	61.9
1995	64.1
1997	71.5

Congo:Station DOLISIE

DOLISIE: Congo

Precipitation anomaly graph (1983-2020) SON



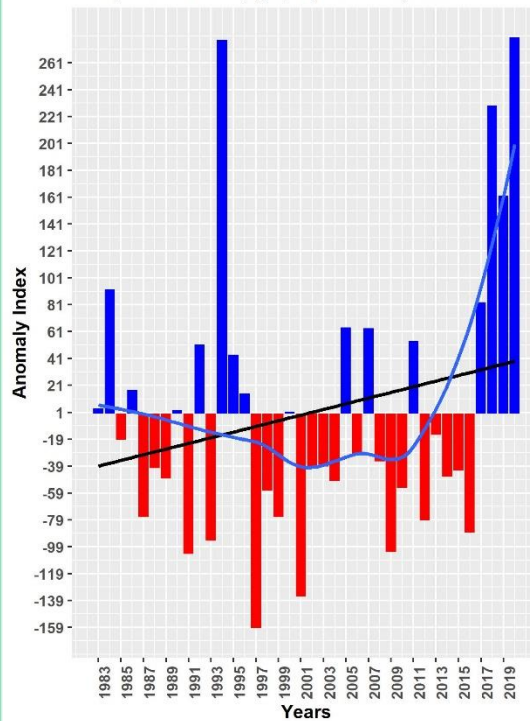
Wet_Year	Percentage
1983	147.6
1994	139.3
2000	141.3
2007	131.5
2011	141.2
2016	129.2
2018	144.4
2019	138
2020	175.7

Dry_Year	Percentage
1986	59.1
1987	67.8
1988	56.7
1997	50.1
2001	40.8

Congo:Station EWO

EWO: Congo

Precipitation anomaly graph (1983-2020) SON



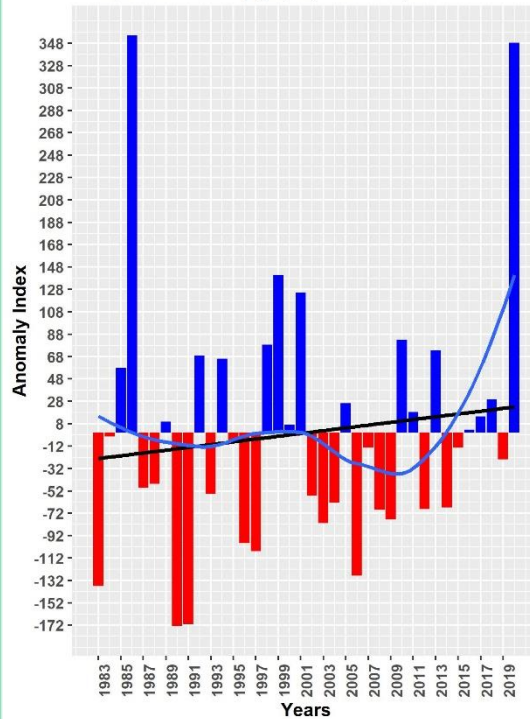
Wet_Year	Percentage
1984	125.5
1994	176.6
2018	163.1
2019	144.7
2020	177.1

Dry_Year	Percentage
1991	71.3
1993	74
1997	56
2001	62.5
2009	71.6

Congo:Station MAKOUA

MAKOUA: Congo

Precipitation anomaly graph (1983-2020) SON



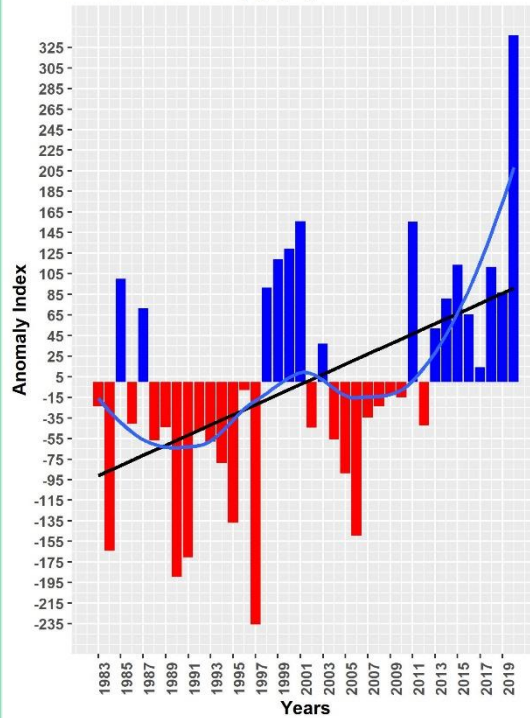
Wet_Year	Percentage
1986	172.7
1999	128.9
2001	125.6
2020	171.4

Dry_Year	Percentage
1983	71.9
1990	64.6
1991	65
2006	73.8

Congo:Station OUESSO

OUESSO: Congo

Precipitation anomaly graph (1983-2020) SON



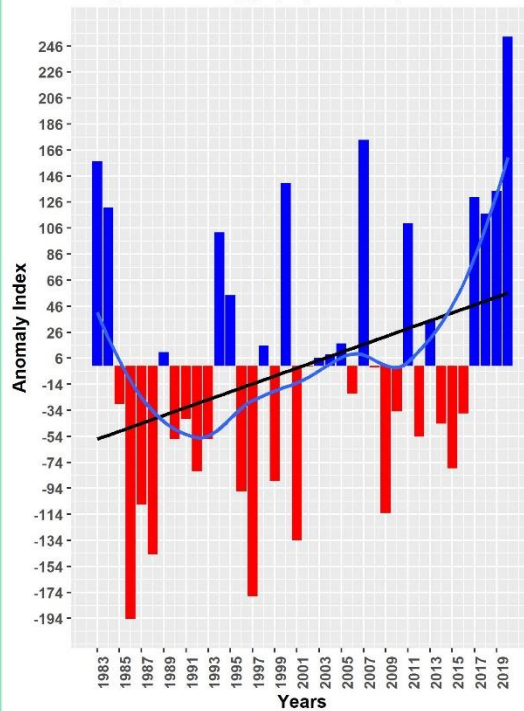
Wet_Year	Percentage
2001	130.2
2011	130.1
2020	165.2

Dry_Year	Percentage
1984	68.2
1990	63.3
1991	67.1
1995	73.5
1997	54.4
2006	71.1

Congo:Station SIBITI

SIBITI: Congo

Precipitation anomaly graph (1983-2020) SON

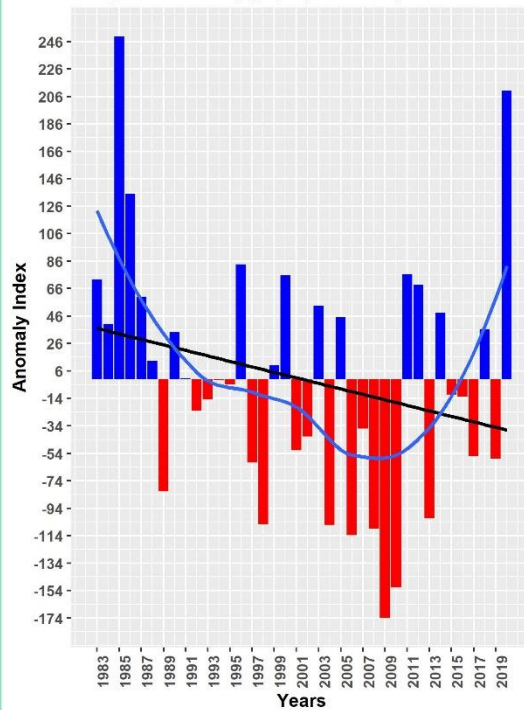


Wet_Year	Percentage
1983	138.2
1984	129.6
2000	134.2
2007	142.2
2011	126.6
2017	131.5
2018	128.4
2019	132.7
2020	161.5

Dry_Year	Percentage
1986	52.8
1987	74.1
1988	64.8
1997	57
2001	67.5
2009	72.6

DRC:Station BUTEMBO

BUTEMBO: DRC
Precipitation anomaly graph (1983-2020) SON

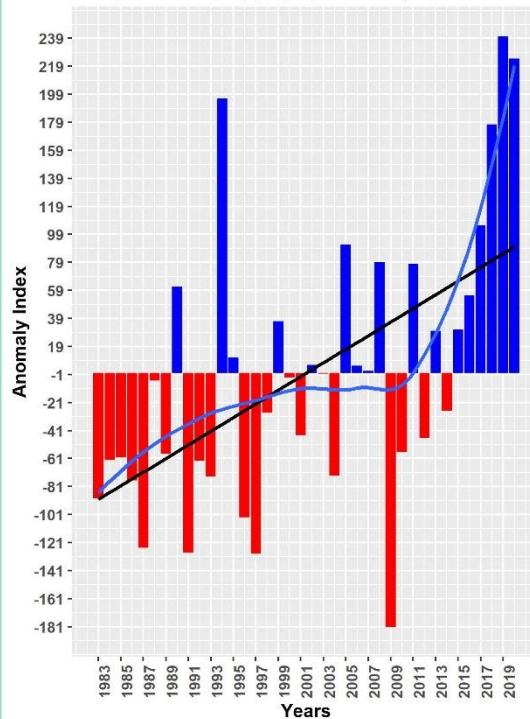


Wet_Year	Percentage
1985	146.4
1986	125.1
2020	139

Dry_Year	Percentage
2009	67.7
2010	71.9

DRC:Station KINSHASA_N_DOLO

KINSHASA_N_DOLO: DRC
Precipitation anomaly graph (1983-2020) SON



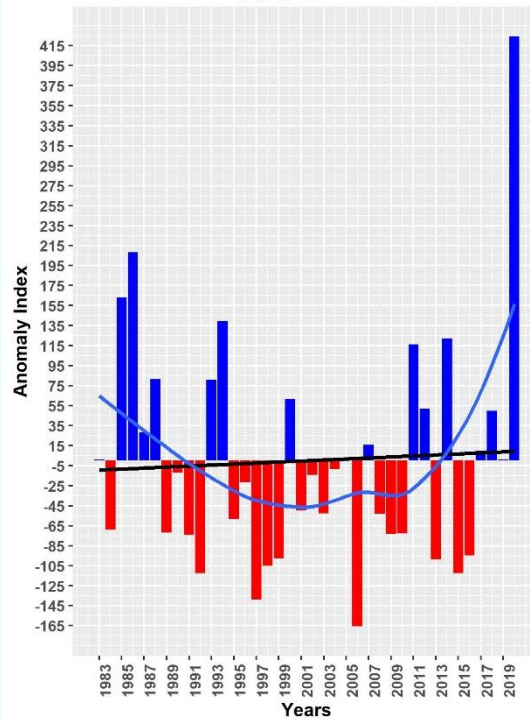
Wet_Year	Percentage
1994	146.1
2018	141.7
2019	156.5
2020	152.7

Dry_Year	Percentage
1987	70.7
1991	69.9
1997	69.7
2009	57.4

DRC:Station LODJA

LODJA: DRC

Precipitation anomaly graph (1983-2020) SON

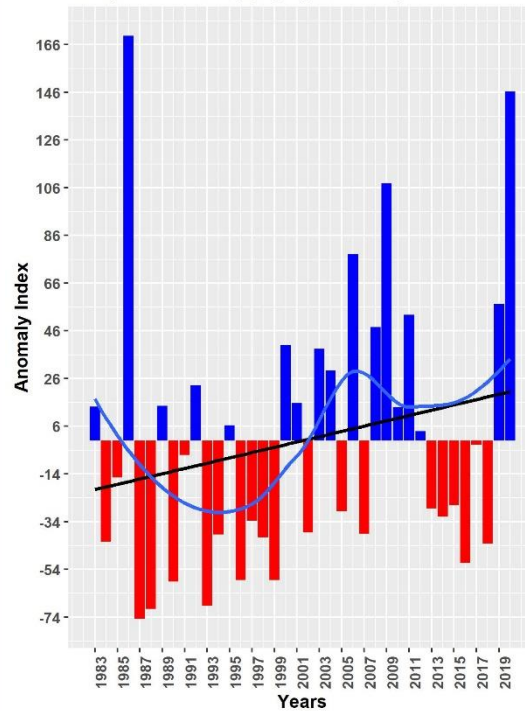


Wet_Year	Percentage
1985	130.1
1986	138.5
1994	125.7
2020	178.4

Dry_Year	Percentage
1997	74.4
2006	69.4

DRC:Station LUBUMBASHI-LUANO

LUBUMBASHI-LUANO: DRC
Precipitation anomaly graph (1983-2020) SON



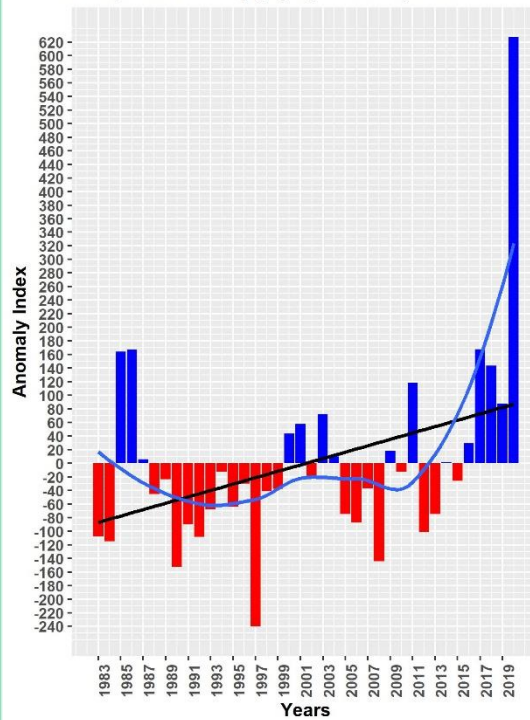
Wet_Year	Percentage
1986	194.3
2006	143.4
2008	126.4
2009	159.9
2011	129.3
2019	131.8
2020	181.2

Dry_Year	Percentage
1987	58.5
1988	60.8
1990	67.2
1993	61.5
1996	67.5
1999	67.5
2016	71.5

DRC:Station MBANDAKA

MBANDAKA: DRC

Precipitation anomaly graph (1983-2020) SON

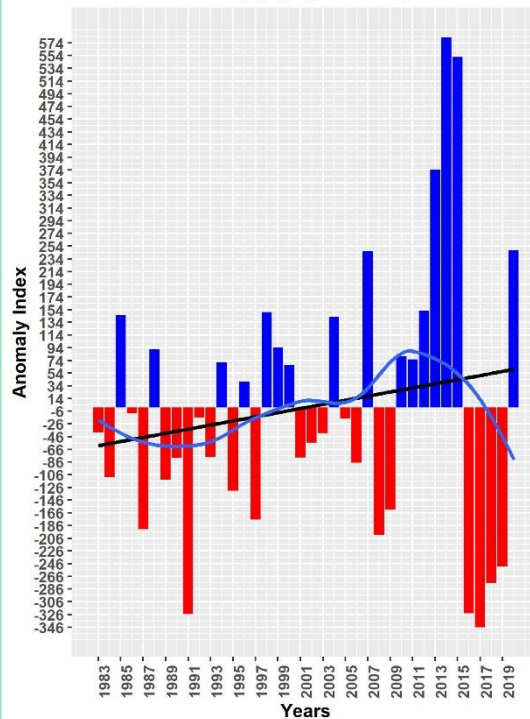


Wet_Year	Percentage
1985	132.6
1986	133.2
2017	133.3
2018	128.5
2020	224.4

Dry_Year	Percentage
1990	69.7
1997	52.3
2008	71.3

Gabon:Station LAMBARENE

LAMBARENE: Gabon
Precipitation anomaly graph (1983-2020) SON

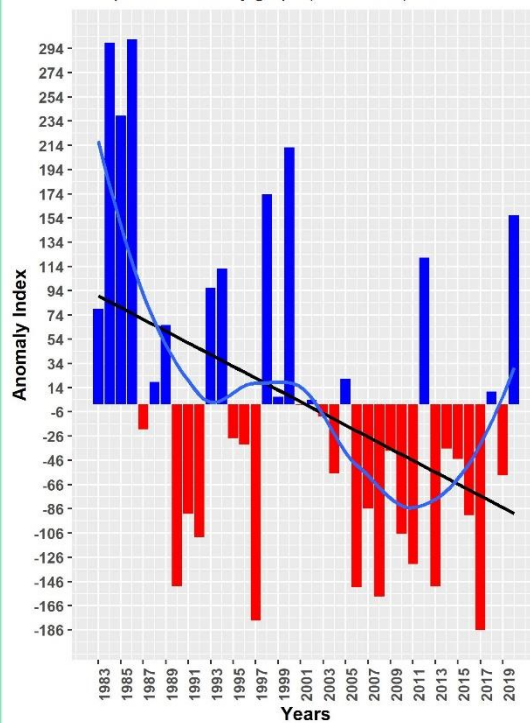


Wet_Year	Percentage
1985	125.3
1998	126.2
2007	143
2012	126.6
2013	165.5
2014	202
2015	196.5
2020	143.4

Dry_Year	Percentage
1987	66.4
1991	43
1997	69.1
2008	64.9
2009	71.8
2016	43.2
2017	39.4
2018	51.6
2019	56.2

Gabon:Station MAKOKOU

MAKOKOU: Gabon
Precipitation anomaly graph (1983-2020) SON



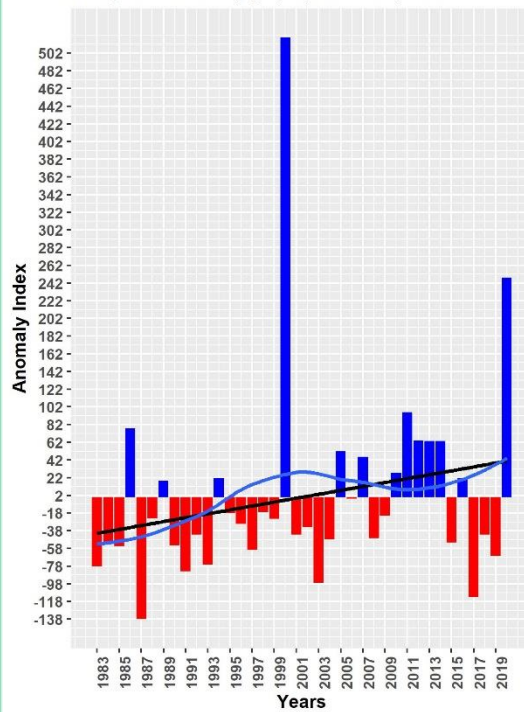
Wet_Year	Percentage
1984	154.7
1985	143.7
1986	155.2
1998	131.8
2000	138.9
2020	128.6

Dry_Year	Percentage
1990	72.5
1997	67.3
2006	72.4
2008	71
2013	72.5
2017	65.9

Gabon:Station MVENGUE

MVENGUE: Gabon

Precipitation anomaly graph (1983-2020) SON



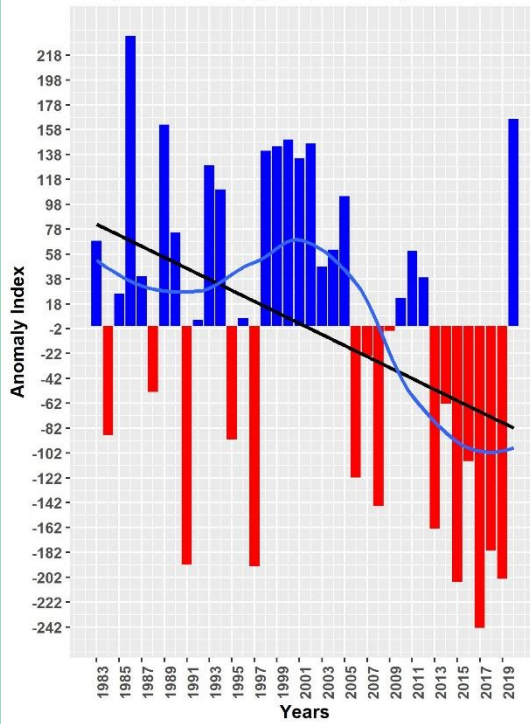
Wet_Year	Percentage
2000	195.6
2020	145.7

Dry_Year	Percentage
1987	74.6

Gabon:Station OYEM

OYEM: Gabon

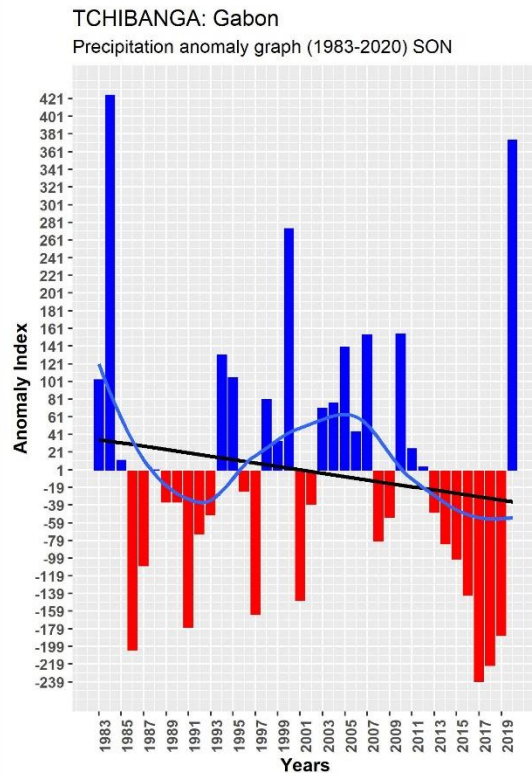
Precipitation anomaly graph (1983-2020) SON



Wet_Year	Percentage
1986	143.5
1989	130.2
1998	126.3
1999	126.9
2000	128
2001	125.2
2002	127.4
2020	131

Dry_Year	Percentage
1991	64.2
1997	64
2008	73
2013	69.6
2015	61.7
2017	54.8
2018	66.4
2019	62.1

Gabon:Station TCHIBANGA

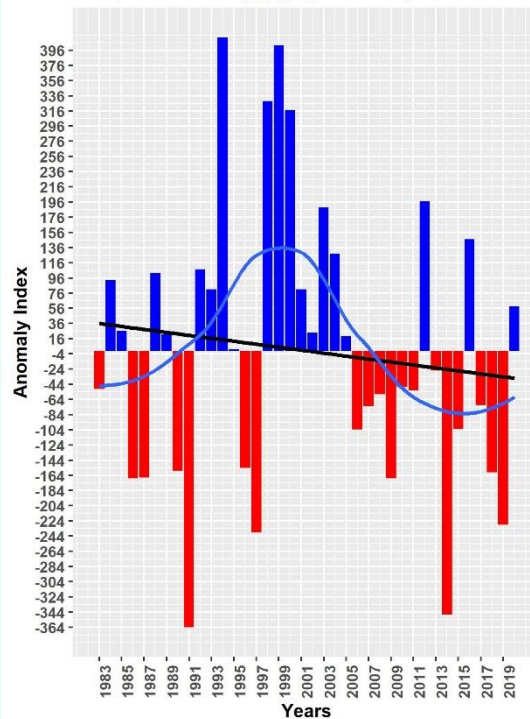


Wet_Year	Percentage
1983	129.6
1984	221.6
1994	137.6
1995	130.1
2000	178.4
2005	140.1
2007	144.1
2010	144.3
2020	207.1

Dry_Year	Percentage
1986	41.8
1987	69
1991	49.2
1997	53.3
2001	57.8
2015	71.3
2016	59.4
2017	31.6
2018	36.8
2019	46.5

GuineaE:Station BATA-RIO-MUNI

BATA-RIO-MUNI: GuineaE
Precipitation anomaly graph (1983-2020) SON



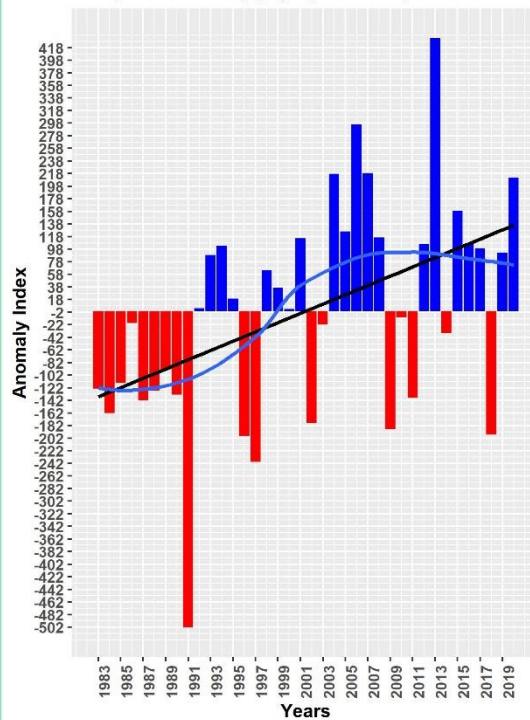
Wet_Year	Percentage
1994	170.1
1998	155.8
1999	168.2
2000	153.8
2003	132
2012	133.5

Dry_Year	Percentage
1986	71.5
1987	71.6
1990	73.2
1991	38.2
1996	73.9
1997	59.5
2009	71.5
2014	41.1
2018	72.8
2019	61.1

GuineaE:Station MALABO

MALABO: GuineaE

Precipitation anomaly graph (1983-2020) SON

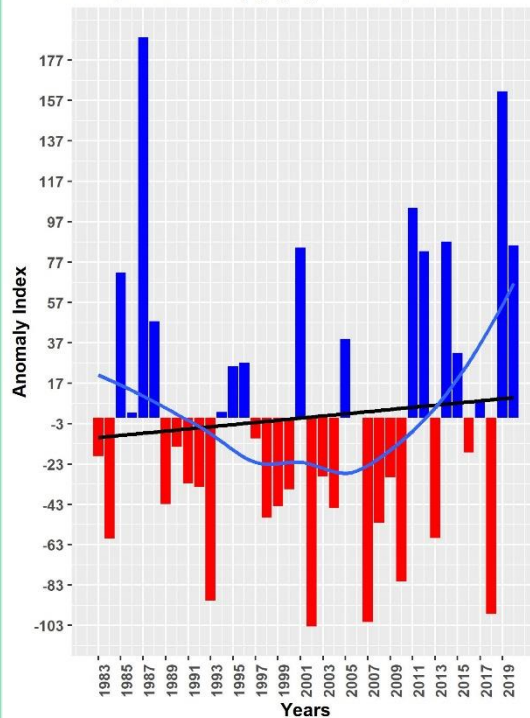


Wet_Year	Percentage
2004	133.4
2006	145.4
2007	133.5
2013	166.3
2020	132.4

Dry_Year	Percentage
1991	23
1996	69.7
1997	63.3
2002	72.7
2009	71.3
2018	70

Rwanda:Station BUTARE

BUTARE: Rwanda
Precipitation anomaly graph (1983-2020) SON

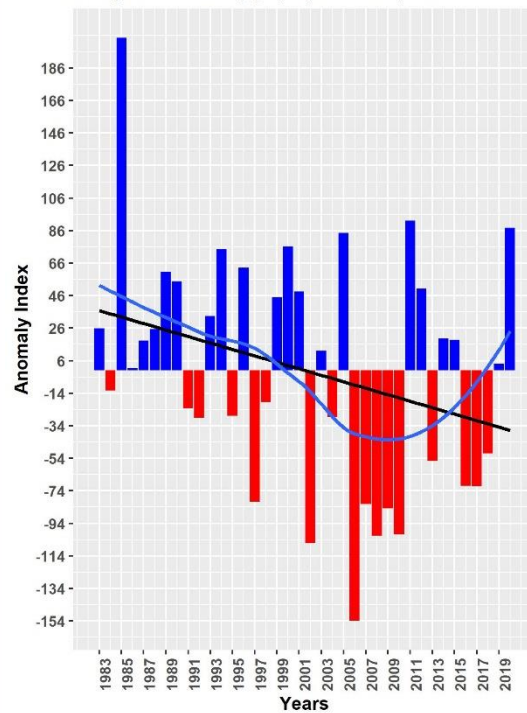


Wet_Year	Percentage
1985	131.3
1987	182.1
2001	136.7
2011	145.3
2012	135.9
2014	137.9
2019	170.4
2020	137.2

Dry_Year	Percentage
1984	73.9
1993	60.5
2002	54.9
2007	55.8
2010	64.6
2013	74
2018	57.6

Rwanda:Station GISENYI

GISENYI: Rwanda
Precipitation anomaly graph (1983-2020) SON

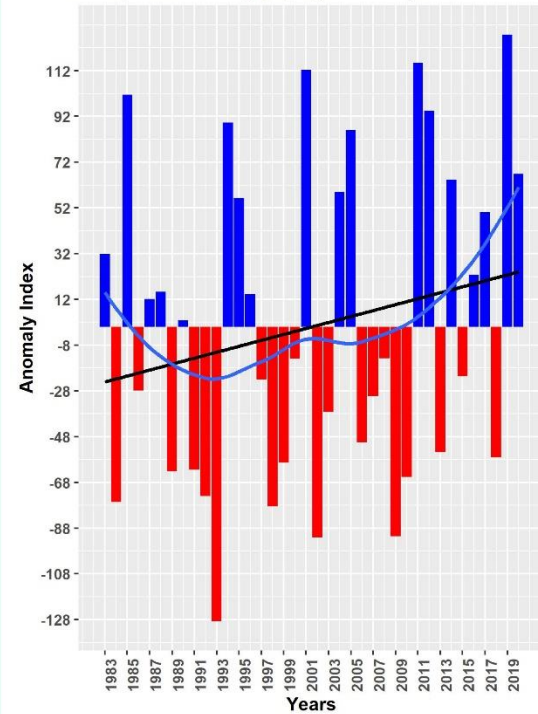


Wet_Year	Percentage
1985	148.7

Dry_Year	Percentage
2002	74.7
2006	63.4

Rwanda:Station KIGALI

KIGALI: Rwanda
Precipitation anomaly graph (1983-2020) SON

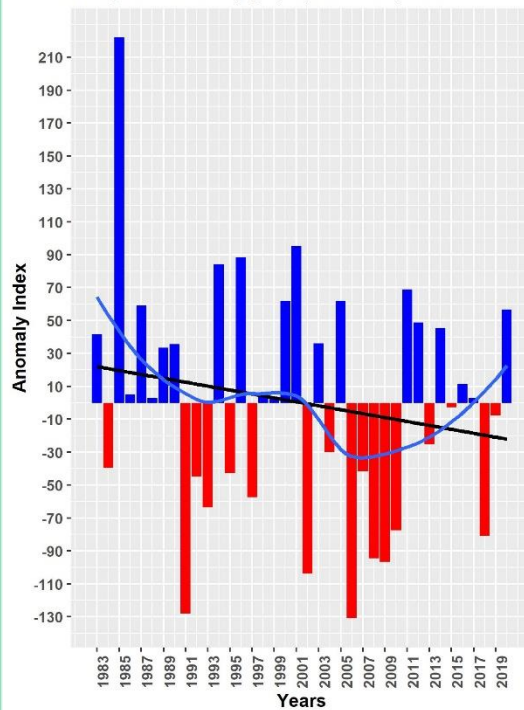


Wet_Year	Percentage
1985	142.6
1994	137.5
2001	147.1
2005	136.1
2011	148.4
2012	139.6
2014	127
2019	153.6
2020	128

Dry_Year	Percentage
1984	67.9
1989	73.5
1991	73.8
1992	69
1993	46
1998	67.1
2002	61.3
2009	61.6
2010	72.4

Rwanda:Station RUHENGARI

RUHENGARI: Rwanda
Precipitation anomaly graph (1983-2020) SON

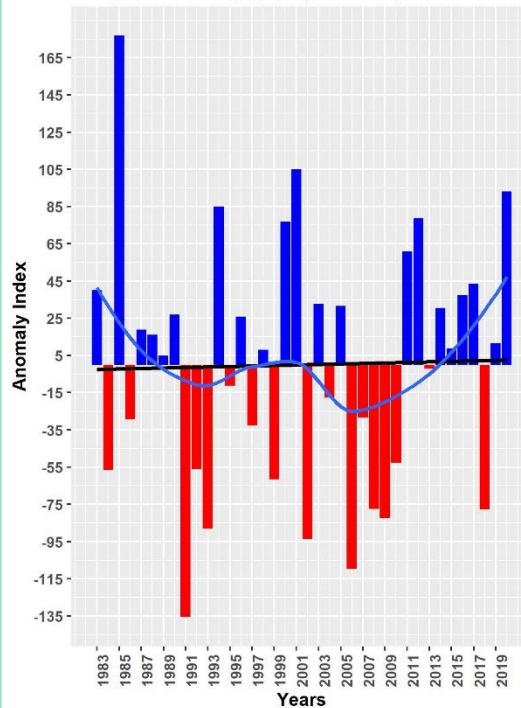


Wet_Year	Percentage
1985	163.2
1996	125.1
2001	127.1

Dry_Year	Percentage
1991	63.6
2002	70.4
2006	62.7
2008	73.1
2009	72.5

Uganda:Station KABALE

KABALE: Uganda
Precipitation anomaly graph (1983-2020) SON



Wet_Year	Percentage
1985	154.4
1994	126.1
2001	132.3
2020	128.6

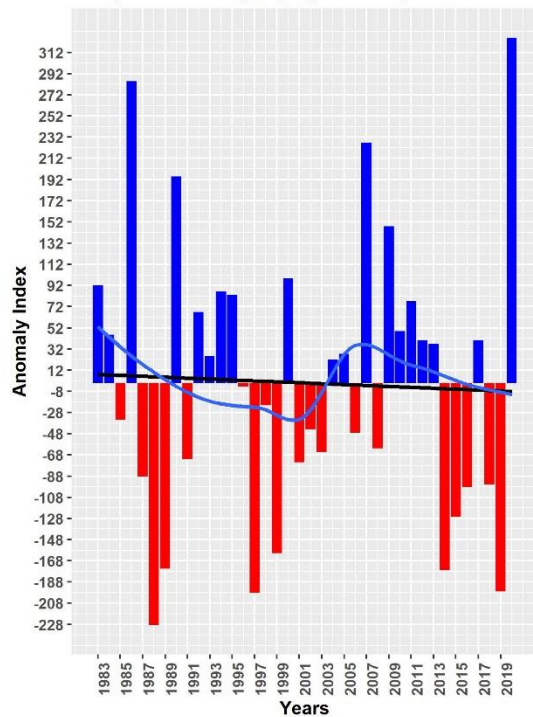
Dry_Year	Percentage
1991	58.3
1993	72.9
2002	71.2
2006	66.2
2009	74.7

CENTRAL-AFRICA (OND)

CLIMATE VARIABILITY AND TRENDS ANALISYS (TIME SERIES): OND Anomaly Graphs

Angola:Station BIE-SILVA-PORTO

BIE-SILVA-PORTO: Angola
Precipitation anomaly graph (1983-2020) OND

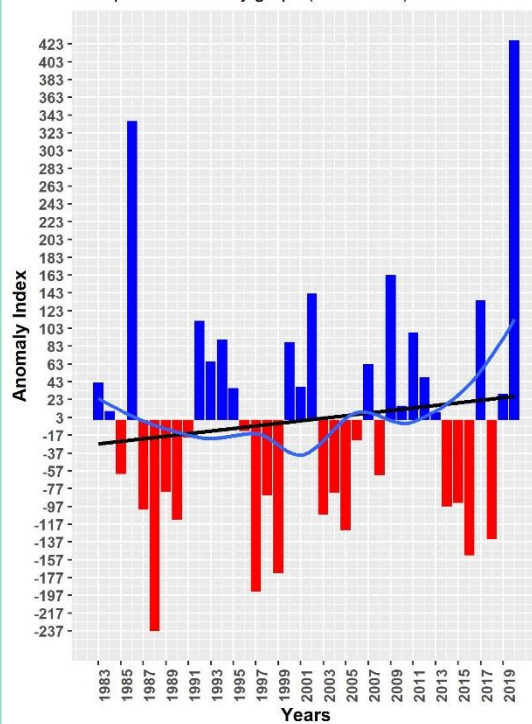


Wet_Year	Percentage
1986	155.9
1990	138.2
2007	144.5
2009	129
2020	164

Dry_Year	Percentage
1988	55.1
1989	65.5
1997	61.1
1999	68.4
2014	65.3
2019	61.4

Angola: Station CAZOMBO

CAZOMBO: Angola
Precipitation anomaly graph (1983-2020) OND



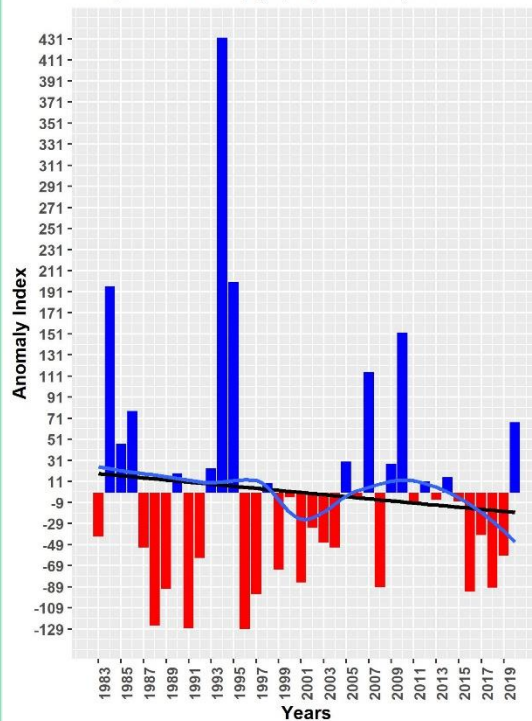
Wet_Year	Percentage
1986	164.6
2002	127.4
2009	131.3
2017	125.9
2020	182.1

Dry_Year	Percentage
1988	54.4
1997	63
1999	67
2016	70.7
2018	74.2

Angola: Station LUANDA

LUANDA: Angola

Precipitation anomaly graph (1983-2020) OND

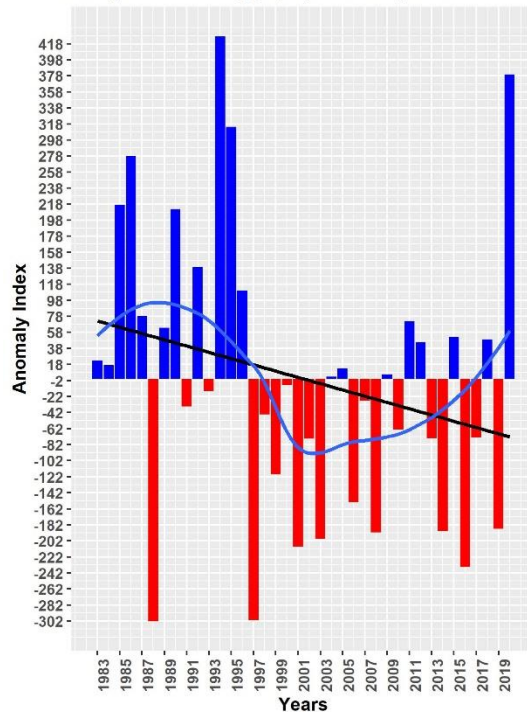


Wet_Year	Percentage
1984	238.7
1985	132.8
1986	155
1994	405.3
1995	241.3
2007	181
2010	207.4
2020	147.3

Dry_Year	Percentage
1983	70.7
1987	63.5
1988	11.2
1989	35.6
1991	9.3
1992	56.3
1996	8.7
1997	32.2
1999	48.5
2001	40
2003	66.5
2004	63.4
2008	36.9
2016	33.9
2017	71.7
2018	36.6
2019	58

Angola:Station NEGAGE

NEGAGE: Angola
Precipitation anomaly graph (1983-2020) OND

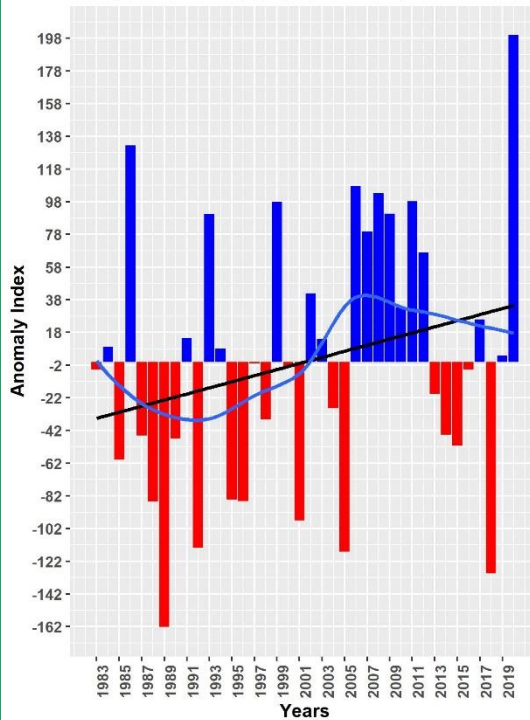


Wet_Year	Percentage
1985	137.6
1986	148.2
1990	136.7
1994	174
1995	154.5
2020	165.7

Dry_Year	Percentage
1988	47.6
1997	47.9
2001	63.8
2003	65.5
2006	73.4
2008	66.8
2014	67.1
2016	59.4
2019	67.6

Angola:Station PEREIRA-DE-ECA

PEREIRA-DE-ECA: Angola
Precipitation anomaly graph (1983-2020) OND

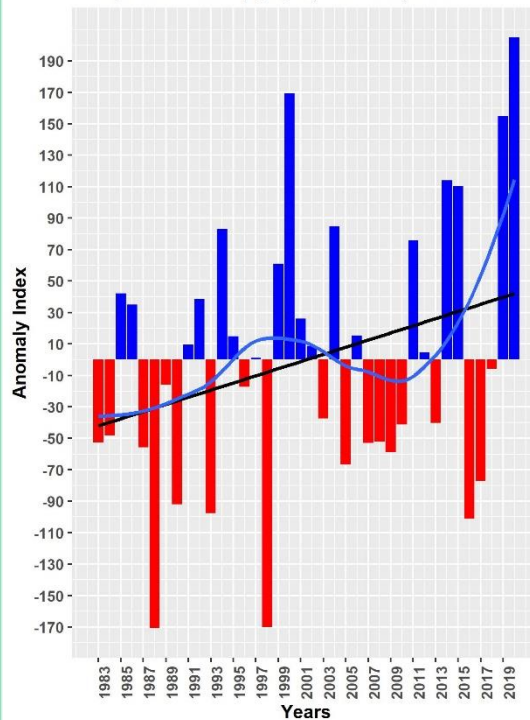


Wet_Year	Percentage
1986	177.3
1993	152.8
1999	157.1
2006	162.8
2007	146.5
2008	160.2
2009	152.9
2011	157.3
2012	139
2020	216.7

Dry_Year	Percentage
1985	65.1
1987	73.7
1988	50.1
1989	5.4
1990	72.7
1992	33.7
1995	50.9
1996	50.3
2001	43.5
2005	32.2
2014	74
2015	70.2
2018	24.5

Burundi:Station BUJUMBURA

BUJUMBURA: Burundi
Precipitation anomaly graph (1983-2020) OND

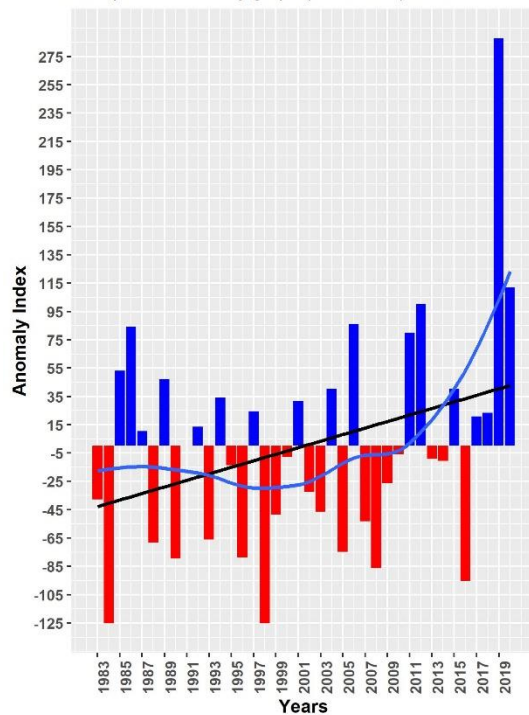


Wet_Year	Percentage
1994	126.3
2000	153.5
2004	126.8
2014	136
2015	134.7
2019	148.8
2020	164.7

Dry_Year	Percentage
1988	46.1
1990	71
1993	69.2
1998	46.3
2016	68.1

Burundi:Station MUYINGA

MUYINGA: Burundi
Precipitation anomaly graph (1983-2020) OND

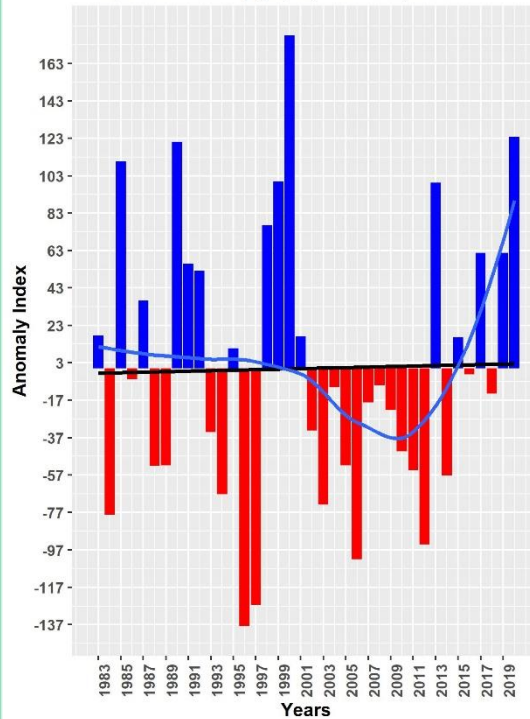


Wet_Year	Percentage
1986	132.2
2006	133.1
2011	130.7
2012	138.4
2019	210.3
2020	142.9

Dry_Year	Percentage
1984	52
1988	73.9
1990	69.5
1993	74.7
1996	69.8
1998	52
2005	71.3
2008	67
2016	63.6

Cameroon:Station BATOURI

BATOURI: Cameroon
Precipitation anomaly graph (1983-2020) OND



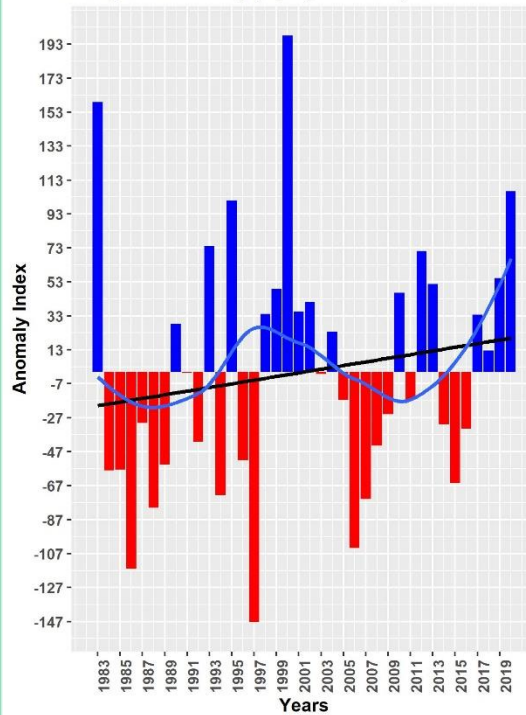
Wet_Year	Percentage
1985	133
1990	136.2
1999	129.8
2000	153.1
2013	129.6
2020	136.9

Dry_Year	Percentage
1996	58.9
1997	62.3
2006	69.6
2012	71.9

Cameroon:Station LOMIE

LOMIE: Cameroon

Precipitation anomaly graph (1983-2020) OND



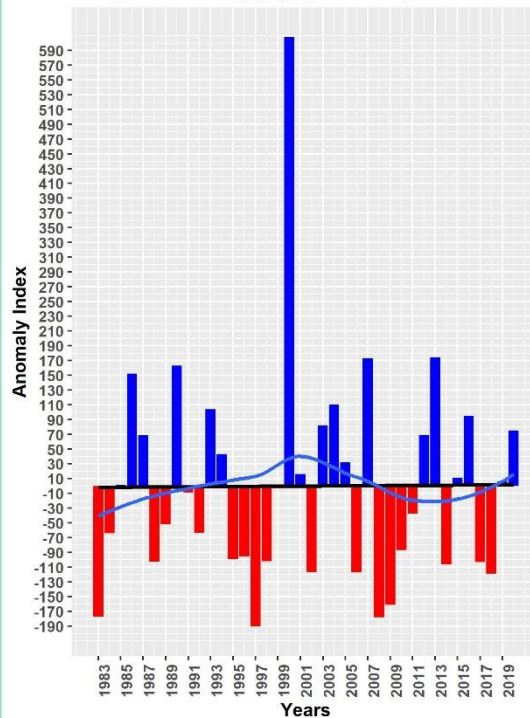
Wet_Year	Percentage
1983	142.8
1995	127.2
2000	153.4
2020	128.6

Dry_Year	Percentage
1986	68.7
1997	60.3
2006	72

Cameroon:Station MAMFE

MAMFE: Cameroon

Precipitation anomaly graph (1983-2020) OND

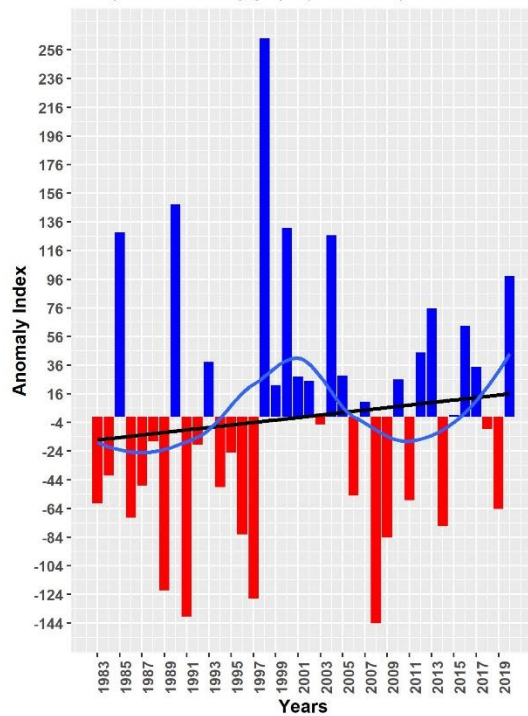


Wet_Year	Percentage
1986	131.9
1990	134.1
2000	227.6
2007	136.2
2013	136.6

Dry_Year	Percentage
1983	62.8
1997	60
2008	62.7
2009	66.3

Cameroon:Station YAOUNDE

YAOUNDE: Cameroon
Precipitation anomaly graph (1983-2020) OND

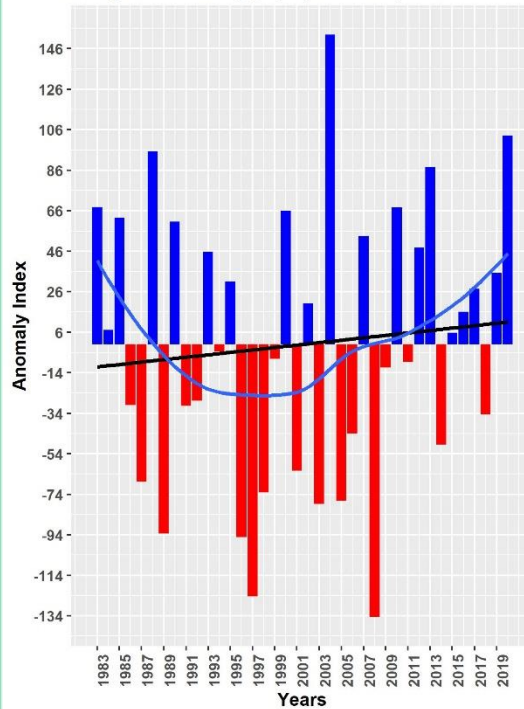


Wet_Year	Percentage
1985	136.1
1990	141.7
1998	174.2
2000	136.9
2004	135.6
2020	127.6

Dry_Year	Percentage
1989	65.9
1991	60.8
1997	64.3
2008	59.5

Cameroon:Station YOKO

YOKO: Cameroon
Precipitation anomaly graph (1983-2020) OND

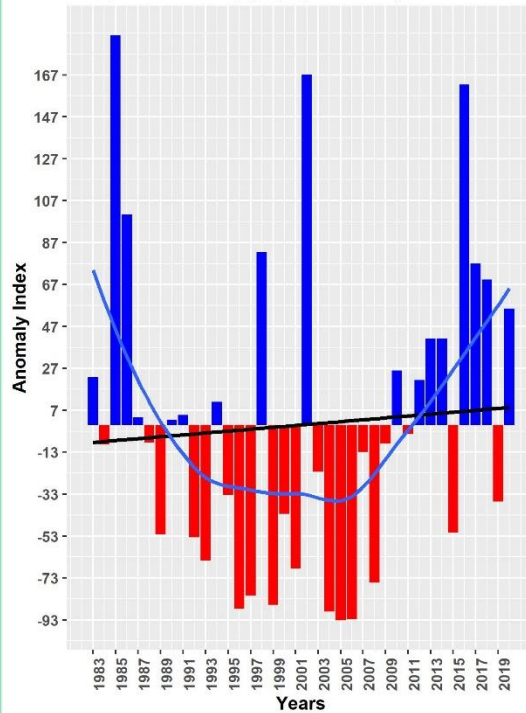


Wet_Year	Percentage
1988	131
2004	149.7
2013	128.5
2020	133.5

Dry_Year	Percentage
1989	69.6
1996	69.1
1997	59.6
2003	74.4
2005	74.9
2008	56.3

Centrafrique:Station BAMBARI

BAMBARI: Centrafrique
Precipitation anomaly graph (1983-2020) OND

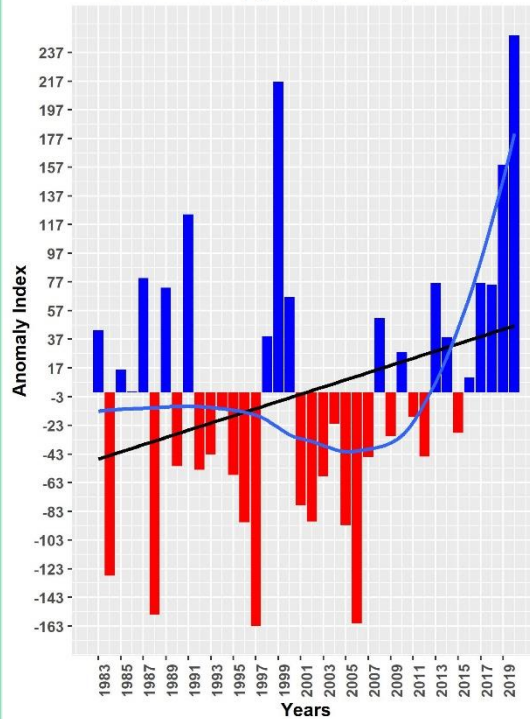


Wet_Year	Percentage
1985	167.3
1986	136.3
1998	129.9
2002	160.5
2016	158.8
2017	127.9
2018	125.1

Dry_Year	Percentage
1996	68.2
1997	70.5
1999	68.9
2004	67.8
2005	66.2
2006	66.5
2008	72.7

Centrafrique:Station BERBERATI

BERBERATI: Centrafrique
Precipitation anomaly graph (1983-2020) OND

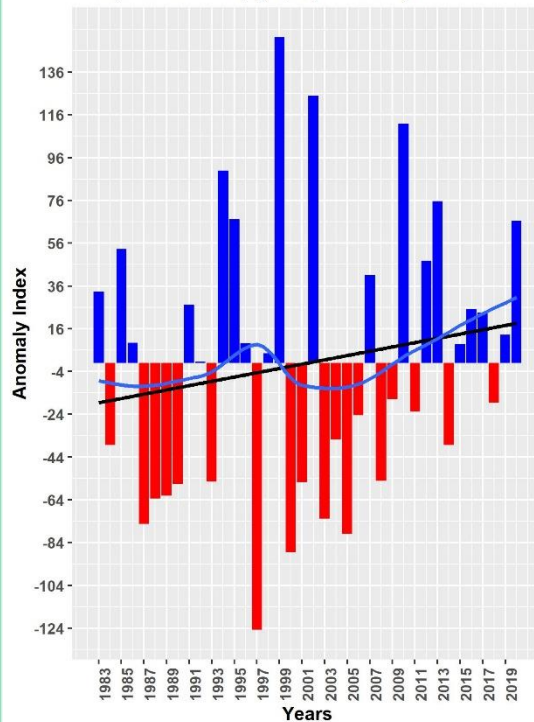


Wet_Year	Percentage
1991	136.1
1999	163
2019	146.1
2020	172.3

Dry_Year	Percentage
1984	62.8
1988	54.9
1996	73.6
1997	52.6
2002	73.8
2005	73.1
2006	53.1

Centrafrique:Station BOSSANGOA

BOSSANGOA: Centrafrique
Precipitation anomaly graph (1983-2020) OND

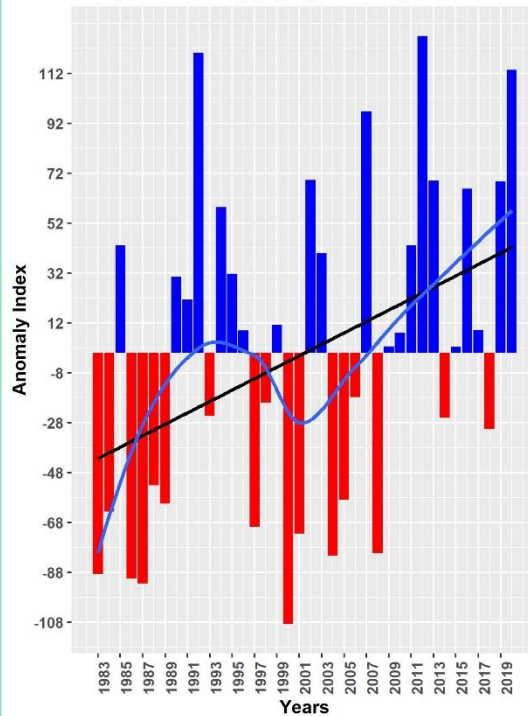


Wet_Year	Percentage
1985	127.2
1994	146
1995	134.3
1999	177.9
2002	163.9
2010	157.1
2013	138.7
2020	133.9

Dry_Year	Percentage
1987	61.5
1988	67.6
1989	68.3
1990	71.1
1993	71.6
1997	36.2
2000	54.8
2001	71.6
2003	62.8
2005	59.2
2008	71.9

Centrafrique:Station N_DELE

N_DELE: Centrafrique
Precipitation anomaly graph (1983-2020) OND

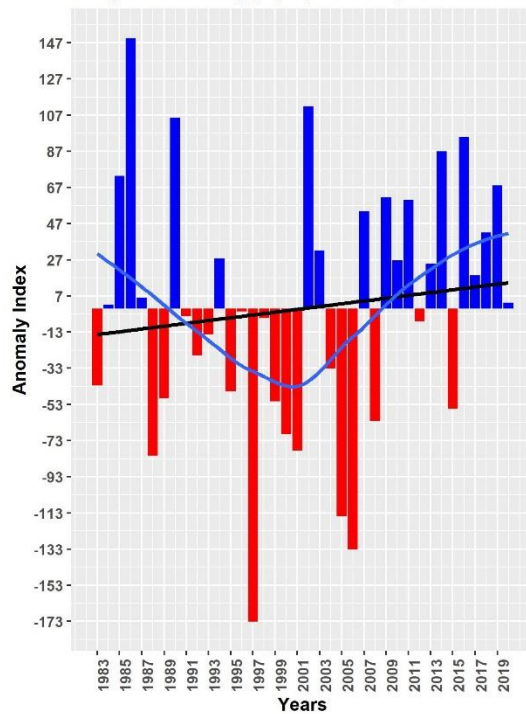


Wet_Year	Percentage
1992	160.8
1994	129.5
2002	135
2007	148.9
2012	164.3
2013	134.9
2016	133.2
2019	134.8
2020	157.3

Dry_Year	Percentage
1983	55.1
1984	67.8
1986	54.2
1987	53.2
1988	73.1
1989	69.4
1997	64.7
2000	45
2001	63.3
2004	58.9
2005	70.3
2008	59.3

Centrafrique:Station YALINGA

YALINGA: Centrafrique
Precipitation anomaly graph (1983-2020) OND

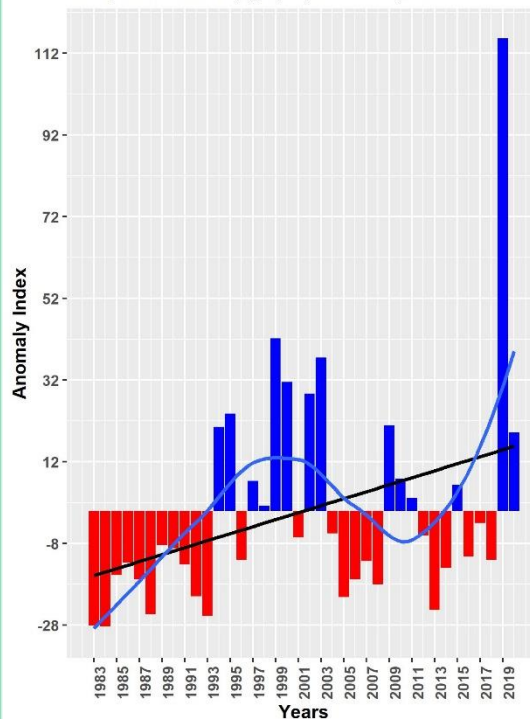


Wet_Year	Percentage
1985	128.2
1986	157.5
1990	140.6
2002	143
2014	133.5
2016	136.4
2019	126.2

Dry_Year	Percentage
1988	68.7
1997	33.4
2000	73.3
2001	69.8
2005	55.8
2006	48.8

Chad:Station BOKORO

BOKORO: Chad
Precipitation anomaly graph (1983-2020) OND

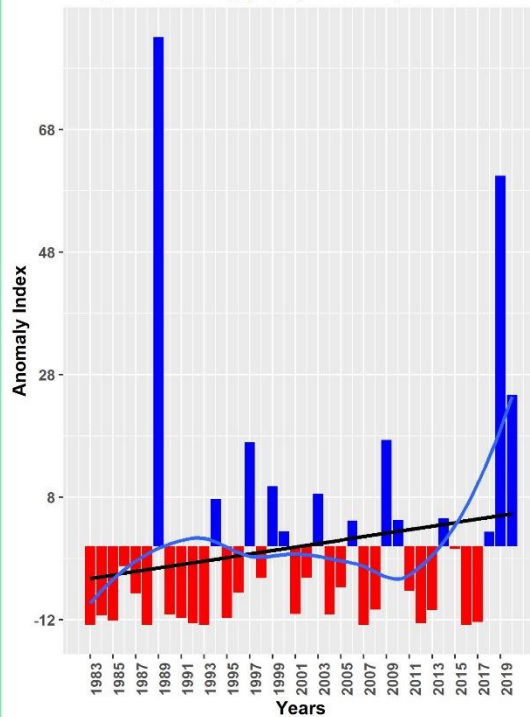


Wet_Year	Percentage
1994	171.2
1995	182.4
1997	125.4
1999	246
2000	209.2
2002	199.3
2003	229.6
2009	172.5
2010	127.2
2019	499.9
2020	166.4

Dry_Year	Percentage
1983	2.8
1984	2.5
1985	45.8
1986	56.1
1987	42
1988	12.6
1989	71.2
1990	68.4
1991	55
1992	27.6
1993	11.2
1996	58.4
2005	26.9
2006	42.1
2007	57.5
2008	38
2013	16.2
2014	51.9
2016	61.1
2018	58.7

BOL-BERIM: Chad

Precipitation anomaly graph (1983-2020) OND



Chad:Station BOL-BERIM

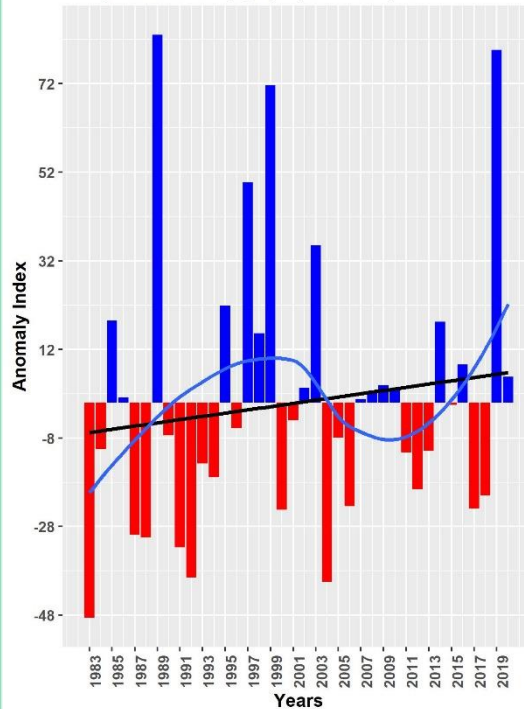
Wet_Year	Percentage
1989	746.8
1994	159.8
1997	231.5
1999	176.1
2003	166.4
2006	132.3
2009	234.6
2010	133.2
2014	135.4
2019	570
2020	291.9

Dry_Year	Percentage
1983	0
1984	12.4
1985	5.5
1986	74.6
1987	40.3
1988	0
1990	13.1
1991	8.8
1992	1.9
1993	0
1995	8.8
1996	41.2
1998	59.5
2001	13.7
2002	60.1
2004	13.3
2005	47.9
2007	0
2008	19.5
2011	43.3
2012	2.2
2013	19
2016	0
2017	3.6

Chad:Station BOUSSO

BOUSSO: Chad

Precipitation anomaly graph (1983-2020) OND

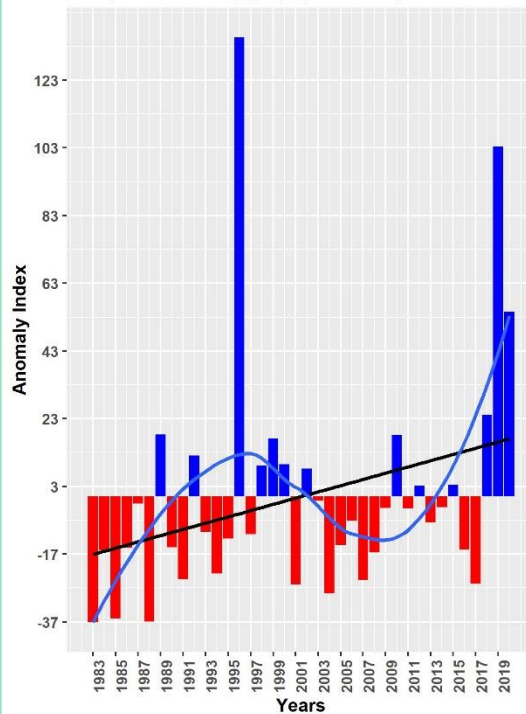


Wet_Year	Percentage
1985	131.7
1989	242.3
1995	137.5
1997	185.3
1998	126.8
1999	222.8
2003	160.9
2014	131.2
2019	236.4

Dry_Year	Percentage
1983	16.7
1987	48.8
1988	47.9
1991	44
1992	32.4
1994	71.1
2000	58.5
2004	30.6
2006	59.9
2012	66.5
2017	58.9
2018	64.1

Chad:Station GOZ-BEIDA

GOZ-BEIDA: Chad
Precipitation anomaly graph (1983-2020) OND

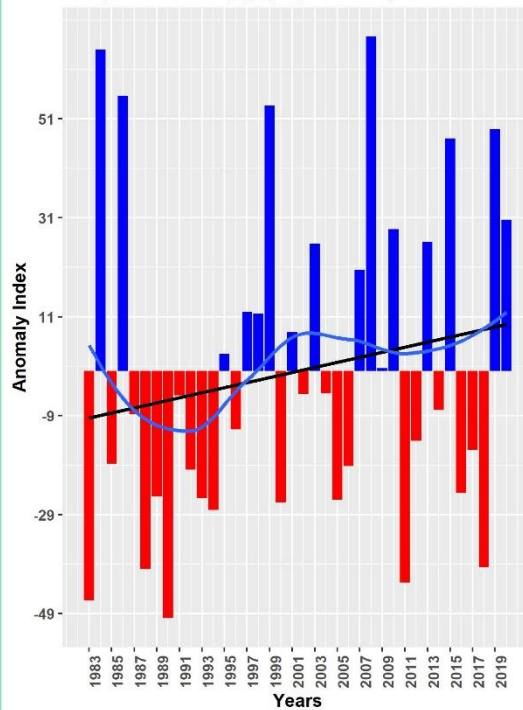


Wet_Year	Percentage
1989	149
1992	132.5
1996	462.6
1999	145.7
2000	125.4
2010	148.8
2018	164.3
2019	376.4
2020	245.8

Dry_Year	Percentage
1983	0.7
1984	57.7
1985	3.9
1986	59.6
1988	1.4
1990	60
1991	34.9
1993	72
1994	39.2
1995	66.7
1997	70.2
2001	30.4
2004	23.5
2005	61.8
2007	34.1
2008	56
2016	58
2017	31.2

Chad:Station MOUNDOU

MOUNDOU: Chad
Precipitation anomaly graph (1983-2020) OND

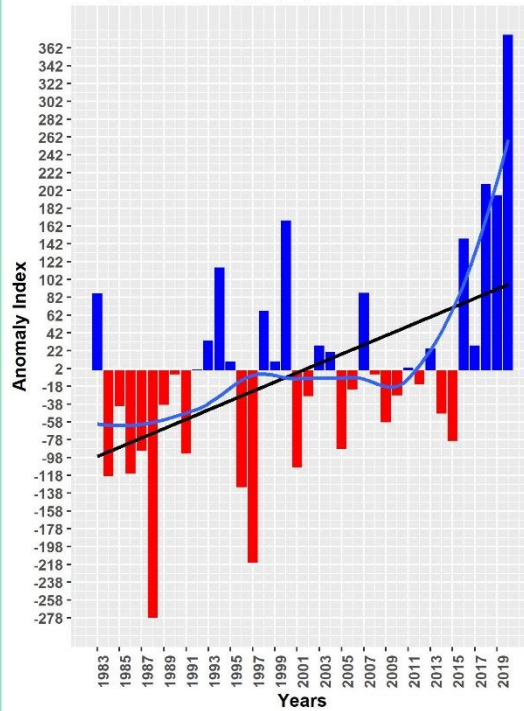


Wet_Year	Percentage
1984	172.8
1986	162.4
1999	160.2
2003	128.8
2008	175.8
2010	132.2
2013	129.3
2015	152.8
2019	154.8
2020	134.3

Dry_Year	Percentage
1983	48.1
1988	55.1
1989	71.6
1990	44
1993	71.2
1994	68.5
2000	70.3
2005	70.9
2011	52.1
2016	72.4
2018	55.6

Congo:Station DOLISIE

DOLISIE: Congo
Precipitation anomaly graph (1983-2020) OND



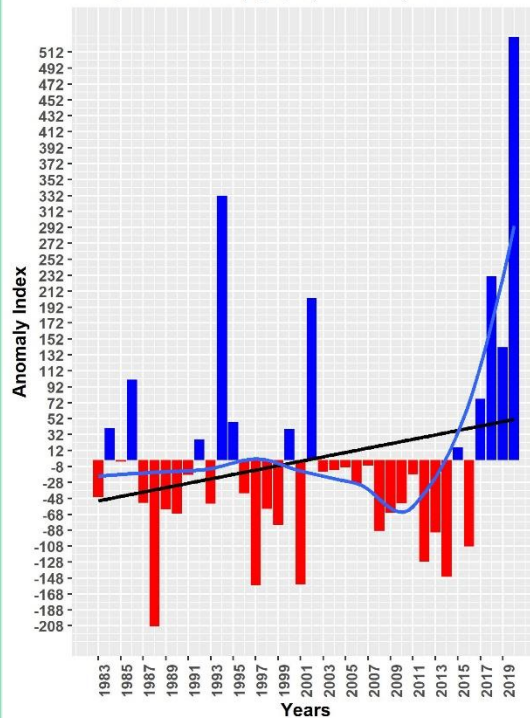
Wet_Year	Percentage
1994	126.8
2000	139.1
2016	134.3
2018	148.5
2019	145.7
2020	187.5

Dry_Year	Percentage
1984	72.4
1986	73
1988	35.5
1996	69.6
1997	49.8
2001	74.6

Congo:Station EWO

EWO: Congo

Precipitation anomaly graph (1983-2020) OND



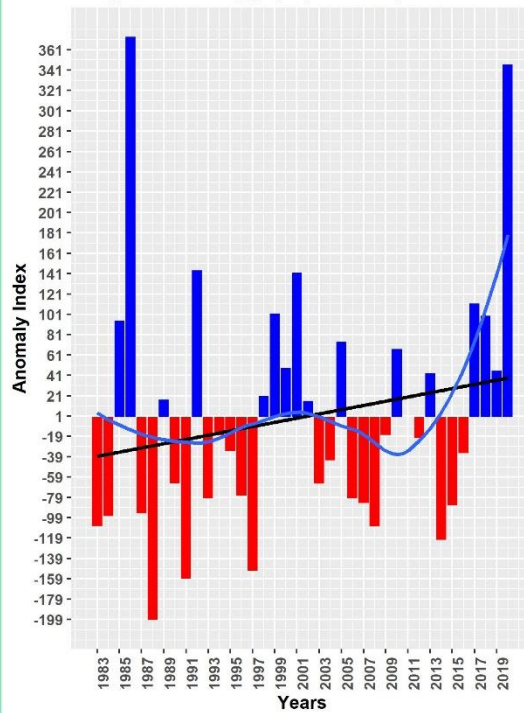
Wet_Year	Percentage
1994	164.2
2002	139.3
2018	144.6
2019	127.4
2020	202.6

Dry_Year	Percentage
1988	59.6
1997	69.6
2001	69.8
2014	71.6

Congo:Station MAKOUA

MAKOUA: Congo

Precipitation anomaly graph (1983-2020) OND



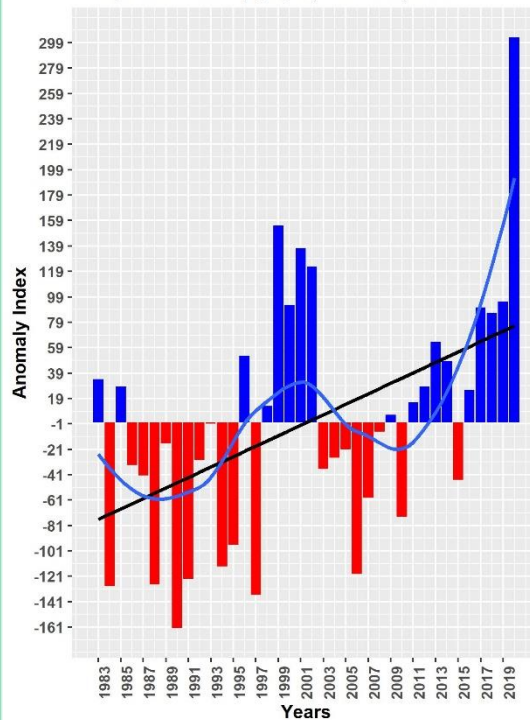
Wet_Year	Percentage
1986	172.4
1992	127.9
2001	127.5
2020	167.1

Dry_Year	Percentage
1988	61.4
1991	69.2
1997	70.7

Congo:Station OUESSO

OUESSO: Congo

Precipitation anomaly graph (1983-2020) OND



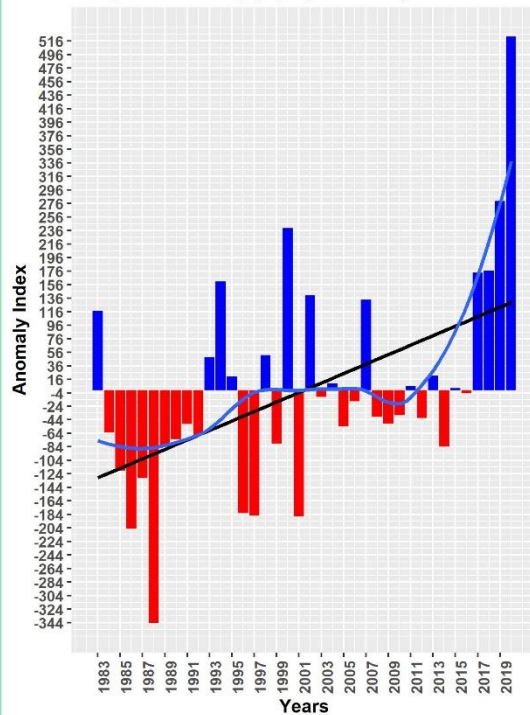
Wet_Year	Percentage
1999	138.6
2001	134.2
2002	130.6
2020	175.5

Dry_Year	Percentage
1984	67.9
1988	68.3
1990	59.7
1991	69.4
1994	71.8
1997	66.2
2006	70.3

Congo:Station SIBITI

SIBITI: Congo

Precipitation anomaly graph (1983-2020) OND



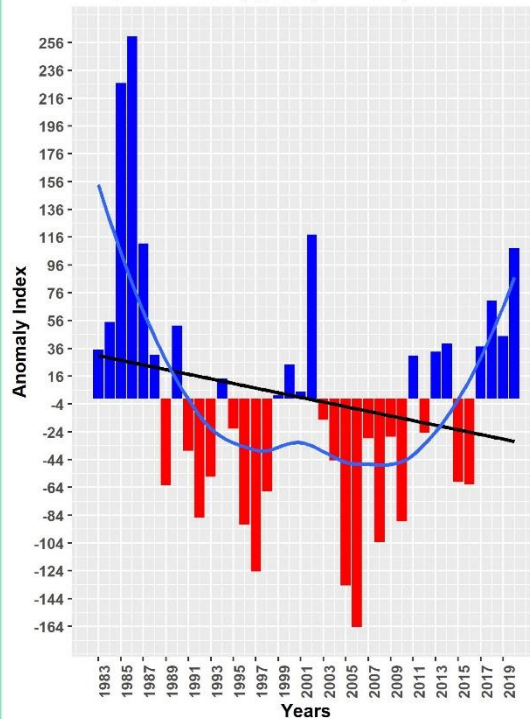
Wet_Year	Percentage
1994	127.2
2000	140.4
2017	129.4
2018	129.8
2019	147.2
2020	188.3

Dry_Year	Percentage
1986	65.3
1988	41.8
1996	69.3
1997	68.7
2001	68.5

DRC:Station BONDO

BONDO: DRC

Precipitation anomaly graph (1983-2020) OND



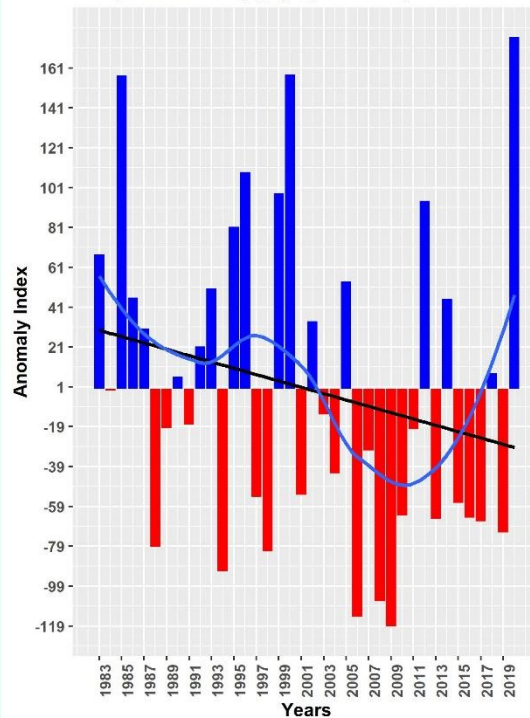
Wet_Year	Percentage
1985	158.6
1986	167.3
1987	128.8
2002	130.4
2020	127.9

Dry_Year	Percentage
1997	67.9
2005	65.2
2006	57.5
2008	73.3

DRC:Station BUTEMBO

BUTEMBO: DRC

Precipitation anomaly graph (1983-2020) OND

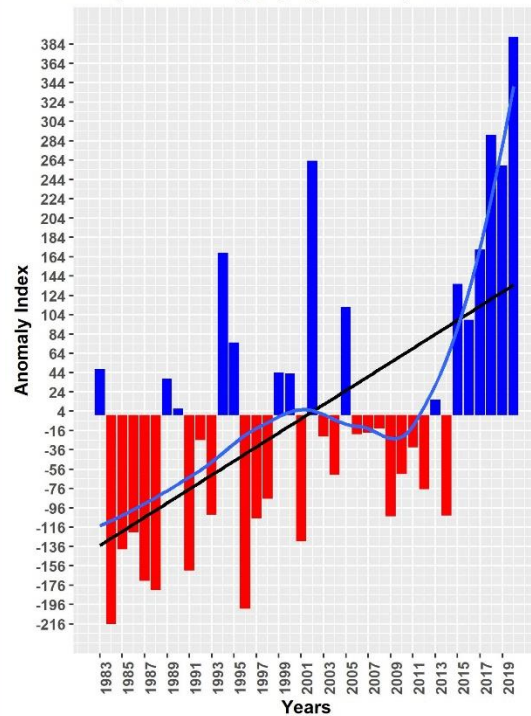


Wet_Year	Percentage
1985	134.4
2000	134.5
2020	138.6

Dry_Year	Percentage
2006	75
2009	73.9

DRC:Station KINSHASA_N_DOLO

KINSHASA_N_DOLO: DRC
Precipitation anomaly graph (1983-2020) OND



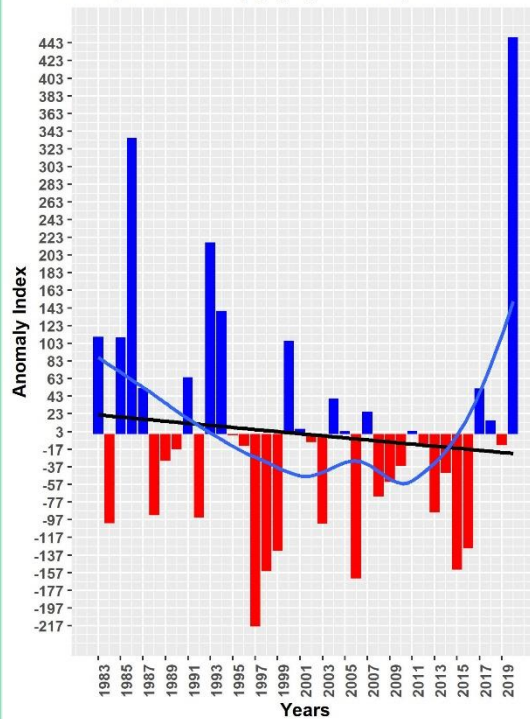
Wet_Year	Percentage
1994	129.1
2002	145.6
2017	129.7
2018	150.3
2019	144.8
2020	167.8

Dry_Year	Percentage
1984	62.5
1987	70.3
1988	68.6
1991	72.1
1996	65.3

DRC:Station LODJA

LODJA: DRC

Precipitation anomaly graph (1983-2020) OND



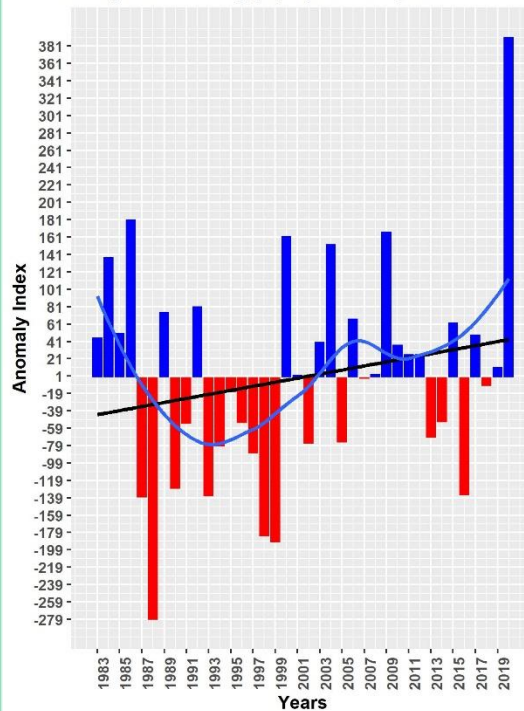
Wet_Year	Percentage
1986	160
1993	138.8
2020	180.5

Dry_Year	Percentage
1997	61
1998	72.2
2006	70.7
2015	72.5

DRC:Station LUBUMBASHI-LUANO

LUBUMBASHI-LUANO: DRC

Precipitation anomaly graph (1983-2020) OND



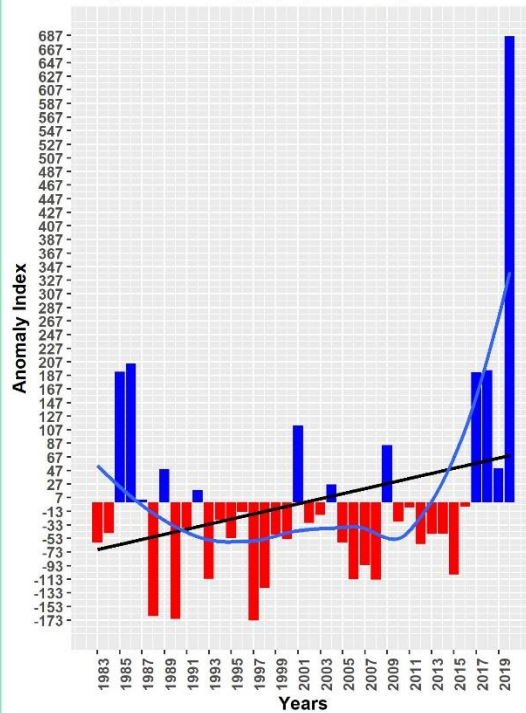
Wet_Year	Percentage
1984	135.4
1986	146.7
2000	141.7
2004	139.3
2009	143
2020	200.7

Dry_Year	Percentage
1987	64.3
1988	28.2
1990	66.9
1993	64.7
1998	52.9
1999	51.1
2016	65.1

DRC:Station MBANDAKA

MBANDAKA: DRC

Precipitation anomaly graph (1983-2020) OND

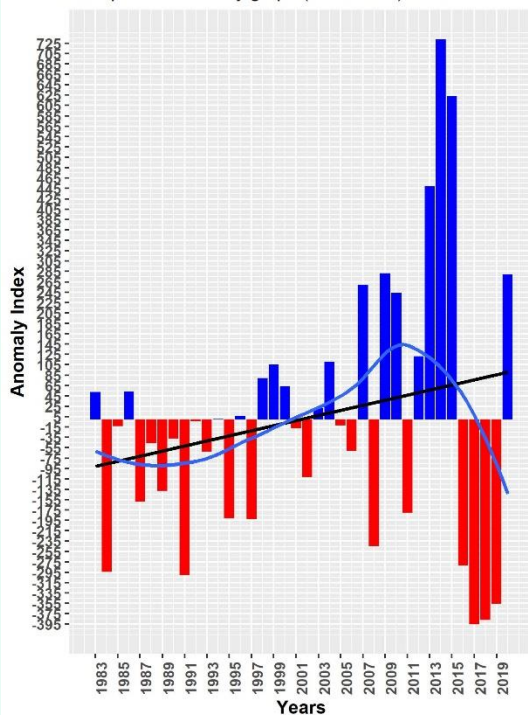


Wet_Year	Percentage
1985	140.2
1986	142.9
2017	140.1
2018	140.8
2020	243.8

Dry_Year	Percentage
1988	65
1990	64.1
1997	63.6
1998	73.6

Gabon:Station LAMBARENE

LAMBARENE: Gabon
Precipitation anomaly graph (1983-2020) OND

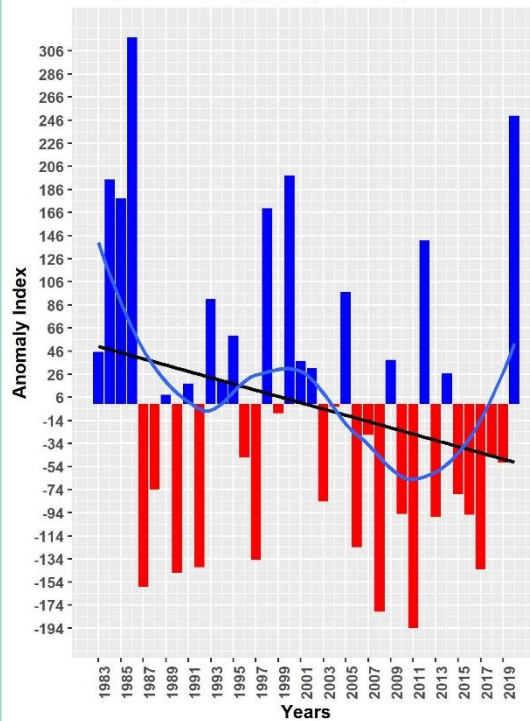


Wet_Year	Percentage
2007	138
2009	141.3
2010	135.8
2013	165.9
2014	207.5
2015	191.3
2020	140.9

Dry_Year	Percentage
1984	56.8
1991	55.9
1995	72
1997	71.8
2008	64.2
2011	73.5
2016	58.6
2017	42
2018	43.2
2019	47.8

Gabon:Station MAKOKOU

MAKOKOU: Gabon
Precipitation anomaly graph (1983-2020) OND



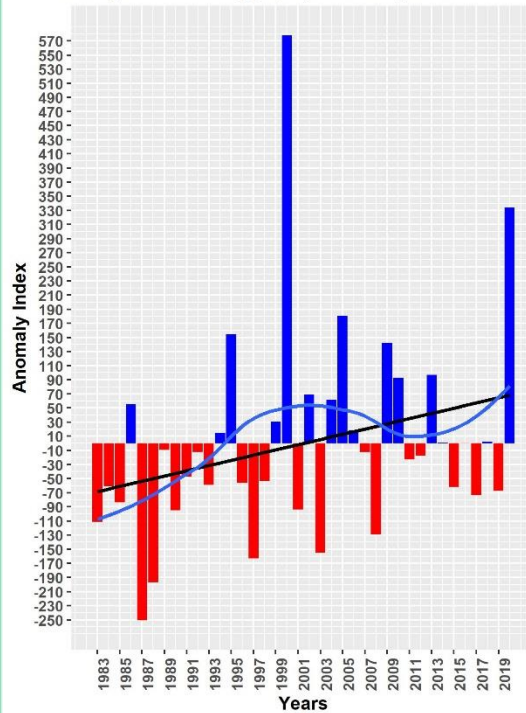
Wet_Year	Percentage
1984	137.9
1985	134.7
1986	161.9
1998	133
2000	138.6
2012	127.6
2020	148.7

Dry_Year	Percentage
1987	69.2
1990	71.5
1992	72.5
1997	73.7
2008	65
2011	62.2
2017	72.2

Gabon:Station MVENGUE

MVENGUE: Gabon

Precipitation anomaly graph (1983-2020) OND



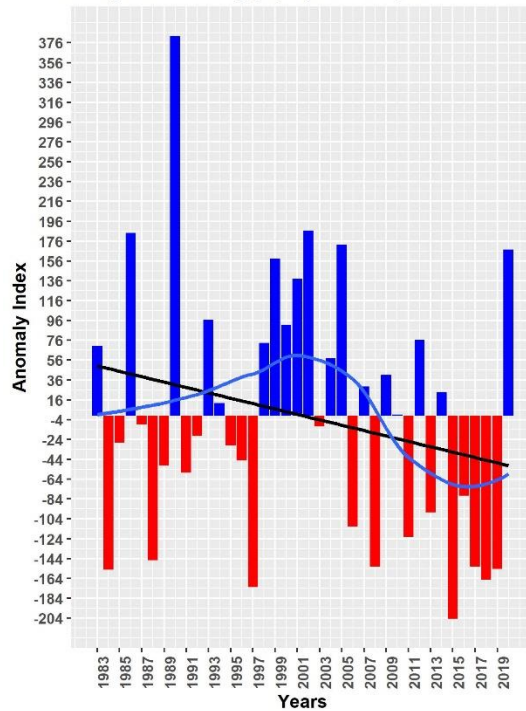
Wet_Year	Percentage
2000	189.4
2005	127.9
2020	151.6

Dry_Year	Percentage
1987	61.2
1988	69.6
1997	74.8

Gabon:Station OYEM

OYEM: Gabon

Precipitation anomaly graph (1983-2020) OND



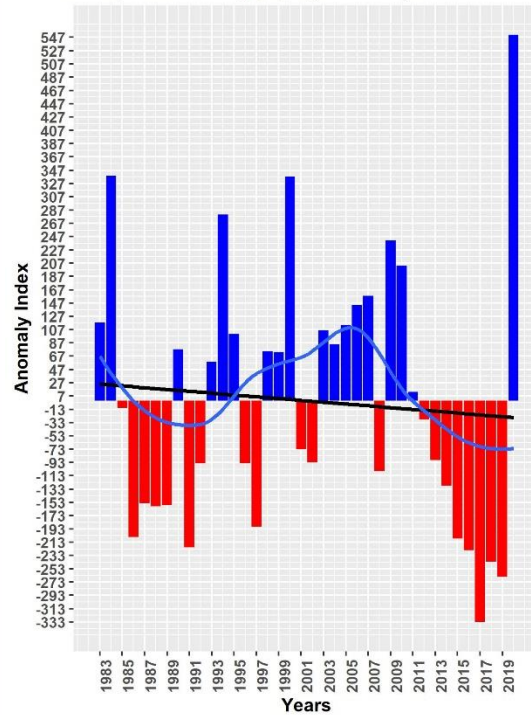
Wet_Year	Percentage
1986	139.8
1990	182.9
1999	134.3
2001	129.9
2002	140.4
2005	137.3
2020	136.3

Dry_Year	Percentage
1984	66.4
1988	68.5
1997	62.6
2008	67.1
2011	73.5
2015	55.7
2017	67.1
2018	64.2
2019	66.6

Gabon:Station TCHIBANGA

TCHIBANGA: Gabon

Precipitation anomaly graph (1983-2020) OND

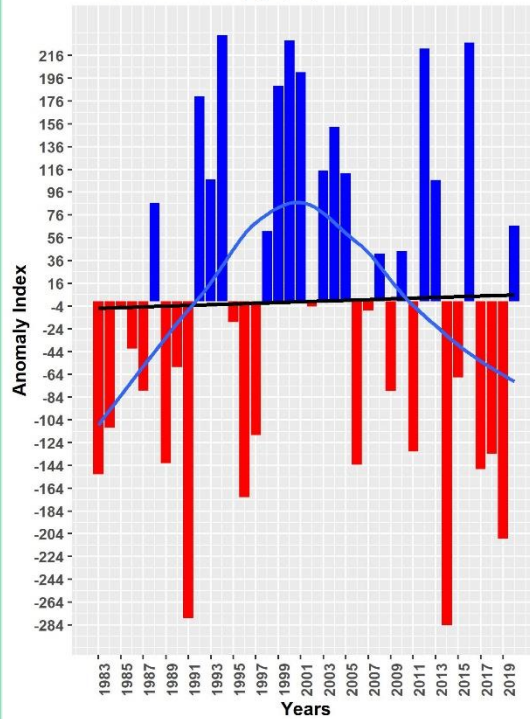


Wet_Year	Percentage
1984	168
1994	156.2
2000	167.6
2006	128.9
2007	131.7
2009	148.4
2010	140.8
2020	210.6

Dry_Year	Percentage
1986	58.9
1987	69.1
1988	68.2
1989	68.5
1991	55.7
1997	61.9
2014	74.4
2015	58.4
2016	54.9
2017	33.2
2018	51.4
2019	46.8

GuineaE:Station BATA-RIO-MUNI

BATA-RIO-MUNI: GuineaE
Precipitation anomaly graph (1983-2020) OND



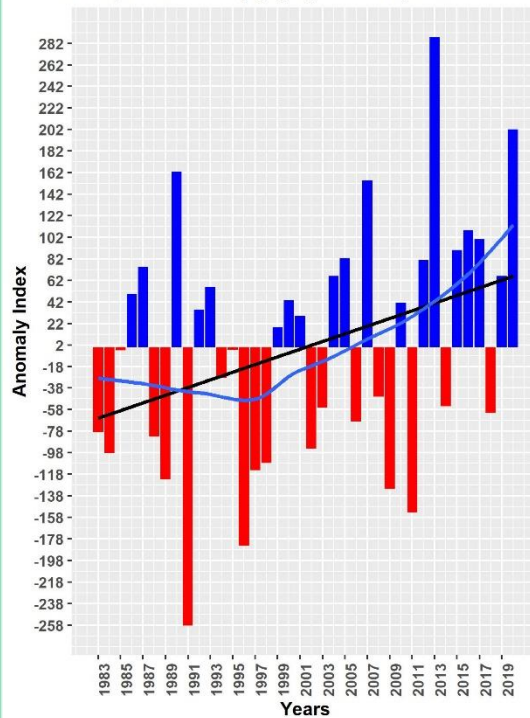
Wet_Year	Percentage
1992	135
1994	145.4
1999	136.8
2000	144.4
2001	139.1
2004	129.7
2012	143.1
2016	144.1

Dry_Year	Percentage
1983	70.5
1989	72.4
1991	46.1
1996	66.7
2006	72.2
2011	74.4
2014	44.8
2017	71.4
2018	74
2019	59.6

GuineaE:Station MALABO

MALABO: GuineaE

Precipitation anomaly graph (1983-2020) OND



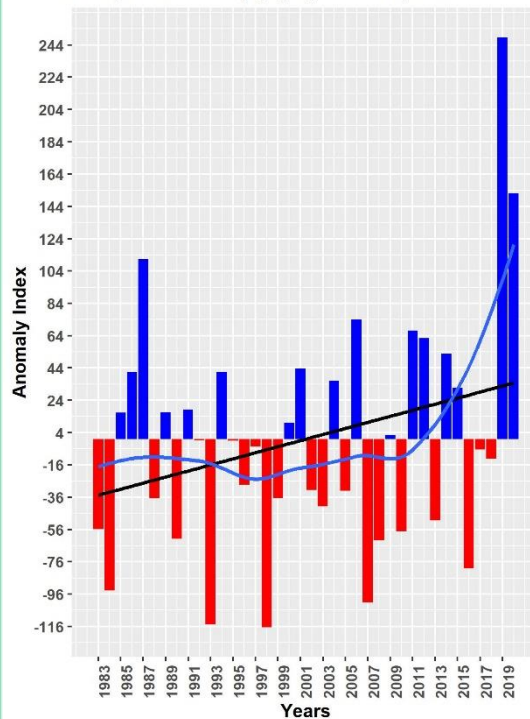
Wet_Year	Percentage
1990	140.5
2007	138.5
2013	171.7
2016	127
2020	150.3

Dry_Year	Percentage
1989	69.5
1991	35.7
1996	54.1
1997	71.6
1998	73.2
2009	67.3
2011	61.8

Rwanda:Station BUTARE

BUTARE: Rwanda

Precipitation anomaly graph (1983-2020) OND



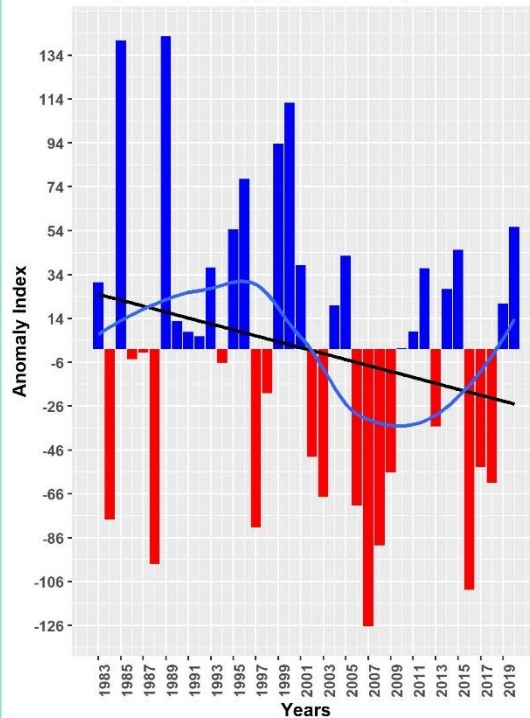
Wet_Year	Percentage
1987	142.9
2006	128.6
2011	125.9
2019	195.9
2020	158.7

Dry_Year	Percentage
1984	63.9
1993	55.8
1998	55
2007	61
2016	69.1

Rwanda:Station GISENYI

GISENYI: Rwanda

Precipitation anomaly graph (1983-2020) OND



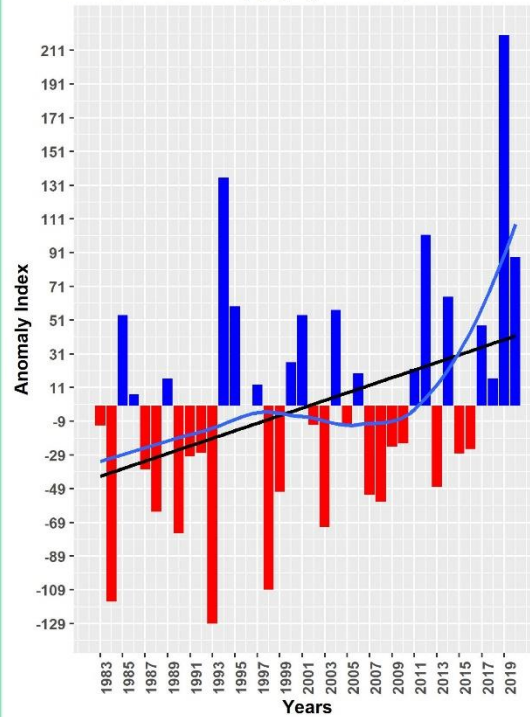
Wet_Year	Percentage
1985	137.4
1989	138
2000	129.9

Dry_Year	Percentage
1988	73.9
2007	66.3
2016	70.8

Rwanda:Station KIGALI

KIGALI: Rwanda

Precipitation anomaly graph (1983-2020) OND

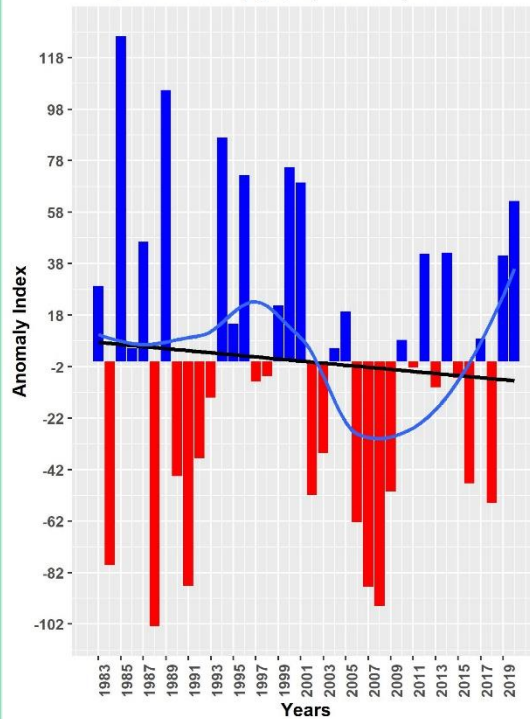


Wet_Year	Percentage
1994	154.3
2012	140.7
2014	126
2019	188.2
2020	135.4

Dry_Year	Percentage
1984	53.5
1988	74.9
1990	69.8
1993	48.3
1998	56.4
2003	71.3

Rwanda:Station RUHENGERRI

RUHENGERRI: Rwanda
Precipitation anomaly graph (1983-2020) OND



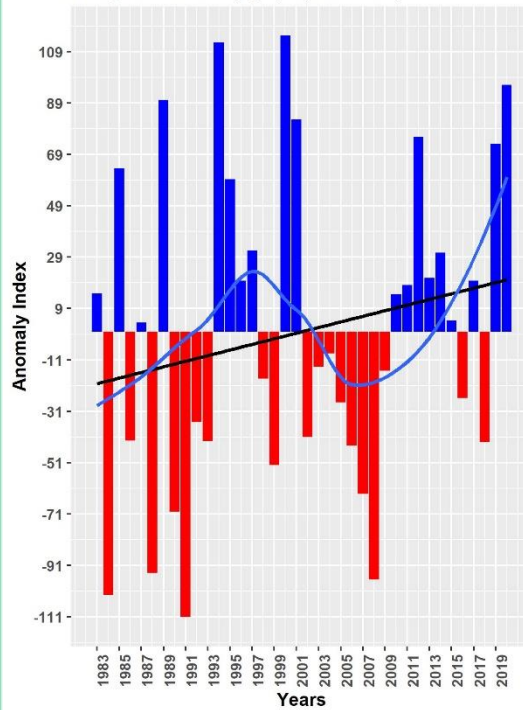
Wet_Year	Percentage
1985	141.5
1989	134.7
1994	128.6

Dry_Year	Percentage
1984	74
1988	66.2
1991	71.4
2007	71.2
2008	68.8

Uganda: Station KABALE

KABALE: Uganda

Precipitation anomaly graph (1983-2020) OND



Wet_Year	Percentage
1989	131
1994	138.8
2000	139.7
2001	128.4
2012	126.1
2019	125.2
2020	133.1

Dry_Year	Percentage
1984	64.7
1988	67.7
1991	61.7
2008	66.8

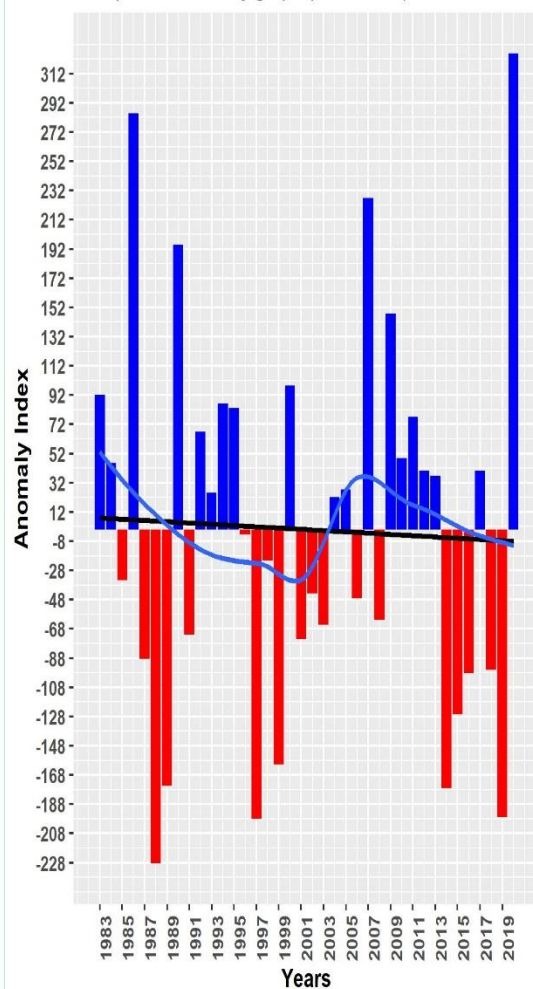
CENTRAL-AFRICA (NDJ)

CLIMATE VARIABILITY AND TRENDS ANALISYS (TIME SERIES): OND Anomaly Graphs

Angola:Station BIE-SILVA-PORTO

BIE-SILVA-PORTO: Angola

Precipitation anomaly graph (1983-2020) NDJ



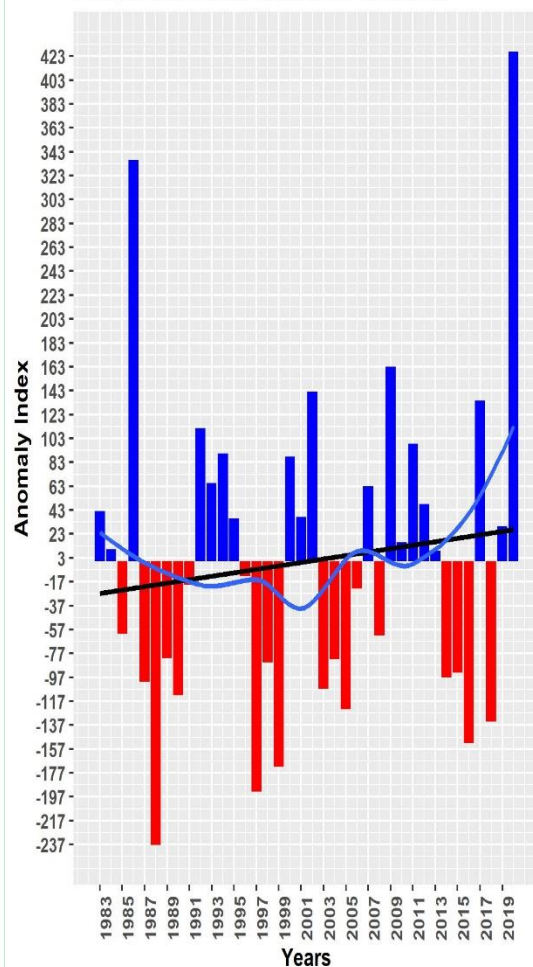
Wet_Year	Percentage
1986	155.9
1990	138.2
2007	144.5
2009	129
2020	164

Dry_Year	Percentage
1988	55.1
1989	65.5
1997	61.1
1999	68.4
2014	65.3
2019	61.4

Angola: Station CAZOMBO

CAZOMBO: Angola

Precipitation anomaly graph (1983-2020) NDJ



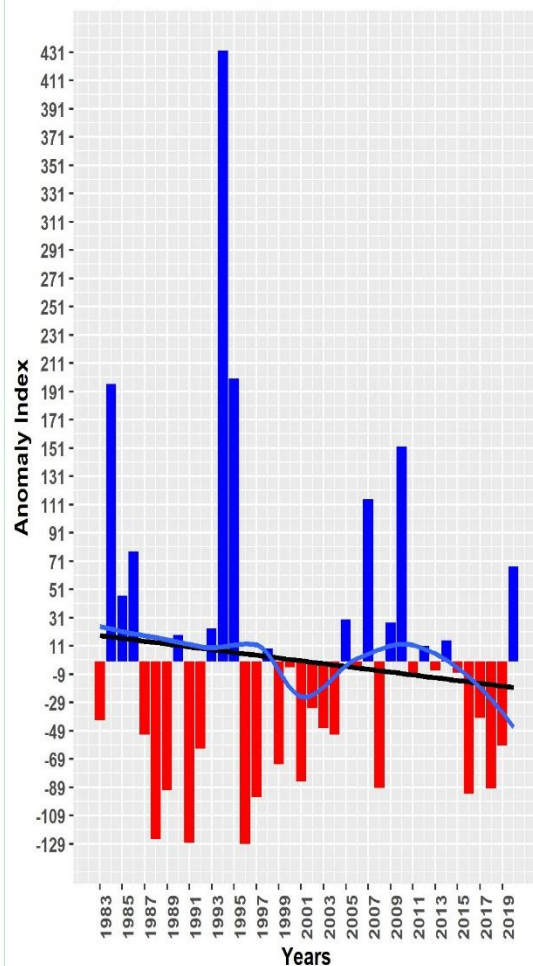
Wet_Year	Percentage
1986	164.6
2002	127.4
2009	131.3
2017	125.9
2020	182.1

Dry_Year	Percentage
1988	54.4
1997	63
1999	67
2016	70.7
2018	74.2

Angola:Station LUANDA

LUANDA: Angola

Precipitation anomaly graph (1983-2020) NDJ



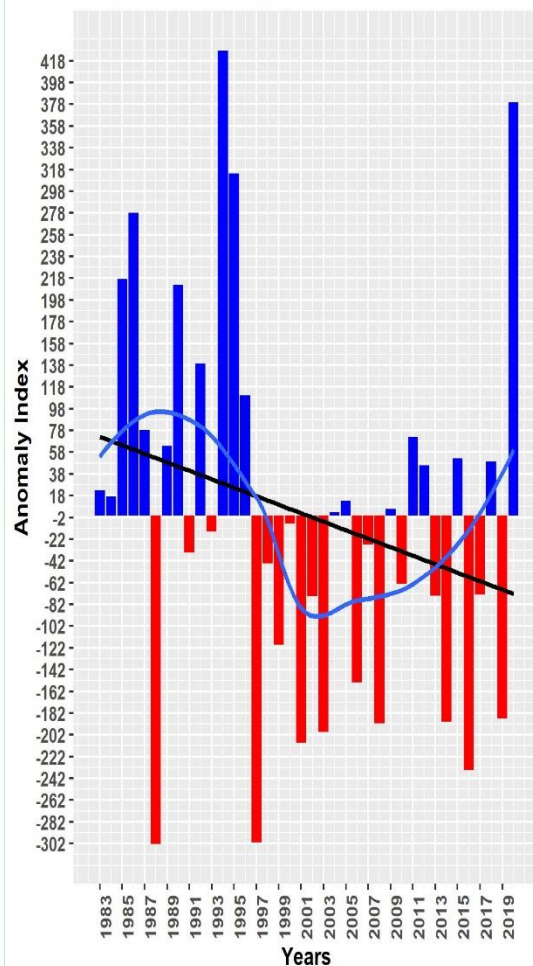
Wet_Year	Percentage
1984	238.7
1985	132.8
1986	155
1994	405.3
1995	241.3
2007	181
2010	207.4
2020	147.3

Dry_Year	Percentage
1983	70.7
1987	63.5
1988	11.2
1989	35.6
1991	9.3
1992	56.3
1996	8.7
1997	32.2
1999	48.5
2001	40
2003	66.5
2004	63.4
2008	36.9
2016	33.9
2017	71.7
2018	36.6
2019	58

Angola: Station NEGAGE

NEGAGE: Angola

Precipitation anomaly graph (1983-2020) NDJ



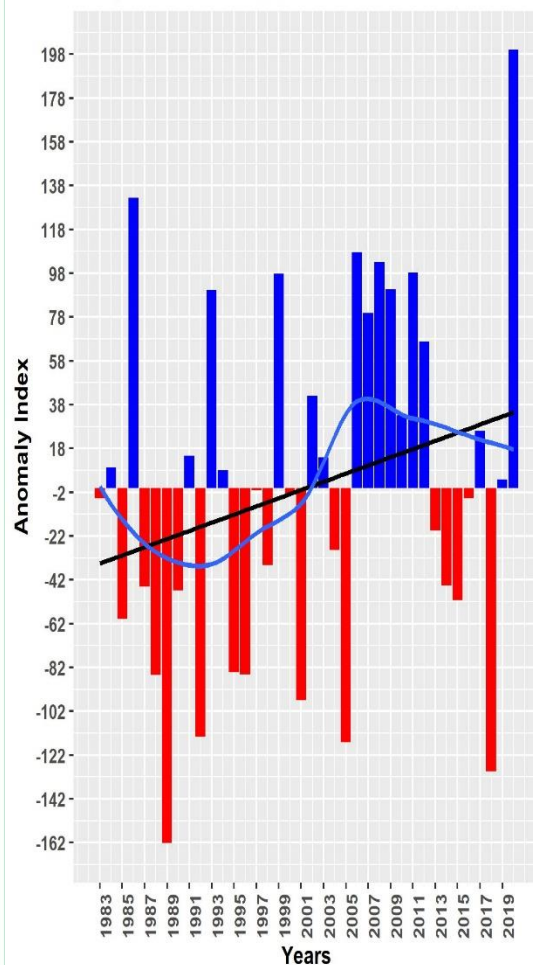
Wet_Year	Percentage
1985	137.6
1986	148.2
1990	136.7
1994	174
1995	154.5
2020	165.7

Dry_Year	Percentage
1988	47.6
1997	47.9
2001	63.8
2003	65.5
2006	73.4
2008	66.8
2014	67.1
2016	59.4
2019	67.6

Angola: Station PEREIRA-DE-ECA

PEREIRA-DE-ECA: Angola

Precipitation anomaly graph (1983-2020) NDJ



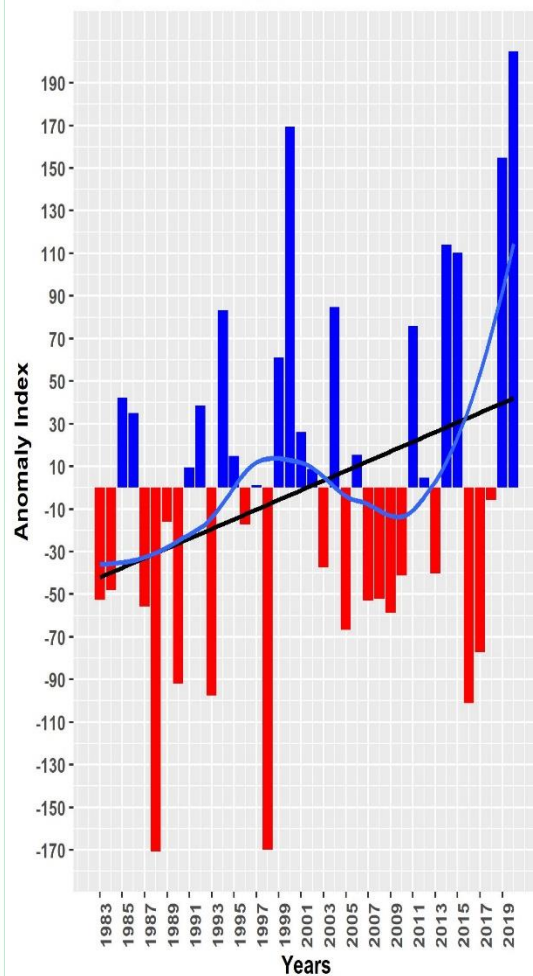
Wet_Year	Percentage
1986	177.3
1993	152.8
1999	157.1
2006	162.8
2007	146.5
2008	160.2
2009	152.9
2011	157.3
2012	139
2020	216.7

Dry_Year	Percentage
1985	65.1
1987	73.7
1988	50.1
1989	5.4
1990	72.7
1992	33.7
1995	50.9
1996	50.3
2001	43.5
2005	32.2
2014	74
2015	70.2
2018	24.5

Burundi: Station BUJUMBURA

BUJUMBURA: Burundi

Precipitation anomaly graph (1983-2020) NDJ



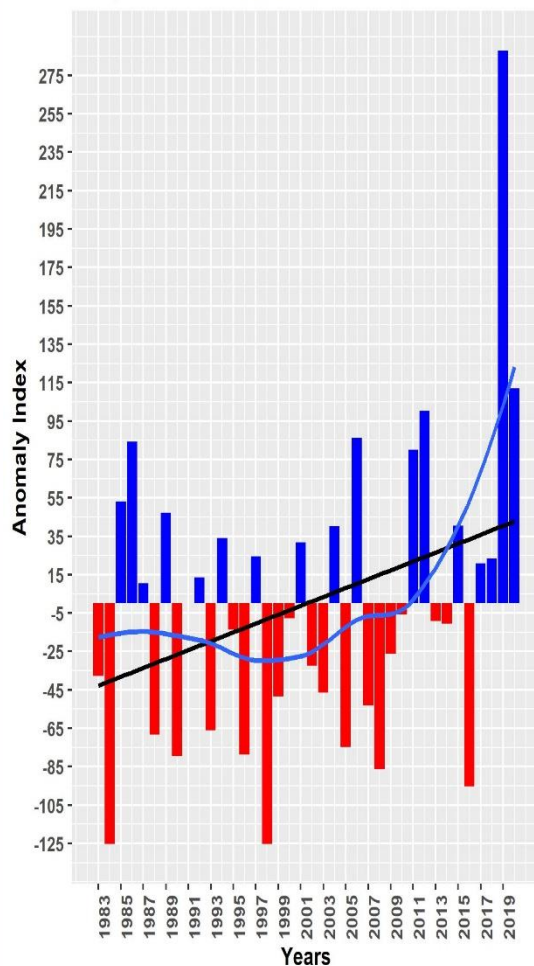
Wet_Year	Percentage
1994	126.3
2000	153.5
2004	126.8
2014	136
2015	134.7
2019	148.8
2020	164.7

Dry_Year	Percentage
1988	46.1
1990	71
1993	69.2
1998	46.3
2016	68.1

Burundi: Station MUYINGA

MUYINGA: Burundi

Precipitation anomaly graph (1983-2020) NDJ

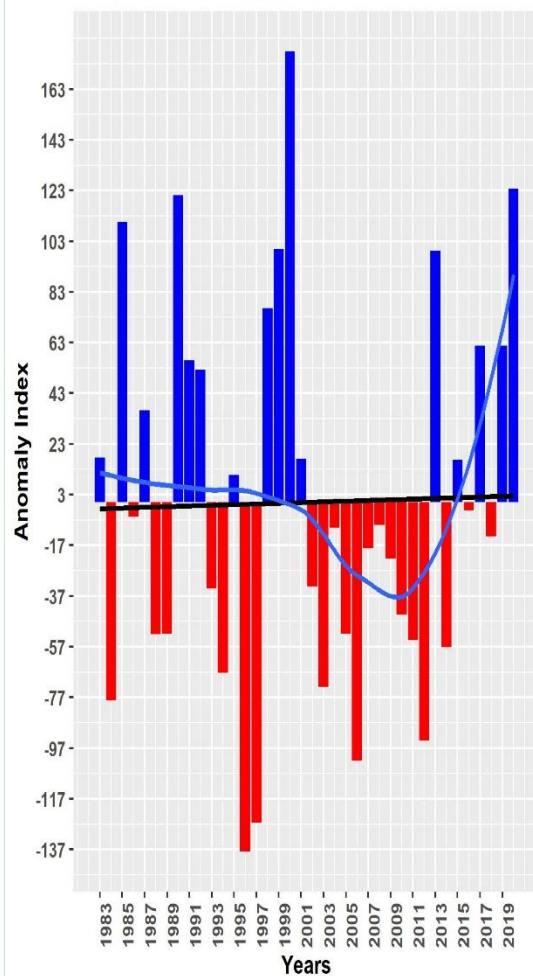


Wet_Year	Percentage
1986	132.2
2006	133.1
2011	130.7
2012	138.4
2019	210.3
2020	142.9

Dry_Year	Percentage
1984	52
1988	73.9
1990	69.5
1993	74.7
1996	69.8
1998	52
2005	71.3
2008	67
2016	63.6

Cameroon: Station BATOURI

BATOURI: Cameroon
Precipitation anomaly graph (1983-2020) NDJ



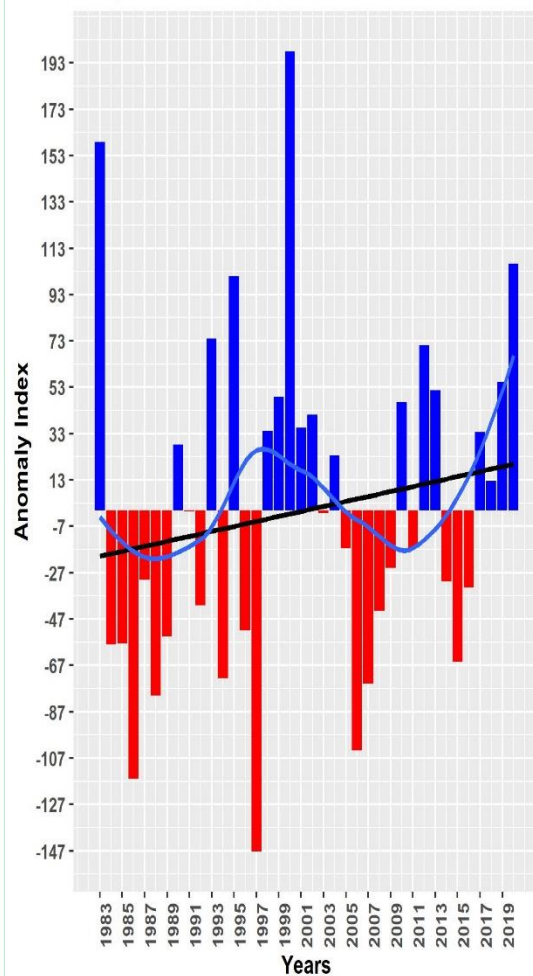
Wet_Year	Percentage
1985	133
1990	136.2
1999	129.8
2000	153.1
2013	129.6
2020	136.9

Dry_Year	Percentage
1996	58.9
1997	62.3
2006	69.6
2012	71.9

Cameroon: Station LOMIE

LOMIE: Cameroon

Precipitation anomaly graph (1983-2020) NDJ



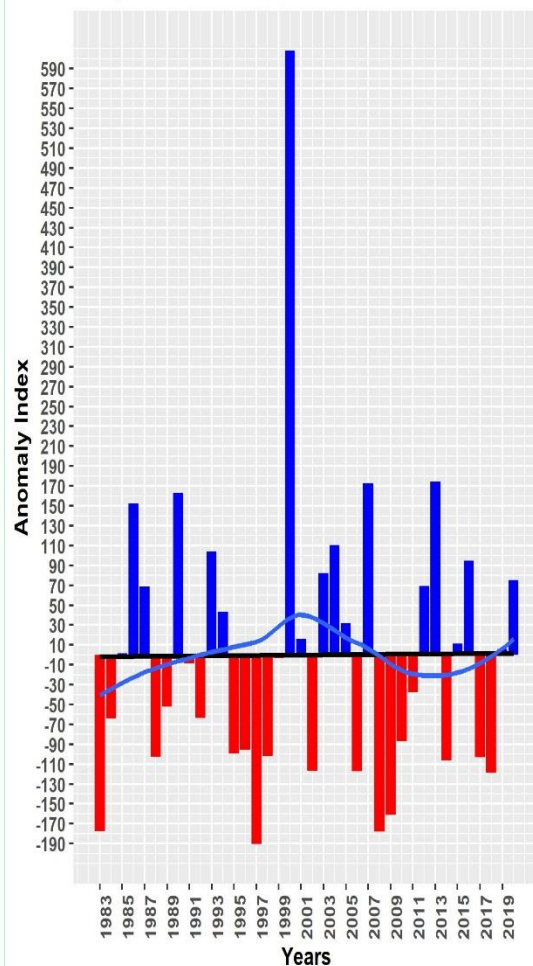
Wet_Year	Percentage
1983	142.8
1995	127.2
2000	153.4
2020	128.6

Dry_Year	Percentage
1986	68.7
1997	60.3
2006	72

Cameroon: Station MAMFE

MAMFE: Cameroon

Precipitation anomaly graph (1983-2020) NDJ



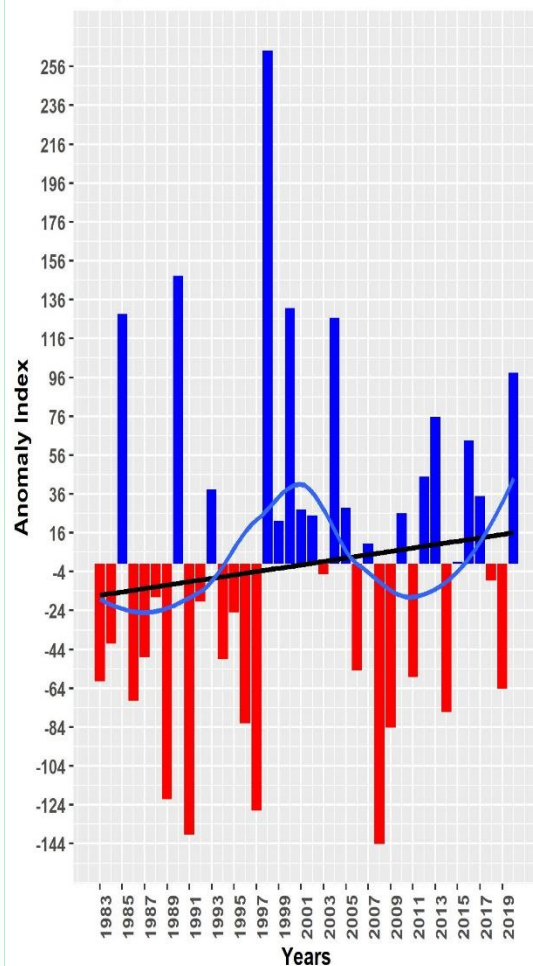
Wet_Year	Percentage
1986	131.9
1990	134.1
2000	227.6
2007	136.2
2013	136.6

Dry_Year	Percentage
1983	62.8
1997	60
2008	62.7
2009	66.3

Cameroon: Station YAOUNDE

YAOUNDE: Cameroon

Precipitation anomaly graph (1983-2020) NDJ



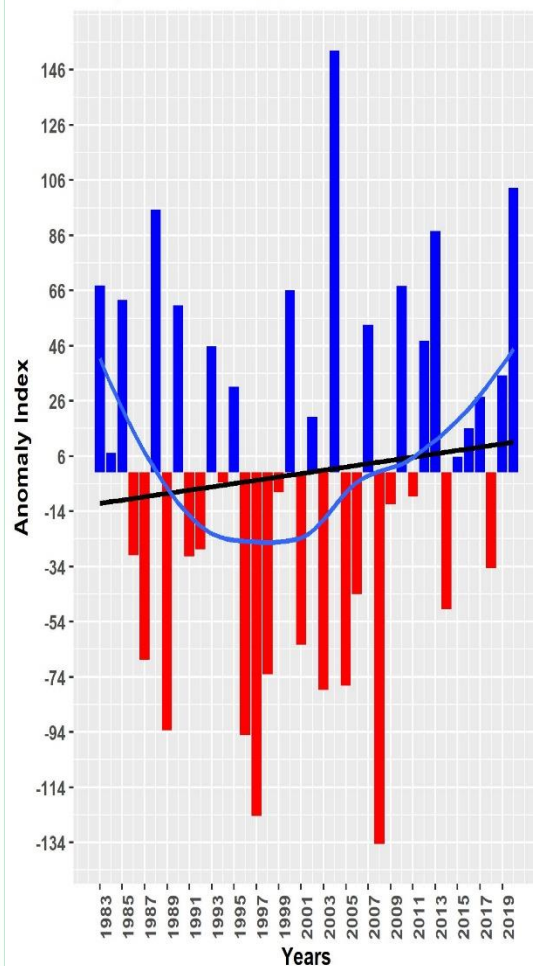
Wet_Year	Percentage
1985	136.1
1990	141.7
1998	174.2
2000	136.9
2004	135.6
2020	127.6

Dry_Year	Percentage
1989	65.9
1991	60.8
1997	64.3
2008	59.5

Cameroon: Station YOKO

YOKO: Cameroon

Precipitation anomaly graph (1983-2020) NDJ



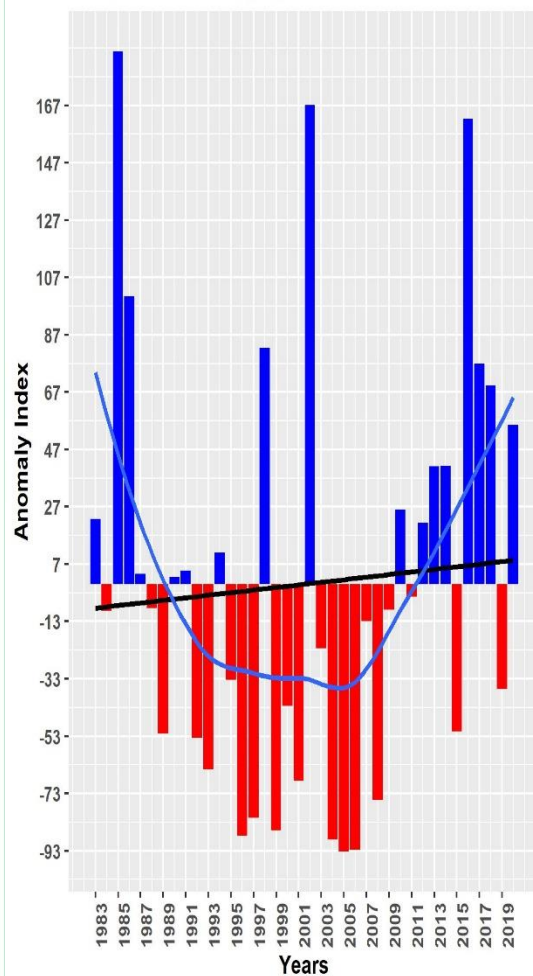
Wet_Year	Percentage
1988	131
2004	149.7
2013	128.5
2020	133.5

Dry_Year	Percentage
1989	69.6
1996	69.1
1997	59.6
2003	74.4
2005	74.9
2008	56.3

Centrafrique:Station BAMBARI

BAMBARI: Centrafrique

Precipitation anomaly graph (1983-2020) NDJ



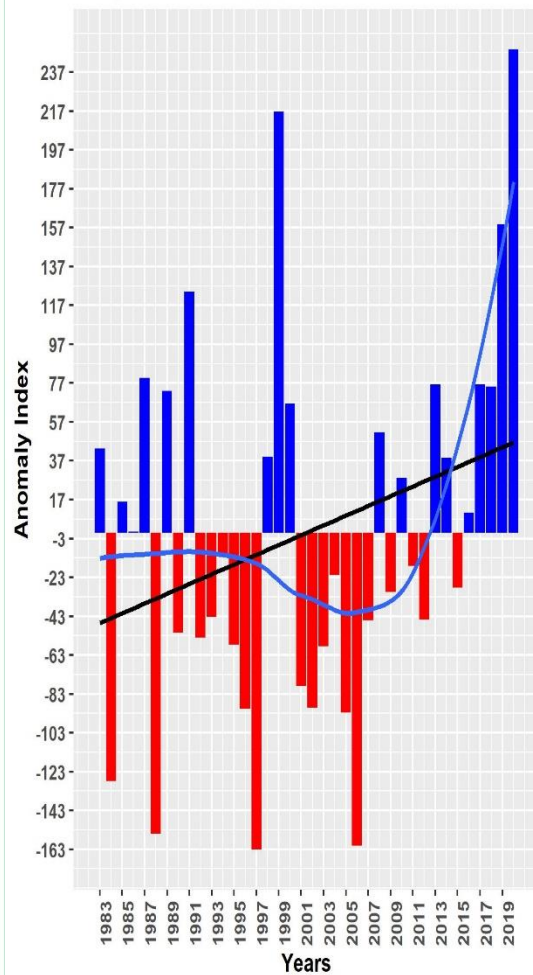
Wet_Year	Percentage
1985	167.3
1986	136.3
1998	129.9
2002	160.5
2016	158.8
2017	127.9
2018	125.1

Dry_Year	Percentage
1996	68.2
1997	70.5
1999	68.9
2004	67.8
2005	66.2
2006	66.5
2008	72.7

Centrafrique:Station BERBERATI

BERBERATI: Centrafrique

Precipitation anomaly graph (1983-2020) NDJ

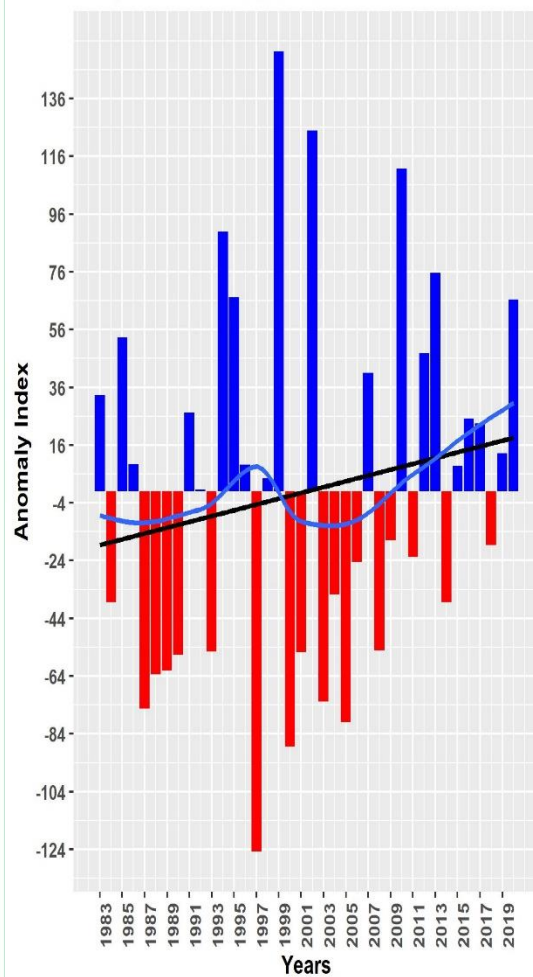


Wet_Year	Percentage
1991	136.1
1999	163
2019	146.1
2020	172.3

Dry_Year	Percentage
1984	62.8
1988	54.9
1996	73.6
1997	52.6
2002	73.8
2005	73.1
2006	53.1

Centrafrique:Station BOSSANGOA

BOSSANGOA: Centrafrique
Precipitation anomaly graph (1983-2020) NDJ

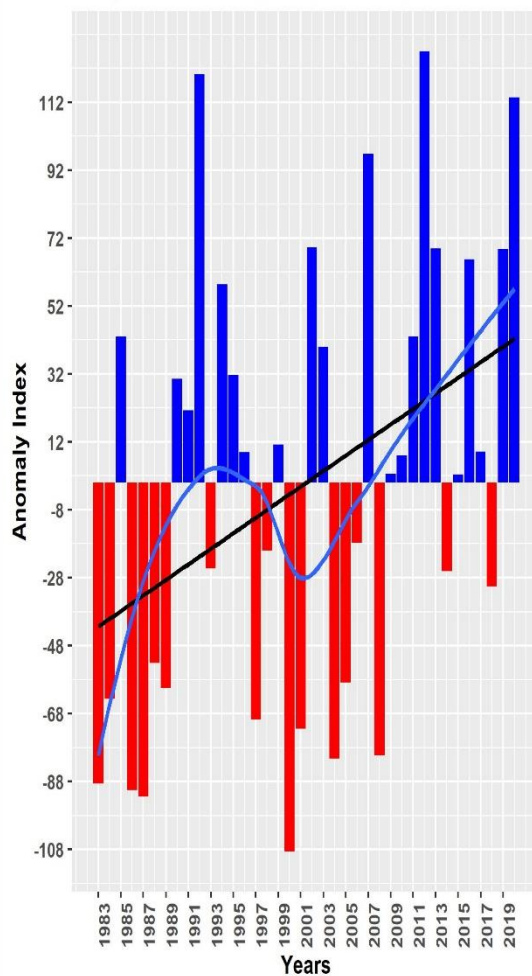


Wet_Year	Percentage
1985	127.2
1994	146
1995	134.3
1999	177.9
2002	163.9
2010	157.1
2013	138.7
2020	133.9

Dry_Year	Percentage
1987	61.5
1988	67.6
1989	68.3
1990	71.1
1993	71.6
1997	36.2
2000	54.8
2001	71.6
2003	62.8
2005	59.2
2008	71.9

Centrafrique:Station N_DELE

N_DELE: Centrafrique
Precipitation anomaly graph (1983-2020) NDJ



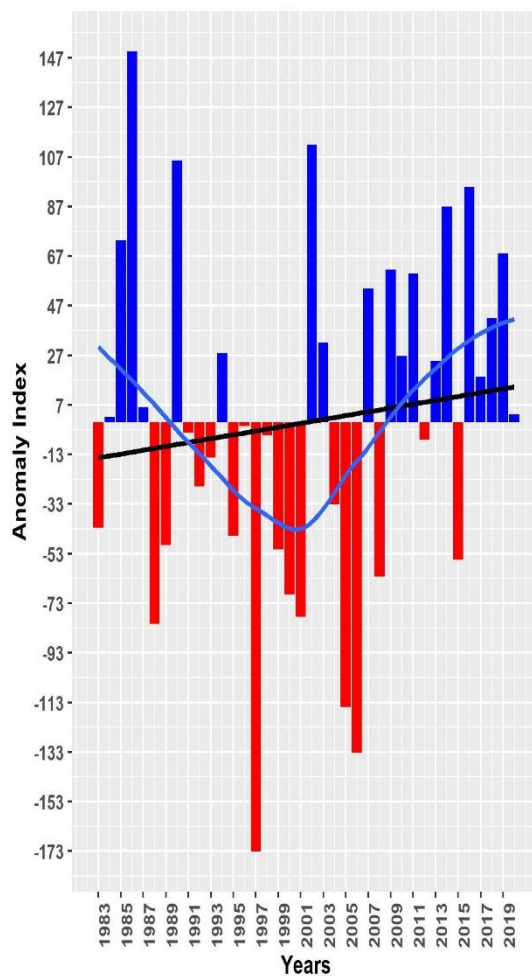
Wet_Year	Percentage
1992	160.8
1994	129.5
2002	135
2007	148.9
2012	164.3
2013	134.9
2016	133.2
2019	134.8
2020	157.3

Dry_Year	Percentage
1983	55.1
1984	67.8
1986	54.2
1987	53.2
1988	73.1
1989	69.4
1997	64.7
2000	45
2001	63.3
2004	58.9
2005	70.3
2008	59.3

Centrafrique:Station YALINGA

YALINGA: Centrafrique

Precipitation anomaly graph (1983-2020) NDJ



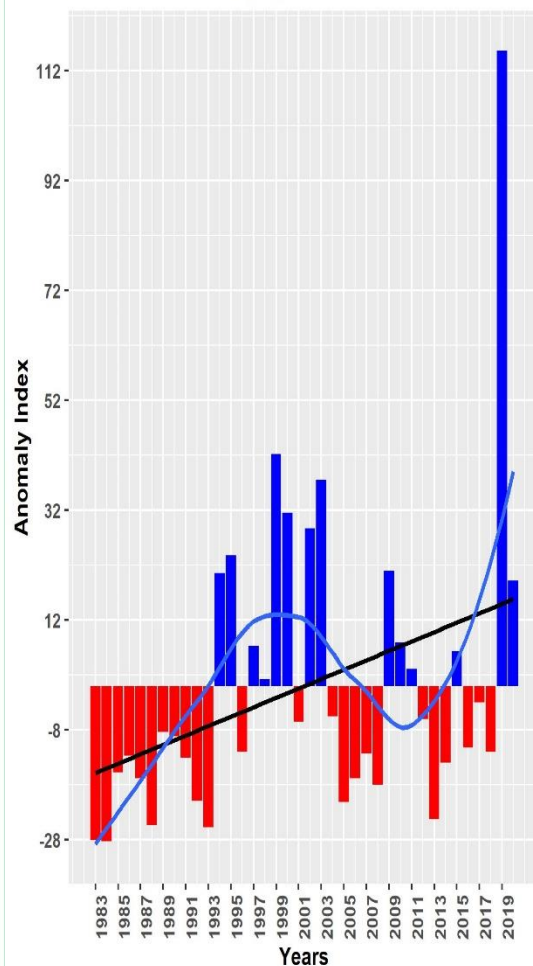
Wet_Year	Percentage
1985	128.2
1986	157.5
1990	140.6
2002	143
2014	133.5
2016	136.4
2019	126.2

Dry_Year	Percentage
1988	68.7
1997	33.4
2000	73.3
2001	69.8
2005	55.8
2006	48.8

Chad: Station BOKORO

BOKORO: Chad

Precipitation anomaly graph (1983-2020) NDJ



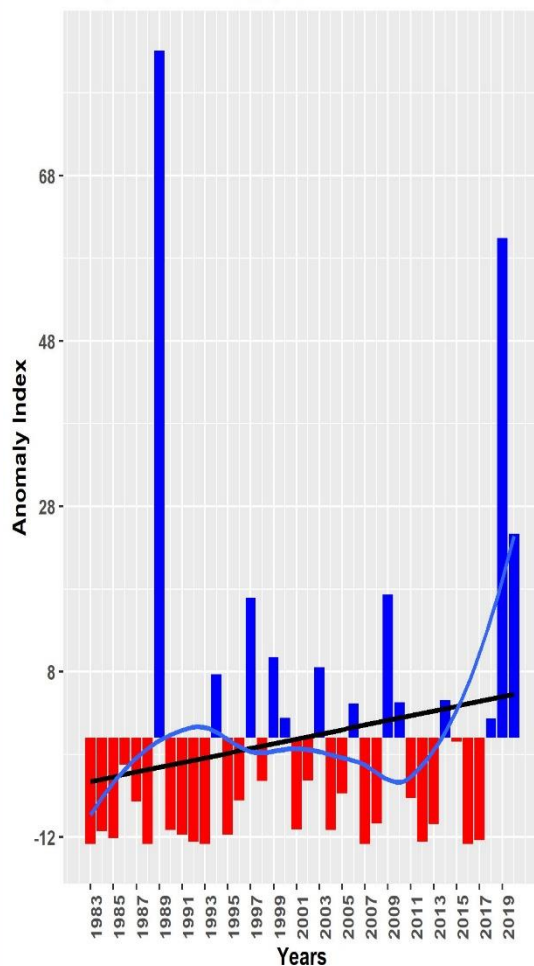
Wet_Year	Percentage
1994	171.2
1995	182.4
1997	125.4
1999	246
2000	209.2
2002	199.3
2003	229.6
2009	172.5
2010	127.2
2019	499.9
2020	166.4

Dry_Year	Percentage
1983	2.8
1984	2.5
1985	45.8
1986	56.1
1987	42
1988	12.6
1989	71.2
1990	68.4
1991	55
1992	27.6
1993	11.2
1996	58.4
2005	26.9
2006	42.1
2007	57.5
2008	38
2013	16.2
2014	51.9
2016	61.1
2018	58.7

Chad:Station BOL-BERIM

BOL-BERIM: Chad

Precipitation anomaly graph (1983-2020) NDJ



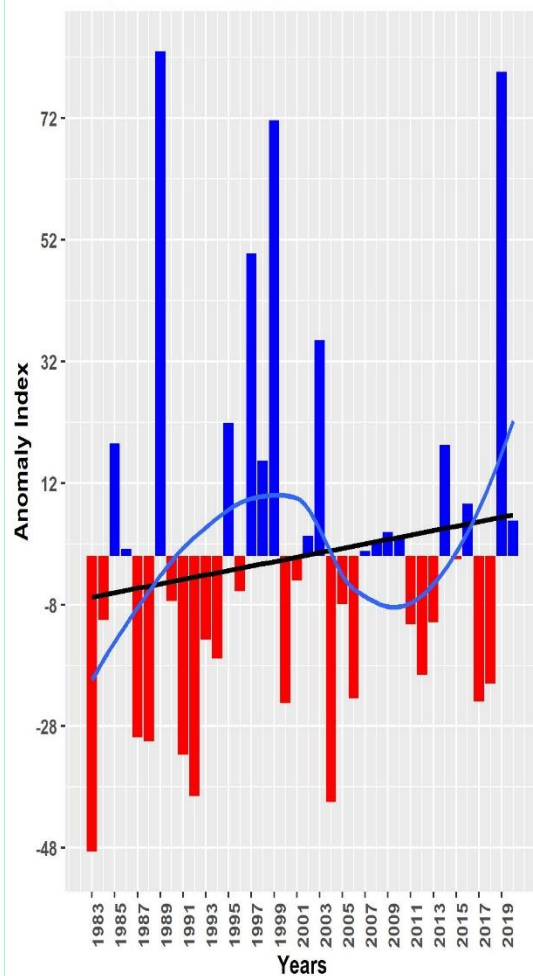
Wet_Year	Percentage
1989	746.8
1994	159.8
1997	231.5
1999	176.1
2003	166.4
2006	132.3
2009	234.6
2010	133.2
2014	135.4
2019	570
2020	291.9

Dry_Year	Percentage
1983	0
1984	12.4
1985	5.5
1986	74.6
1987	40.3
1988	0
1990	13.1
1991	8.8
1992	1.9
1993	0
1995	8.8
1996	41.2
1998	59.5
2001	13.7
2002	60.1
2004	13.3
2005	47.9
2007	0
2008	19.5
2011	43.3
2012	2.2
2013	19
2016	0
2017	2.6

Chad:Station BOUSSO

BOUSSO: Chad

Precipitation anomaly graph (1983-2020) NDJ



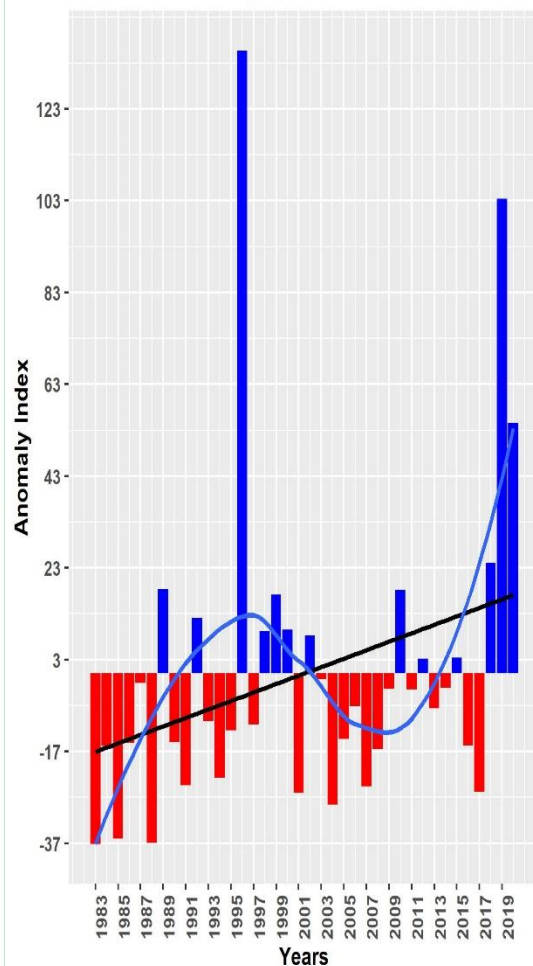
Wet_Year	Percentage
1985	131.7
1989	242.3
1995	137.5
1997	185.3
1998	126.8
1999	222.8
2003	160.9
2014	131.2
2019	236.4

Dry_Year	Percentage
1983	16.7
1987	48.8
1988	47.9
1991	44
1992	32.4
1994	71.1
2000	58.5
2004	30.6
2006	59.9
2012	66.5
2017	58.9
2018	64.1

Chad: Station GOZ-BEIDA

GOZ-BEIDA: Chad

Precipitation anomaly graph (1983-2020) NDJ



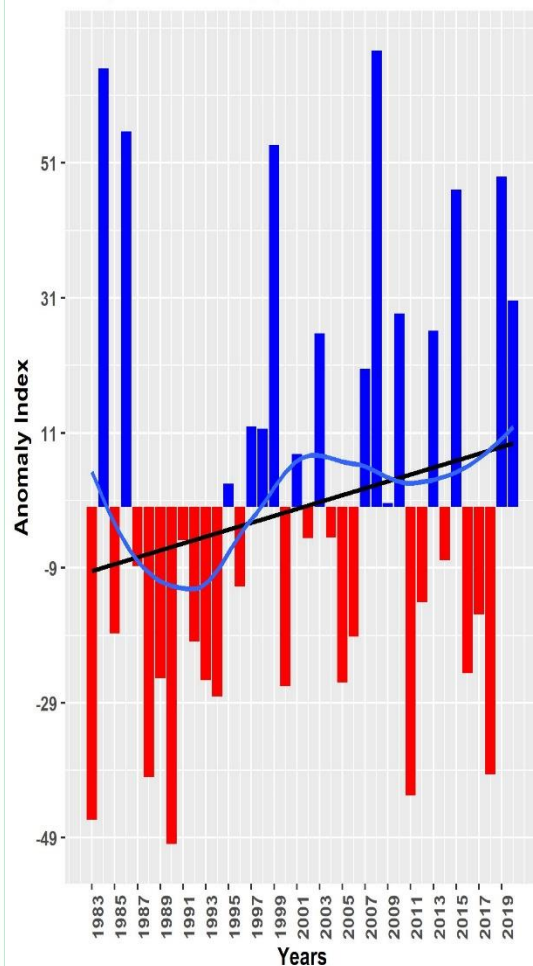
Wet_Year	Percentage
1989	149
1992	132.5
1996	462.6
1999	145.7
2000	125.4
2010	148.8
2018	164.3
2019	376.4
2020	245.8

Dry_Year	Percentage
1983	0.7
1984	57.7
1985	3.9
1986	59.6
1988	1.4
1990	60
1991	34.9
1993	72
1994	39.2
1995	66.7
1997	70.2
2001	30.4
2004	23.5
2005	61.8
2007	34.1
2008	56
2016	58
2017	31.2

Chad: Station MOUNDOU

MOUNDOU: Chad

Precipitation anomaly graph (1983-2020) NDJ



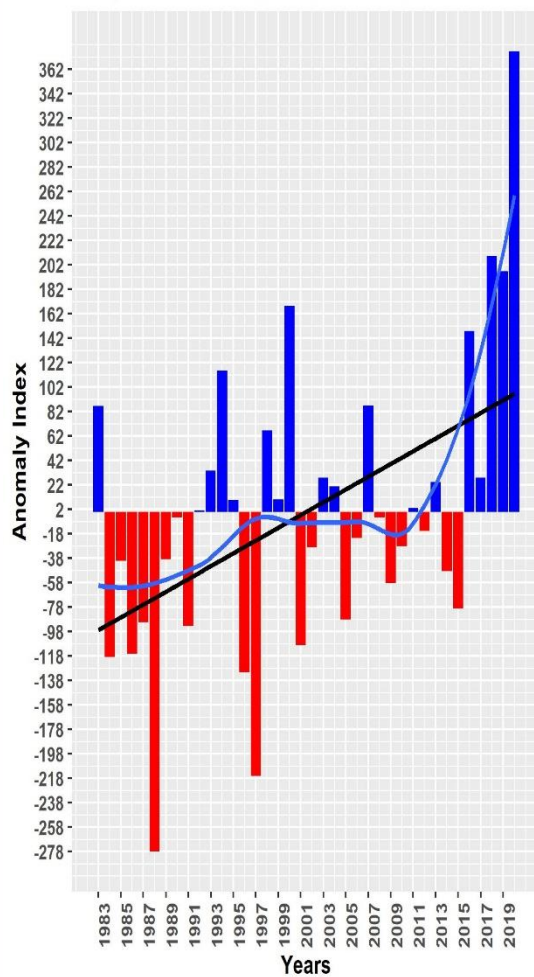
Wet_Year	Percentage
1984	172.8
1986	162.4
1999	160.2
2003	128.8
2008	175.8
2010	132.2
2013	129.3
2015	152.8
2019	154.8
2020	134.3

Dry_Year	Percentage
1983	48.1
1988	55.1
1989	71.6
1990	44
1993	71.2
1994	68.5
2000	70.3
2005	70.9
2011	52.1
2016	72.4
2018	55.6

Congo:Station DOLISIE

DOLISIE: Congo

Precipitation anomaly graph (1983-2020) NDJ



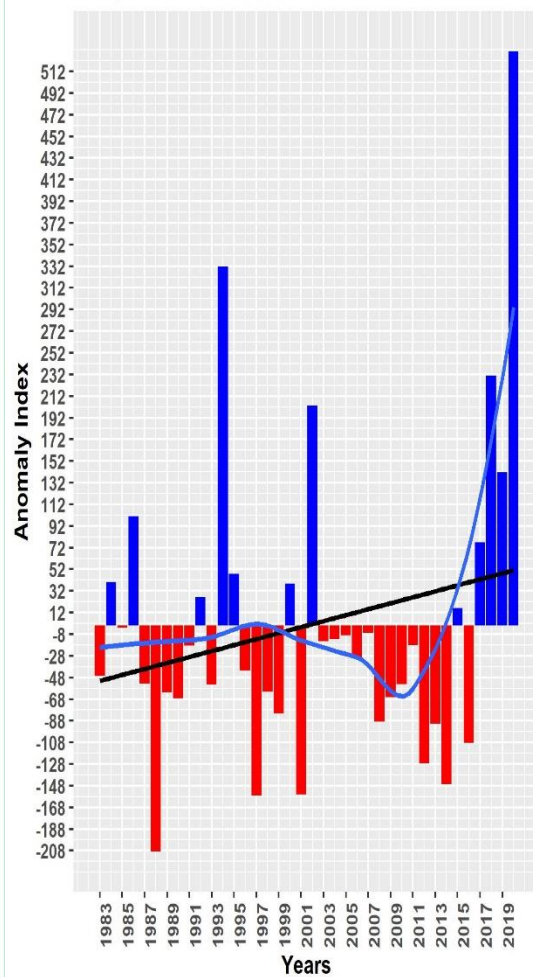
Wet_Year	Percentage
1994	126.8
2000	139.1
2016	134.3
2018	148.5
2019	145.7
2020	187.5

Dry_Year	Percentage
1984	72.4
1986	73
1988	35.5
1996	69.6
1997	49.8
2001	74.6

Congo:Station EWO

EWO: Congo

Precipitation anomaly graph (1983-2020) NDJ



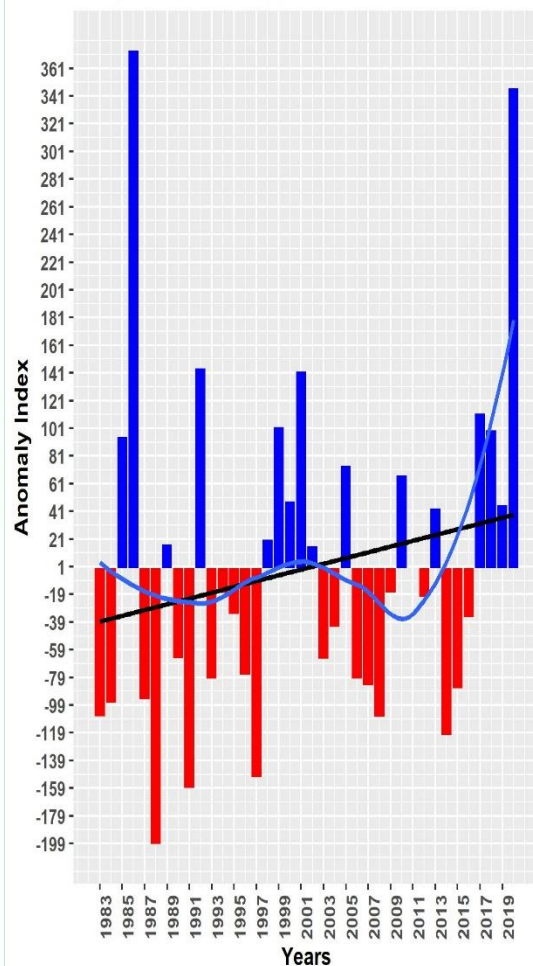
Wet_Year	Percentage
1994	164.2
2002	139.3
2018	144.6
2019	127.4
2020	202.6

Dry_Year	Percentage
1988	59.6
1997	69.6
2001	69.8
2014	71.6

Congo:Station MAKOUA

MAKOUA: Congo

Precipitation anomaly graph (1983-2020) NDJ



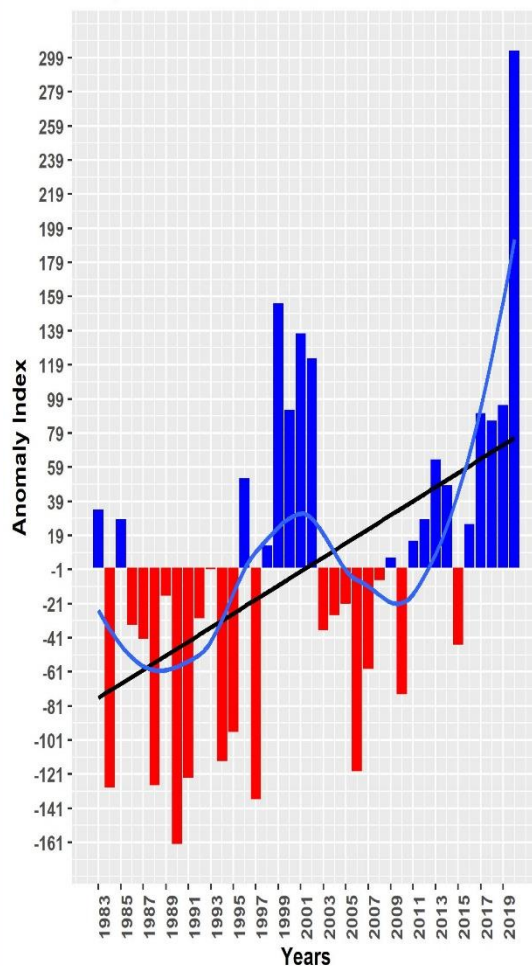
Wet_Year	Percentage
1986	172.4
1992	127.9
2001	127.5
2020	167.1

Dry_Year	Percentage
1988	61.4
1991	69.2
1997	70.7

Congo:Station OUESSO

OUESSO: Congo

Precipitation anomaly graph (1983-2020) NDJ



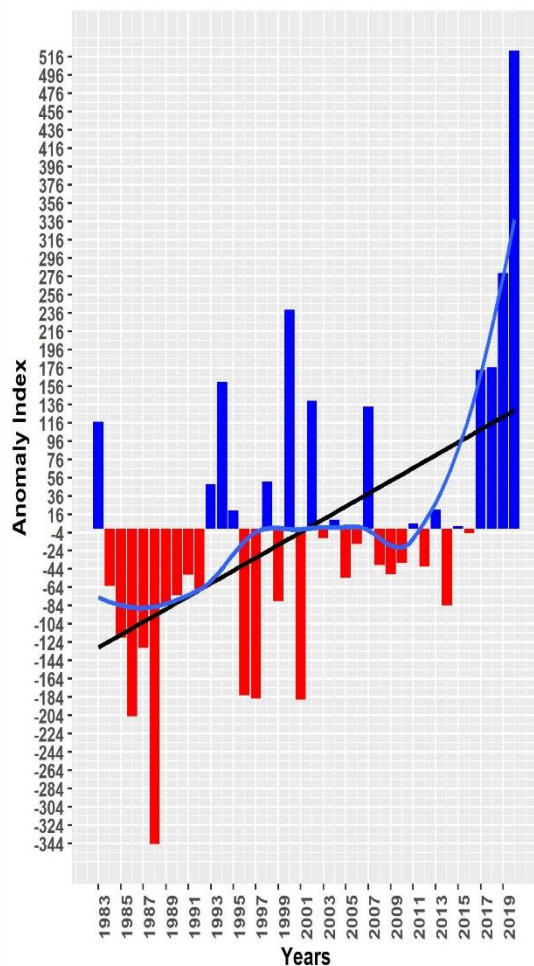
Wet_Year	Percentage
1999	138.6
2001	134.2
2002	130.6
2020	175.5

Dry_Year	Percentage
1984	67.9
1988	68.3
1990	59.7
1991	69.4
1994	71.8
1997	66.2
2006	70.3

Congo:Station SIBITI

SIBITI: Congo

Precipitation anomaly graph (1983-2020) NDJ



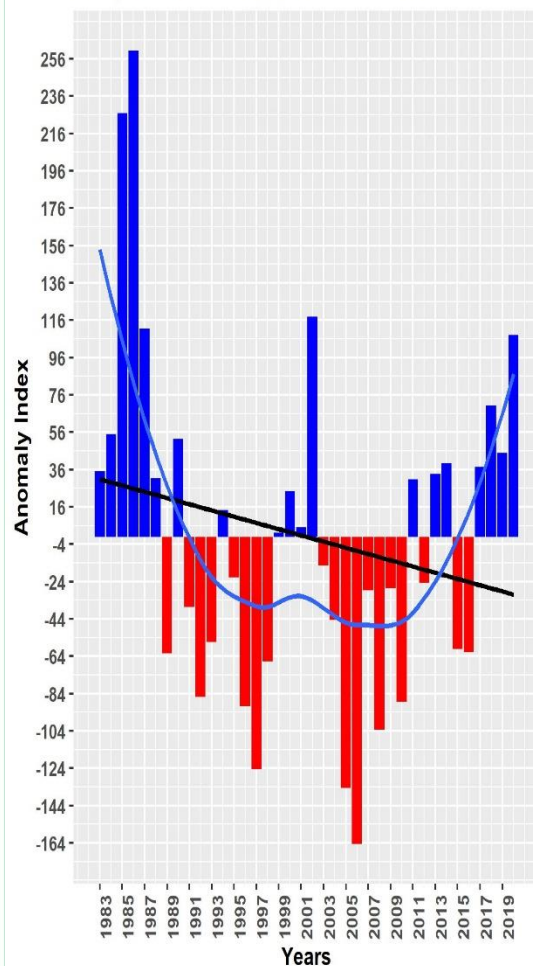
Wet_Year	Percentage
1994	127.2
2000	140.4
2017	129.4
2018	129.8
2019	147.2
2020	188.3

Dry_Year	Percentage
1986	65.3
1988	41.8
1996	69.3
1997	68.7
2001	68.5

DRC:Station BONDO

BONDO: DRC

Precipitation anomaly graph (1983-2020) NDJ



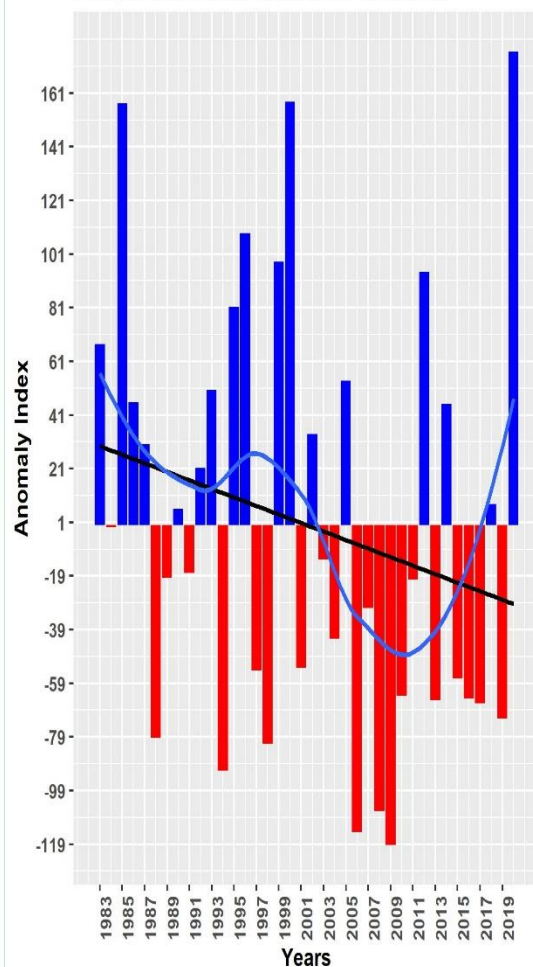
Wet_Year	Percentage
1985	158.6
1986	167.3
1987	128.8
2002	130.4
2020	127.9

Dry_Year	Percentage
1997	67.9
2005	65.2
2006	57.5
2008	73.3

DRC:Station BUTEMBO

BUTEMBO: DRC

Precipitation anomaly graph (1983-2020) NDJ

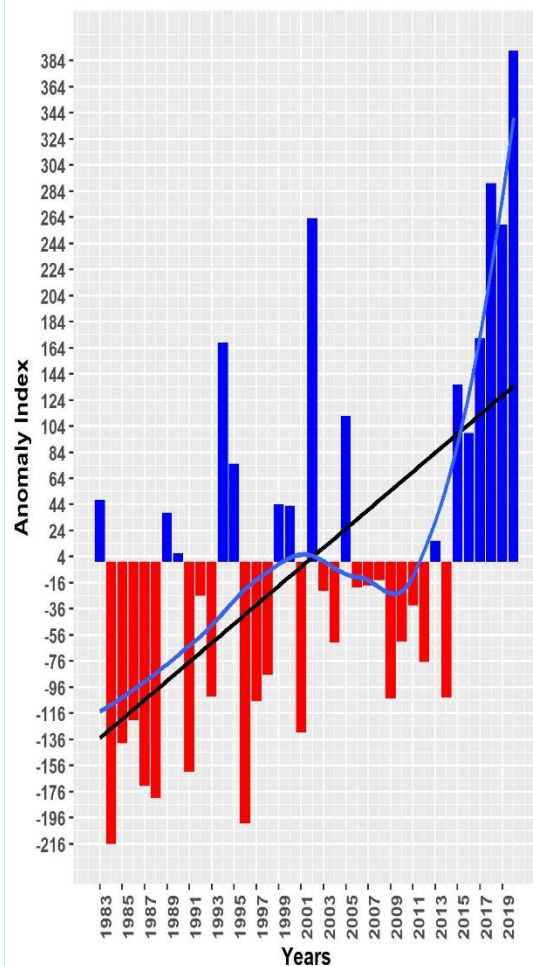


Wet_Year	Percentage
1985	134.4
2000	134.5
2020	138.6

Dry_Year	Percentage
2006	75
2009	73.9

DRC:Station KINSHASA_N_DOLO

KINSHASA_N_DOLO: DRC
Precipitation anomaly graph (1983-2020) NDJ



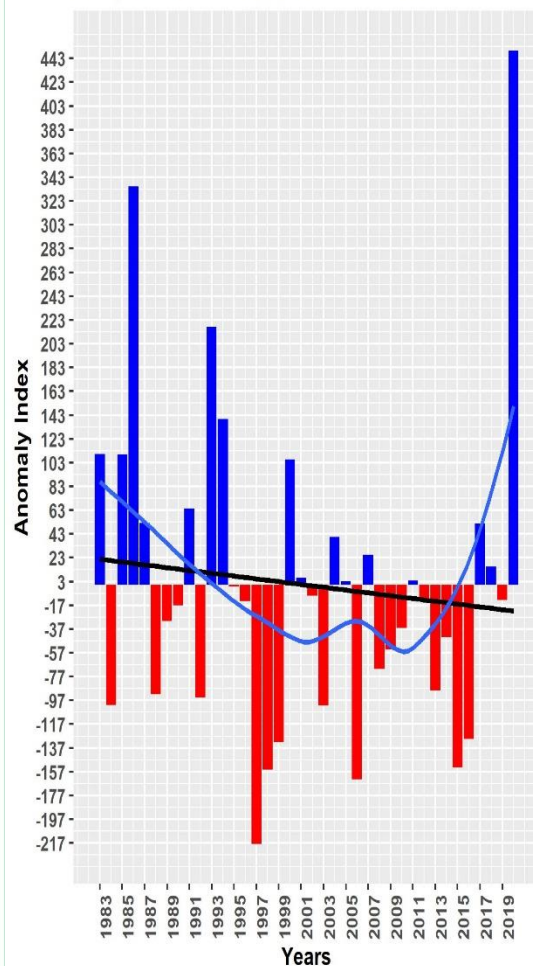
Wet_Year	Percentage
1994	129.1
2002	145.6
2017	129.7
2018	150.3
2019	144.8
2020	167.8

Dry_Year	Percentage
1984	62.5
1987	70.3
1988	68.6
1991	72.1
1996	65.3

DRC:Station LODJA

LODJA: DRC

Precipitation anomaly graph (1983-2020) NDJ



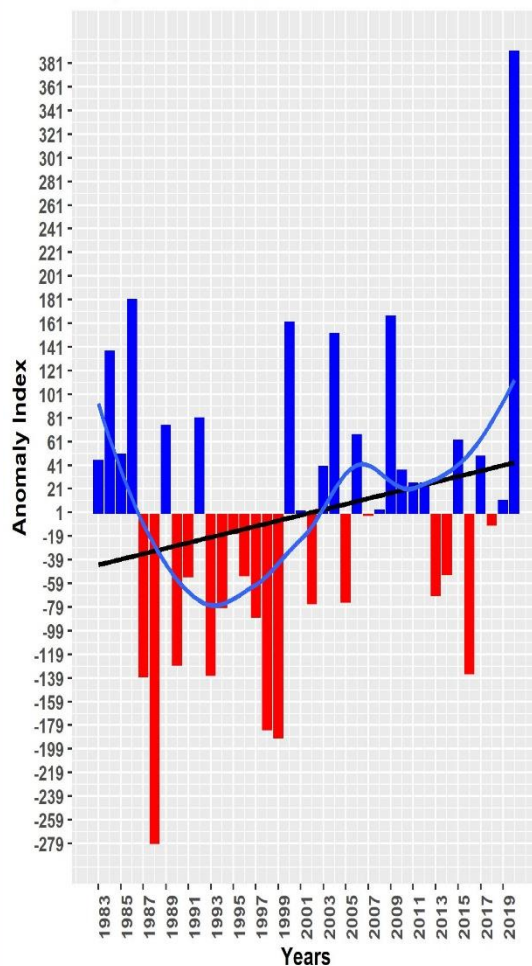
Wet_Year	Percentage
1986	160
1993	138.8
2020	180.5

Dry_Year	Percentage
1997	61
1998	72.2
2006	70.7
2015	72.5

DRC:Station LUBUMBASHI-LUANO

LUBUMBASHI-LUANO: DRC

Precipitation anomaly graph (1983-2020) NDJ



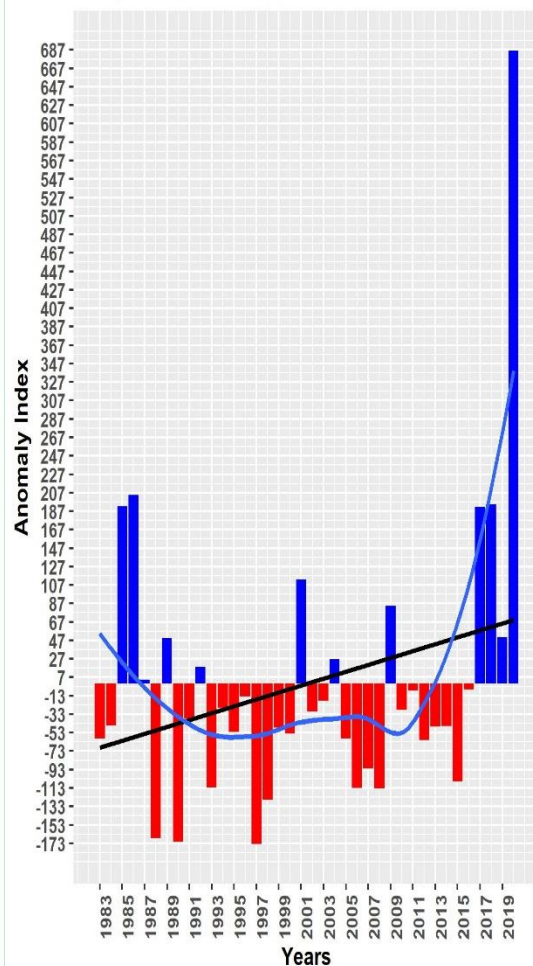
Wet_Year	Percentage
1984	135.4
1986	146.7
2000	141.7
2004	139.3
2009	143
2020	200.7

Dry_Year	Percentage
1987	64.3
1988	28.2
1990	66.9
1993	64.7
1998	52.9
1999	51.1
2016	65.1

DRC:Station MBANDAKA

MBANDAKA: DRC

Precipitation anomaly graph (1983-2020) NDJ



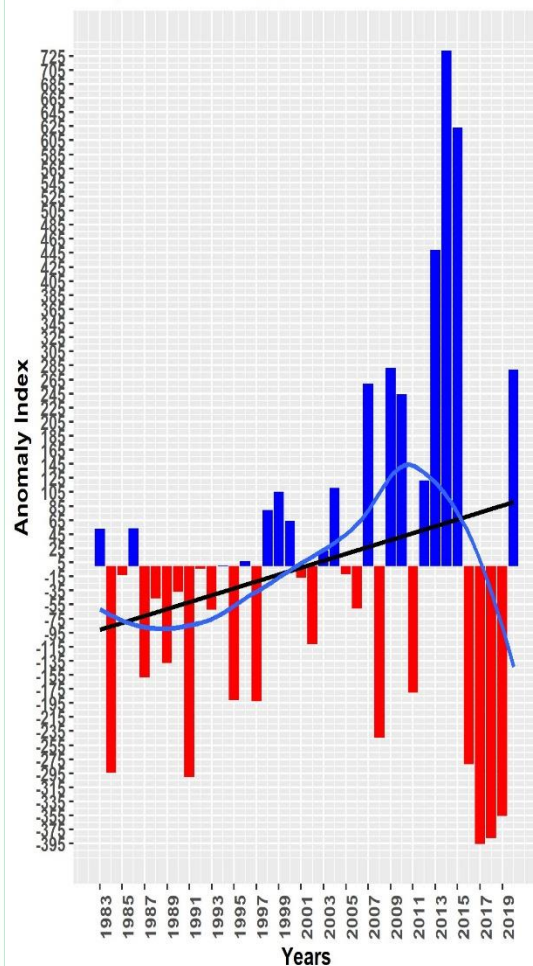
Wet_Year	Percentage
1985	140.2
1986	142.9
2017	140.1
2018	140.8
2020	243.8

Dry_Year	Percentage
1988	65
1990	64.1
1997	63.6
1998	73.6

Gabon: Station LAMBARENE

LAMBARENE: Gabon

Precipitation anomaly graph (1983-2020) NDJ



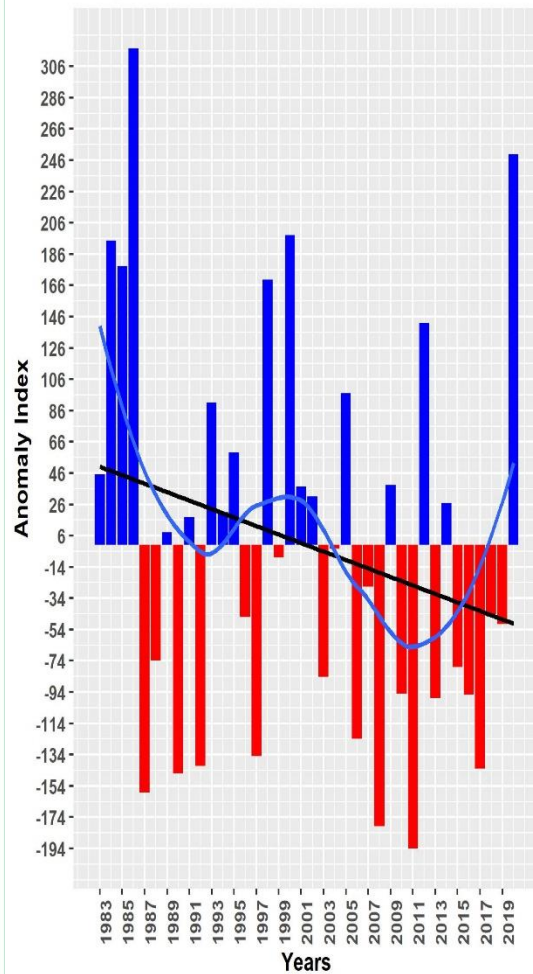
Wet_Year	Percentage
2007	138
2009	141.3
2010	135.8
2013	165.9
2014	207.5
2015	191.3
2020	140.9

Dry_Year	Percentage
1984	56.8
1991	55.9
1995	72
1997	71.8
2008	64.2
2011	73.5
2016	58.6
2017	42
2018	43.2
2019	47.8

Gabon: Station MAKOKOU

MAKOKOU: Gabon

Precipitation anomaly graph (1983-2020) NDJ



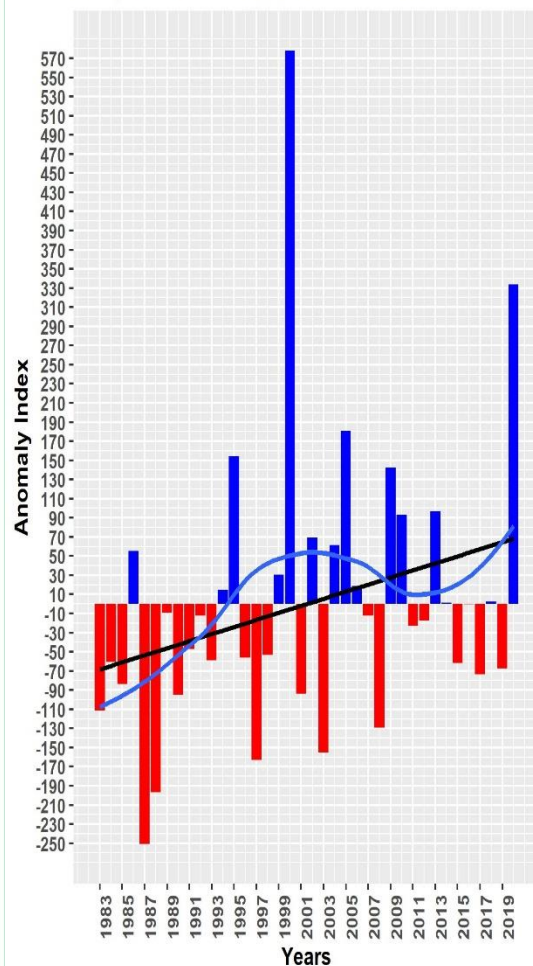
Wet_Year	Percentage
1984	137.9
1985	134.7
1986	161.9
1998	133
2000	138.6
2012	127.6
2020	148.7

Dry_Year	Percentage
1987	69.2
1990	71.5
1992	72.5
1997	73.7
2008	65
2011	62.2
2017	72.2

Gabon: Station MVENGUE

MVENGUE: Gabon

Precipitation anomaly graph (1983-2020) NDJ



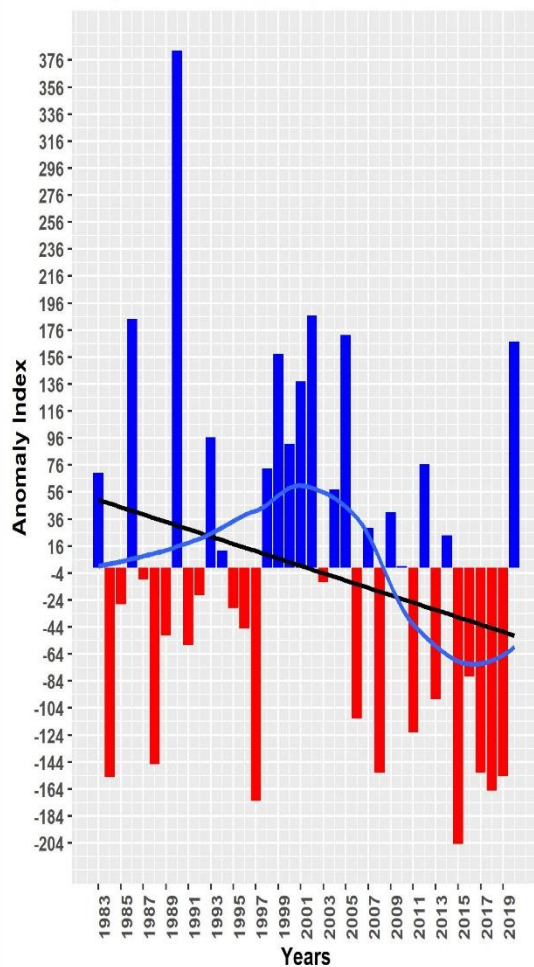
Wet_Year	Percentage
2000	189.4
2005	127.9
2020	151.6

Dry_Year	Percentage
1987	61.2
1988	69.6
1997	74.8

Gabon:Station OYEM

OYEM: Gabon

Precipitation anomaly graph (1983-2020) NDJ



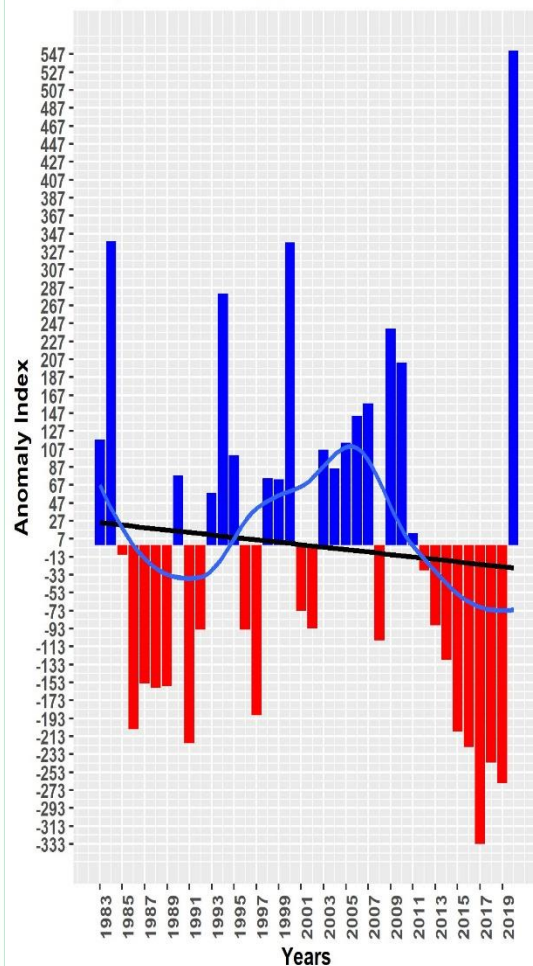
Wet_Year	Percentage
1986	139.8
1990	182.9
1999	134.3
2001	129.9
2002	140.4
2005	137.3
2020	136.3

Dry_Year	Percentage
1984	66.4
1988	68.5
1997	62.6
2008	67.1
2011	73.5
2015	55.7
2017	67.1
2018	64.2
2019	66.6

Gabon: Station TCHIBANGA

TCHIBANGA: Gabon

Precipitation anomaly graph (1983-2020) NDJ



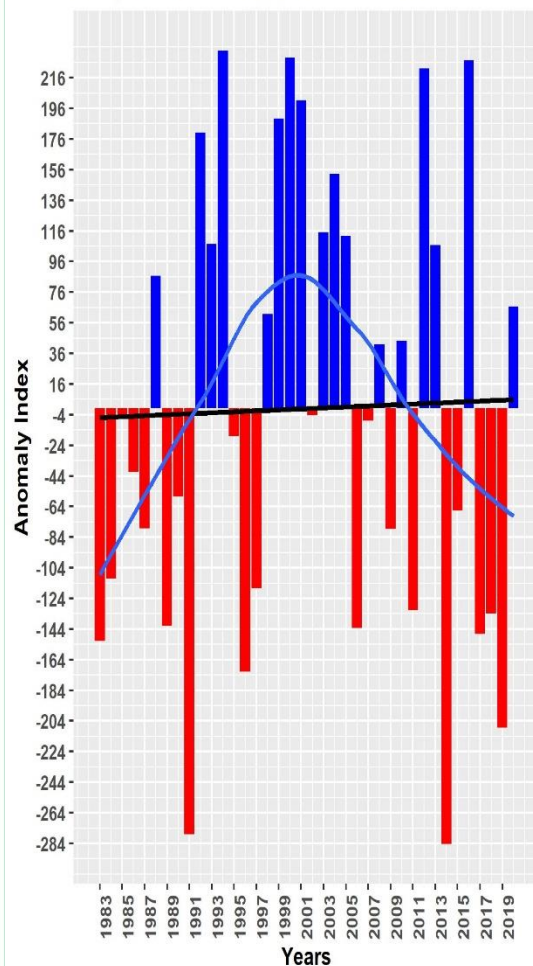
Wet_Year	Percentage
1984	168
1994	156.2
2000	167.6
2006	128.9
2007	131.7
2009	148.4
2010	140.8
2020	210.6

Dry_Year	Percentage
1986	58.9
1987	69.1
1988	68.2
1989	68.5
1991	55.7
1997	61.9
2014	74.4
2015	58.4
2016	54.9
2017	33.2
2018	51.4
2019	46.8

GuineaE:Station BATA-RIO-MUNI

BATA-RIO-MUNI: GuineaE

Precipitation anomaly graph (1983-2020) NDJ



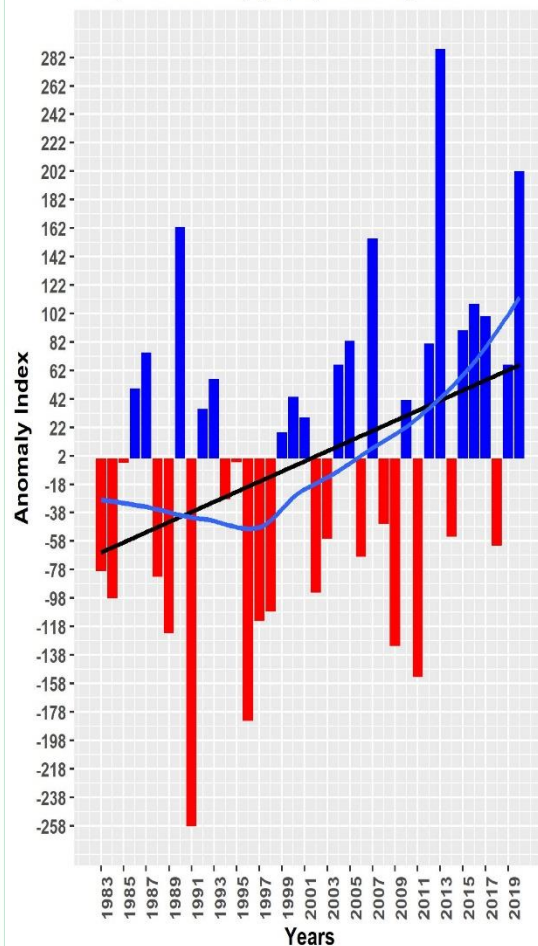
Wet_Year	Percentage
1992	135
1994	145.4
1999	136.8
2000	144.4
2001	139.1
2004	129.7
2012	143.1
2016	144.1

Dry_Year	Percentage
1983	70.5
1989	72.4
1991	46.1
1996	66.7
2006	72.2
2011	74.4
2014	44.8
2017	71.4
2018	74
2019	59.6

GuineaE:Station MALABO

MALABO: GuineaE

Precipitation anomaly graph (1983-2020) NDJ



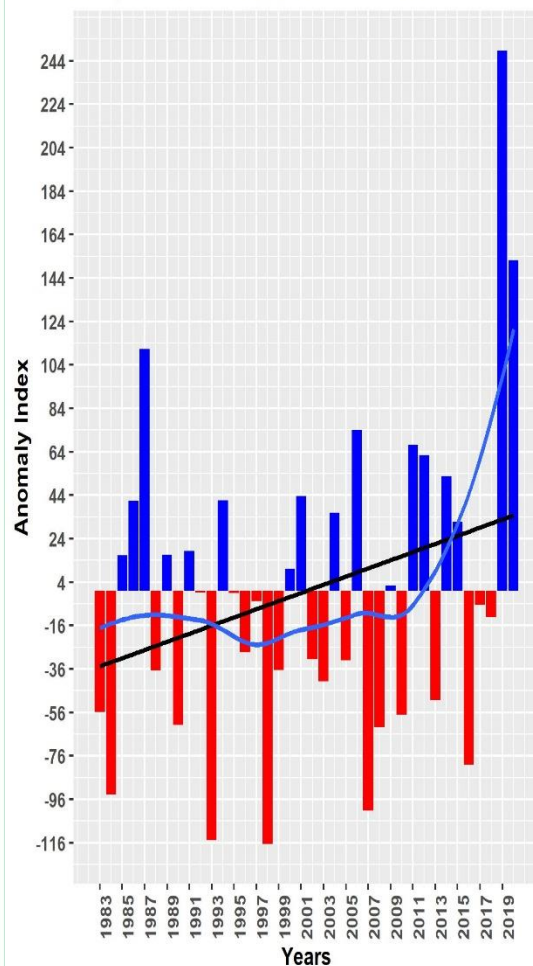
Wet_Year	Percentage
1990	140.5
2007	138.5
2013	171.7
2016	127
2020	150.3

Dry_Year	Percentage
1989	69.5
1991	35.7
1996	54.1
1997	71.6
1998	73.2
2009	67.3
2011	61.8

Rwanda: Station BUTARE

BUTARE: Rwanda

Precipitation anomaly graph (1983-2020) NDJ



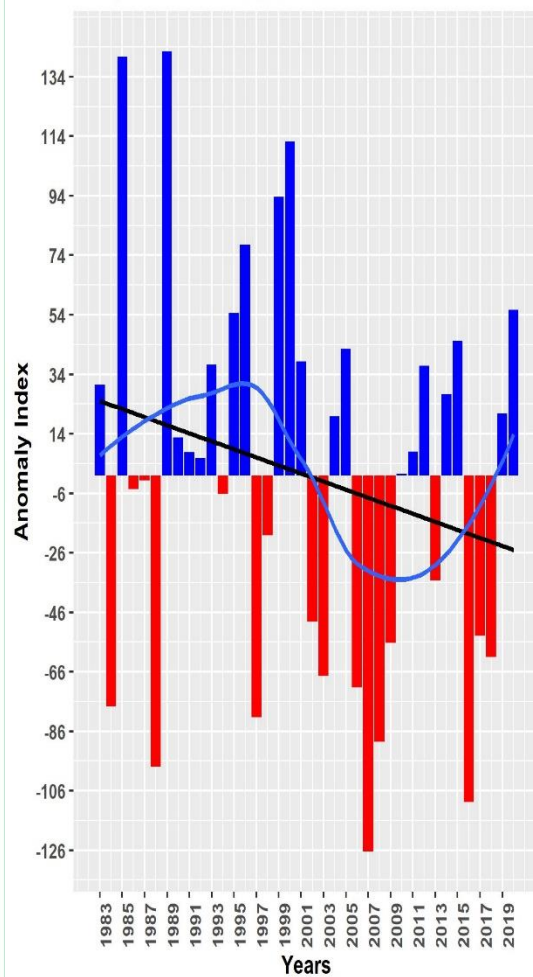
Wet_Year	Percentage
1987	142.9
2006	128.6
2011	125.9
2019	195.9
2020	158.7

Dry_Year	Percentage
1984	63.9
1993	55.8
1998	55
2007	61
2016	69.1

Rwanda: Station GISENYI

GISENYI: Rwanda

Precipitation anomaly graph (1983-2020) NDJ



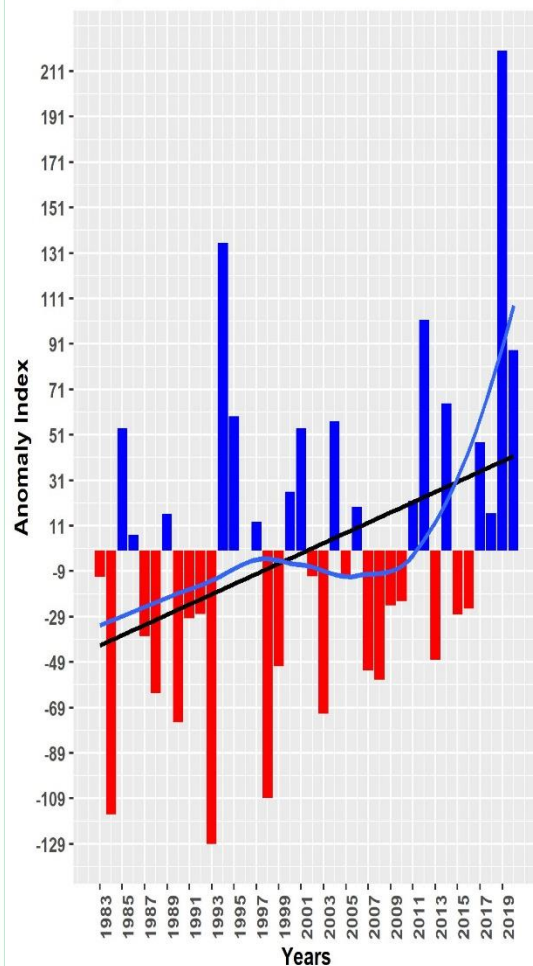
Wet_Year	Percentage
1985	137.4
1989	138
2000	129.9

Dry_Year	Percentage
1988	73.9
2007	66.3
2016	70.8

Rwanda: Station KIGALI

KIGALI: Rwanda

Precipitation anomaly graph (1983-2020) NDJ



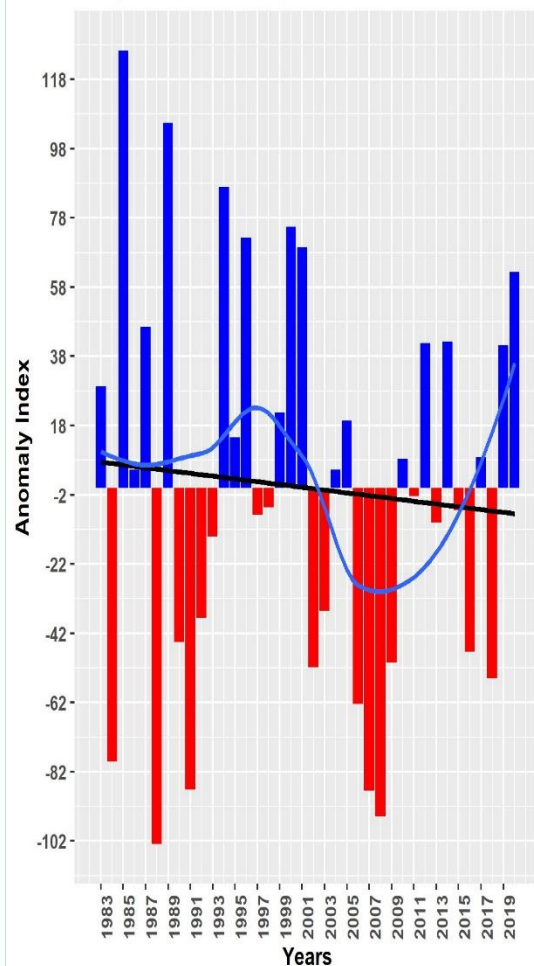
Wet_Year	Percentage
1994	154.3
2012	140.7
2014	126
2019	188.2
2020	135.4

Dry_Year	Percentage
1984	53.5
1988	74.9
1990	69.8
1993	48.3
1998	56.4
2003	71.3

Rwanda: Station RUHENGRI

RUHENGRI: Rwanda

Precipitation anomaly graph (1983-2020) NDJ



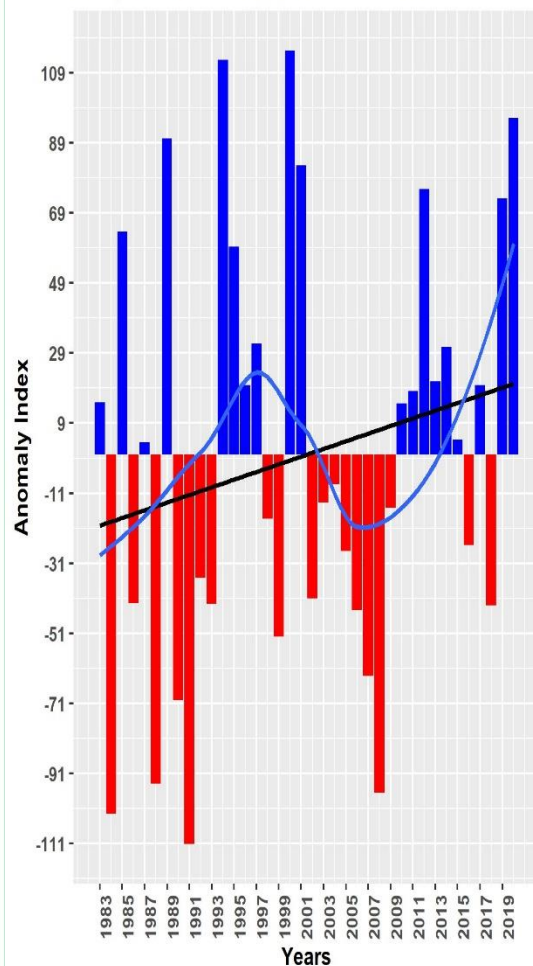
Wet_Year	Percentage
1985	141.5
1989	134.7
1994	128.6

Dry_Year	Percentage
1984	74
1988	66.2
1991	71.4
2007	71.2
2008	68.8

Uganda: Station KABALE

KABALE: Uganda

Precipitation anomaly graph (1983-2020) NDJ



Wet_Year	Percentage
1989	131
1994	138.8
2000	139.7
2001	128.4
2012	126.1
2019	125.2
2020	133.1

Dry_Year	Percentage
1984	64.7
1988	67.7
1991	61.7
2008	66.8

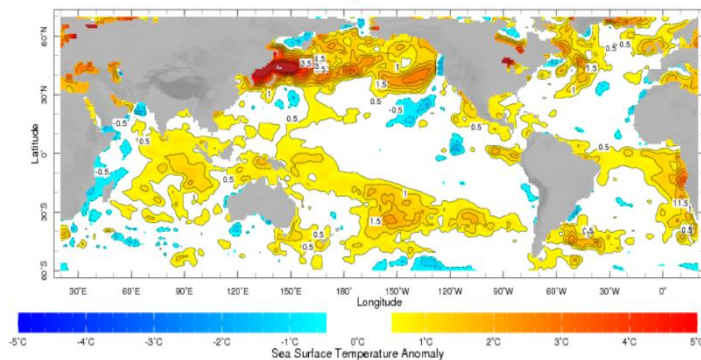
STATE AND OUTLOOKS FOR CLIMATE VARIABILITY DRIVERS (ENSO, TNA, ...)



WEEKLY OBSERVED SST ANALYSIS

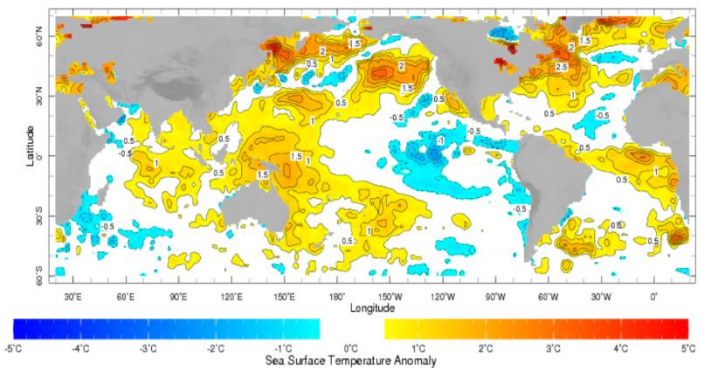
1-8 August 2021

4 Aug 2021



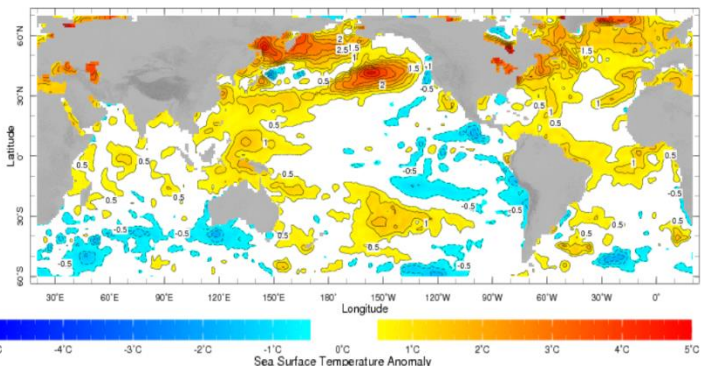
15- 21 August 2021

18 Aug 2021



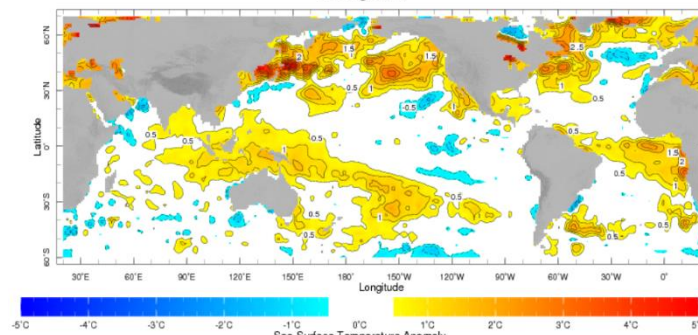
28 August -4 September 2021

1 Sep 2021



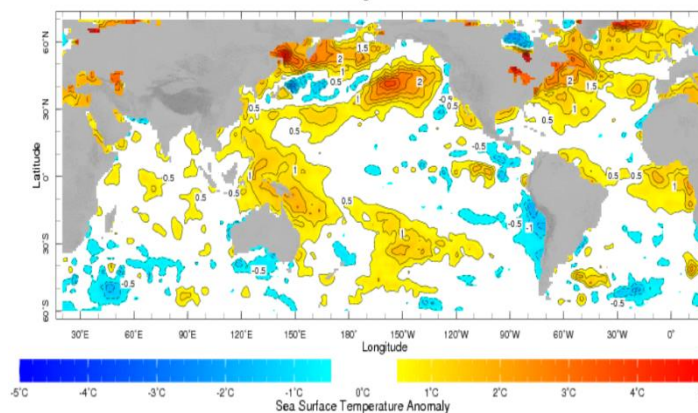
8-14 August 2021

11 Aug 2021



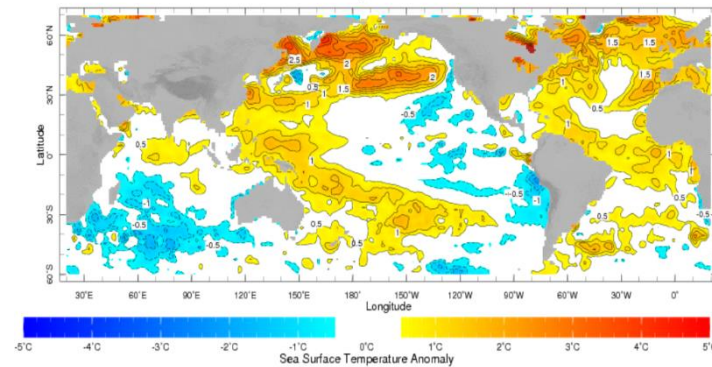
22-28 August 2021

25 Aug 2021



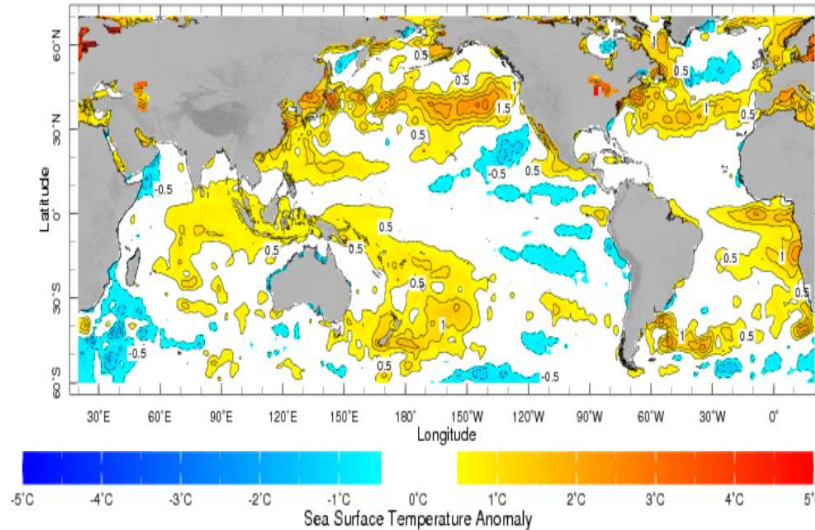
5-11 September 2021

8 Sep 2021

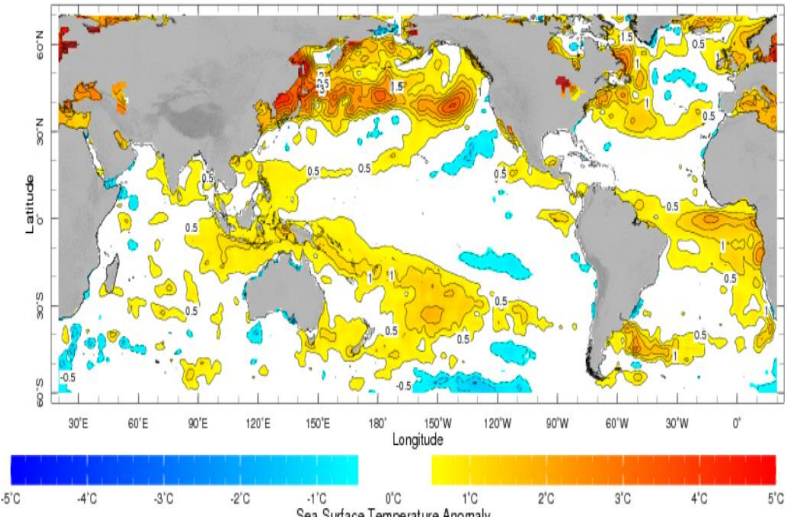


MONTHLY OBSERVED SST ANOMALY

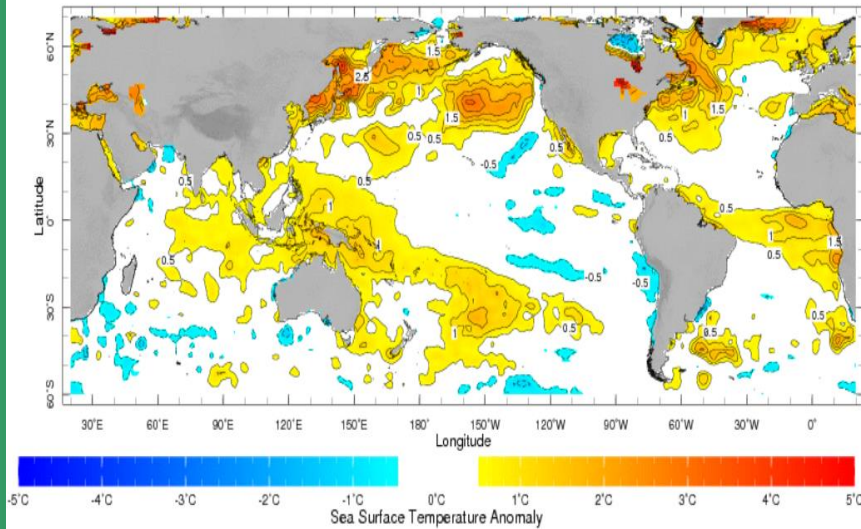
Jun 2021



Jul 2021

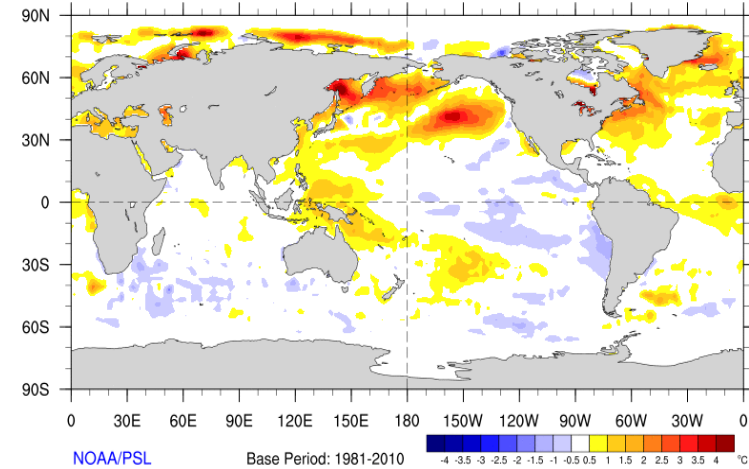


Aug 2021



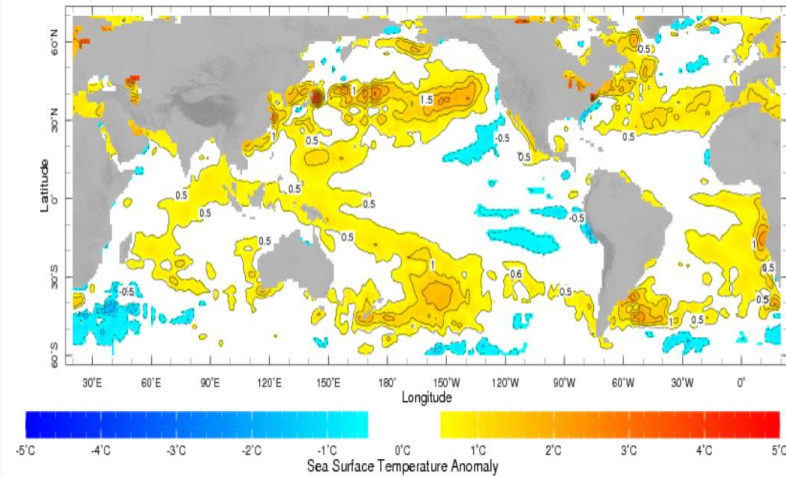
Monthly SST Anomaly

2021/08/15 - 2021/09/11

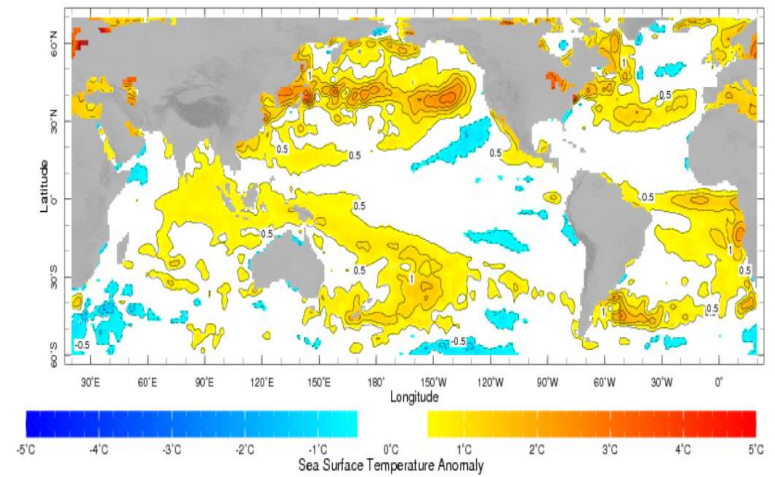


SEASONAL OBSERVED SST ANALYSIS

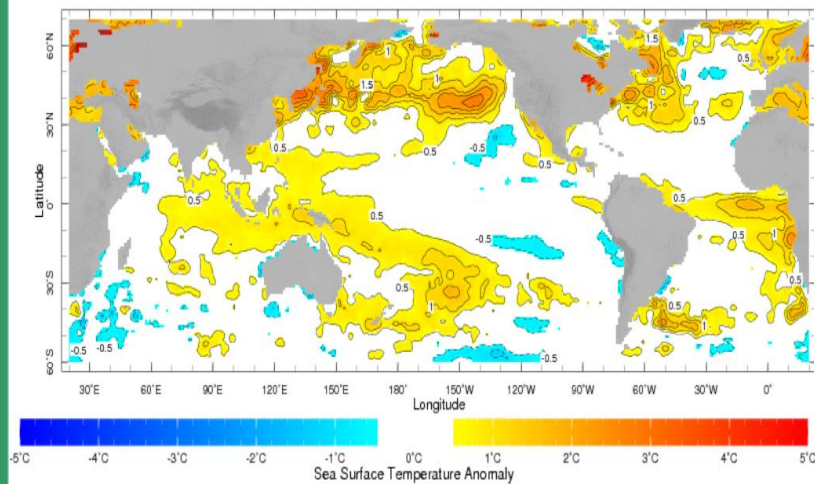
Apr-Jun 2021



May-Jul 2021

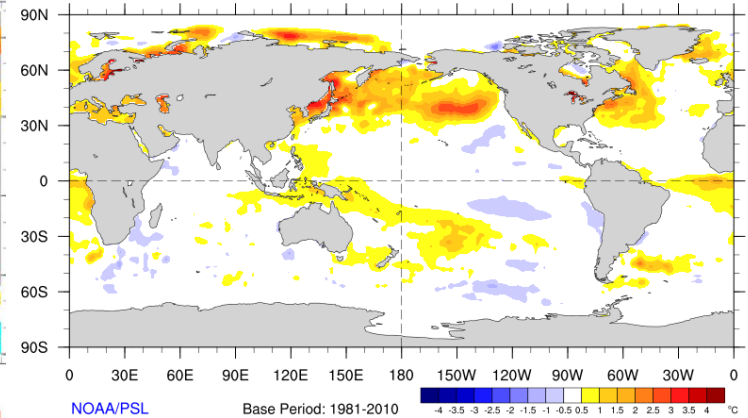


Jun-Aug 2021



Seasonal SST Anomaly

2021/06/13 - 2021/09/11



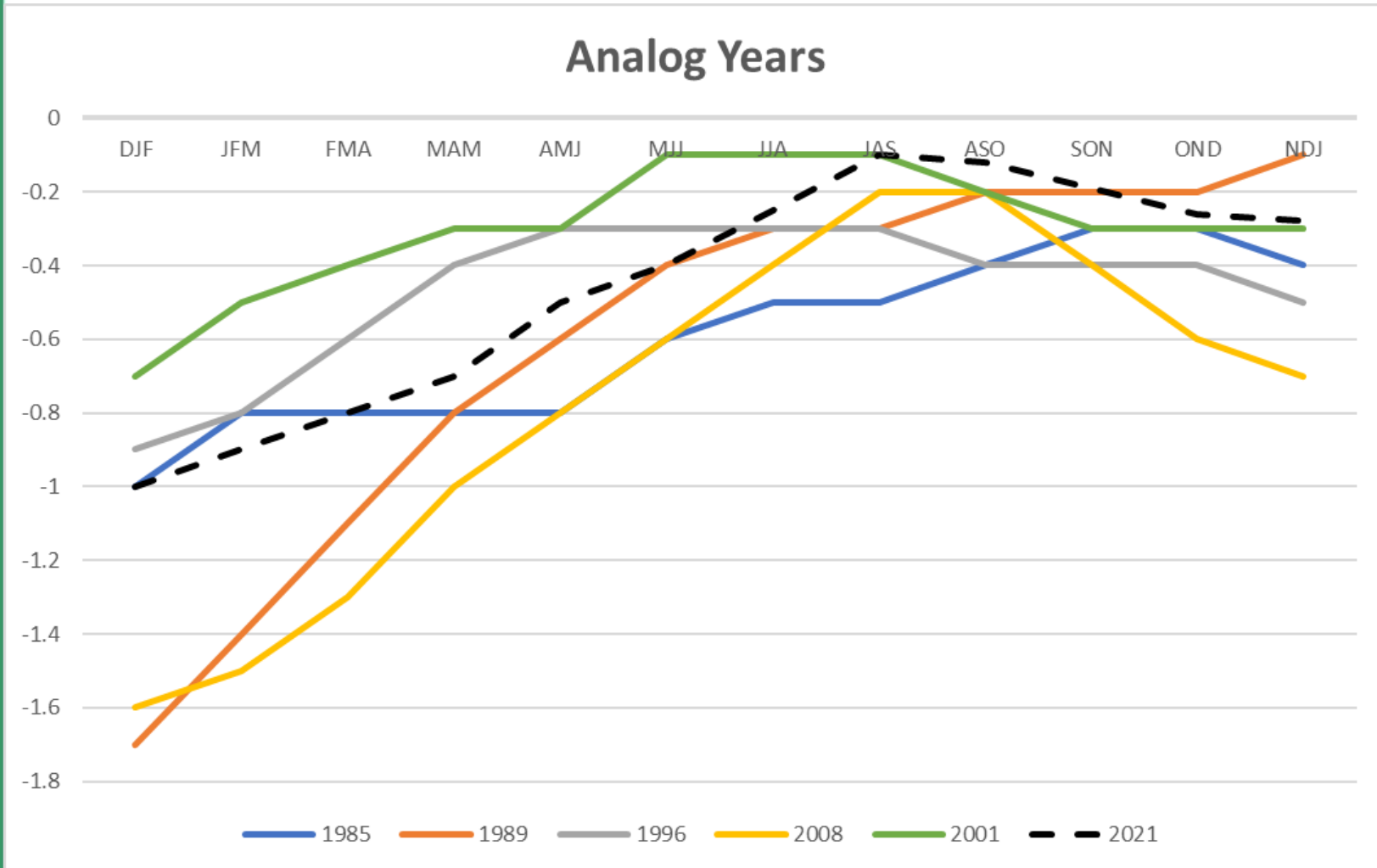
II. IDENTIFICATION OF THE ANALOG YEARS

Analysis of Historical El Niño and La Niña Episodes

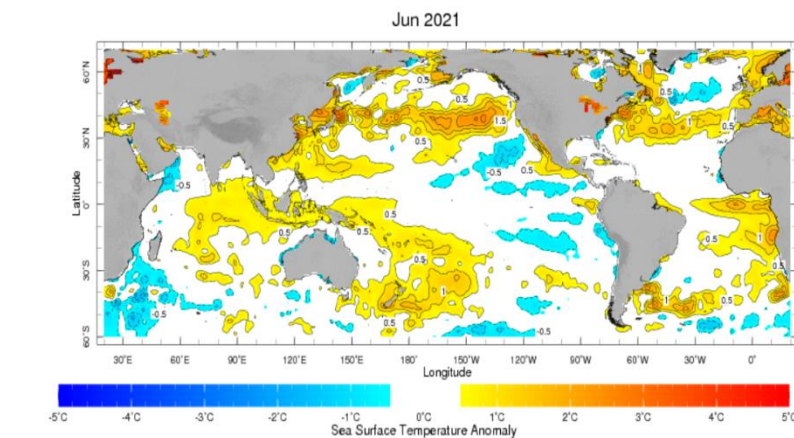
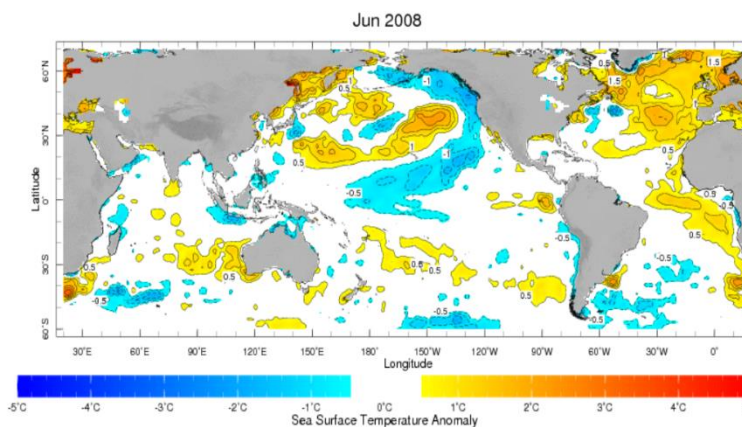
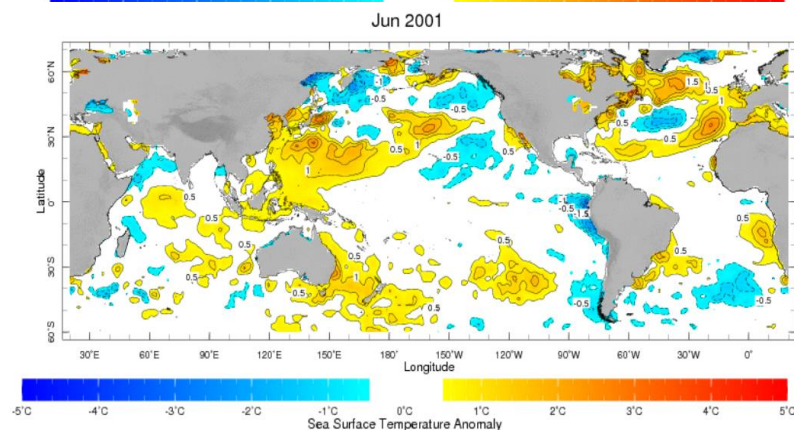
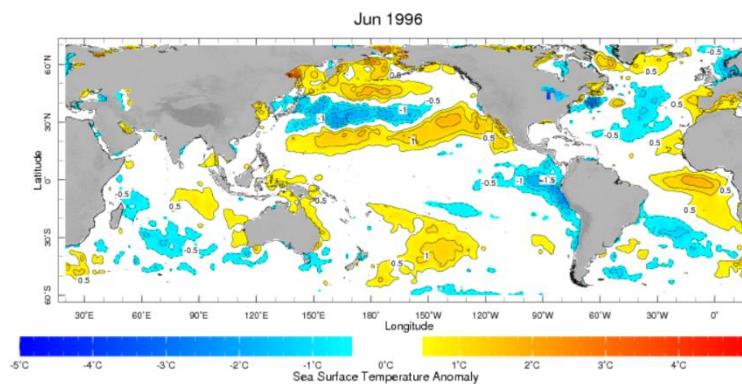
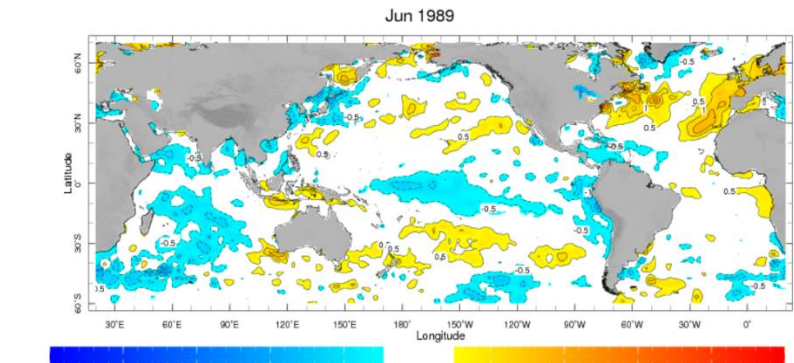
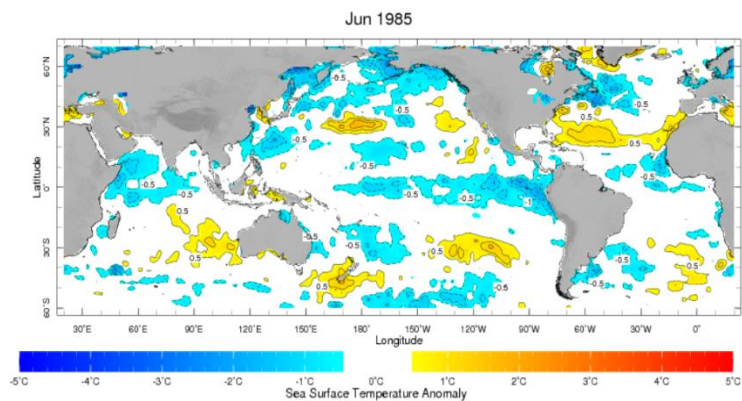


Year	DJF	JFM	FMA	MAM	AMJ	MJJ	JJA	IAS	ASO	SON	OND	NDI
1980	0.6	0.5	0.3	0.4	0.5	0.5	0.3	0	-0.1	0	0.1	0
1981	-0.3	-0.5	-0.5	-0.4	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	-0.2	-0.1
1982	0	0.1	0.2	0.5	0.7	0.7	0.8	1.1	1.6	2	2.2	2.2
1983	2.2	1.9	1.5	1.3	1.1	0.7	0.3	-0.1	-0.5	-0.8	-1	-0.9
1984	-0.6	-0.4	-0.3	-0.4	-0.5	-0.4	-0.3	-0.2	-0.2	-0.6	-0.9	-1.1
1985	-1	-0.8	-0.8	-0.8	-0.8	-0.6	-0.5	-0.5	-0.4	-0.3	-0.3	-0.4
1986	-0.5	-0.5	-0.3	-0.2	-0.1	0	0.2	0.4	0.7	0.9	1.1	1.2
1987	1.2	1.2	1.1	0.9	1	1.2	1.5	1.7	1.6	1.5	1.3	1.1
1988	0.8	0.5	0.1	-0.3	-0.9	-1.3	-1.3	-1.1	-1.2	-1.5	-1.8	-1.8
1989	-1.7	-1.4	-1.1	-0.8	-0.6	-0.4	-0.3	-0.3	-0.2	-0.2	-0.2	-0.1
1990	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.4	0.4
1991	0.4	0.3	0.2	0.3	0.5	0.6	0.7	0.6	0.6	0.8	1.2	1.5
1992	1.7	1.6	1.5	1.3	1.1	0.7	0.4	0.1	-0.1	-0.2	-0.3	-0.1
1993	0.1	0.3	0.5	0.7	0.7	0.6	0.3	0.3	0.2	0.1	0	0.1
1994	0.1	0.1	0.2	0.3	0.4	0.4	0.4	0.4	0.6	0.7	1	1.1
1995	1	0.7	0.5	0.3	0.1	0	-0.2	-0.5	-0.8	-1	-1	-1
1996	-0.9	-0.8	-0.6	-0.4	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.5
1997	-0.5	-0.4	-0.1	0.3	0.8	1.2	1.6	1.9	2.1	2.3	2.4	2.4
1998	2.2	1.9	1.4	1	0.5	-0.1	-0.8	-1.1	-1.3	-1.4	-1.5	-1.6
1999	-1.5	-1.3	-1.1	-1	-1	-1	-1.1	-1.1	-1.2	-1.3	-1.5	-1.7
2000	-1.7	-1.4	-1.1	-0.8	-0.7	-0.6	-0.6	-0.5	-0.5	-0.6	-0.7	-0.7
2001	-0.7	-0.5	-0.4	-0.3	-0.3	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3
2002	-0.1	0	0.1	0.2	0.4	0.7	0.8	0.9	1	1.2	1.3	1.1
2003	0.9	0.6	0.4	0	-0.3	-0.2	0.1	0.2	0.3	0.3	0.4	0.4
2004	0.4	0.3	0.2	0.2	0.2	0.3	0.5	0.6	0.7	0.7	0.7	0.7
2005	0.6	0.6	0.4	0.4	0.3	0.1	-0.1	-0.1	-0.1	-0.3	-0.6	-0.8
2006	-0.9	-0.8	-0.6	-0.4	-0.1	0	0.1	0.3	0.5	0.8	0.9	0.9
2007	0.7	0.2	-0.1	-0.3	-0.4	-0.5	-0.6	-0.8	-1.1	-1.3	-1.5	-1.6
2008	-1.6	-1.5	-1.3	-1	-0.8	-0.6	-0.4	-0.2	-0.2	-0.4	-0.6	-0.7
2009	-0.8	-0.8	-0.6	-0.3	0	0.3	0.5	0.6	0.7	1	1.4	1.6
2010	1.5	1.2	0.8	0.4	-0.2	-0.7	-1	-1.3	-1.6	-1.6	-1.6	-1.6
2011	-1.4	-1.2	-0.9	-0.7	-0.6	-0.4	-0.5	-0.6	-0.8	-1	-1.1	-1
2012	-0.9	-0.7	-0.6	-0.5	-0.3	0	0.2	0.4	0.4	0.3	0.1	-0.2
2013	-0.4	-0.4	-0.3	-0.3	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.3
2014	-0.4	-0.5	-0.3	0	0.2	0.2	0	0.1	0.2	0.5	0.6	0.7
2015	0.5	0.5	0.5	0.7	0.9	1.2	1.5	1.9	2.2	2.4	2.6	2.6
2016	2.5	2.1	1.6	0.9	0.4	-0.1	-0.4	-0.5	-0.6	-0.7	-0.7	-0.6
2017	-0.3	-0.2	0.1	0.2	0.3	0.3	0.1	-0.1	-0.4	-0.7	-0.8	-1
2018	-0.9	-0.9	-0.7	-0.5	-0.2	0	0.1	0.2	0.5	0.8	0.9	0.8
2019	0.7	0.7	0.7	0.7	0.5	0.5	0.3	0.1	0.2	0.3	0.5	0.5
2020	0.5	0.5	0.4	0.2	-0.1	-0.3	-0.4	-0.6	-0.9	-1.2	-1.3	-1.2
2021	-1	-0.9	-0.8	-0.7	-0.5	-0.4	-0.25	-0.1	-0.12	-0.19	-0.26	-0.28

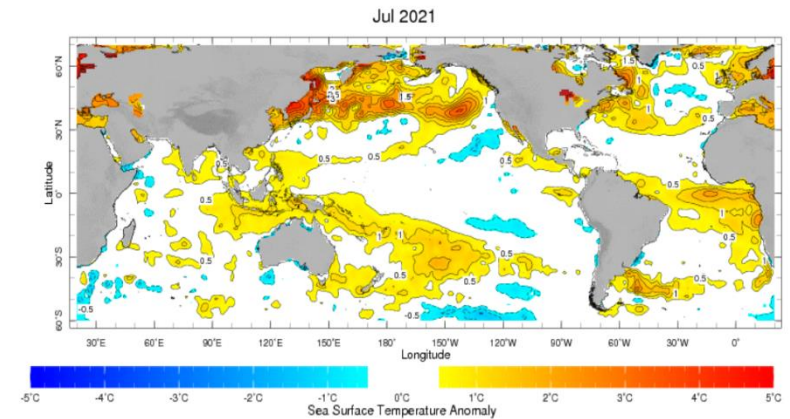
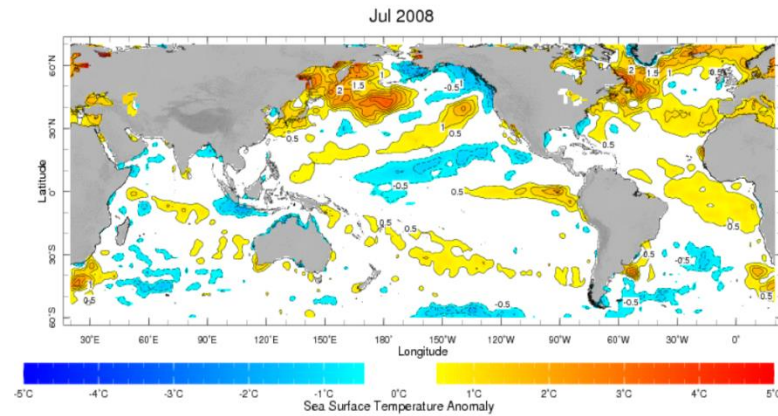
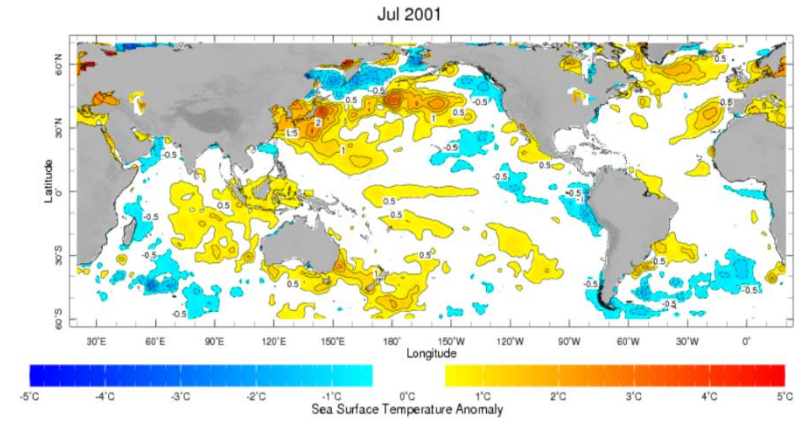
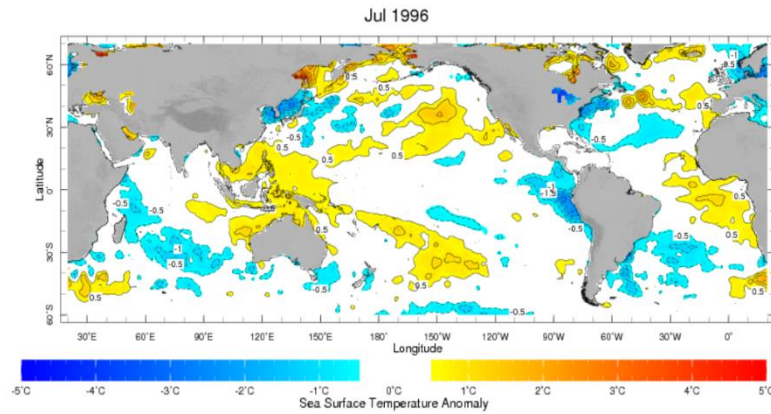
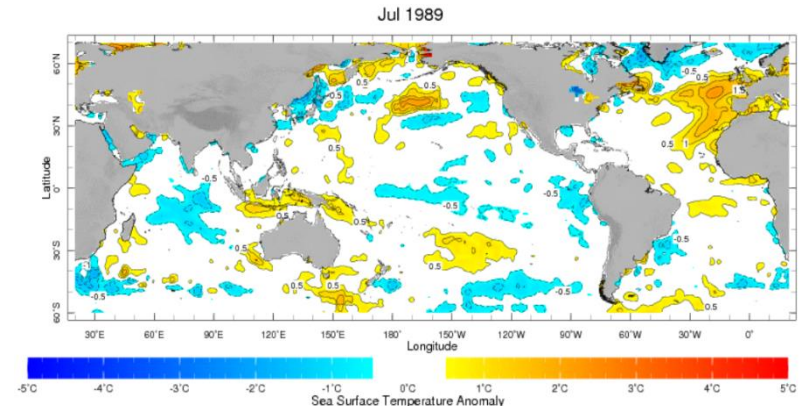
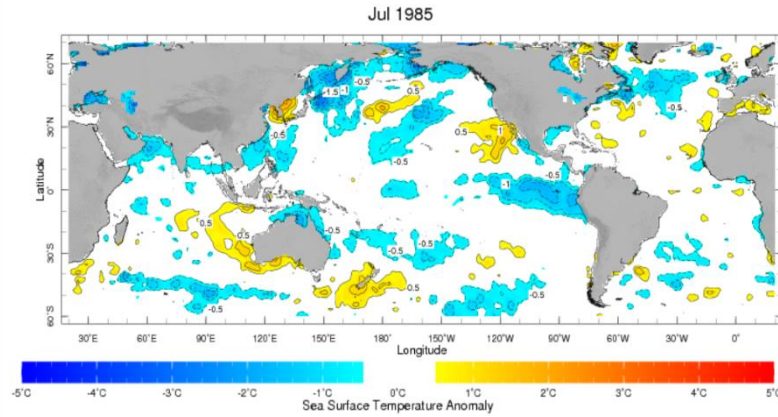
Selected Analogue years for SON and OND 2021



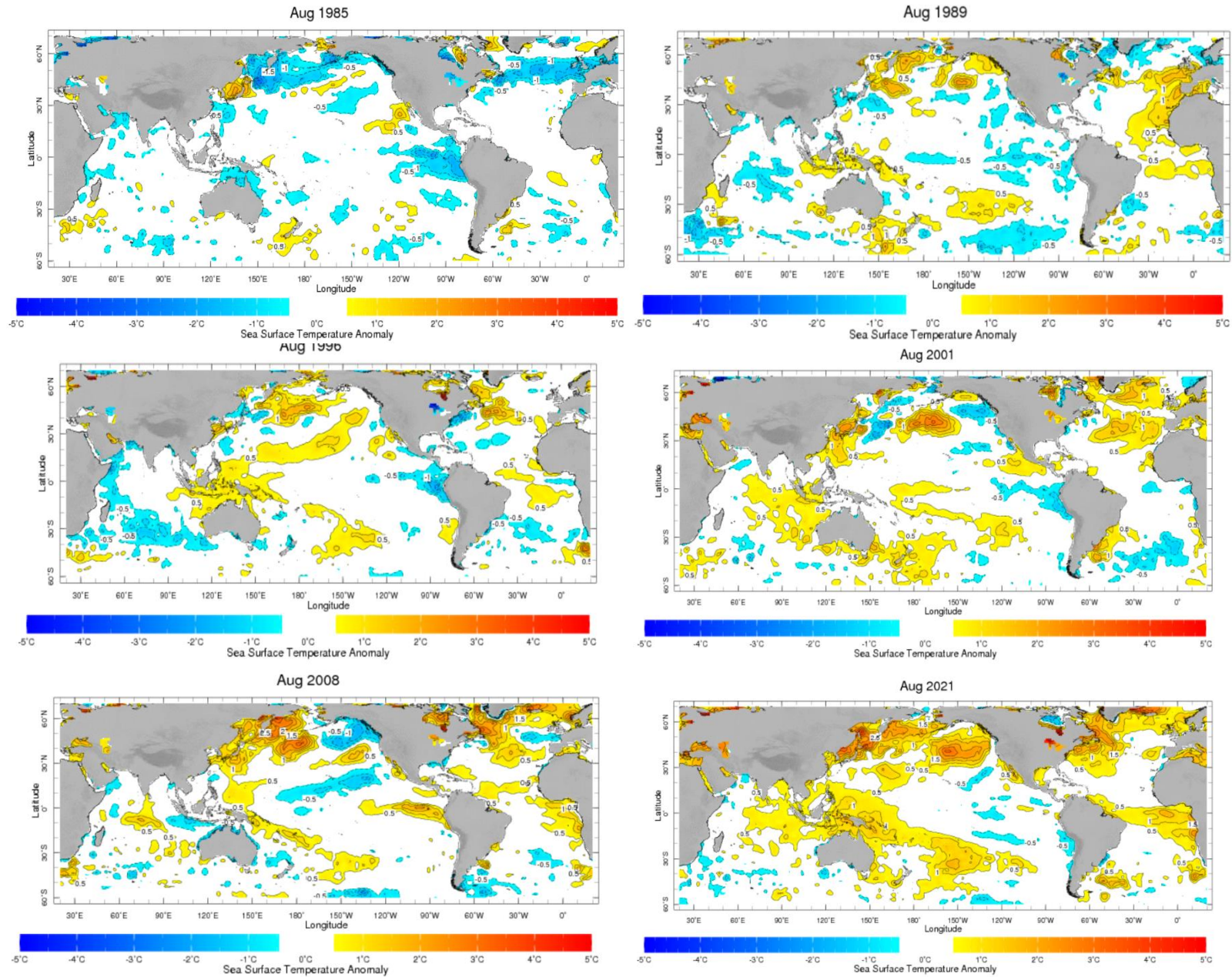
SST for June during the analogue years : 1985, 1989, 1996, 2001 and 2008



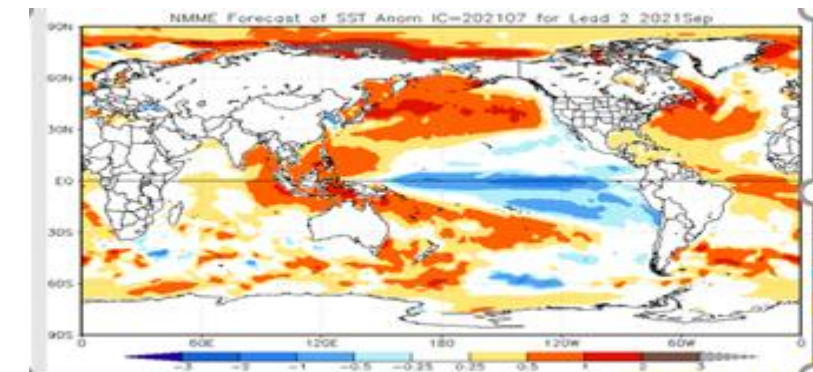
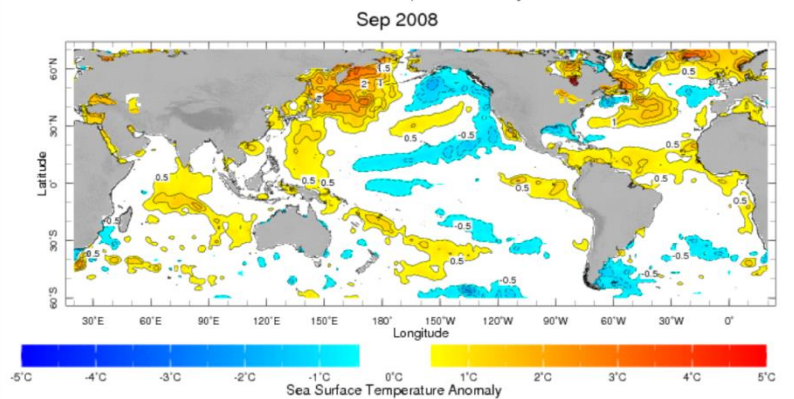
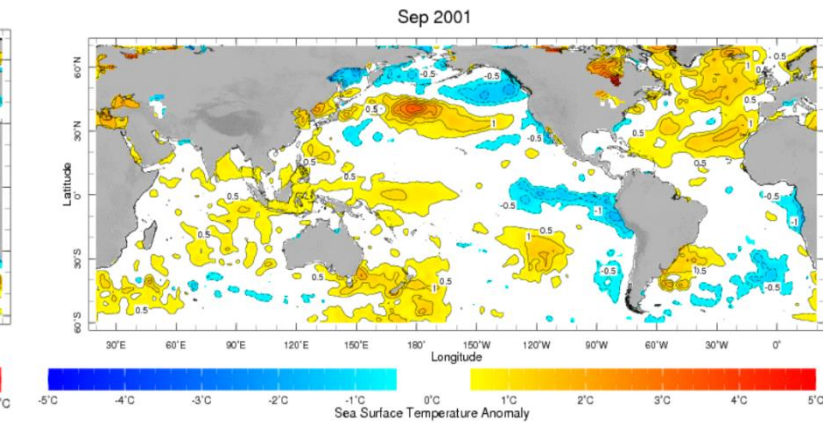
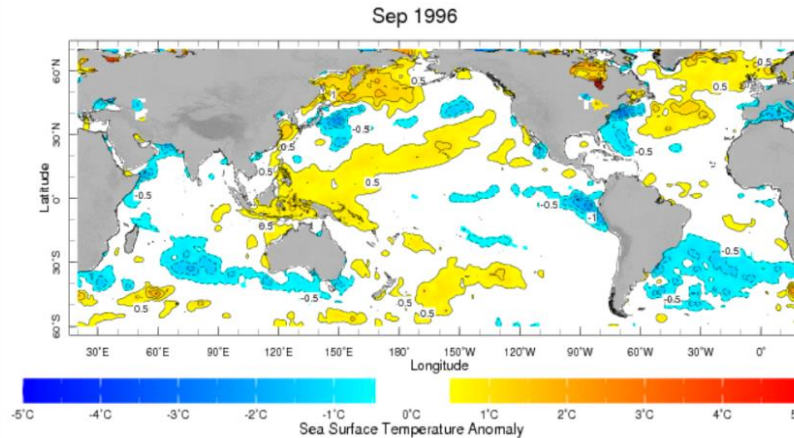
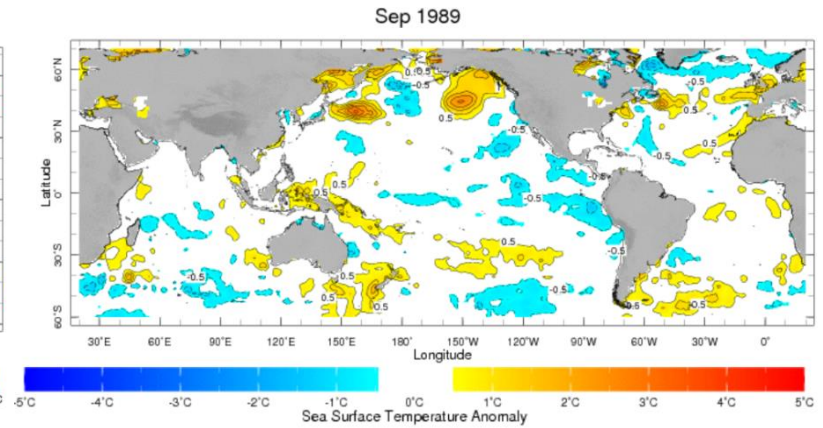
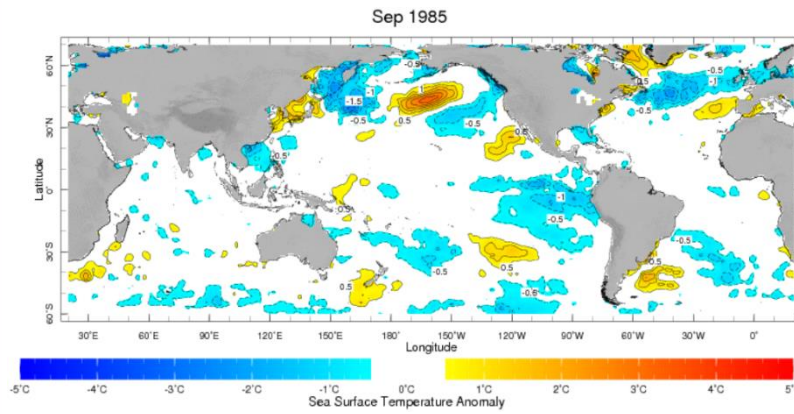
SST for July during the analogue years : 1985, 1989, 1996, 2001 and 2008



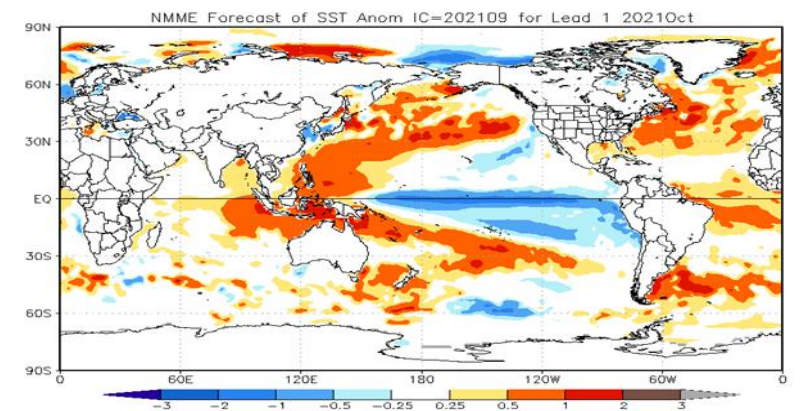
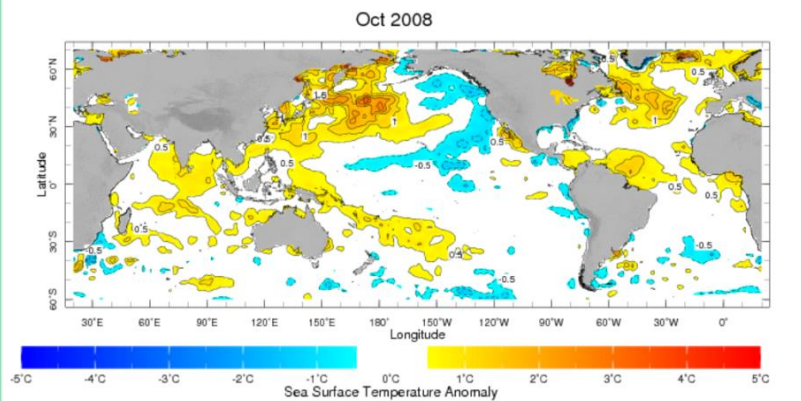
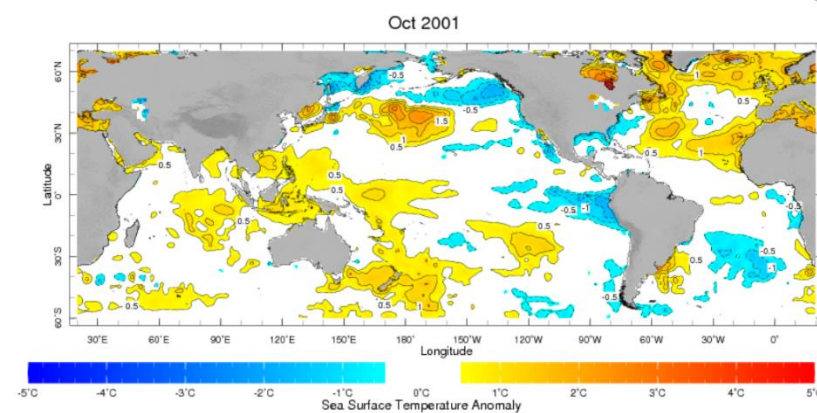
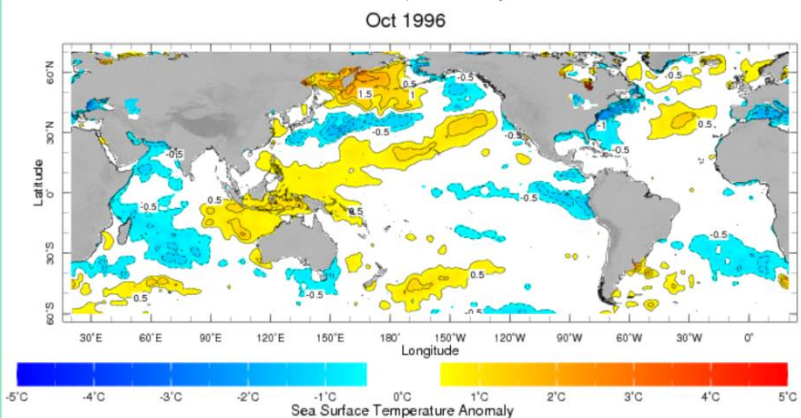
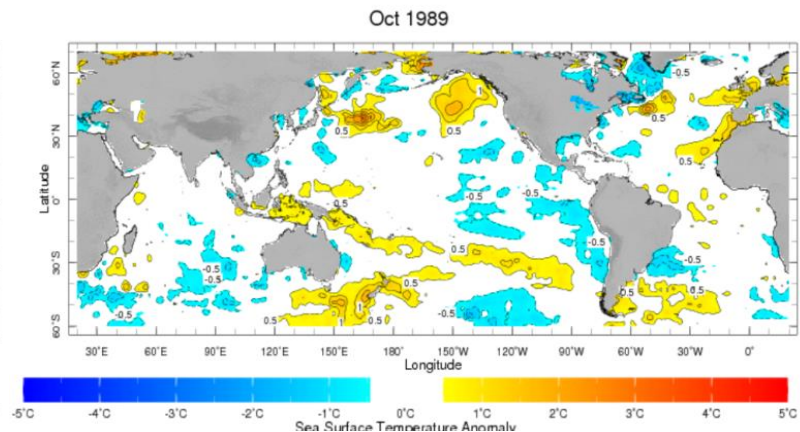
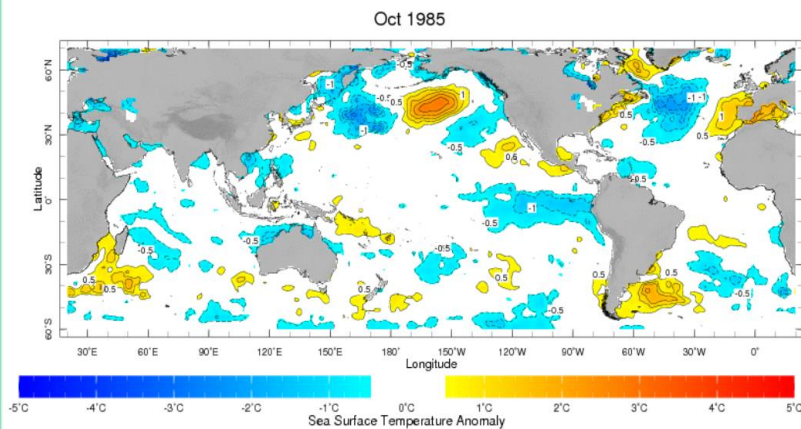
SST for August during the analogue years : 1985, 1989, 1996, 2001 and 2008



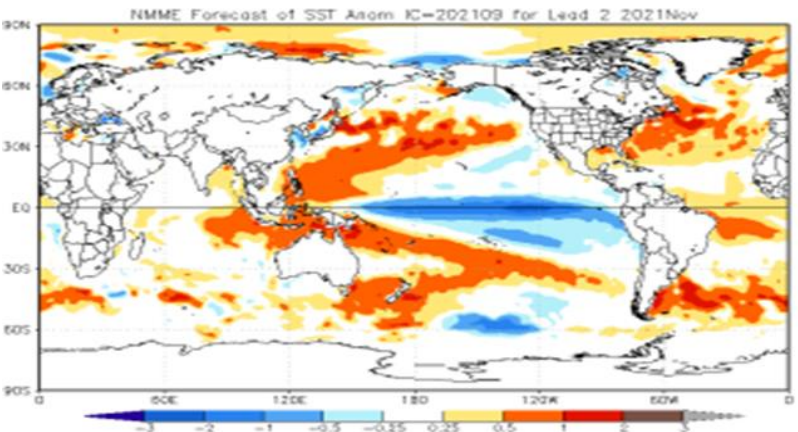
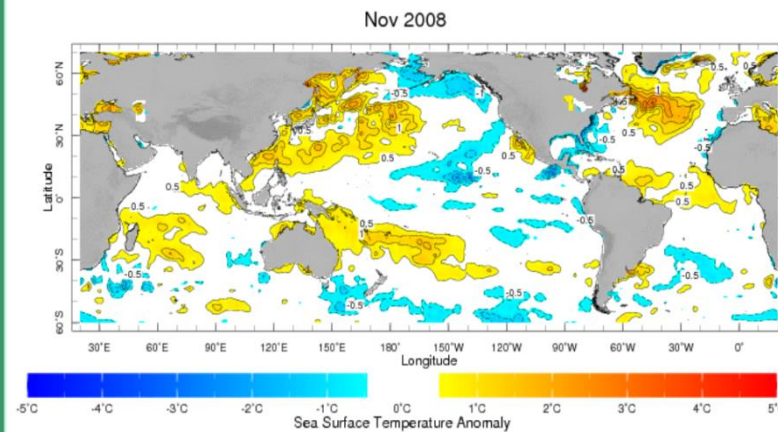
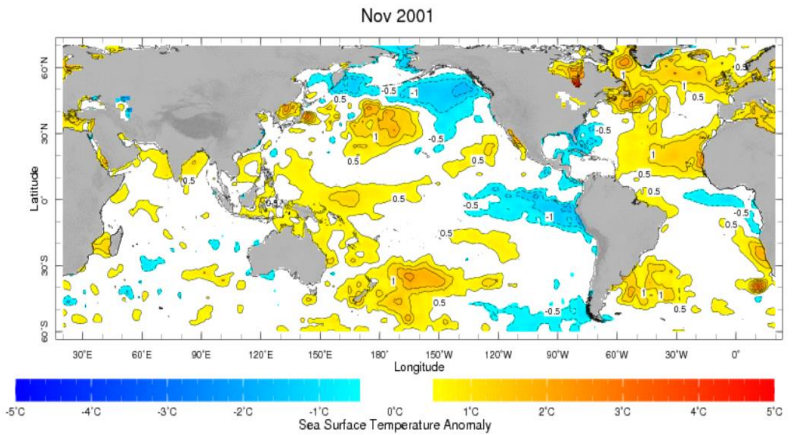
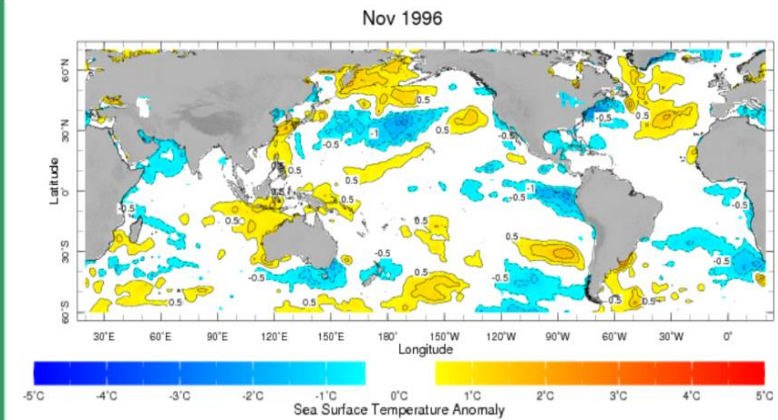
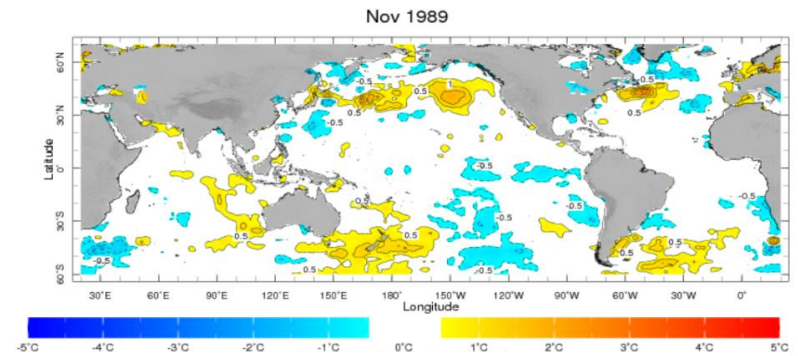
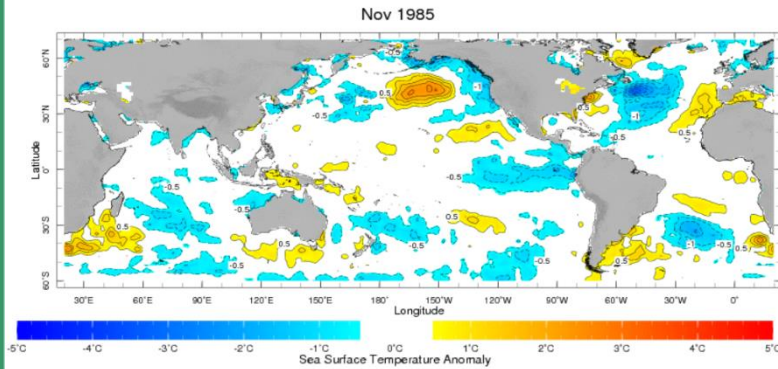
SST for September during the analogue years : 1985, 1989, 1996, 2001 and 2008



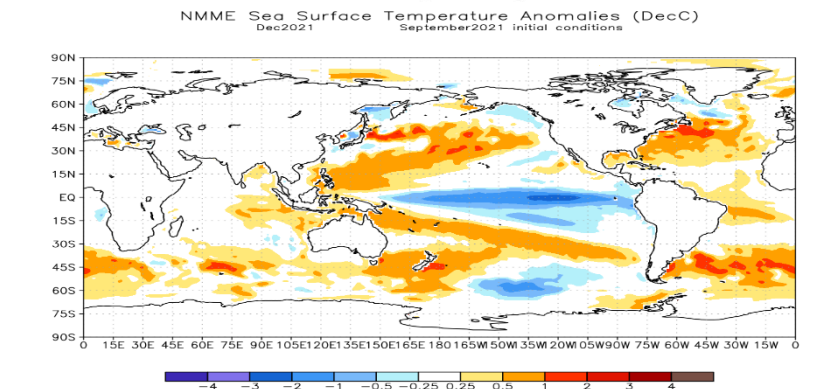
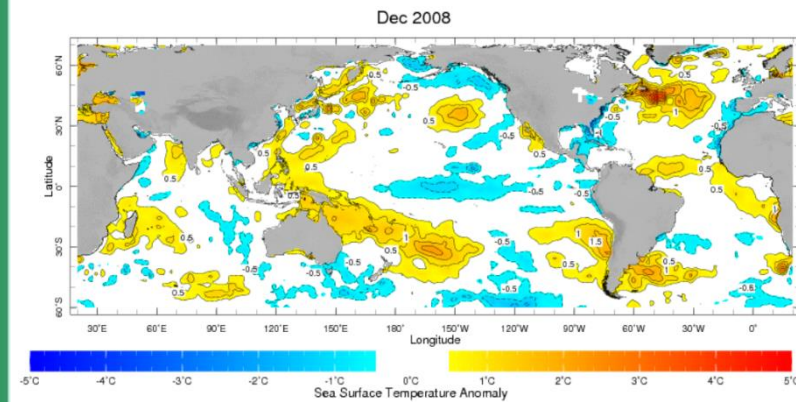
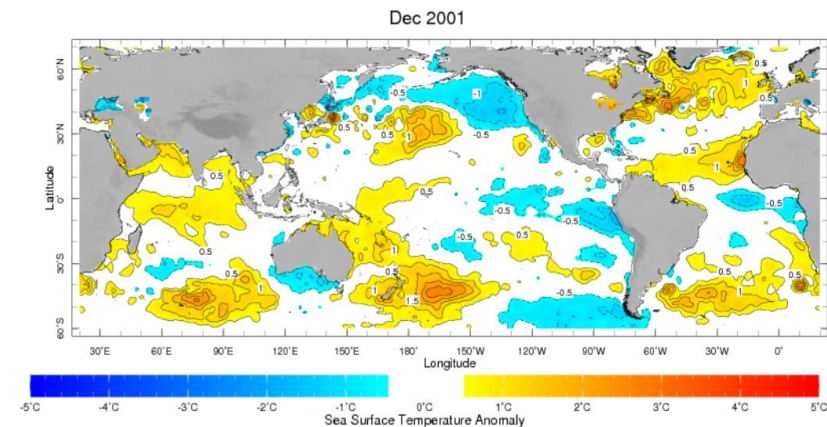
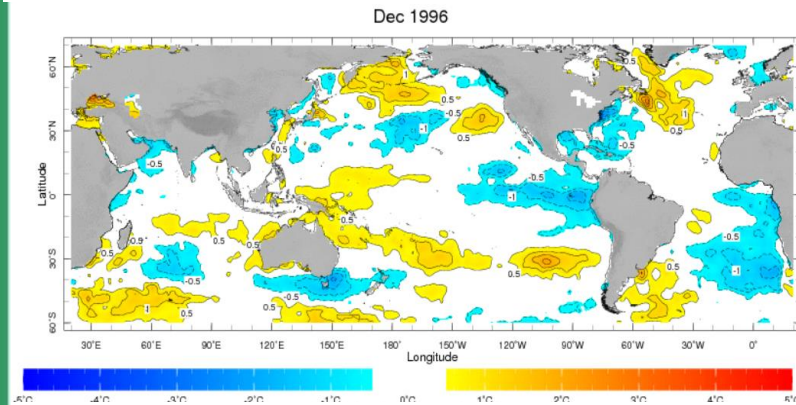
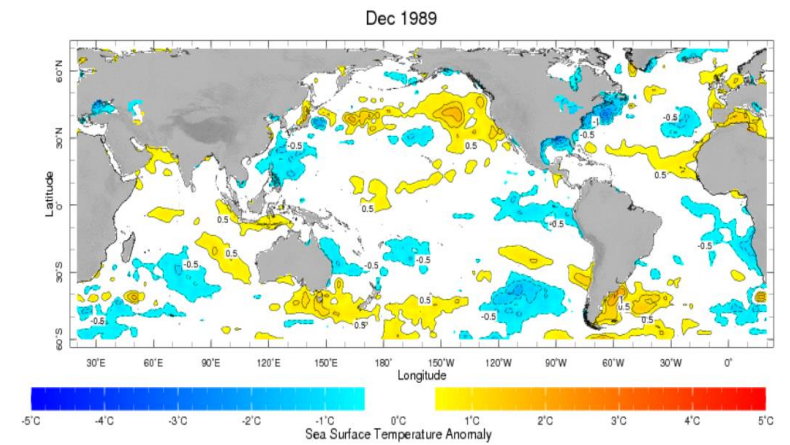
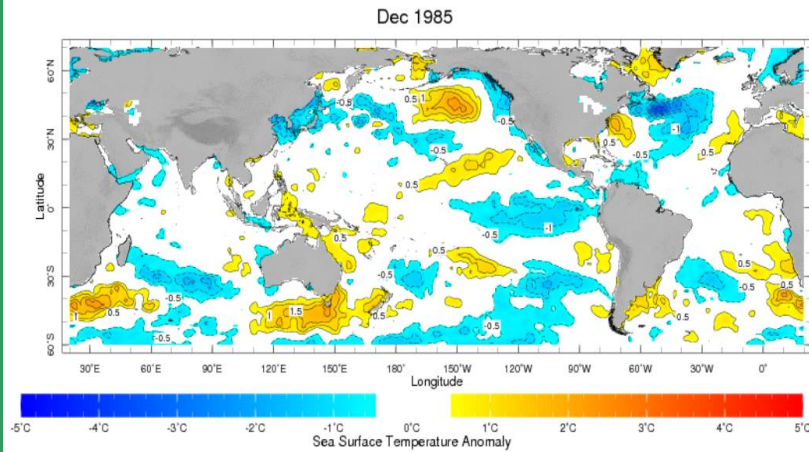
SST for October during the analogue years : 1985, 1989, 1996, 2001 and 2008



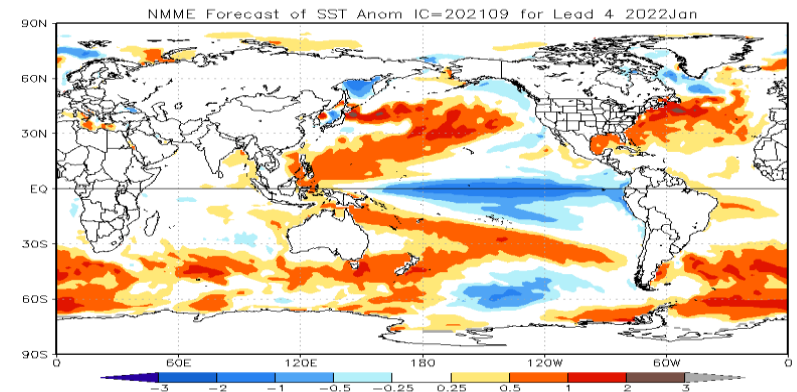
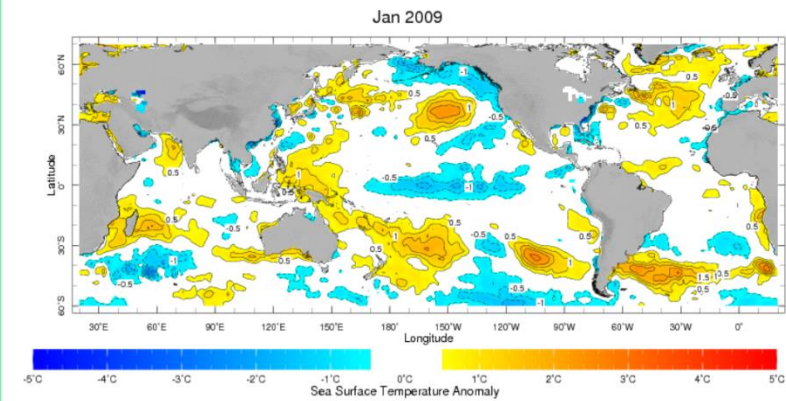
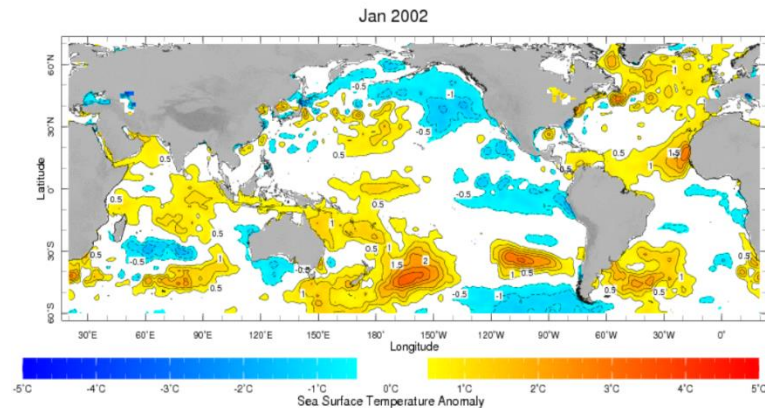
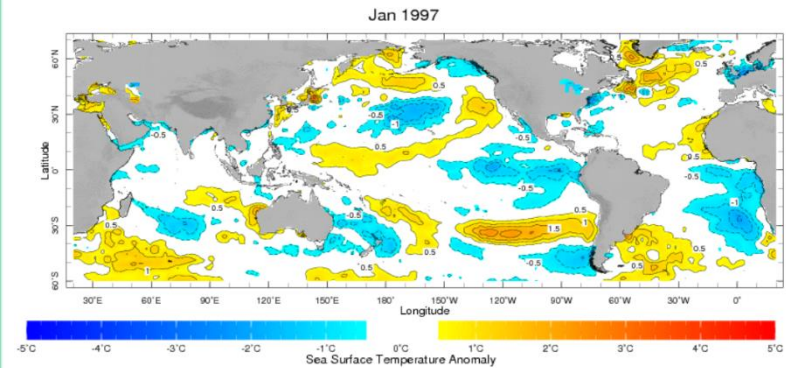
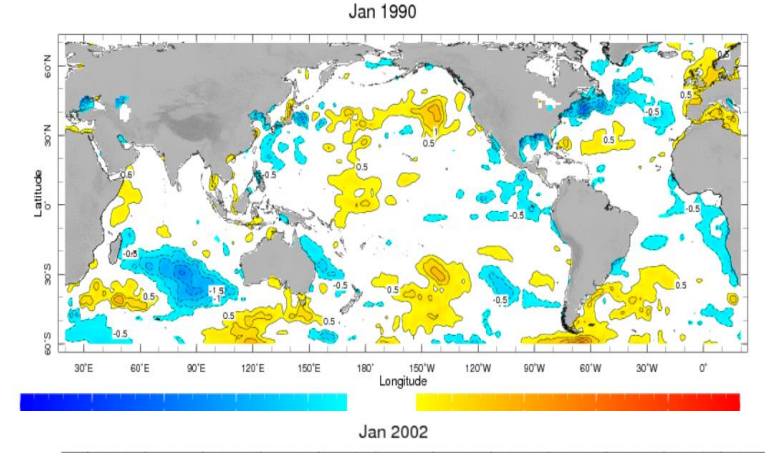
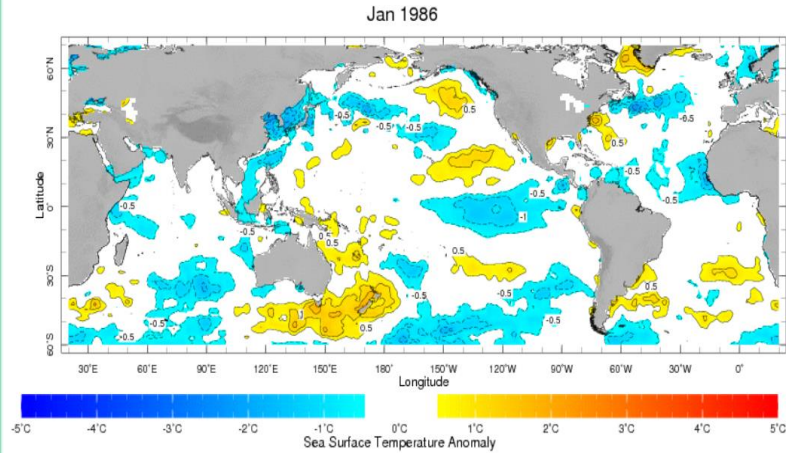
SST for November during the analogue years : 1985, 1989, 1996, 2001 and 2008



SST for December during the analogue years : 1985, 1989, 1996, 2001 and 2008

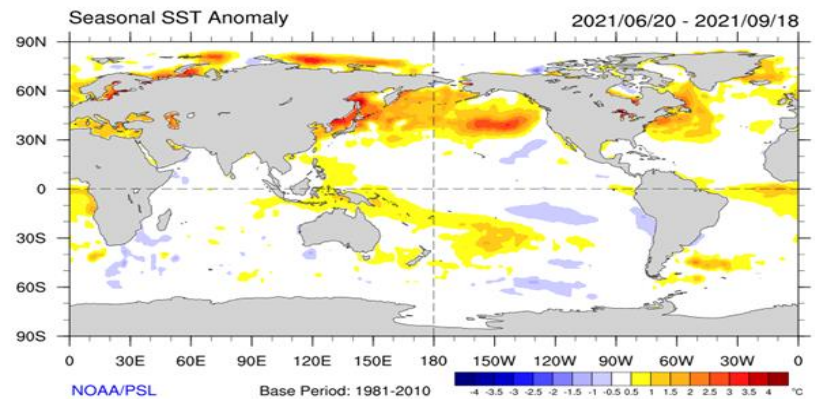
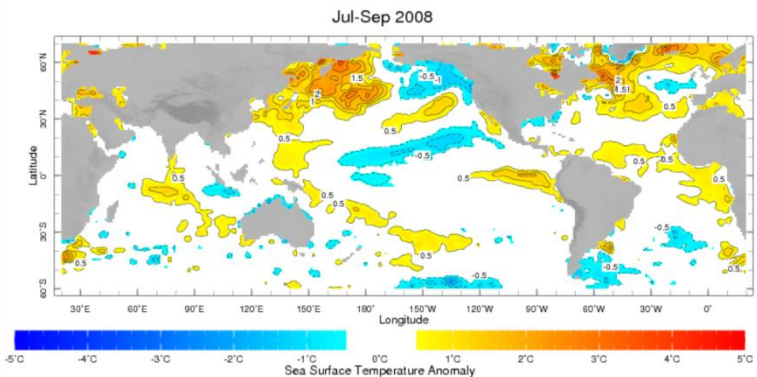
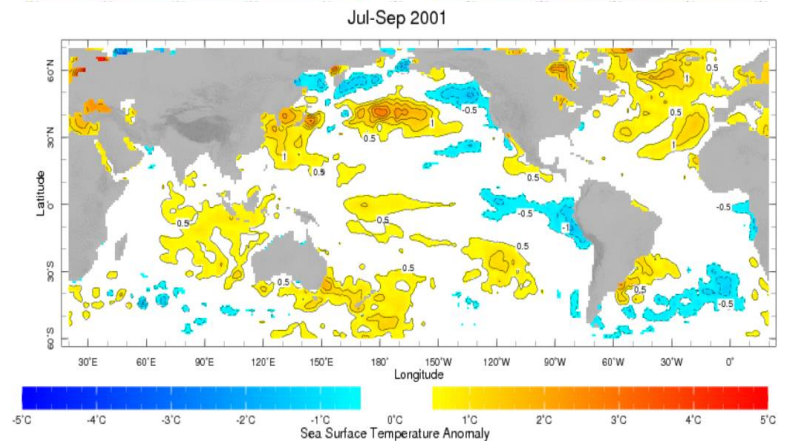
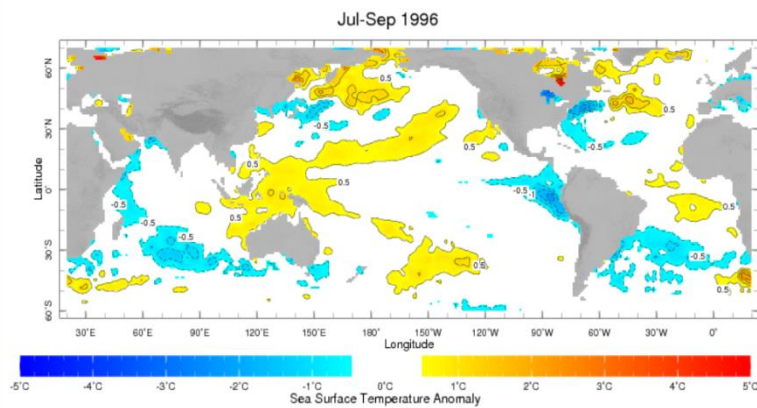
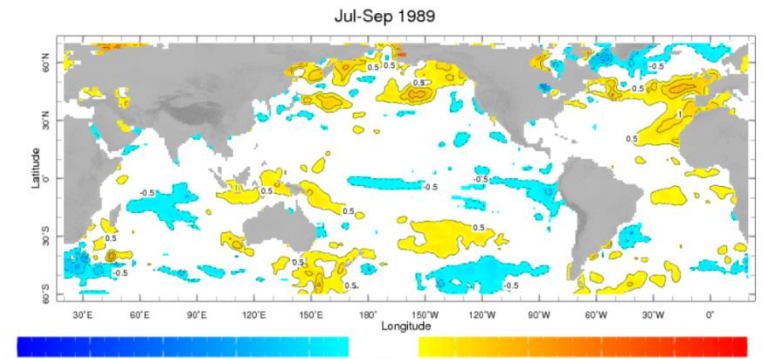
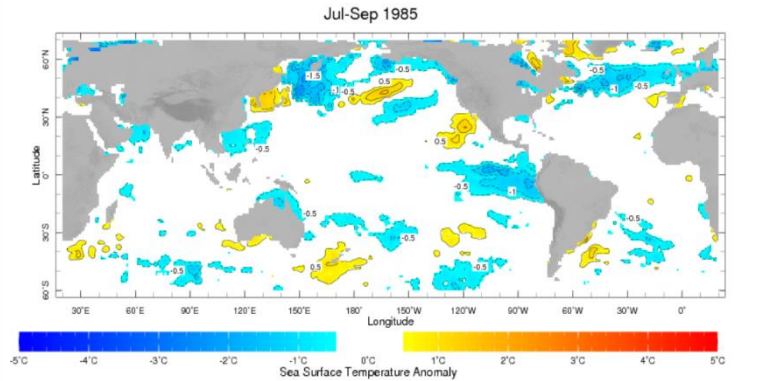


SST for January during the analogue years : 1985/86, 1989/90, 1996/97, 2001/02 and 2008/09



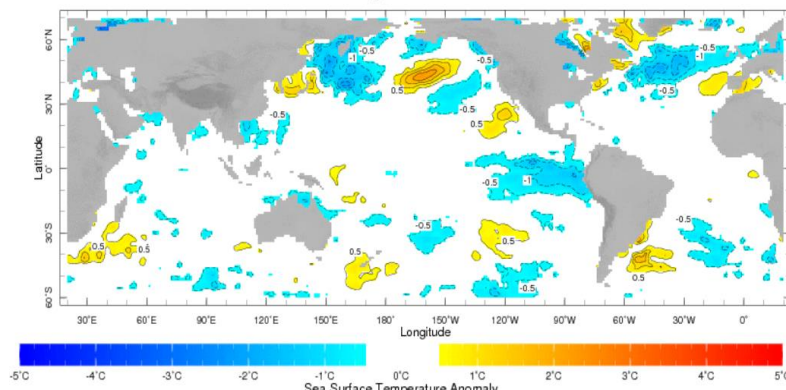
SEASONAL SSTs OBSERVED AND FORECAST FOR THE ANALOG YEARS USING IRI AND NMME

SST for JAS during the analogue years : 1985, 1989, 1996, 2001 and 2008

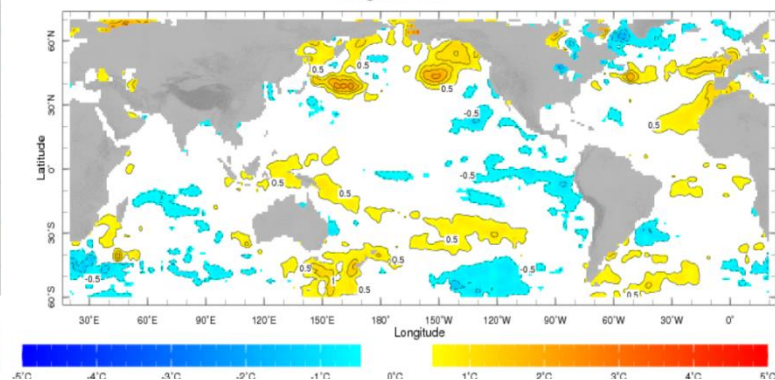


SST for ASO during the analogue years : 1985, 1989, 1996, 2001 and 2008

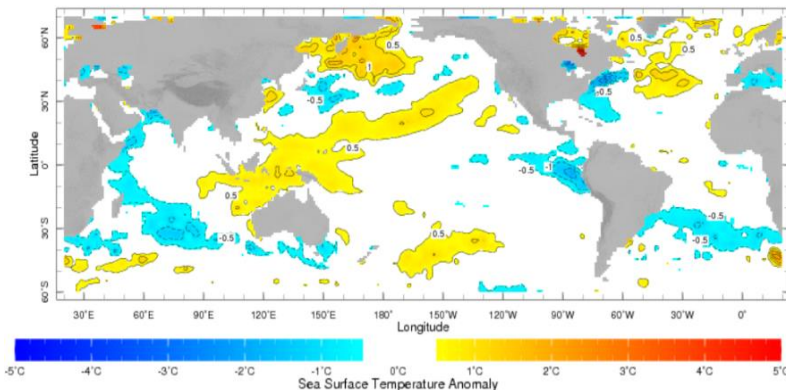
Aug-Oct 1985



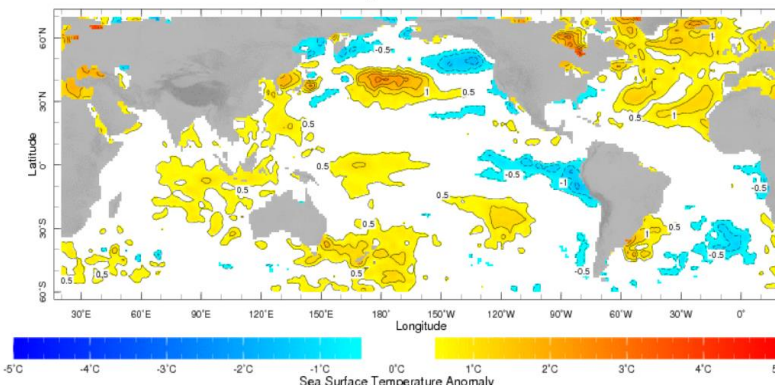
Aug-Oct 1989



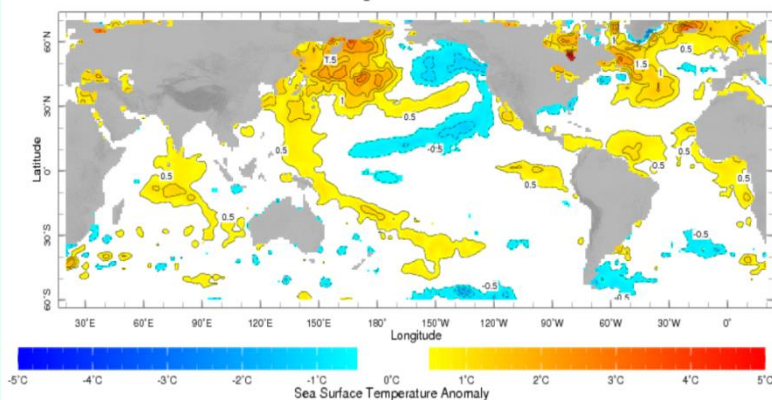
Aug-Oct 1996



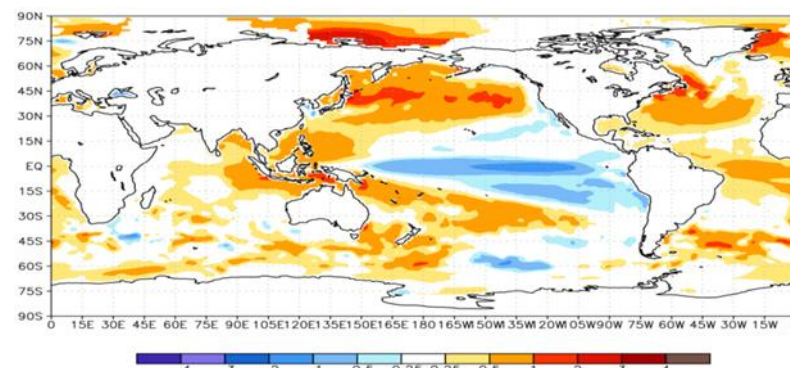
Aug-Oct 2001



Aug-Oct 2008

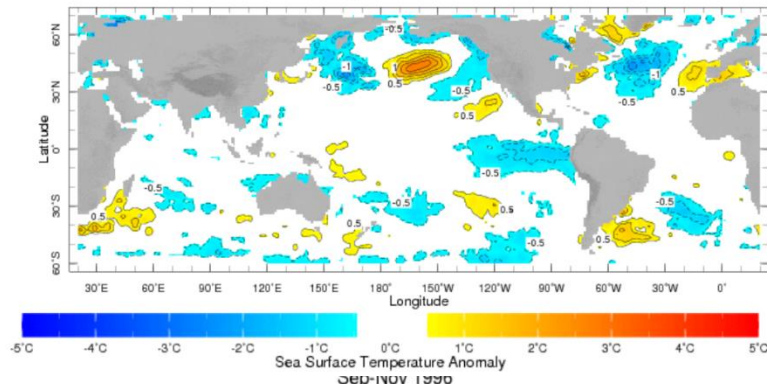


NMME Sea Surface Temperature Anomalies (DecC)
Aug2021-Oct2021
July2021 initial conditions

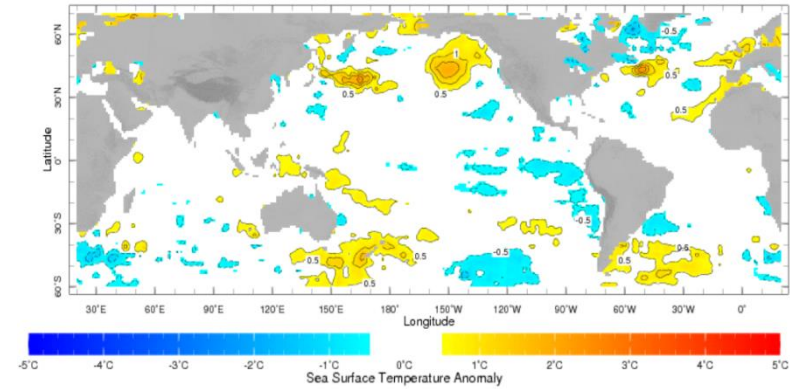


SST for SON during the analogue years : 1985, 1989, 1996, 2001 and 2008

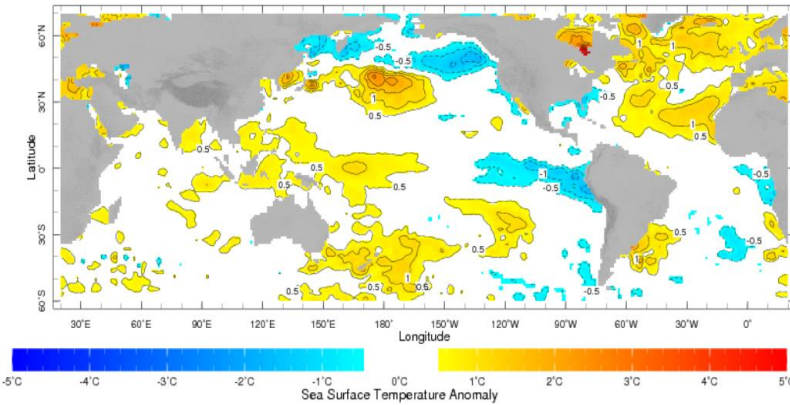
Sep-Nov 1985



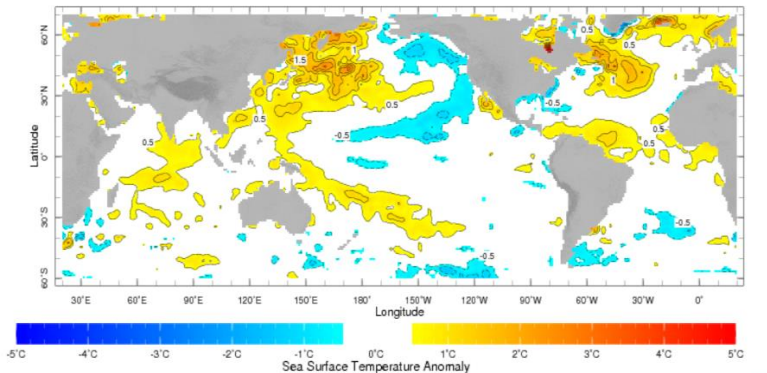
Sep-Nov 1989



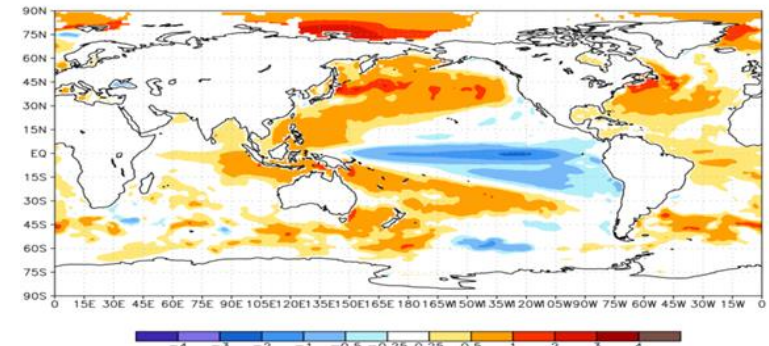
Sep-Nov 2001



Sep-Nov 2008

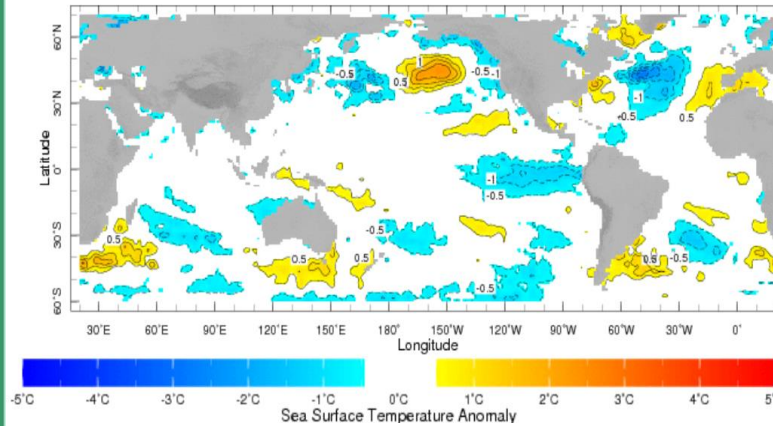


NMME Sea Surface Temperature Anomalies (DecC)
Sep2021–Nov2021
July2021 initial conditions

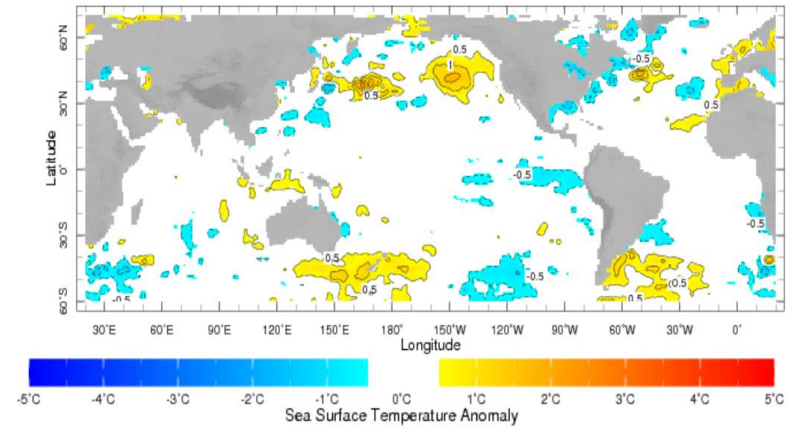


SST for OND during the analogue years : 1985, 1989, 1996, 2001 and 2008

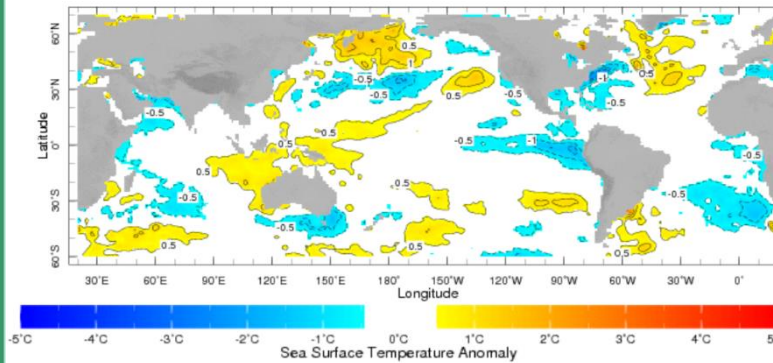
Oct-Dec 1985



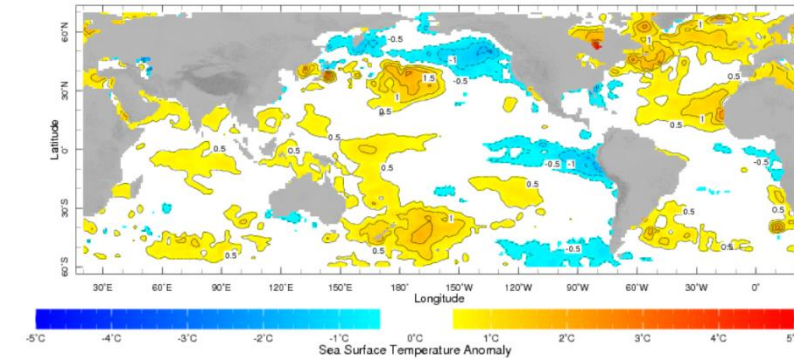
Oct-Dec 1989



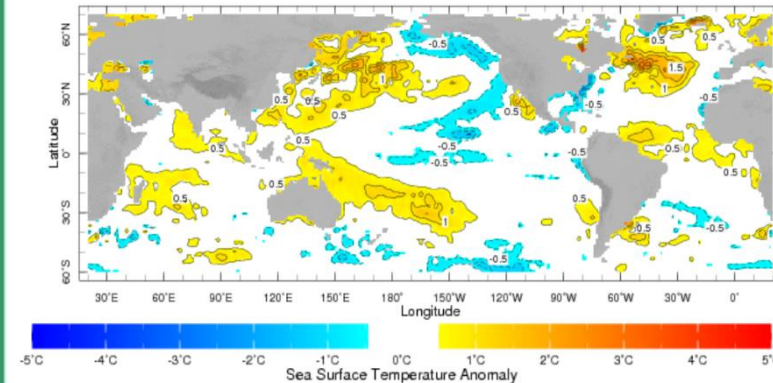
Oct-Dec 1996



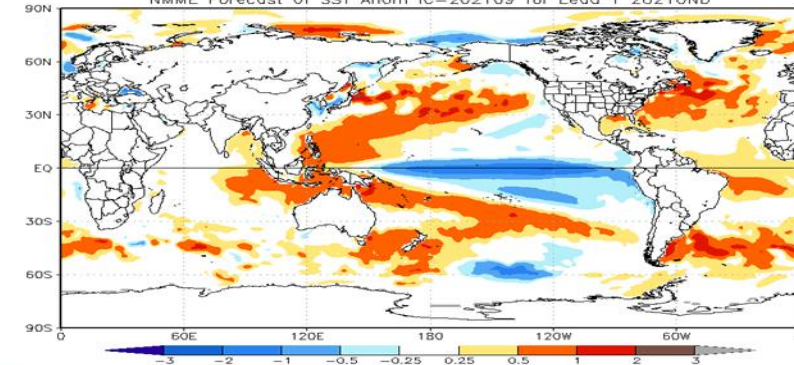
Oct-Dec 2001



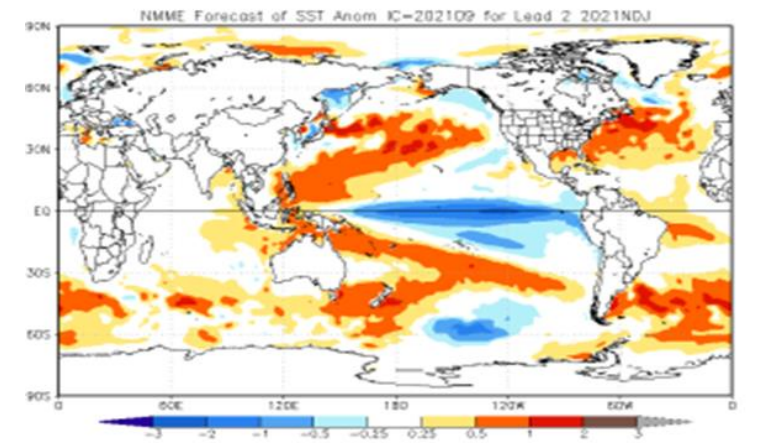
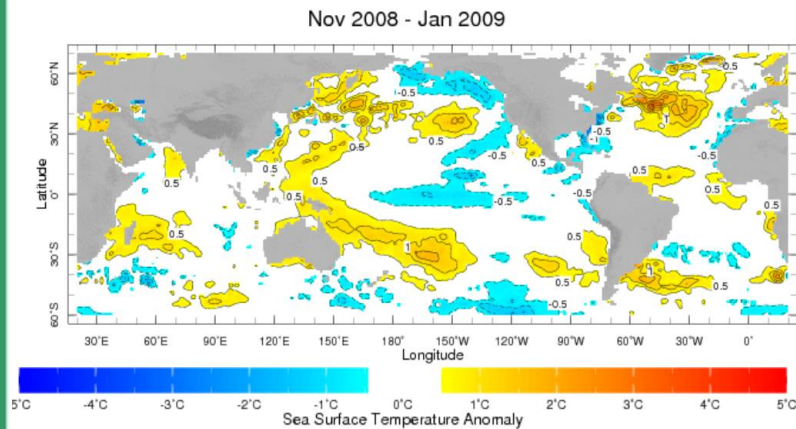
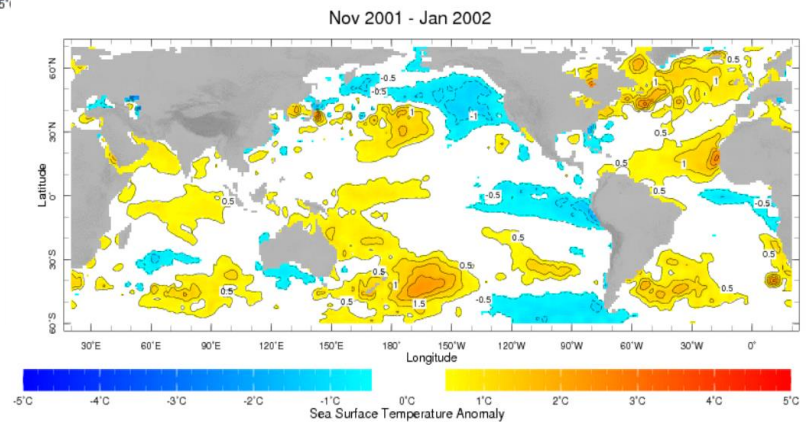
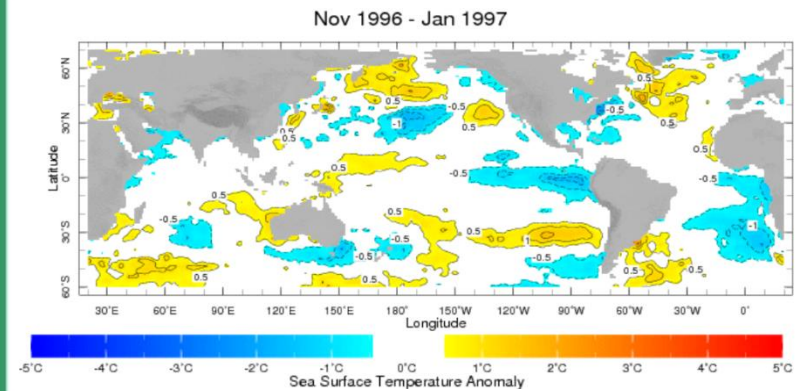
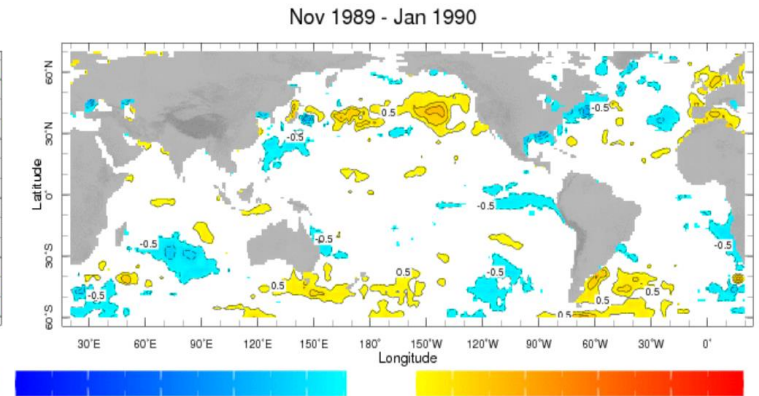
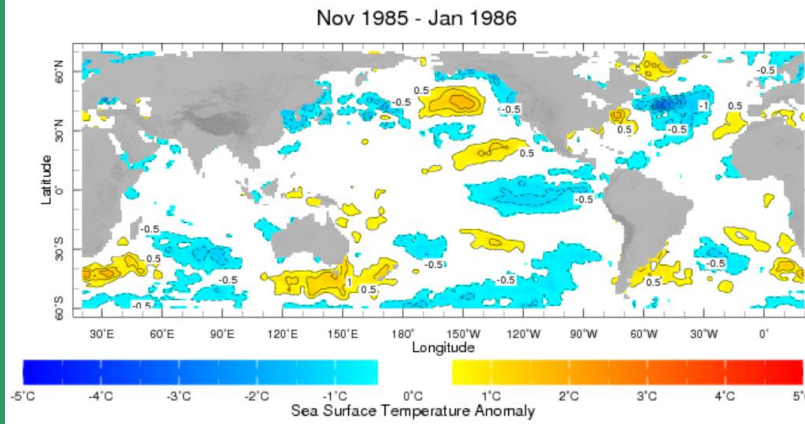
Oct-Dec 2008



NMME Forecast of SST Anom IC=202109 for Lead 1 2021OND

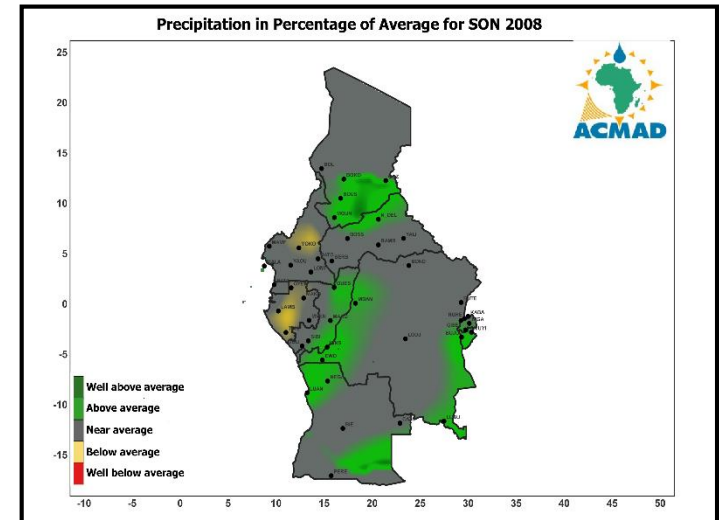
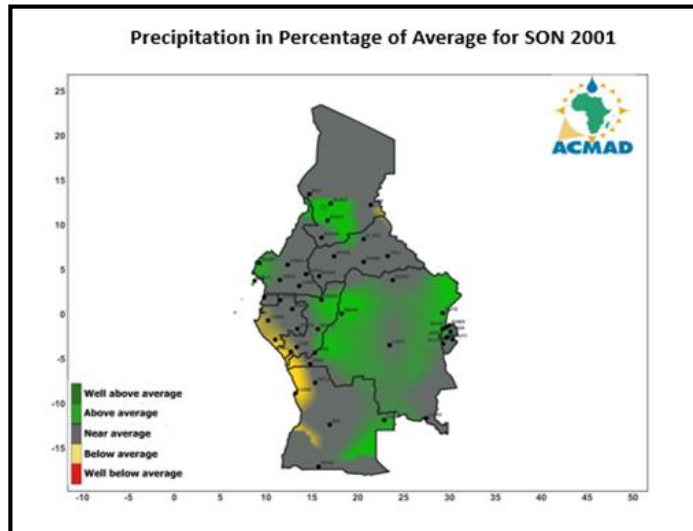
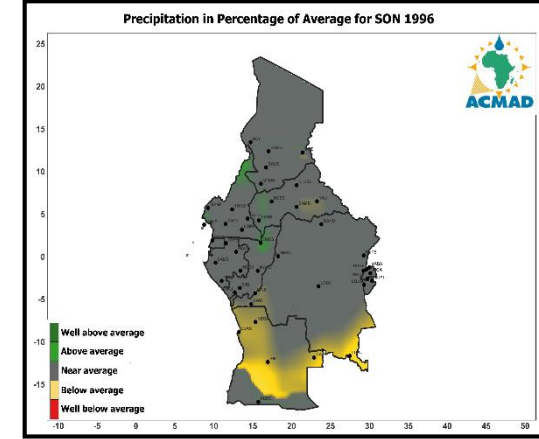
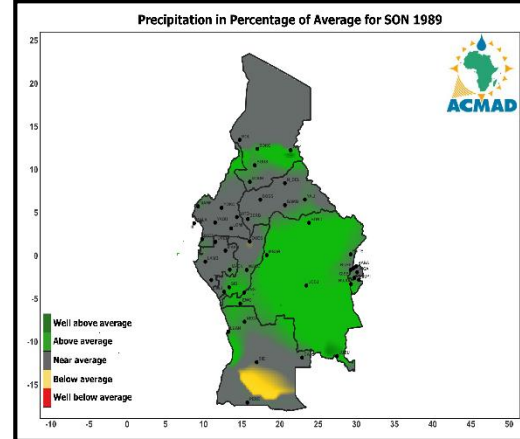
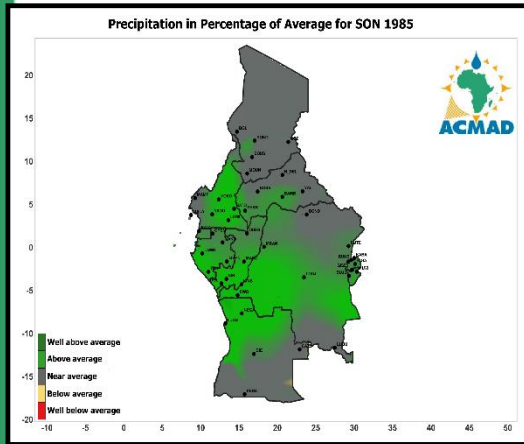


SST for NDJ during the analogue years : 1985, 1989, 1996, 2001 and 2008

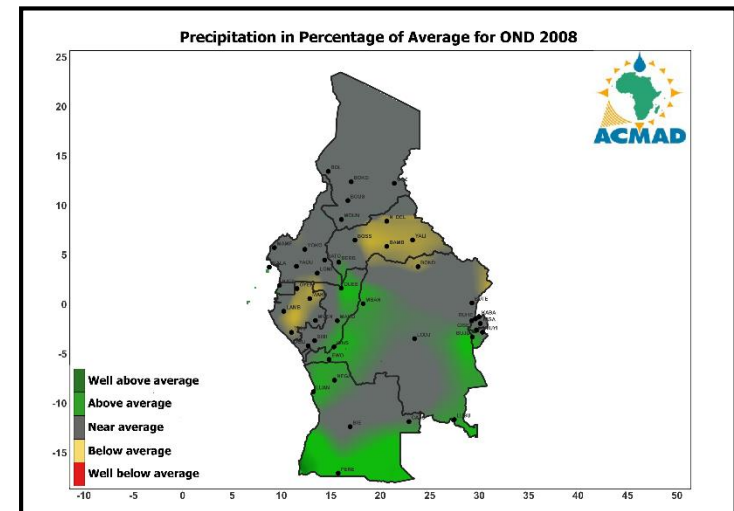
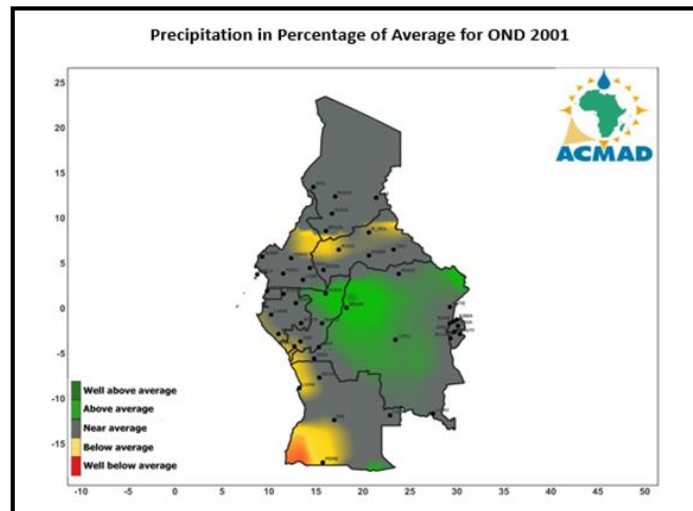
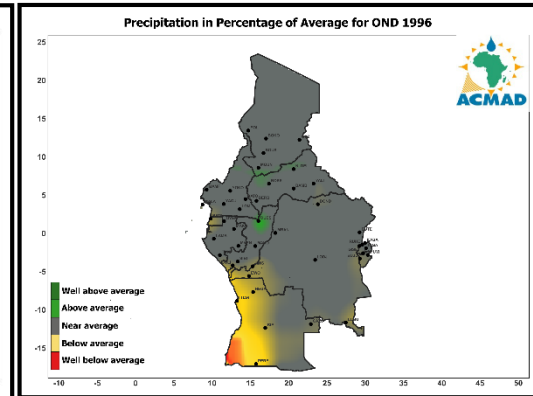
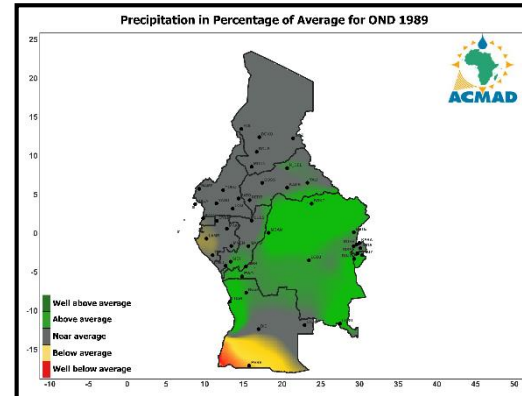
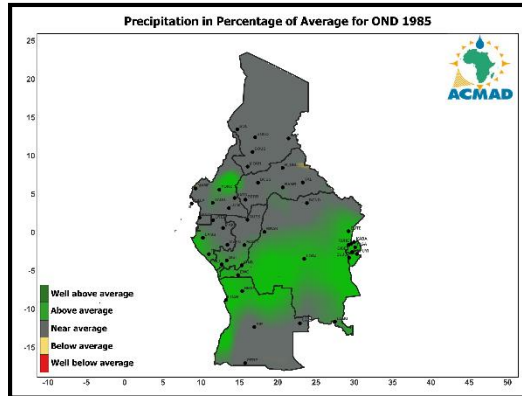


IDENTIFICATION OF ANALOG YEARS INCLUDING RELATED PRECIPITATION ESTIMATES FOR THE TARGET SEASONS

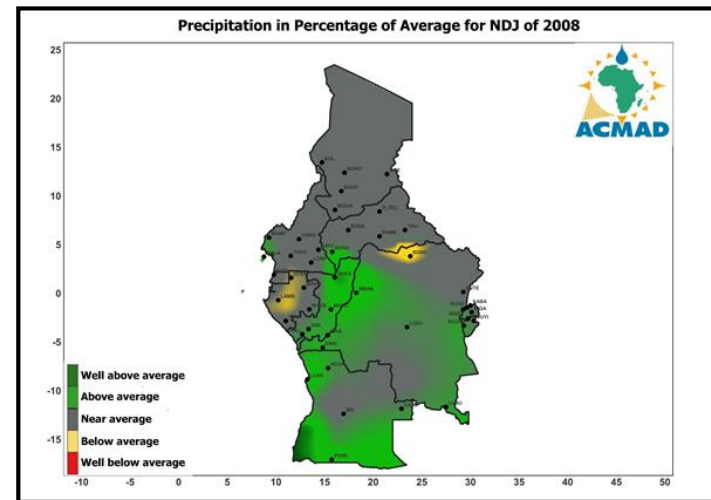
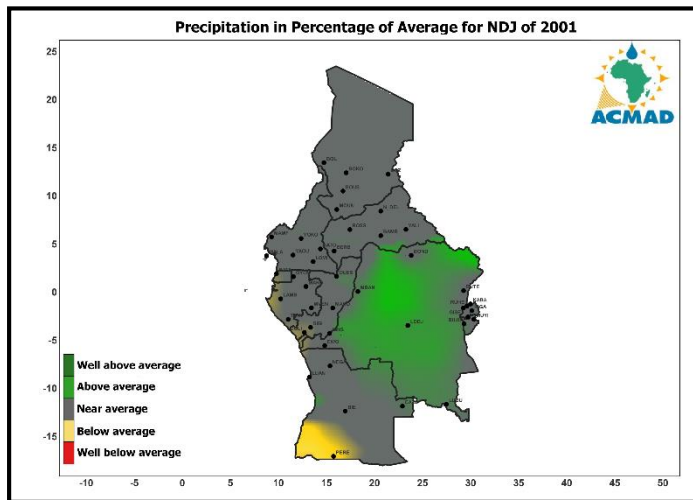
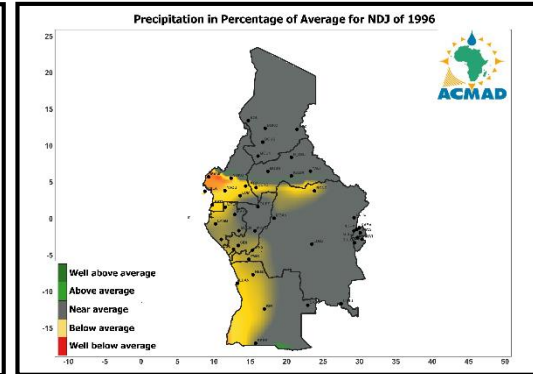
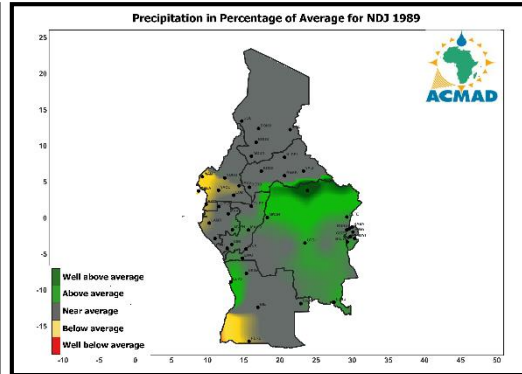
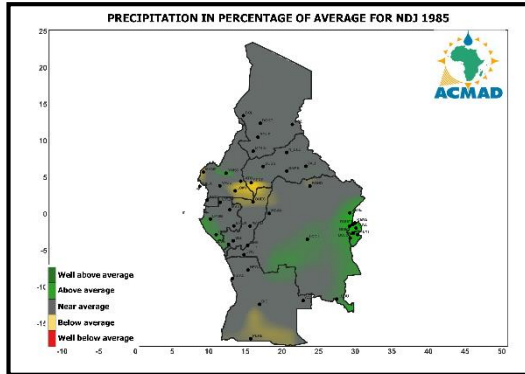
PRECIPITATION IN PERCENT OF AVERAGE FOR THE ANALOGUE YEARS FOR THE SON SEASON [1985, 1989, 1996, 2001 and 2008]_(1991-2020 Reference period)



PRECIPITATION IN PERCENT OF AVERAGE FOR THE ANALOGUE YEARS FOR THE OND SEASON [1985, 1989, 1996, 2001 and 2008]_(Reference period_ 1991-2020)

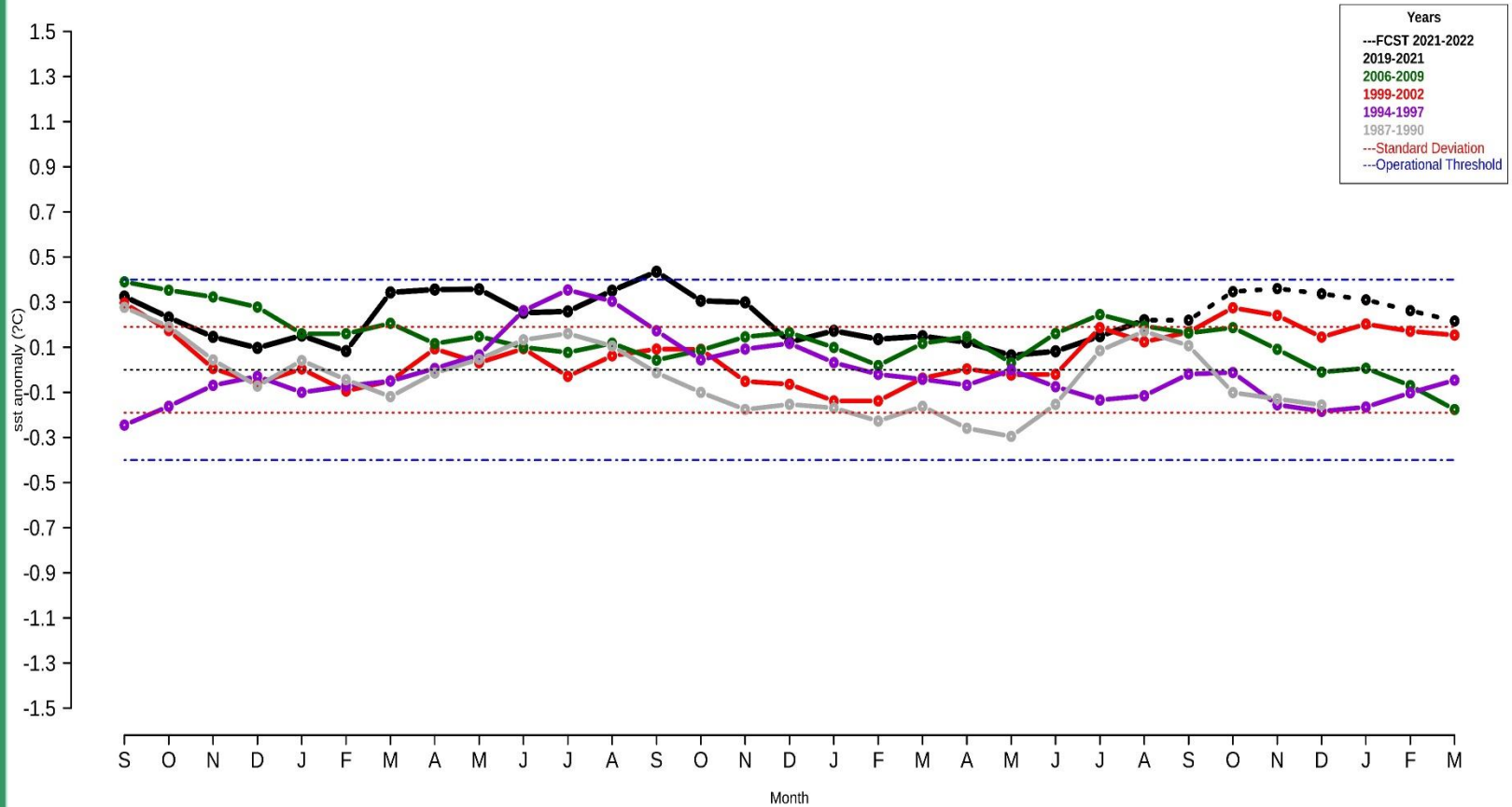


PRECIPITATION IN PERCENT OF AVERAGE FOR THE ANALOGUE YEARS FOR THE NDJ SEASON [1985, 1989, 1996, 2001 and 2008]_(Reference period_ 1991-2020)

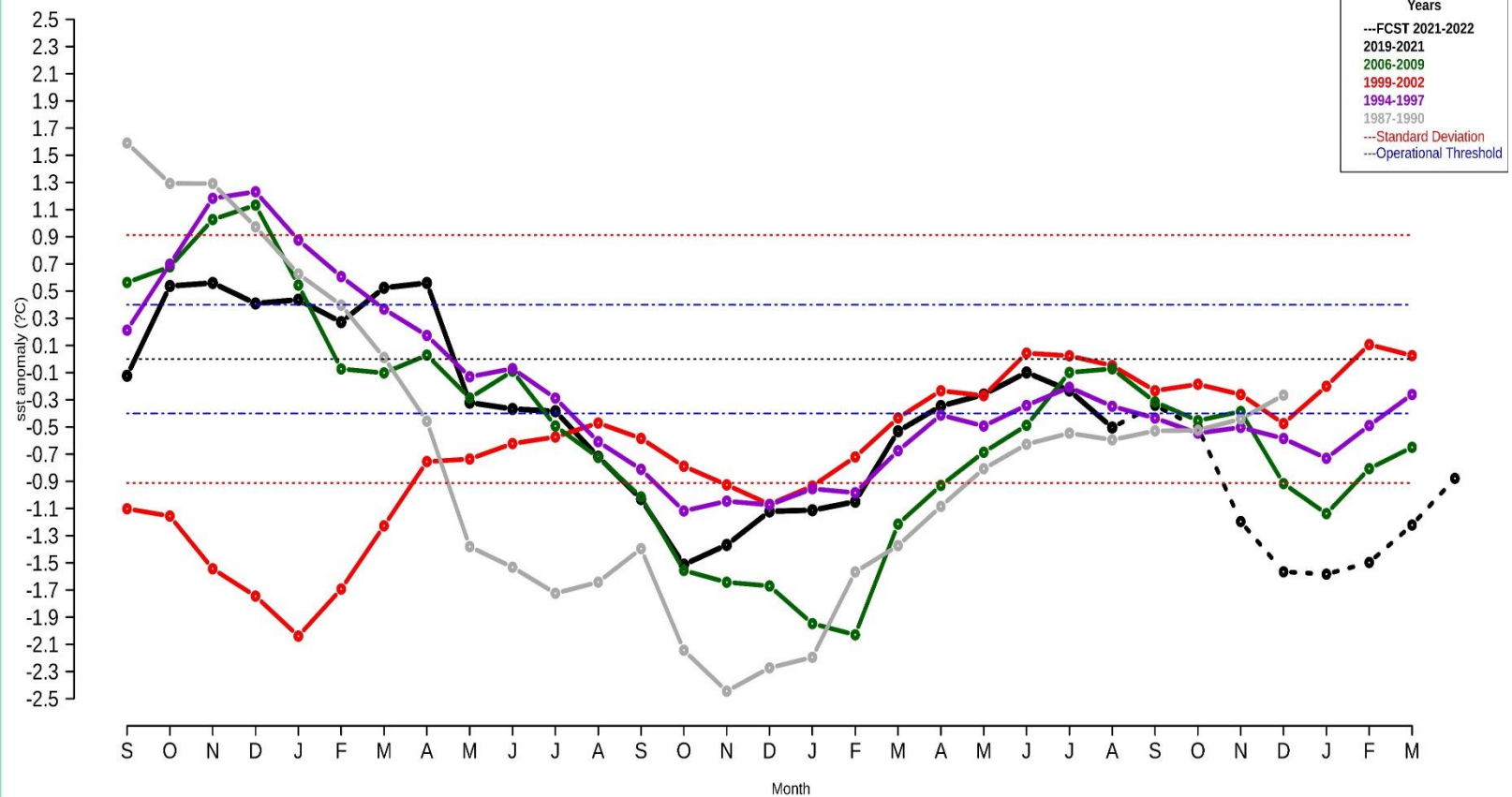


**-ENSO, TNA, SIOD, IOD, TSA, SWIO, AMO, NAO, SAM,
AO, SAT, TASI, ADD TIME SERIES FOR ANALOG YEARS
(DATA FROM M_0-6 MONTHS TO M_0+6 MONTHS)**

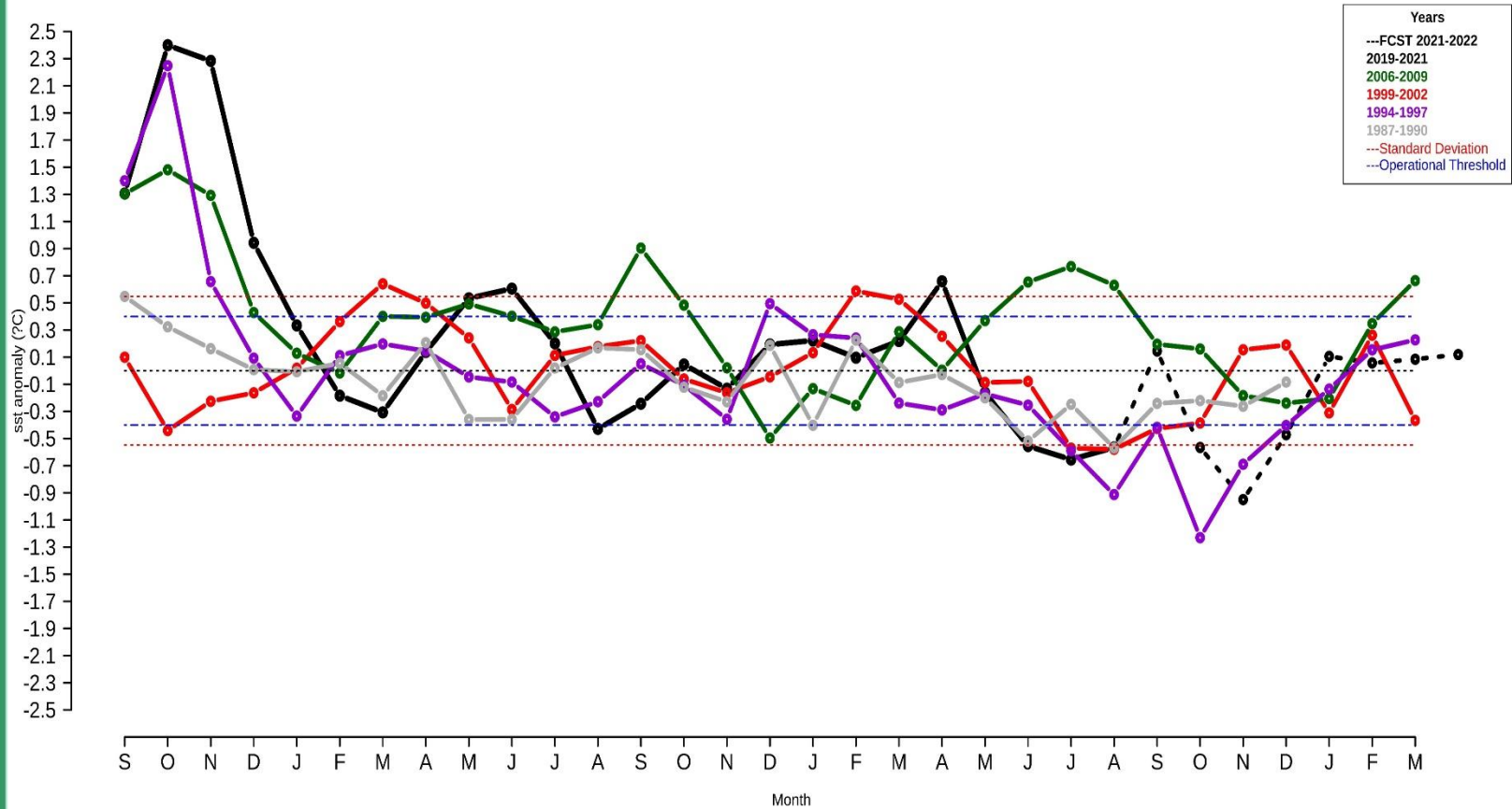
AMO SST ANOMALY



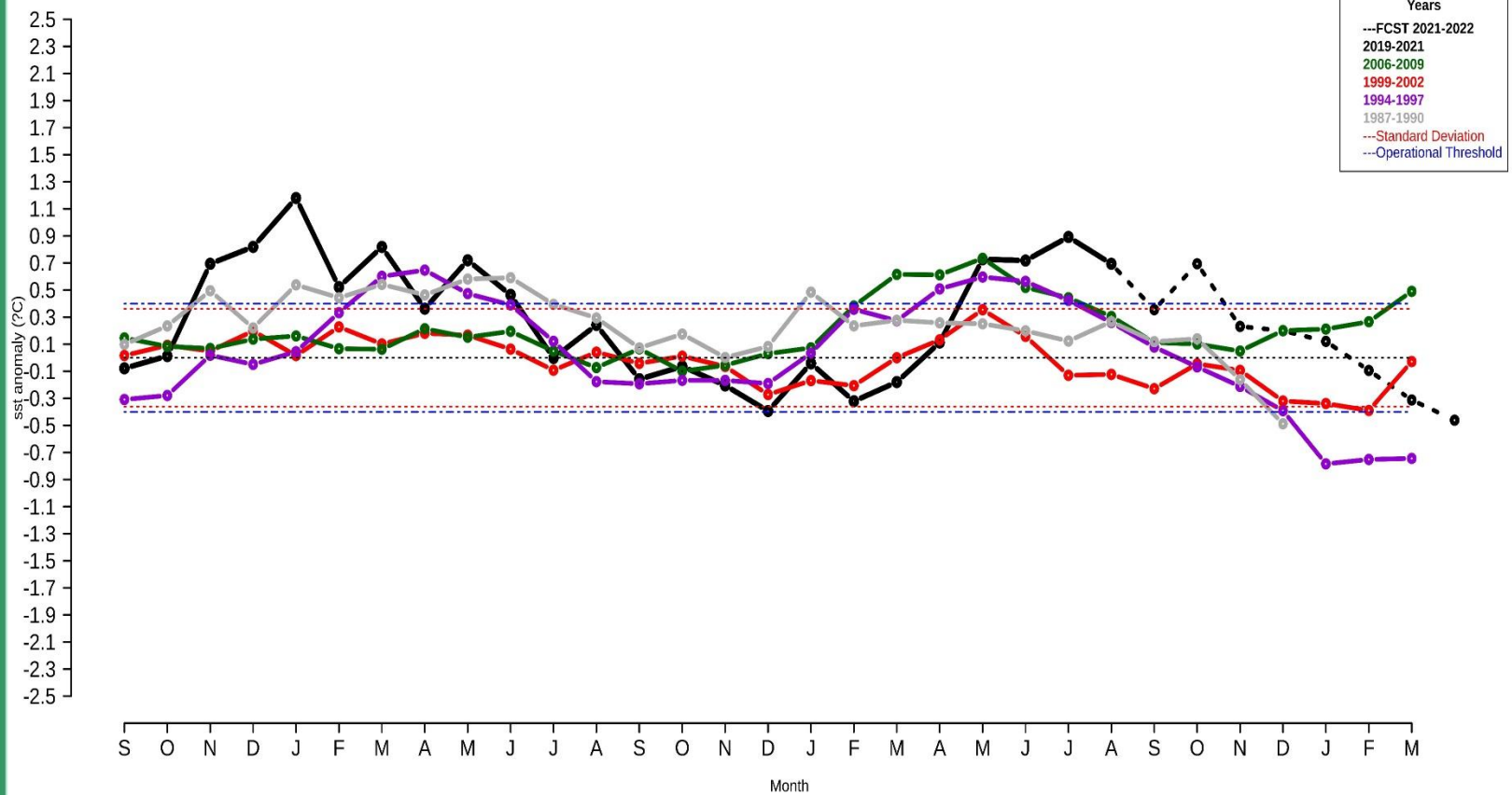
ELNINO34 SST ANOMALY



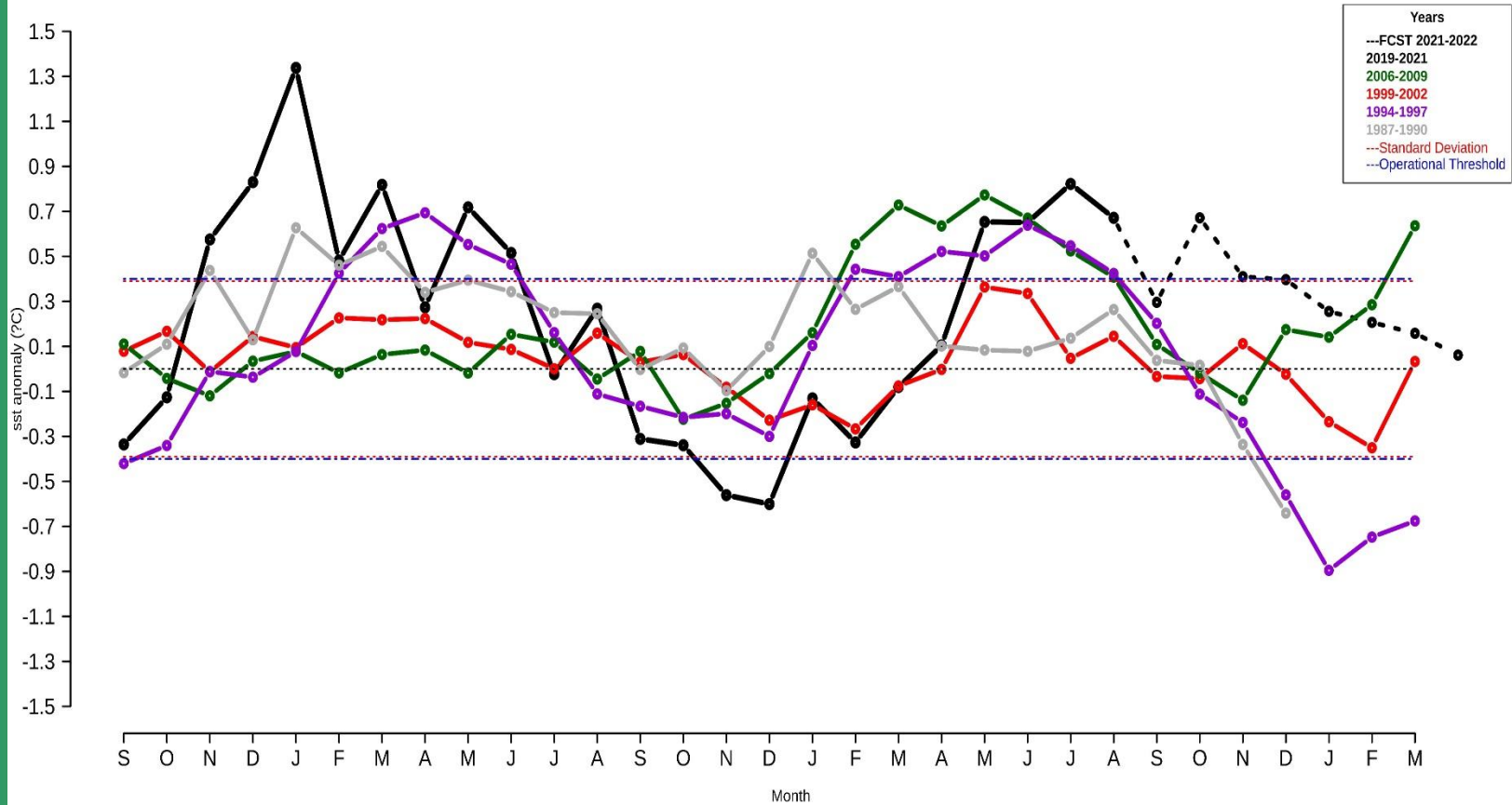
IOD_DMI SST ANOMALY



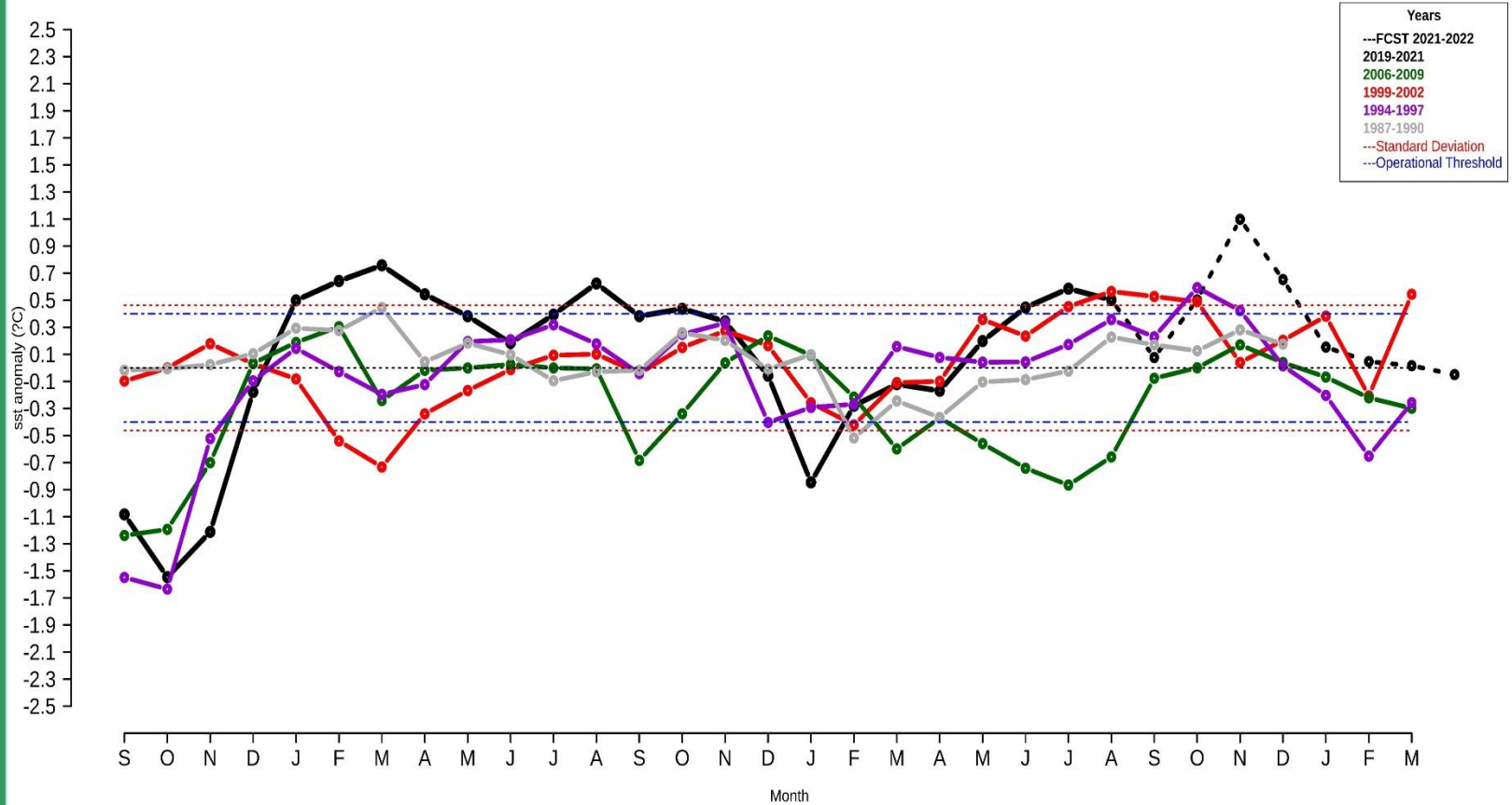
NAT SST ANOMALY



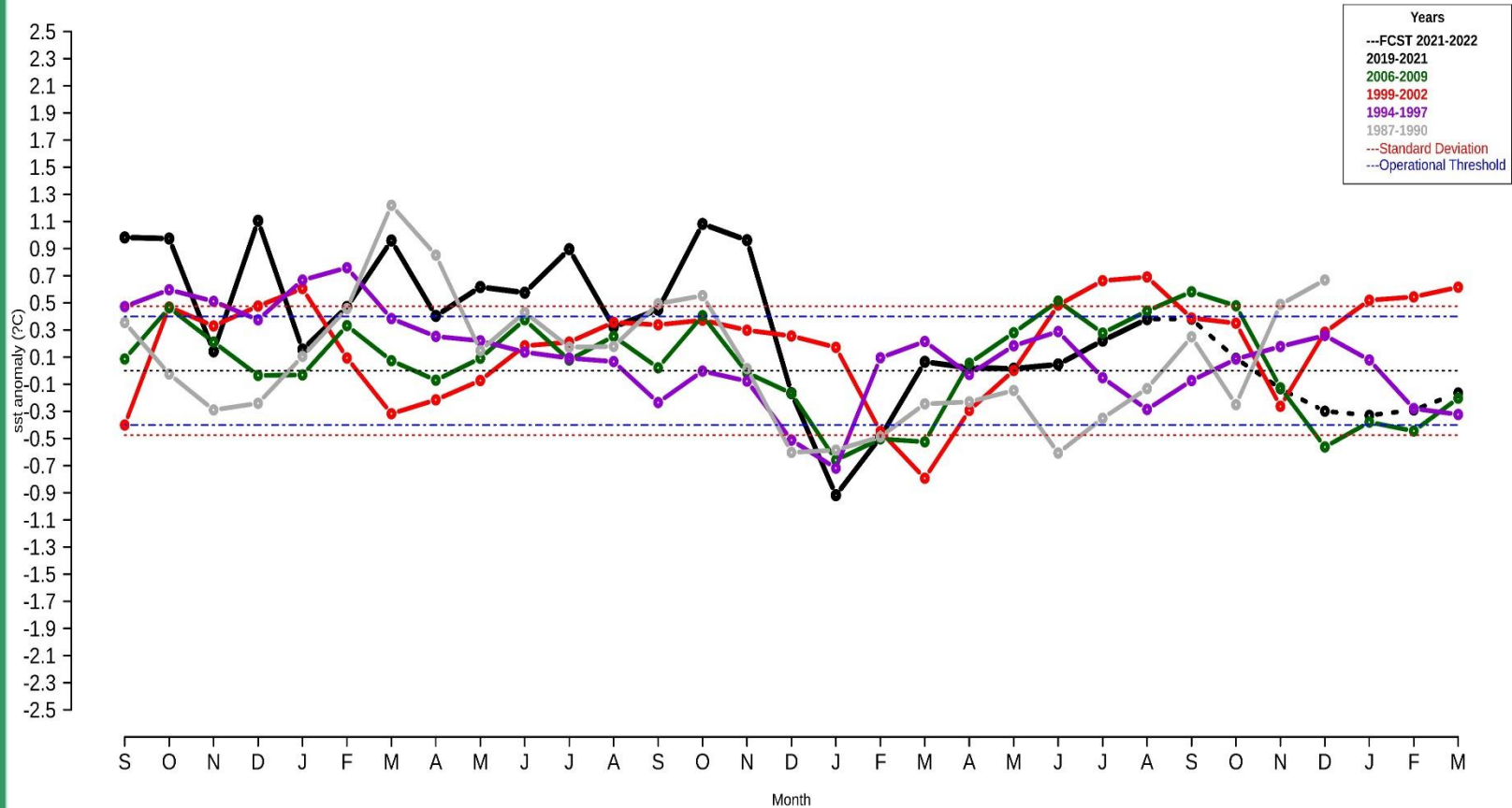
SAT SST ANOMALY



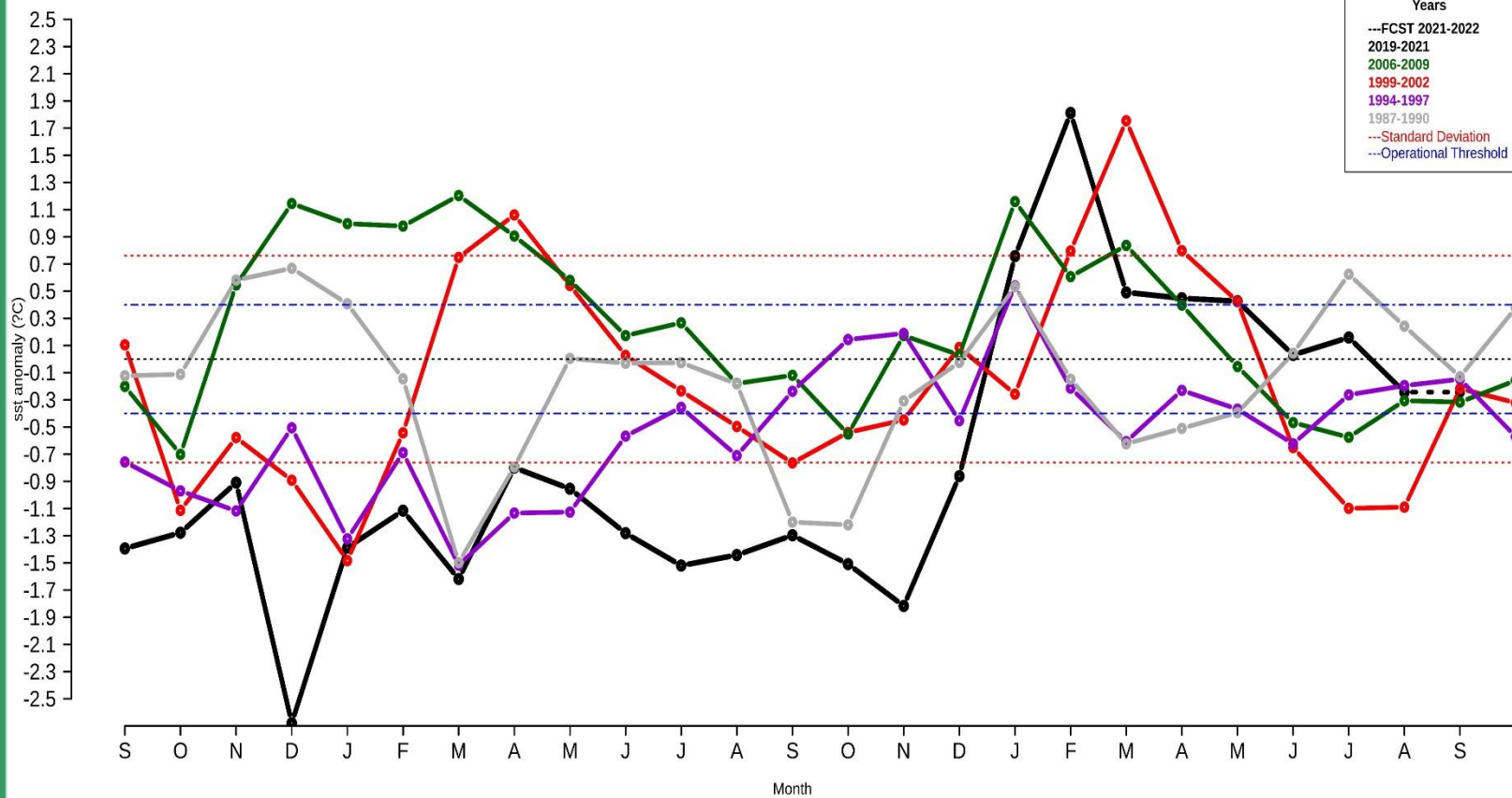
SETIO SST ANOMALY



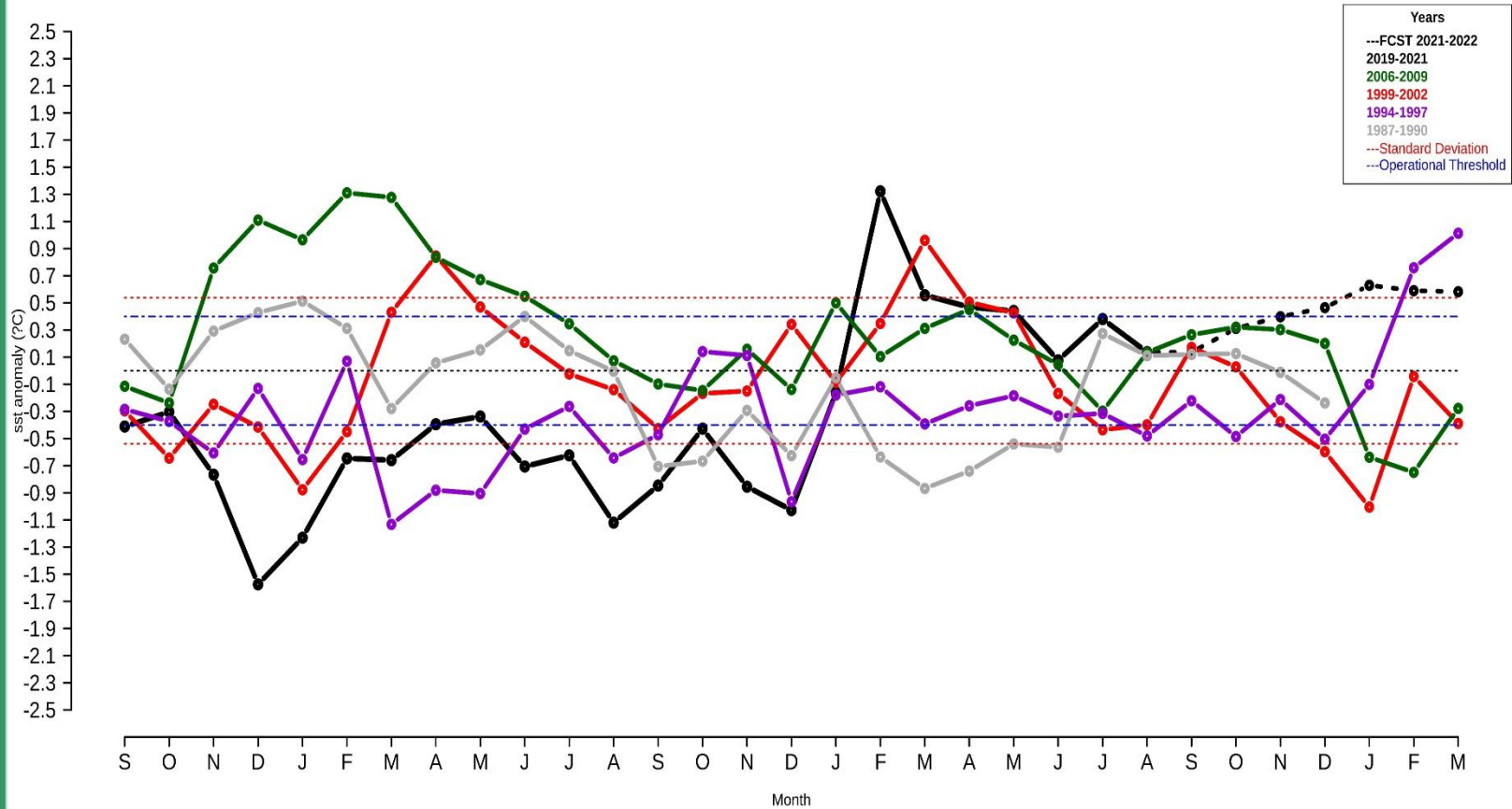
SIOD_EST SST ANOMALY



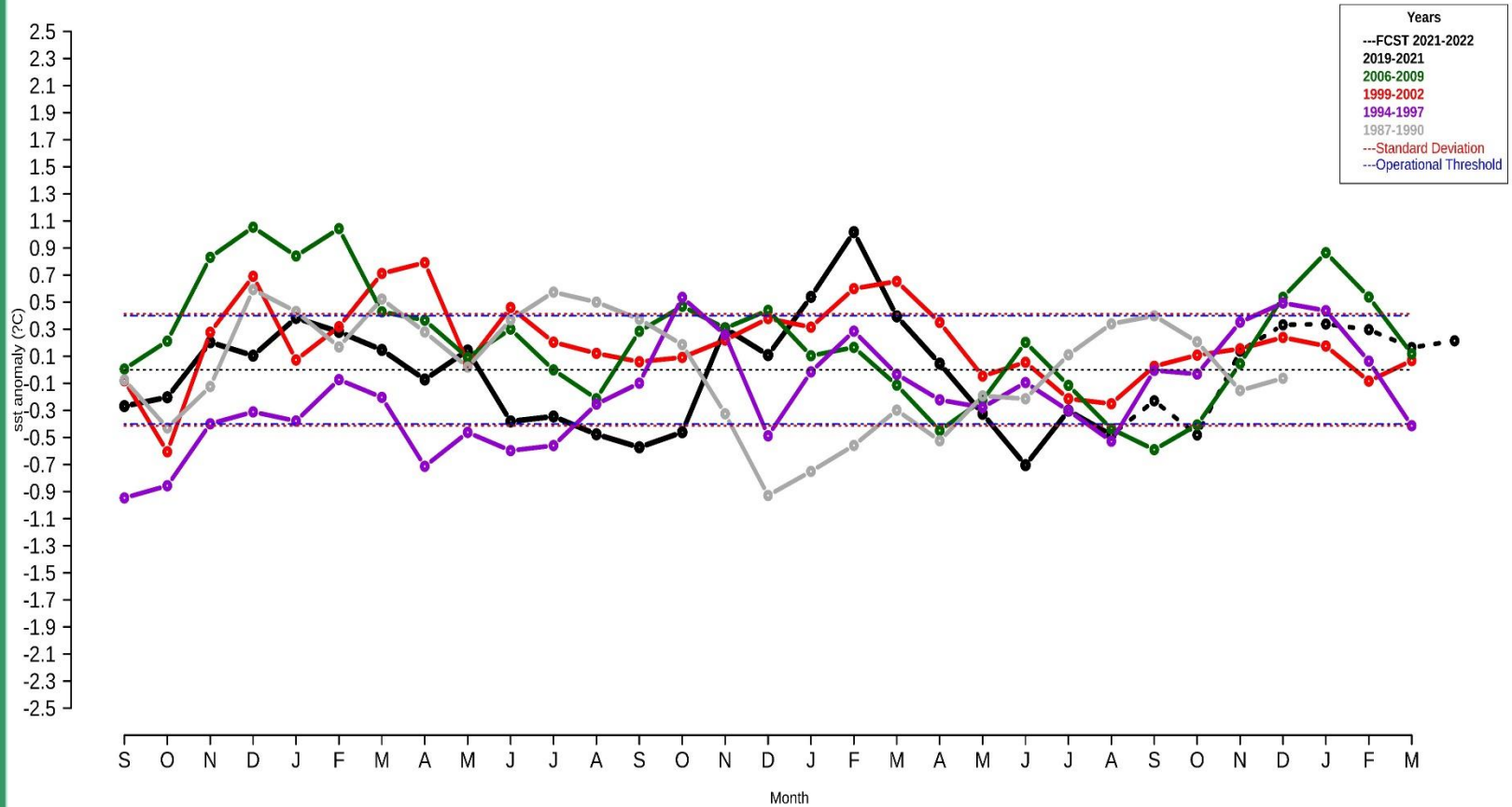
SIOD_Index SST ANOMALY



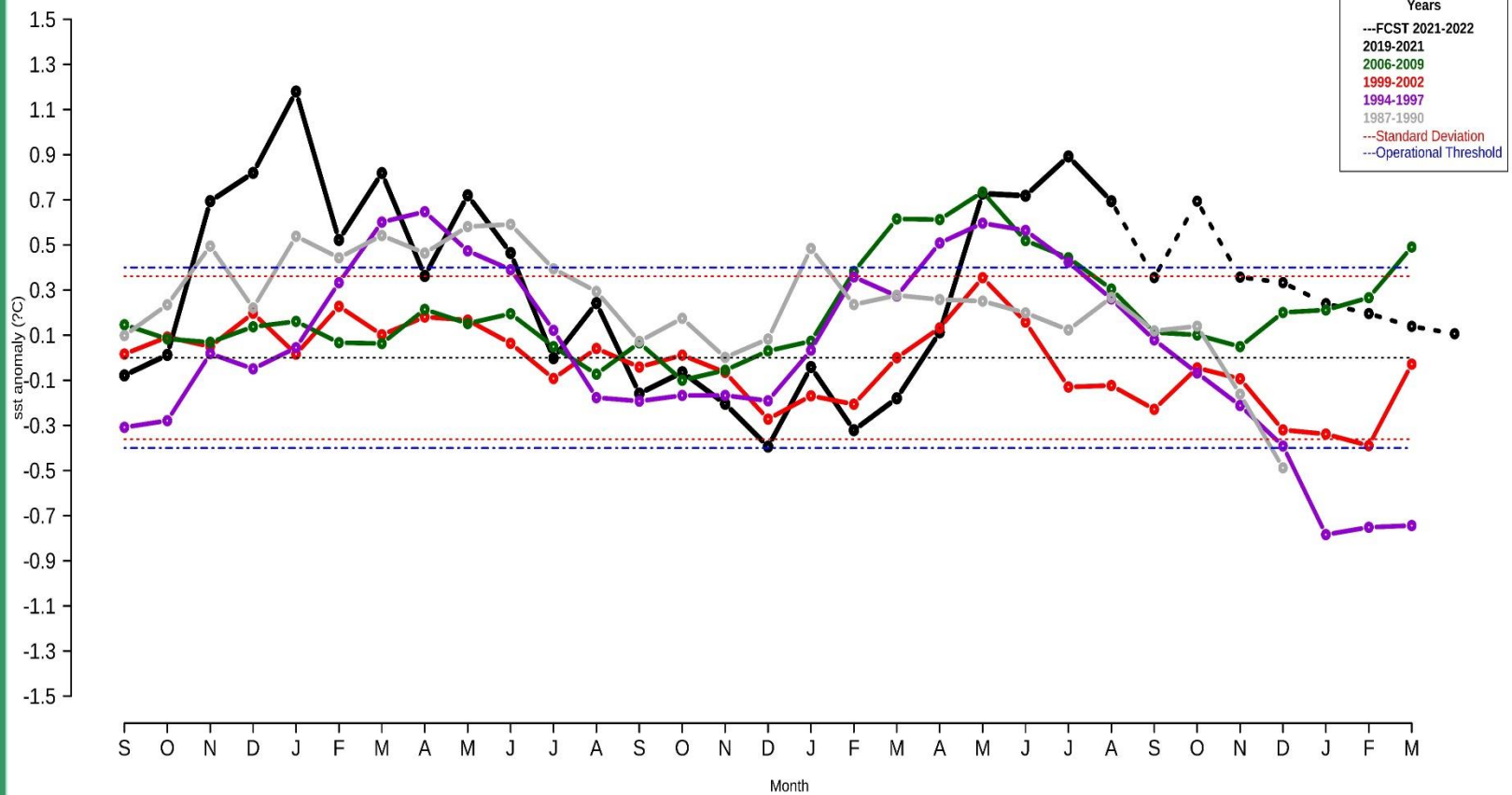
SIOD_WEST SST ANOMALY



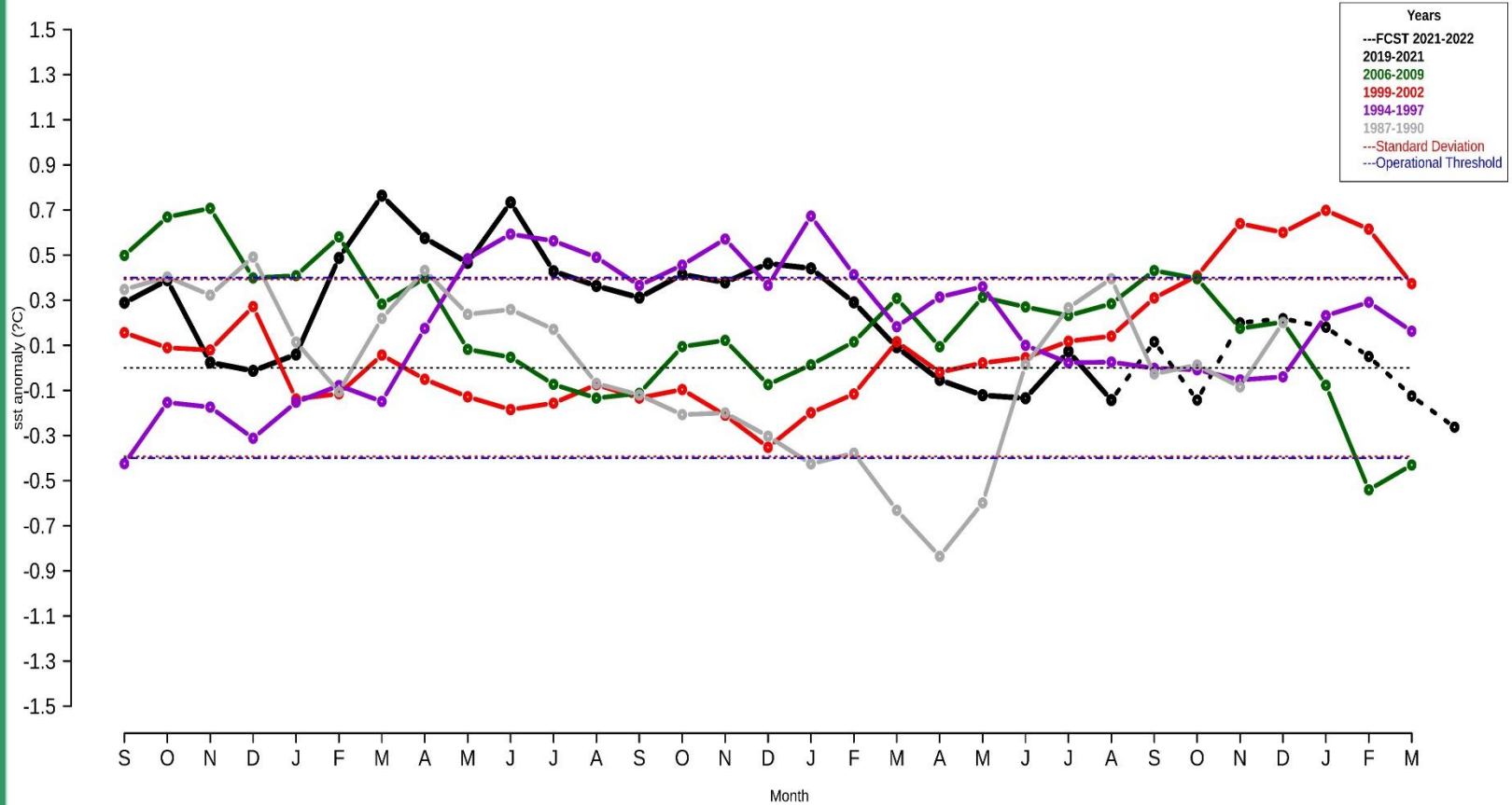
SWIO SST ANOMALY



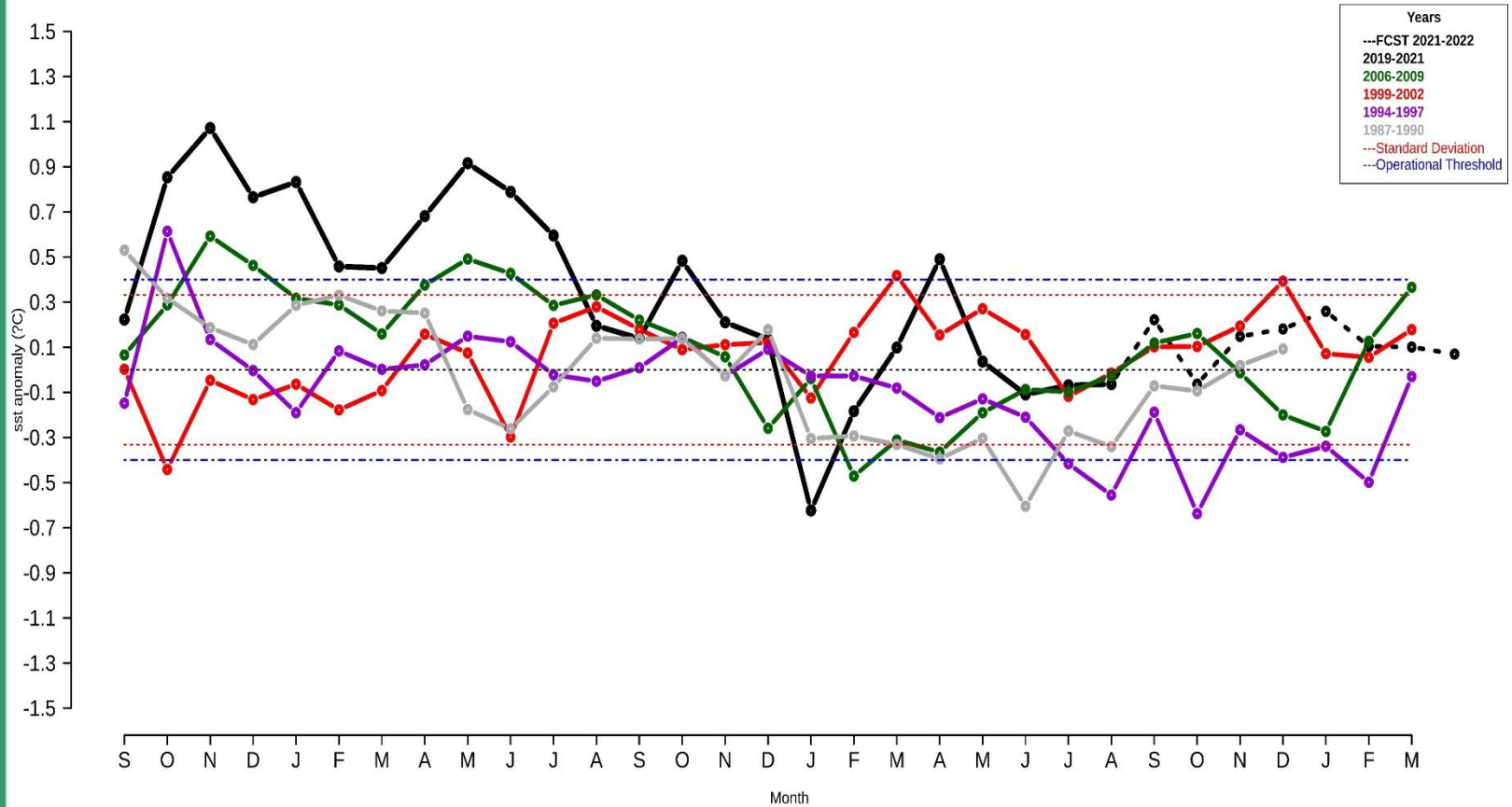
TAS SST ANOMALY



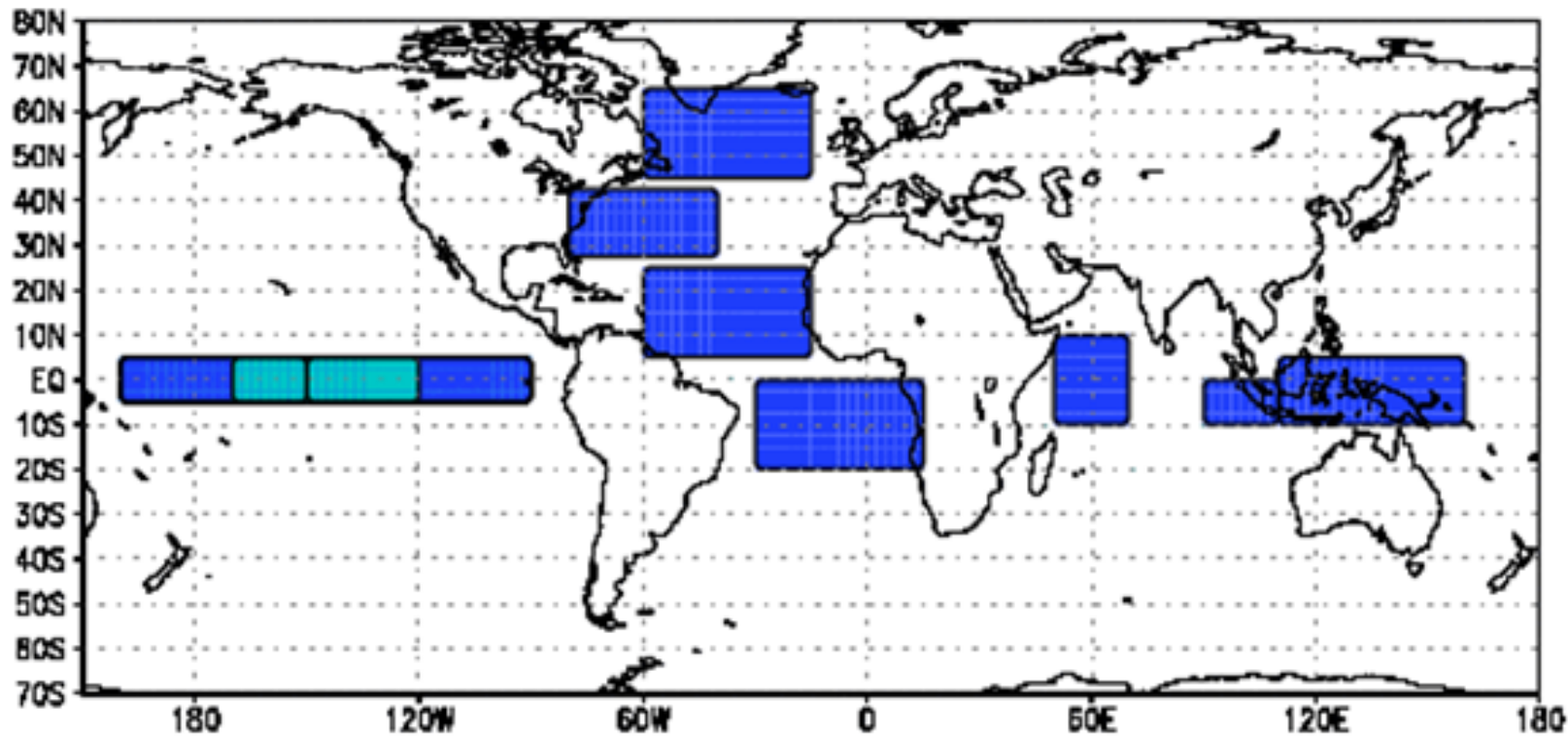
TNA SST ANOMALY



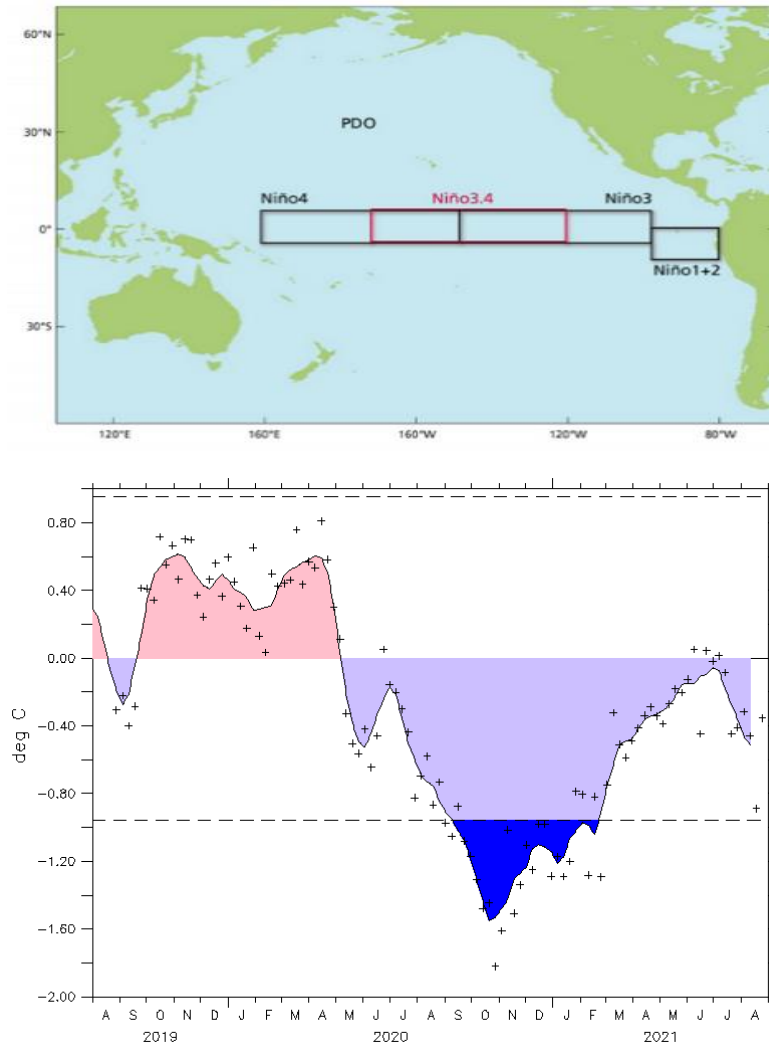
WTIO SST ANOMALY



MAJOR SST BOXES FOR THE SST DRIVER ANALYSIS



SEA SURFACE TEMPERATURE AREA AVERAGES - EQUATORIAL PACIFIC NINO3.4



SST anomalies (K) latitude= 5.0 to -5.0 longitude= 190.0 to 240.0
 Forecast initial date: 20210901
 Ensemble size: Forecast=51 Model climate=600 Analysis climate=24 Climate period: 1993-2016

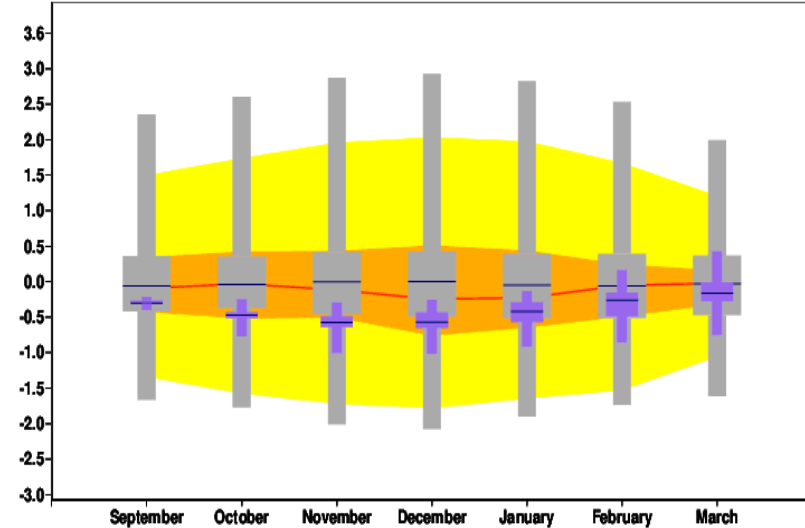


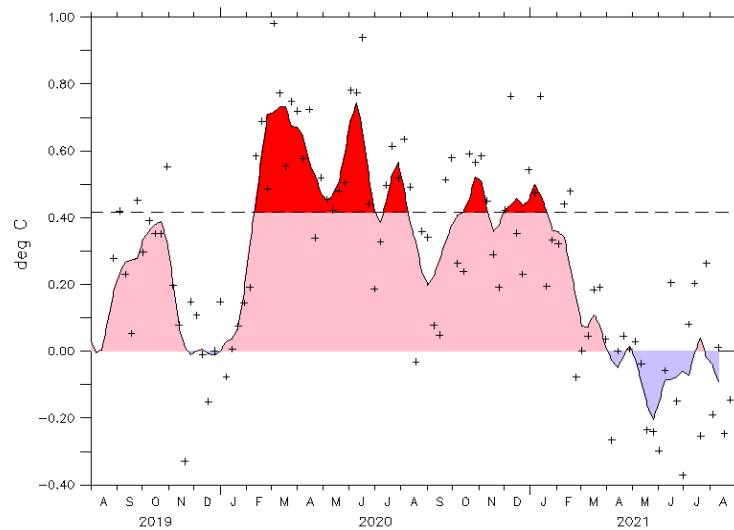
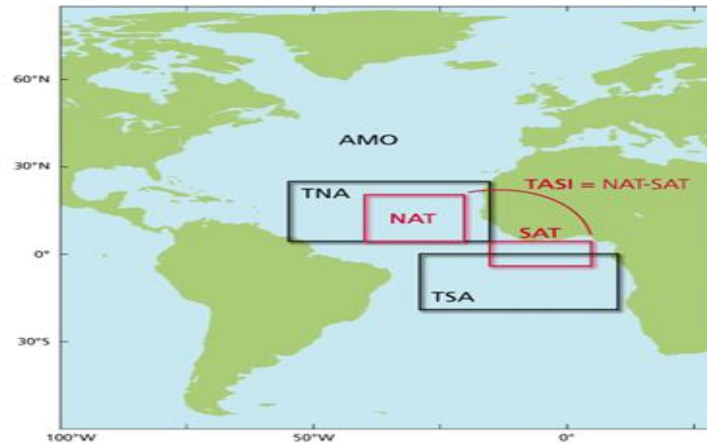
Figure :

- (a) Indian Ocean basin showing SWIO region
- (b) Observed SWIO time series
- (c) Sea Surface Temperature area averages - Long range forecast - SEAS5

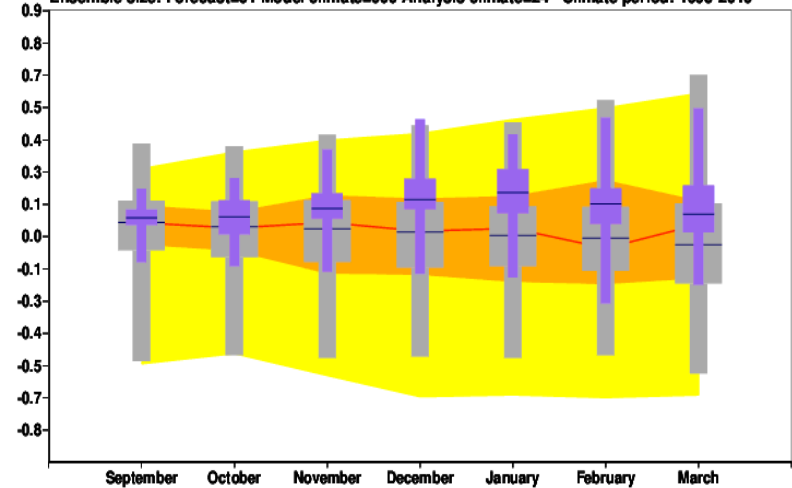


ATLANTIC BASIN INDEX

TROPICAL NORTH ATLANTIC: TNA

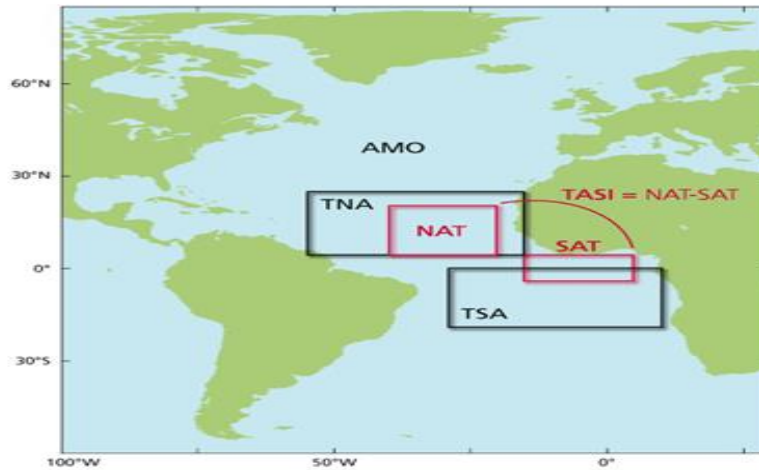


SST anomalies (K) latitude= 25.0 to 5.0 longitude= 300.0 to 345.0
 Forecast Initial date: 20210901
 Ensemble size: Forecast=51 Model climate=600 Analysis climate=24 Climate period: 1993-2016

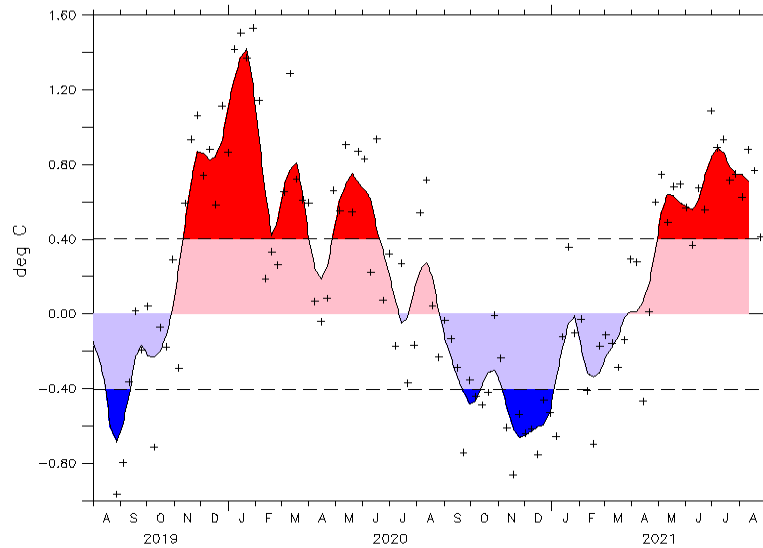
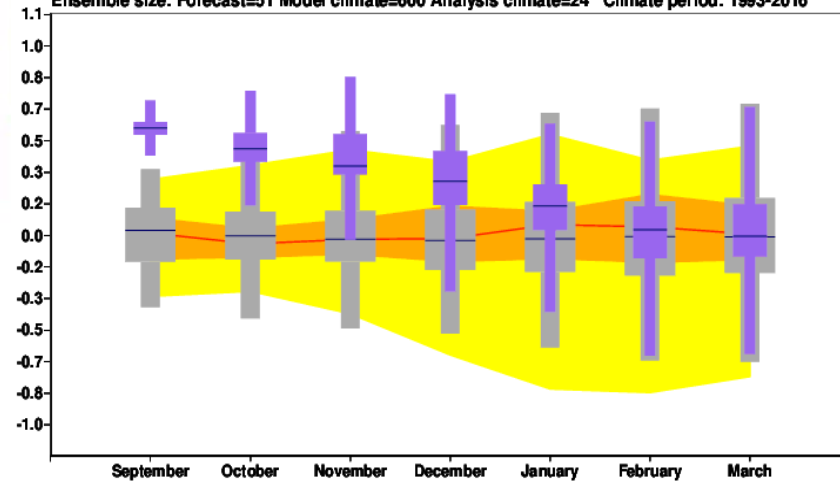


ATLANTIC BASIN INDEX

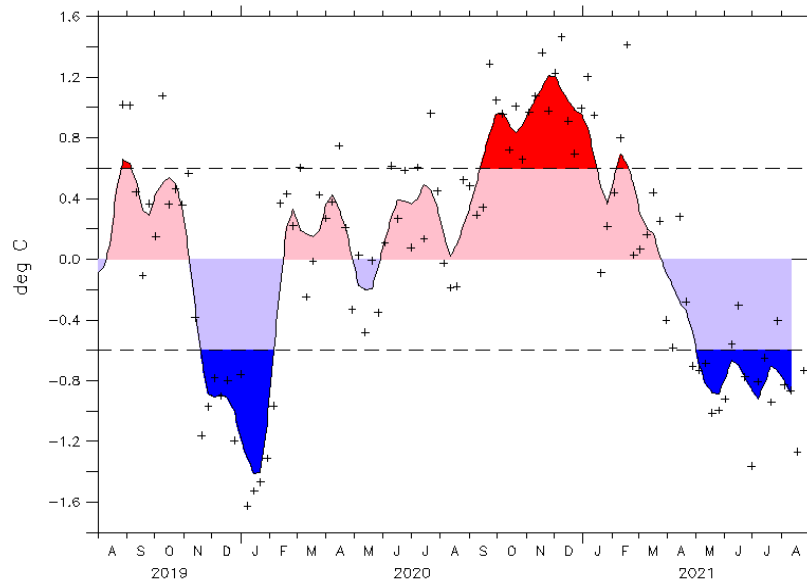
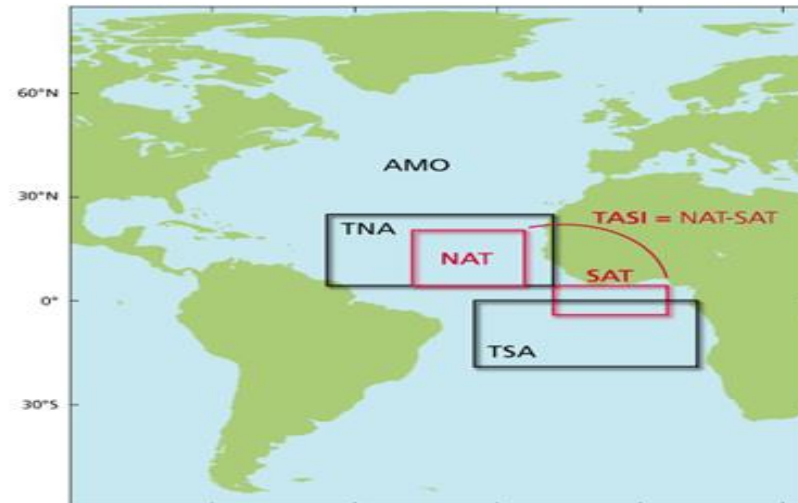
SOUTH ATLANTIC TROPICAL : SAT



SST anomalies (K) latitude= 0.0 to -20.0 longitude= 330.0 to 15.0
 Forecast initial date: 20210901
 Ensemble size: Forecast=51 Model climate=600 Analysis climate=24 Climate period: 1993-2016

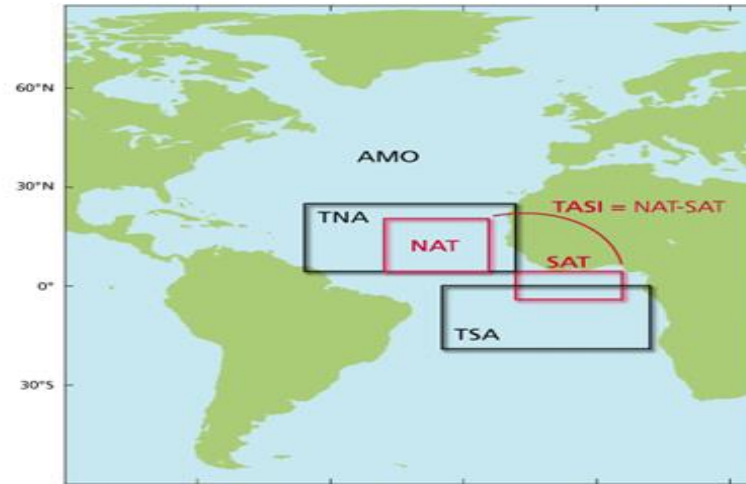


Tropical Atlantic SST index: TASI

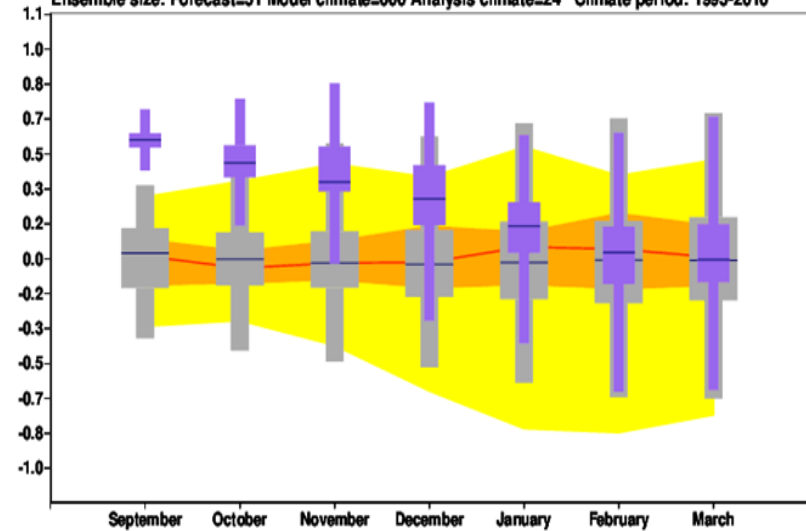
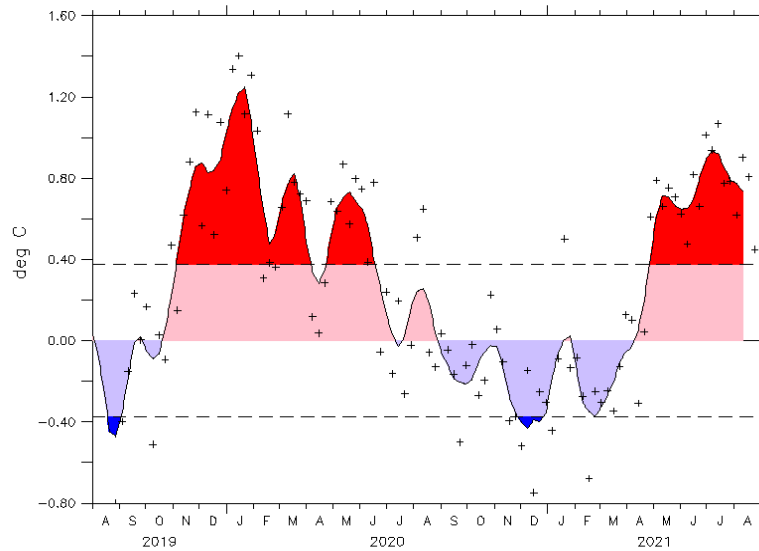


The Tropical Atlantic SST Index was near to below average since early of Mar 2021. Markedly below average condition was observed since end of Apr 2021. Persistence of these conditions are very likely during coming months of 2021

Tropical South Atlantic: TSA

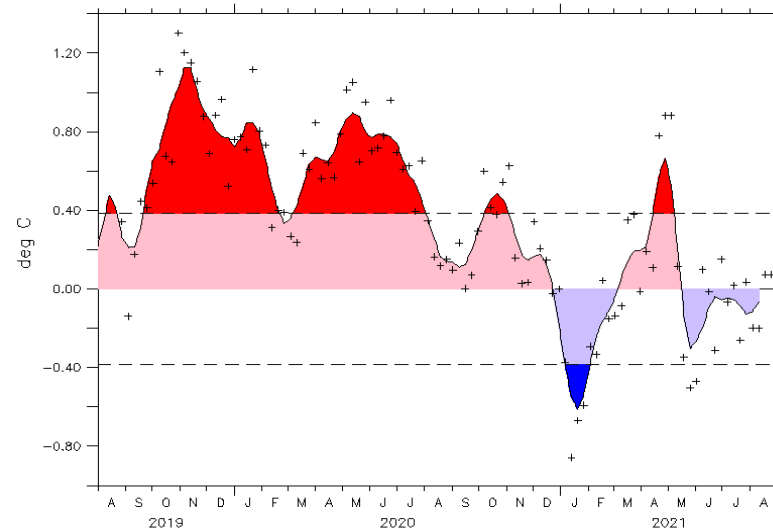
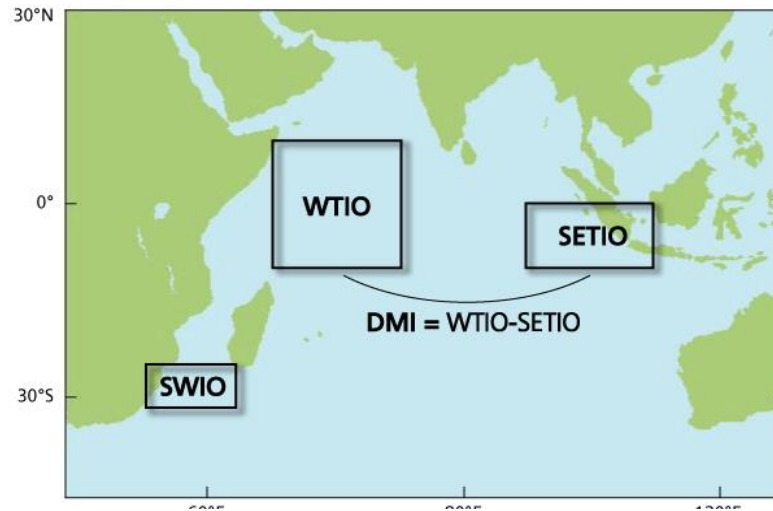


SST anomalies (K) latitude= 0.0 to -20.0 longitude= 330.0 to 15.0
 Forecast Initial date: 20210901
 Ensemble size: Forecast=51 Model climate=600 Analysis climate=24 Climate period: 1993-2016

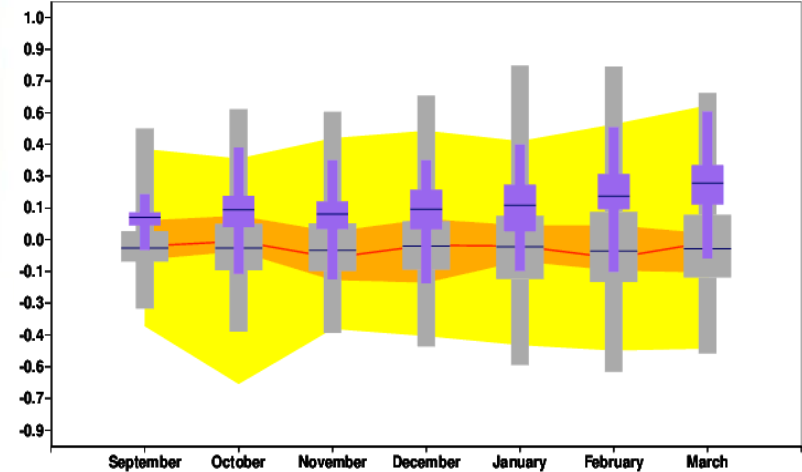


INDIAN BASIN INDEX

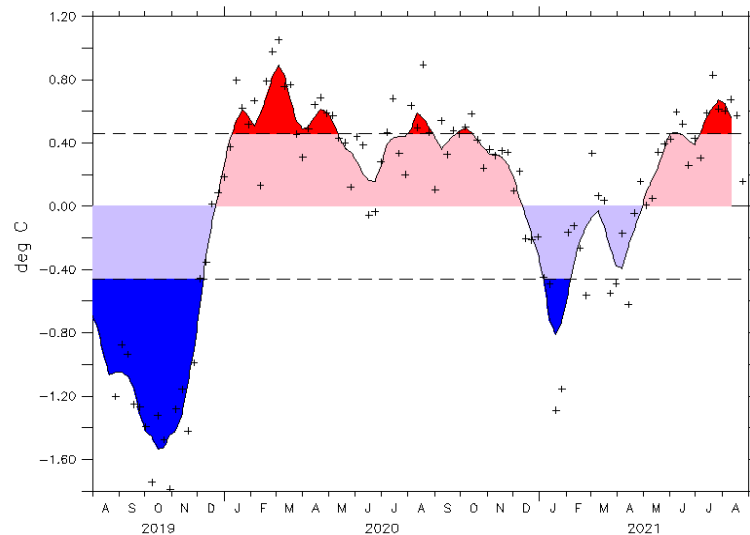
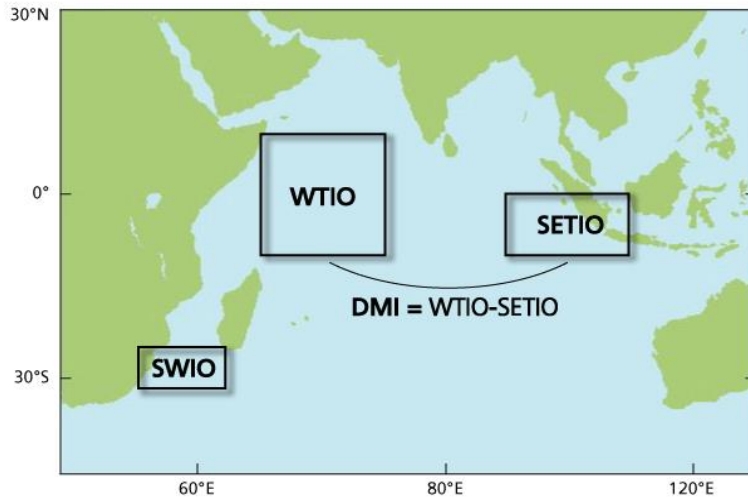
Western Tropical Indian Ocean (WTIO) SST index



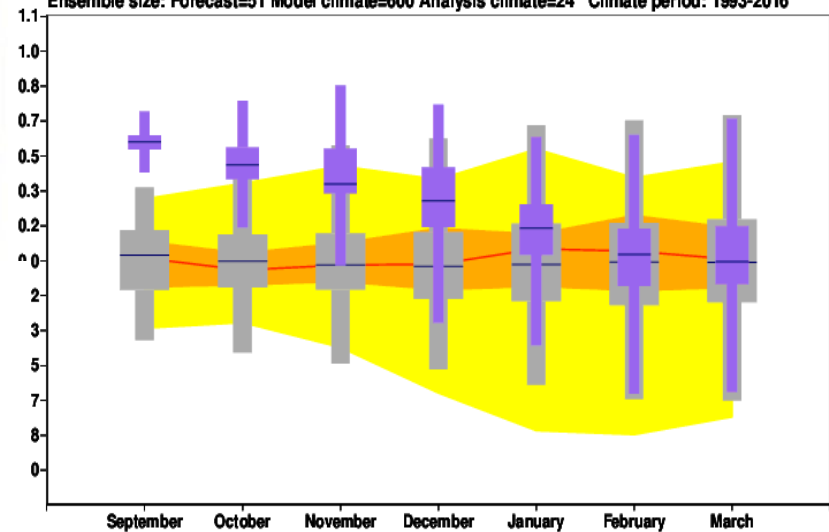
SST anomalies (K) latitude= 10.0 to -10.0 longitude= 50.0 to 70.0
 Forecast Initial date: 20210901
 Ensemble size: Forecast=51 Model climate=600 Analysis climate=24 Climate period: 1993-2016



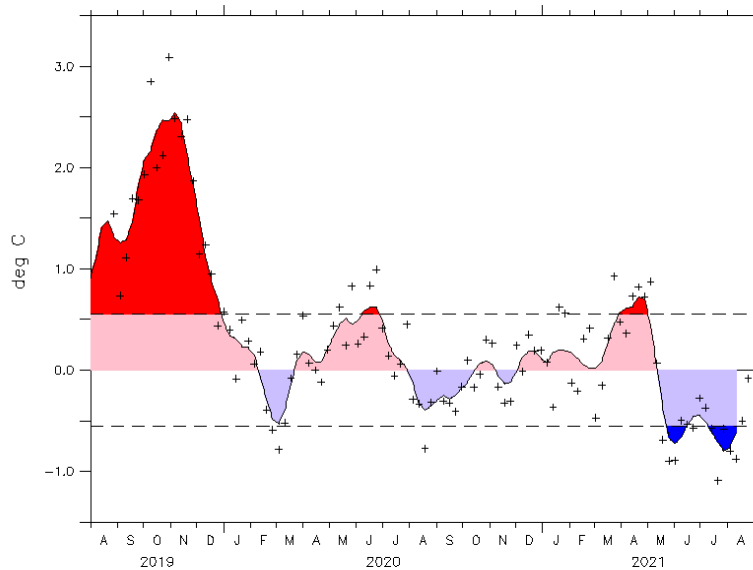
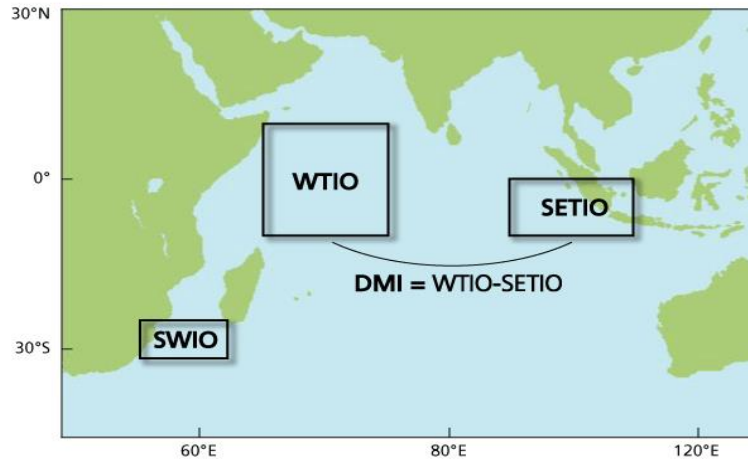
Southeastern Tropical Indian Ocean (SETIO) SST index



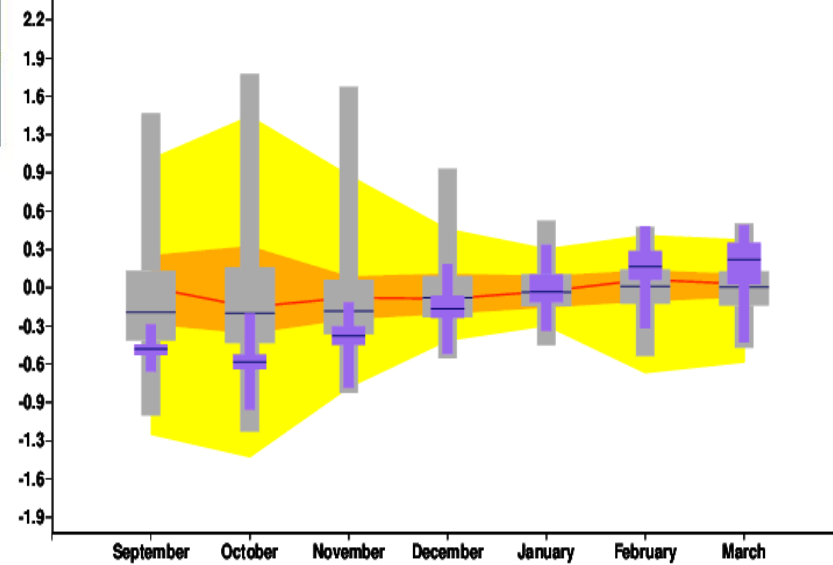
SST anomalies (K) latitude= 0.0 to -20.0 longitude= 330.0 to 15.0
 Forecast initial date: 20210901
 Ensemble size: Forecast=51 Model climate=600 Analysis climate=24 Climate period: 1993-2016



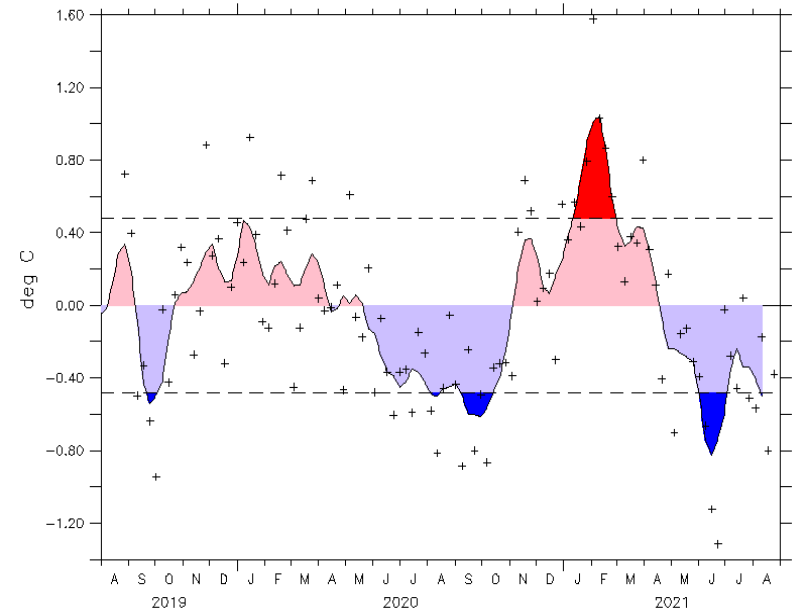
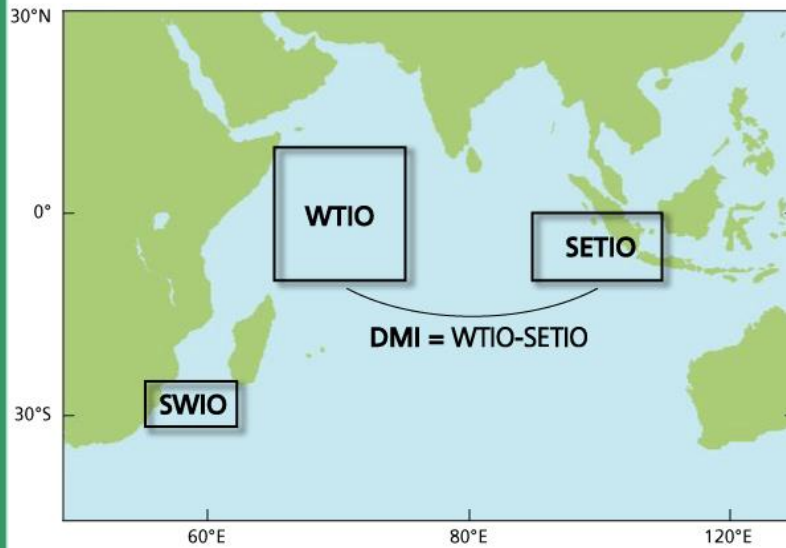
Dipole Mode Index (DMI)



SST anomalies (K) 10.0 to -10.0 50.0 to 70.0 minus 0.0 to -10.0 90.0 to 110.0
 Forecast Initial date: 20210901
 Ensemble size: Forecast=51 Model climate=600 Analysis climate=24 Climate period: 1993-2016



South Western Indian Ocean (SWIO) SST index

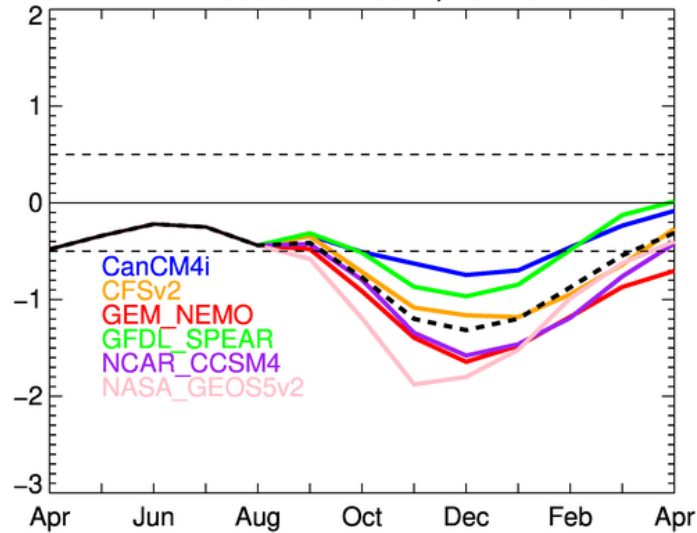


- Above average SSTs prevailed over SWIO Box during past 2 months (May and June 2021).
- Above average to near average SSTs condition are very likely during coming months of 2021

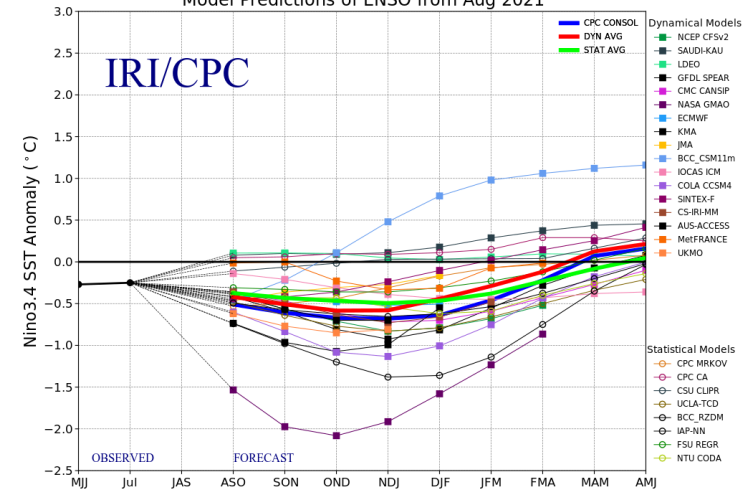
GRAPHIQUES DES PREVISIONS DE LA REGION ENSO (NINO3.4)



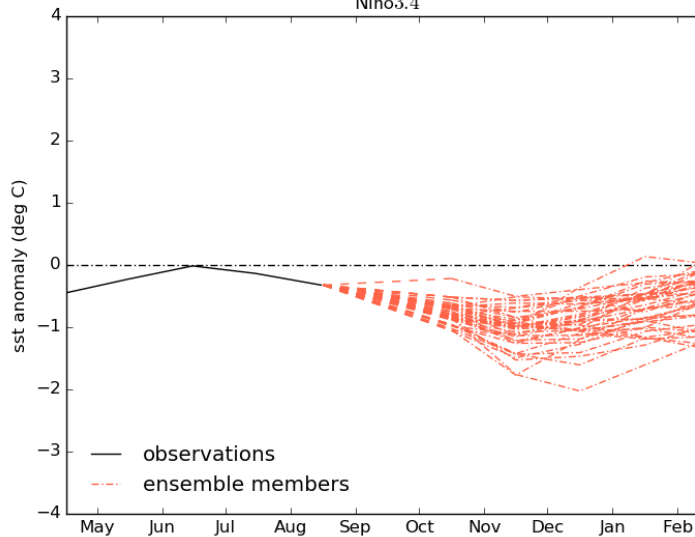
NMME scaled Nino3.4, IC=202109



Model Predictions of ENSO from Aug 2021

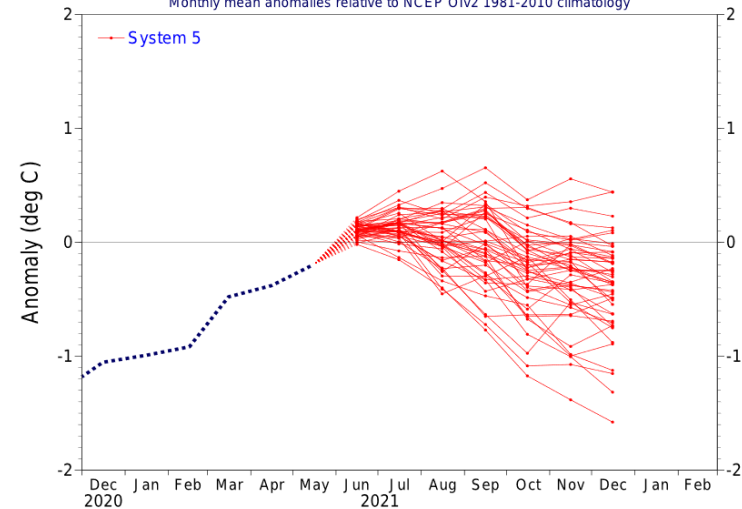


Nino3.4



NINO3.4 SST anomaly plume
ECMWF forecast from 1 Jun 2021

Monthly mean anomalies relative to NCEP OIv2 1981-2010 climatology

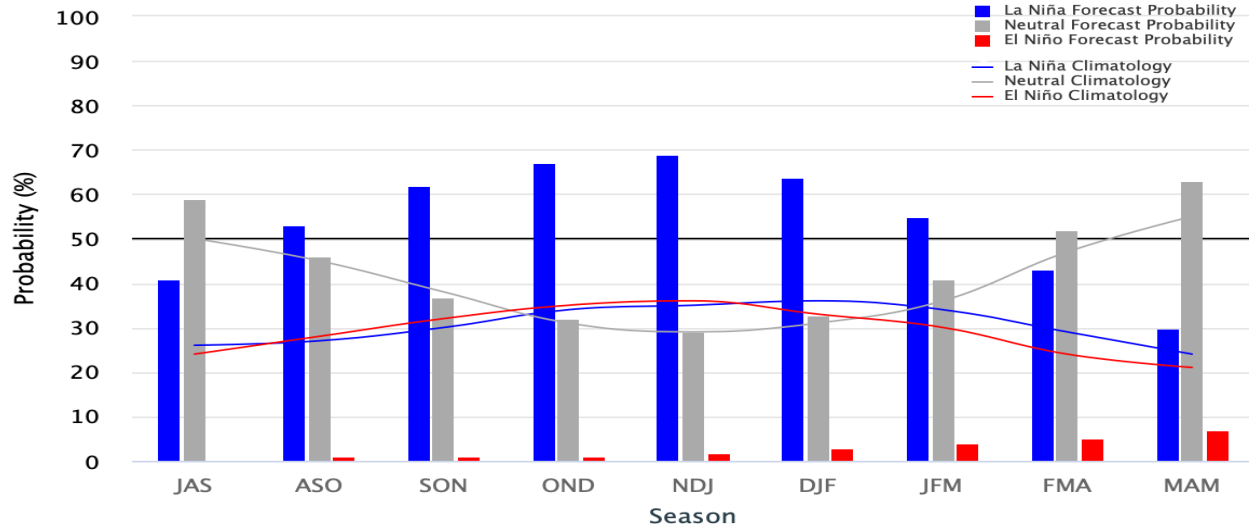


IRI/CPC Model-Based Probabilistic ENSO Forecast

Early-August 2021 CPC/IRI Official Probabilistic ENSO Forecasts

ENSO state based on NINO3.4 SST Anomaly

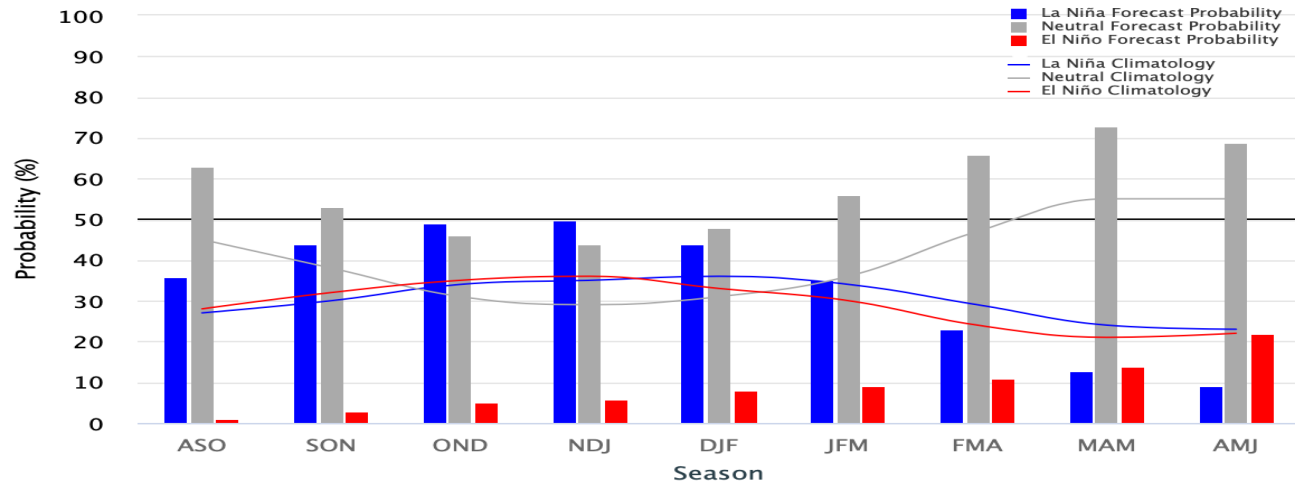
Neutral ENSO: -0.5°C to 0.5°C



Mid-August 2021 IRI/CPC Model-Based Probabilistic ENSO Forecasts

ENSO state based on NINO3.4 SST Anomaly

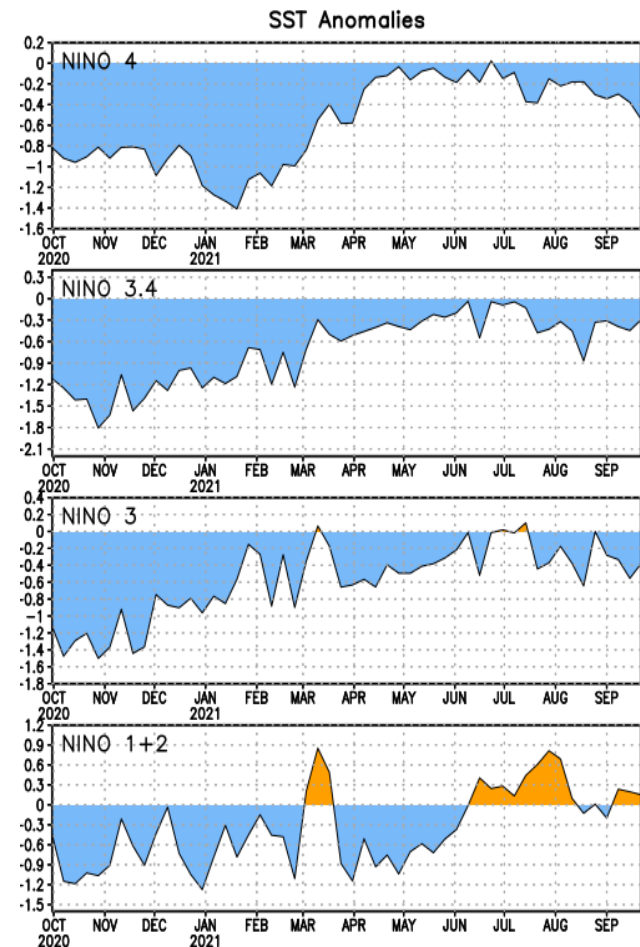
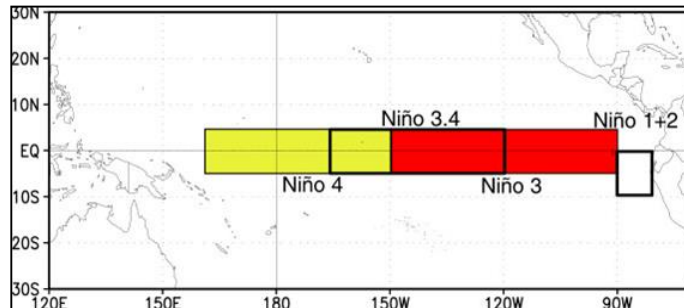
Neutral ENSO: -0.5°C to 0.5°C



Niño Region SST Departures (°C) Recent Evolution

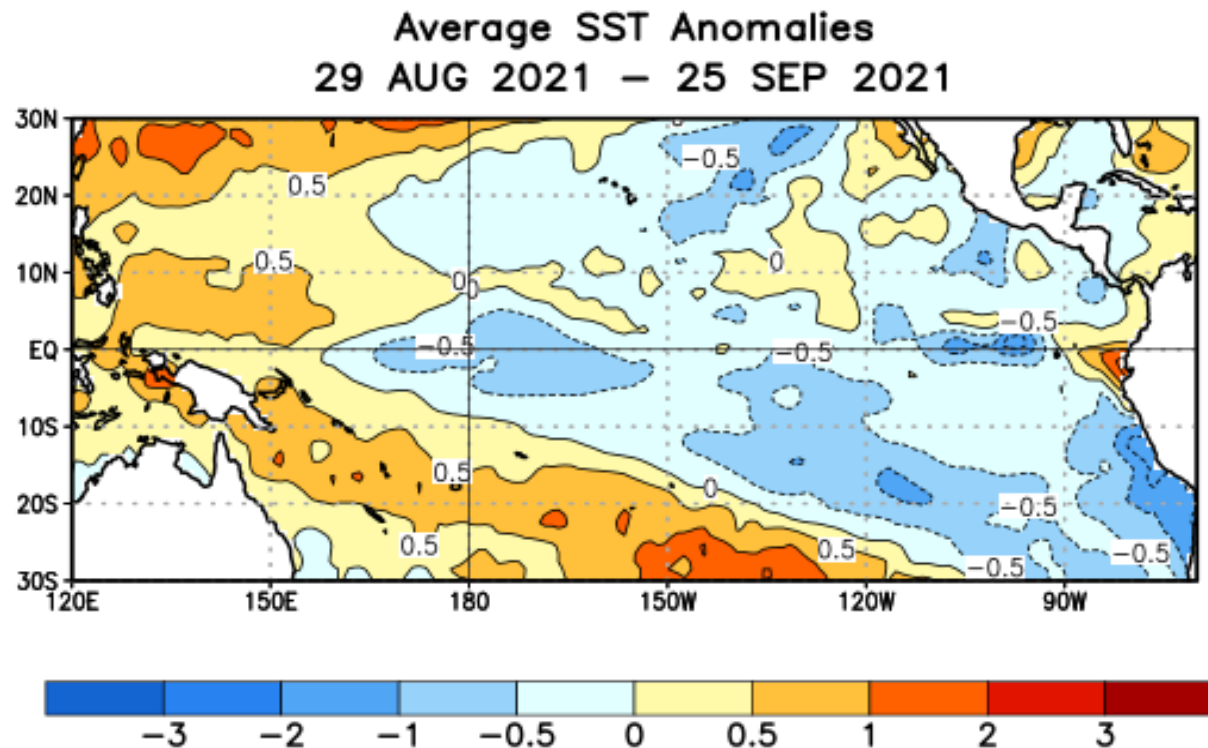
The latest weekly
SST departures are:

Niño 4	-0.5°C
Niño 3.4	-0.3°C
Niño 3	-0.4°C
Niño 1+2	0.2°C



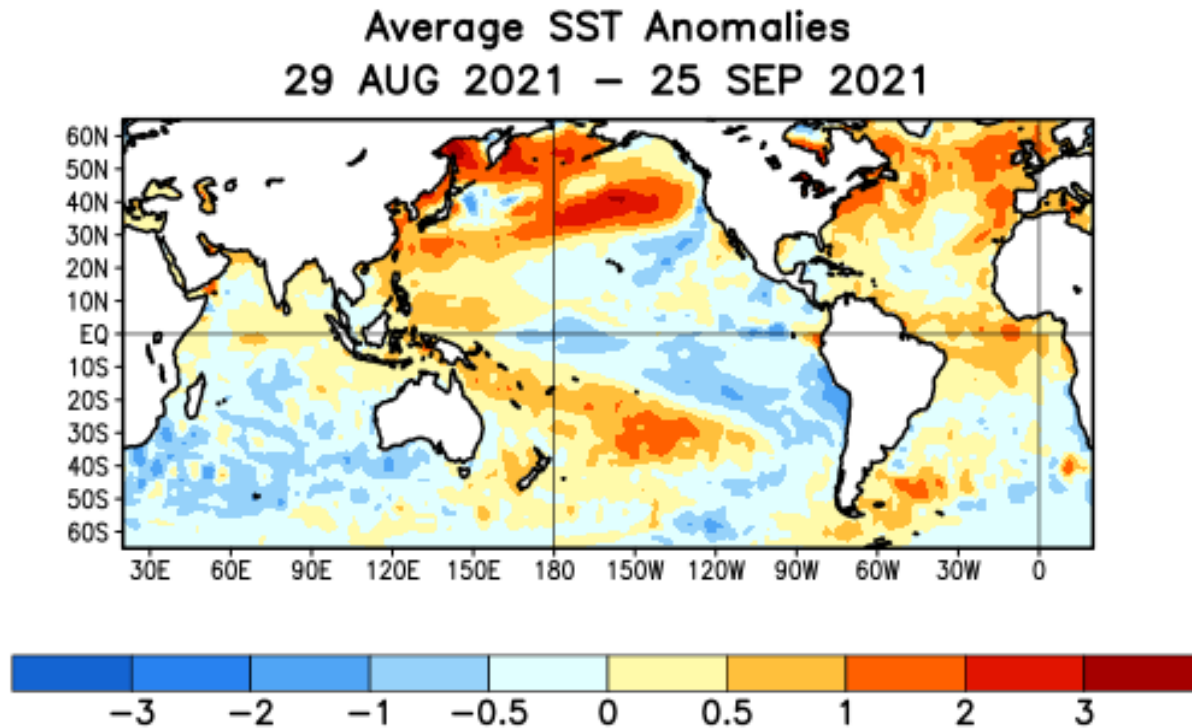
SST Departures ($^{\circ}\text{C}$) in the Tropical Pacific During the Last Four Weeks

In the last four weeks, equatorial SSTs were near-to-below average across most of the equatorial Pacific Ocean, and were above average in the western and far eastern Pacific Ocean.



Global SST Departures ($^{\circ}\text{C}$) During the Last Four Weeks

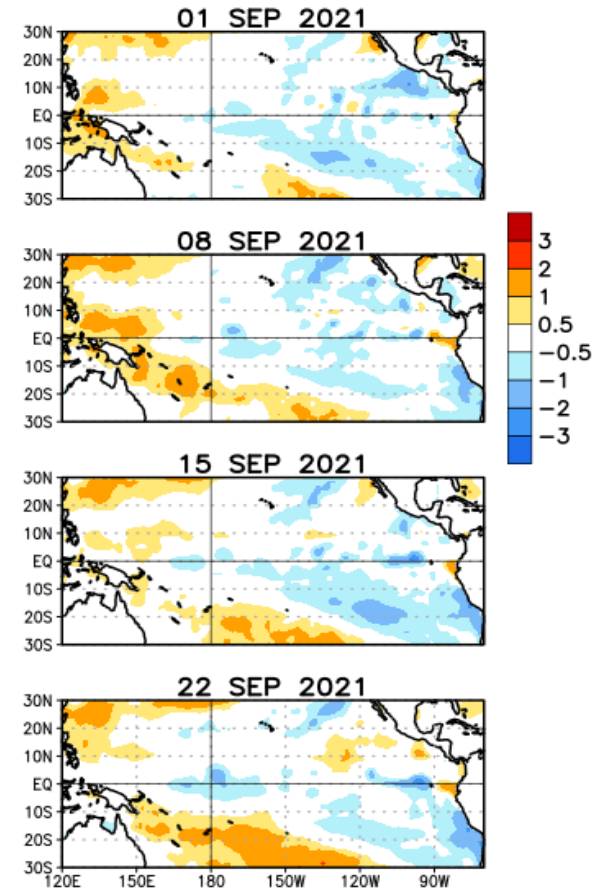
During the last four weeks, equatorial SSTs were near-to-below average across most of the equatorial Pacific Ocean. Equatorial SSTs were above average in the western and far eastern Pacific Ocean and Atlantic Ocean.



Weekly SST Departures during the Last Four Weeks

During the last 4 weeks, SSTs have been mostly near-to-below average in the central and east-central Pacific Ocean.

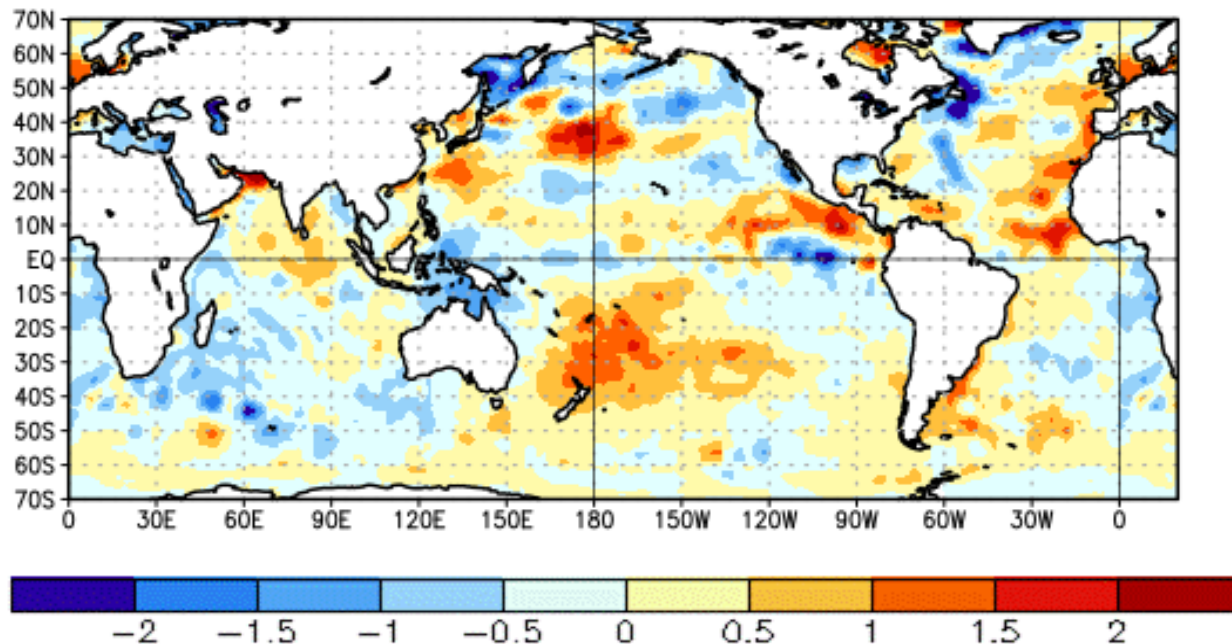
Weekly SST Anomalies (DEG C)



Change in Weekly SST Departures over the Last Four Weeks

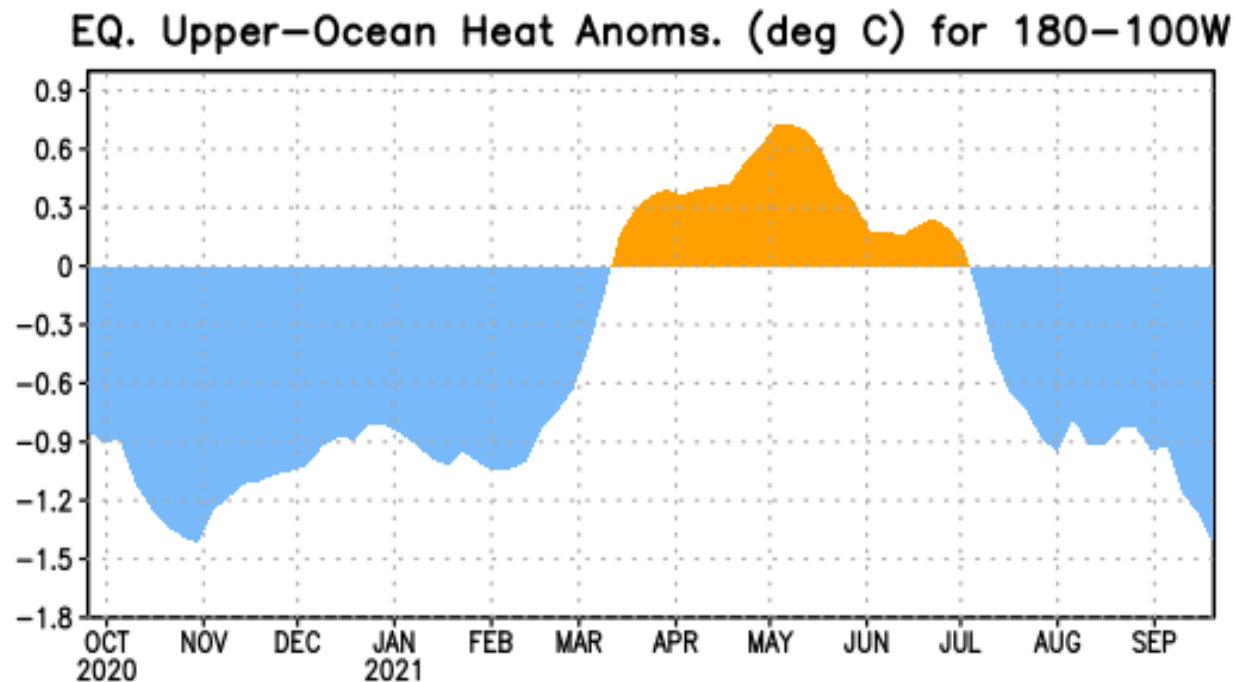
During the last four weeks, the changes in equatorial SST anomalies were mostly negative across the Pacific Ocean.

Change in Weekly SST Anoms (°C)
22SEP2021 minus 25AUG2021



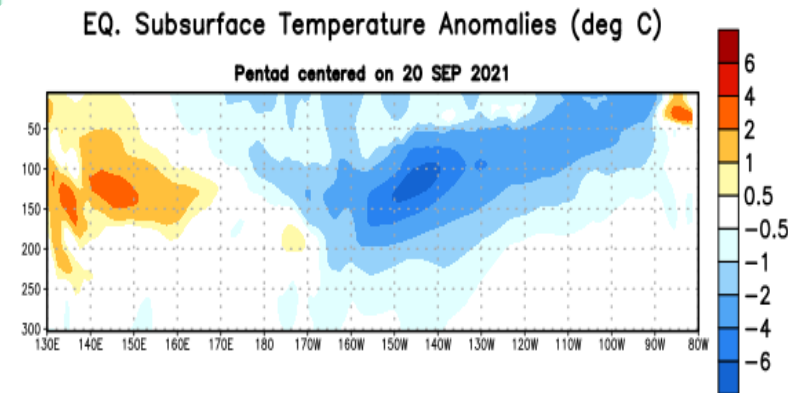
Central and Eastern Pacific Upper-Ocean (0-300 m) Weekly Average Temperature Anomalies

Negative subsurface temperature anomalies persisted into March 2021. From mid-March to early July 2021, subsurface temperature was above average. Since mid-May 2021, positive temperature anomalies have weakened. Negative anomalies strengthened in July and again in September



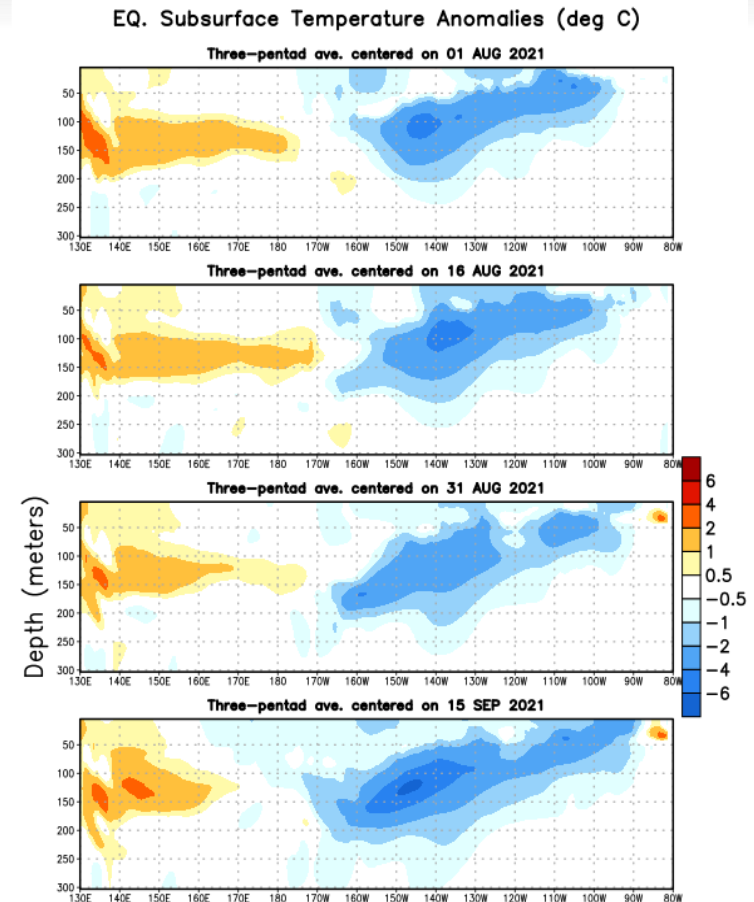
Sub-Surface Temperature Departures in the Equatorial Pacific

In the last two months, negative subsurface anomalies have strengthened in the east-central Pacific Ocean.



Most recent pentad analysis

Positive subsurface temperature anomalies remain at depth in the western Pacific Ocean. In the last month, positive anomalies have also emerged near the surface in the far eastern Pacific Ocean.



Historical El Niño and La Niña Episodes Based on the ONI computed using ERSST.v5

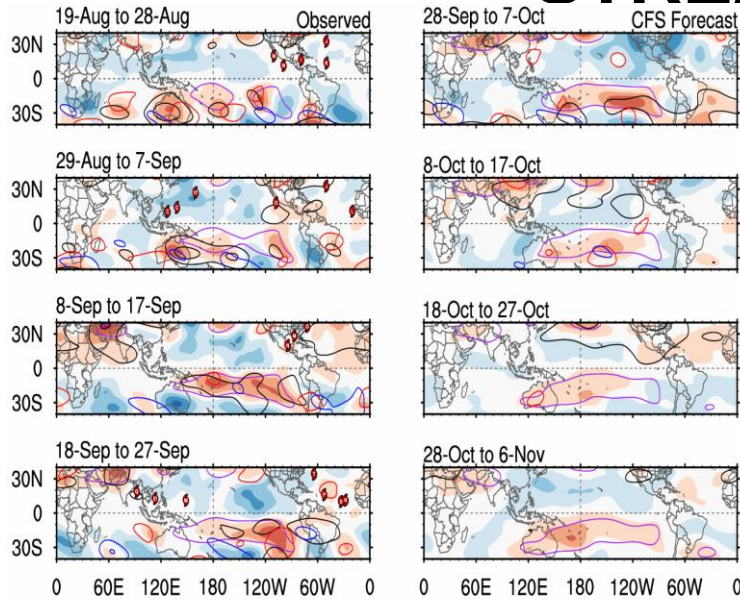
Recent Pacific warm (red) and cold (blue) periods based on a threshold of ± 0.5 °C for the Oceanic Niño Index (ONI) [3 month running mean of ERSST.v5 SST anomalies in the Niño 3.4 region (5N-5S, 120-170W)]. For historical purposes, periods of below and above normal SSTs are colored in blue and red when the threshold is met for a minimum of 5 consecutive over-lapping seasons.

The ONI is one measure of the El Niño-Southern Oscillation, and other indices can confirm whether features consistent with a coupled ocean-atmosphere phenomenon accompanied these periods. The complete table going back to DJF 1950 can be found [here](#).

Year	DJF	JFM	FMA	MAM	AMJ	MJJ	JJA	JAS	ASO	SON	OND	NDJ
2009	-0.8	-0.8	-0.6	-0.3	0.0	0.3	0.5	0.6	0.7	1.0	1.4	1.6
2010	1.5	1.2	0.8	0.4	-0.2	-0.7	-1.0	-1.3	-1.6	-1.6	-1.6	-1.6
2011	-1.4	-1.2	-0.9	-0.7	-0.6	-0.4	-0.5	-0.6	-0.8	-1.0	-1.1	-1.0
2012	-0.9	-0.7	-0.6	-0.5	-0.3	0.0	0.2	0.4	0.4	0.3	0.1	-0.2
2013	-0.4	-0.4	-0.3	-0.3	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.3
2014	-0.4	-0.5	-0.3	0.0	0.2	0.2	0.0	0.1	0.2	0.5	0.6	0.7
2015	0.5	0.5	0.5	0.7	0.9	1.2	1.5	1.9	2.2	2.4	2.6	2.6
2016	2.5	2.1	1.6	0.9	0.4	-0.1	-0.4	-0.5	-0.6	-0.7	-0.7	-0.6
2017	-0.3	-0.2	0.1	0.2	0.3	0.3	0.1	-0.1	-0.4	-0.7	-0.8	-1.0
2018	-0.9	-0.9	-0.7	-0.5	-0.2	0.0	0.1	0.2	0.5	0.8	0.9	0.8
2019	0.7	0.7	0.7	0.7	0.5	0.5	0.3	0.1	0.2	0.3	0.5	0.5
2020	0.5	0.5	0.4	0.2	-0.1	-0.3	-0.4	-0.6	-0.9	-1.2	-1.3	-1.2
2021	-1.0					-0.4	-0.4					

The Weather/Climate Drivers (Observed and Forecast)

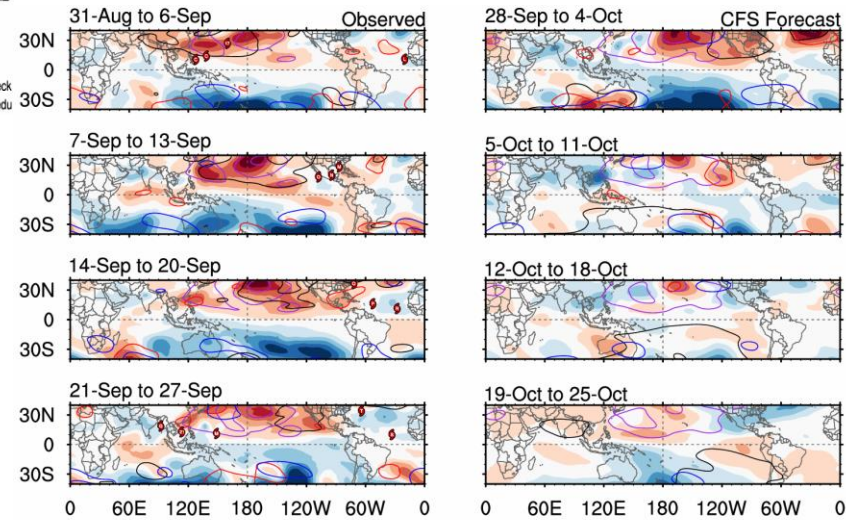
STREAM FUNCTION



10-day PSI200 with CFS forecasts

Tue 2021-09-28 10:19 UTC

— MJO — Kelvin x2
— Low — ER
Contours at 4, 12 x10^6 m^2 s^-1
Carl Schreck
carl_schreck@ncsu.edu

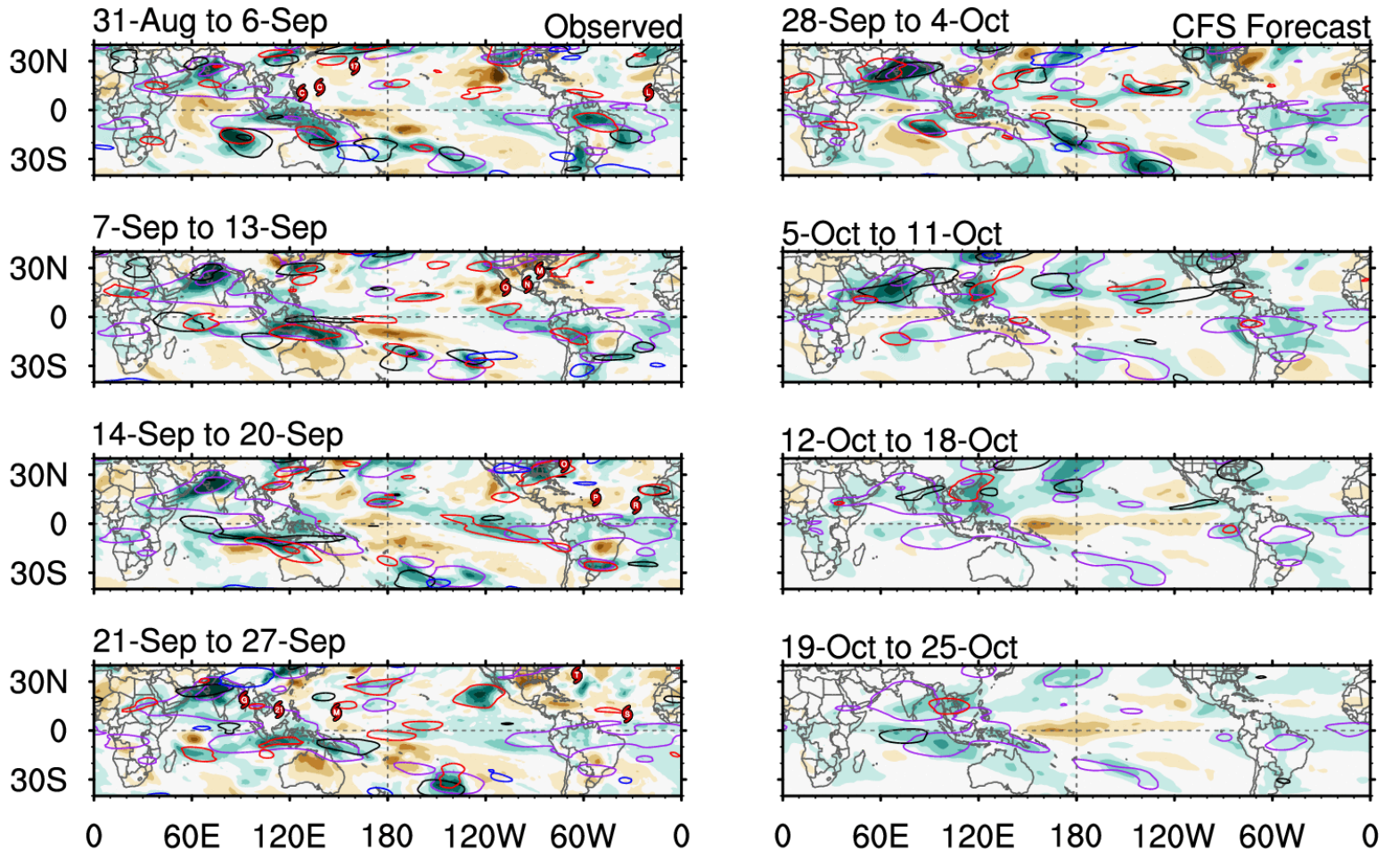


7-day PSI850 with CFS forecasts

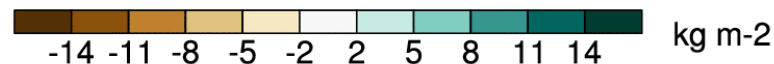
Tue 2021-09-28 10:15 UTC

— MJO — Kelvin x2
— Low — ER
Contours at 2, 6 x10^6 m^2 s^-1
Carl Schreck
carl_schreck@ncsu.edu

OBSERVED AND FORECASTED WATER PRECIPITABLE



ncics.org/mjo



7-day PWAT with CFS forecasts

Tue 2021-09-28 1016 UTC

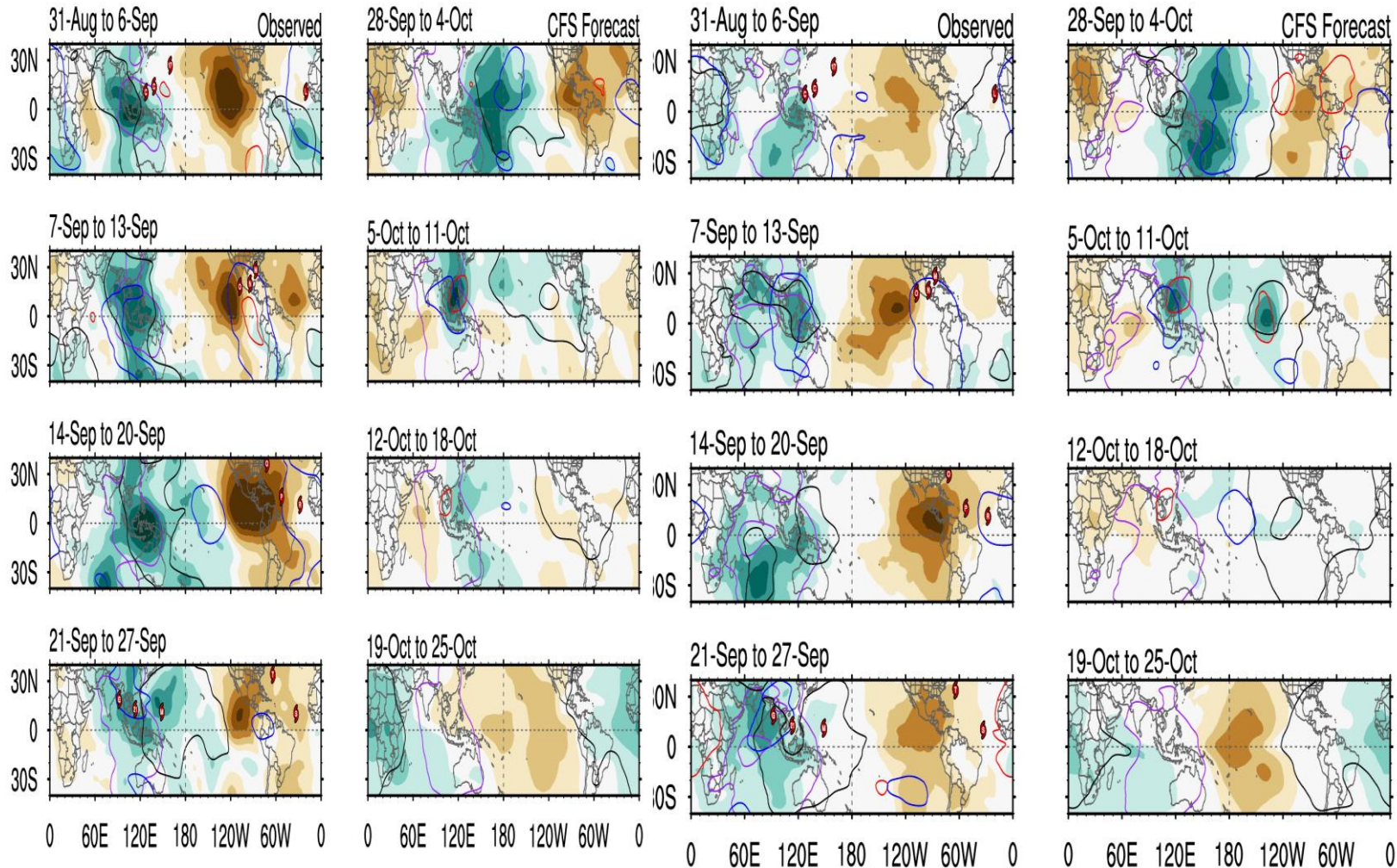
— MJO — Kelvin x2
— Low — ER

Contours at 3, 9 kg m⁻²

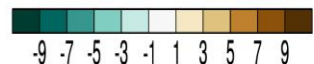
Carl Schreck
carl_schreck@ncsu.edu



VELOCITY POTENTIAL



noics.org/mjo



7-day CHI200 with CFS forecasts

Tue 2021-09-28 10:16 UTC

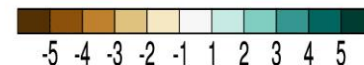
— MJO — Kelvin x2
— Low — ER

Contours at -2, -6 x10^6 m2 s-1

Carl Schreck
carl_schreck@ncsu.edu



noics.org/mjo



7-day CHI850 with CFS forecasts

Tue 2021-09-28 10:16 UTC

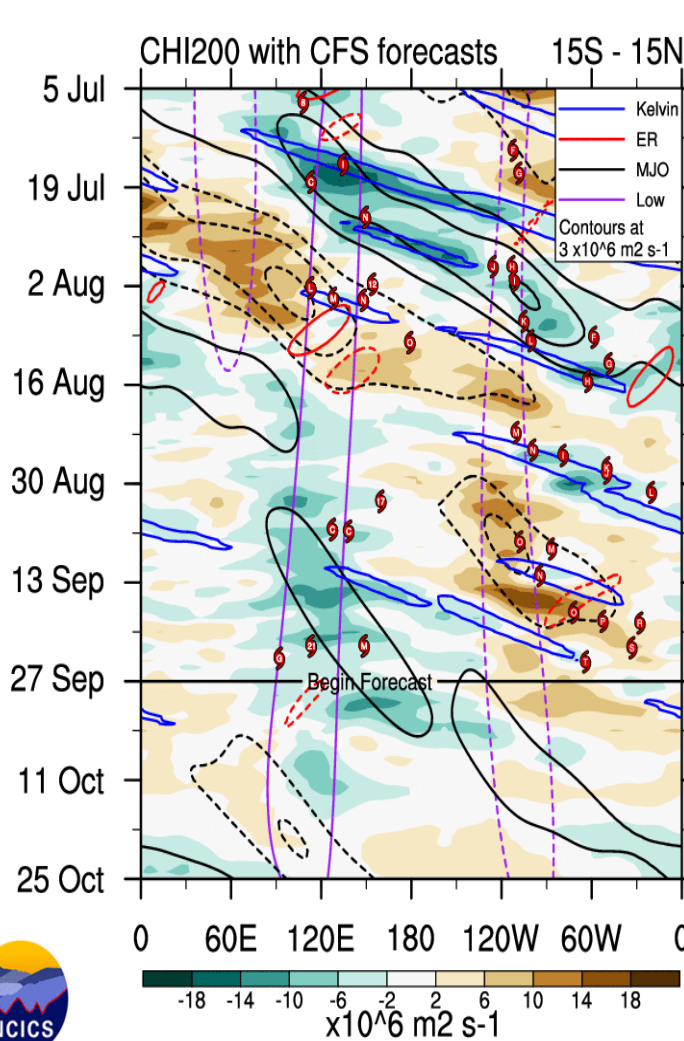
— MJO — Kelvin x2
— Low — ER

Contours at 1, 3 x10^6 m2 s-1

Carl Schreck
carl_schreck@ncsu.edu



Hovmöllers Diagram 15N-15S



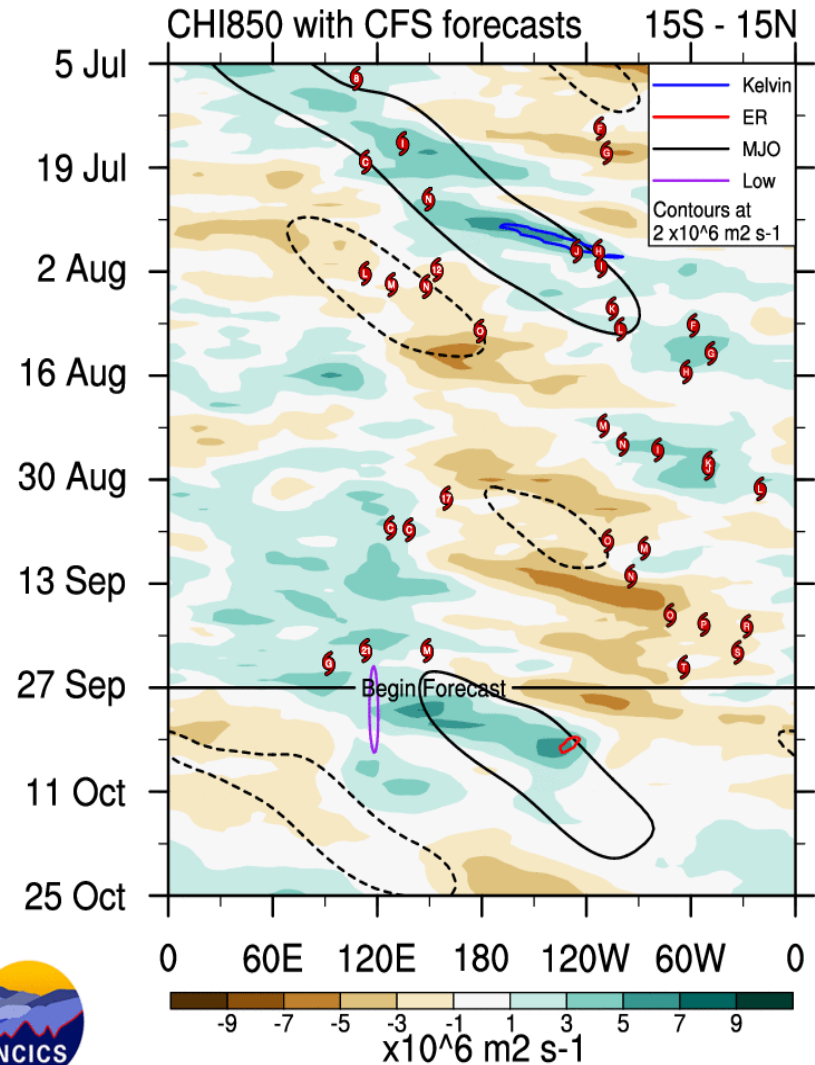
ncics.org/mjo

Tue 2021-09-28 1011 UTC

Carl Sch
carl_schreck@ncsu



ncics.org/mjo

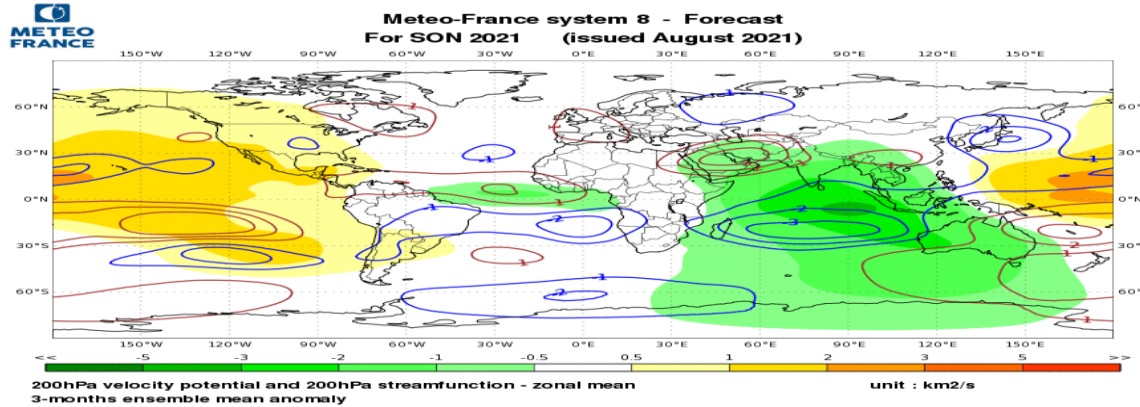


Carl Schreck

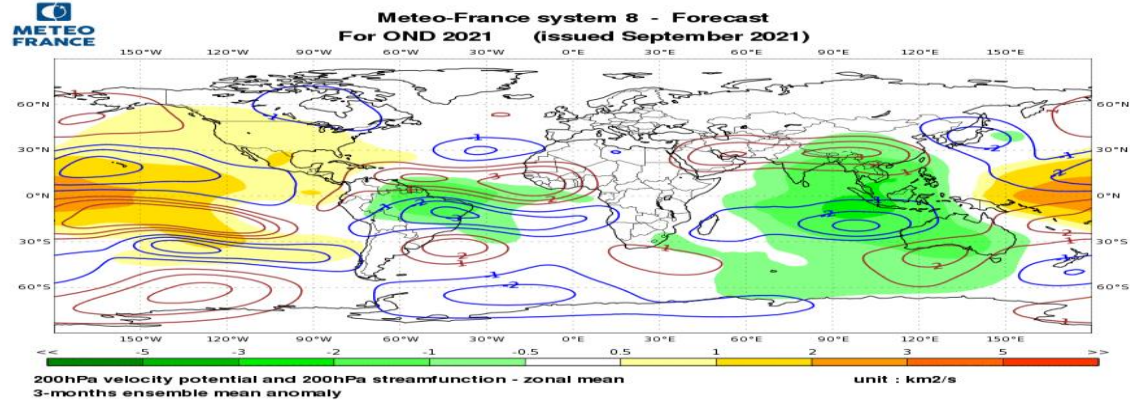
carl_schreck@ncsu.edu

Tue 2021-09-28 1011 UTC

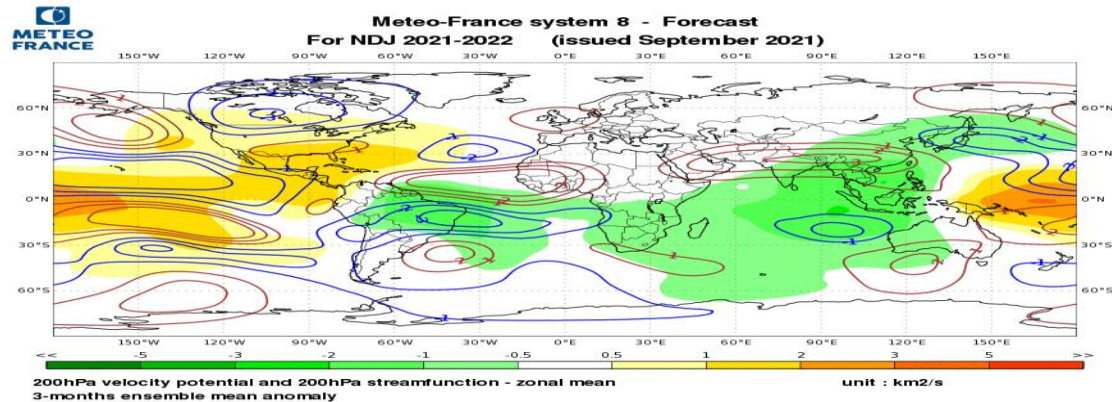
SON_2021



OND_2021

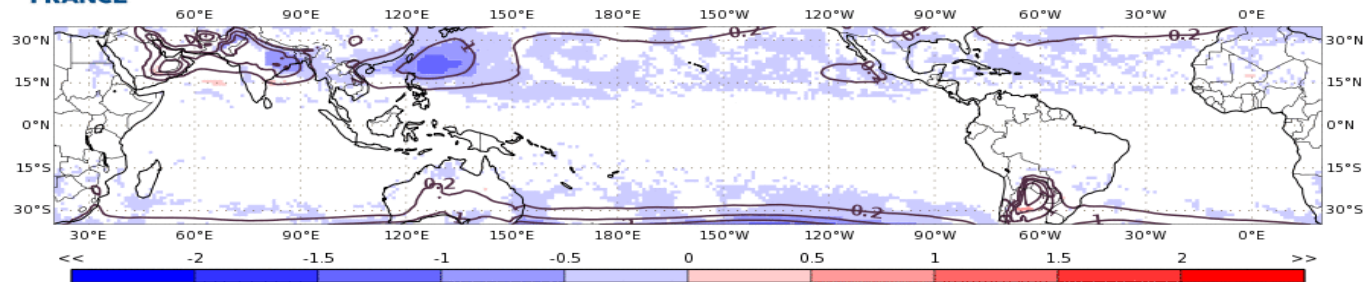


NDJ_2021/2022





Meteo-France system 8 - Forecast For SON 2021 (issued August 2021)



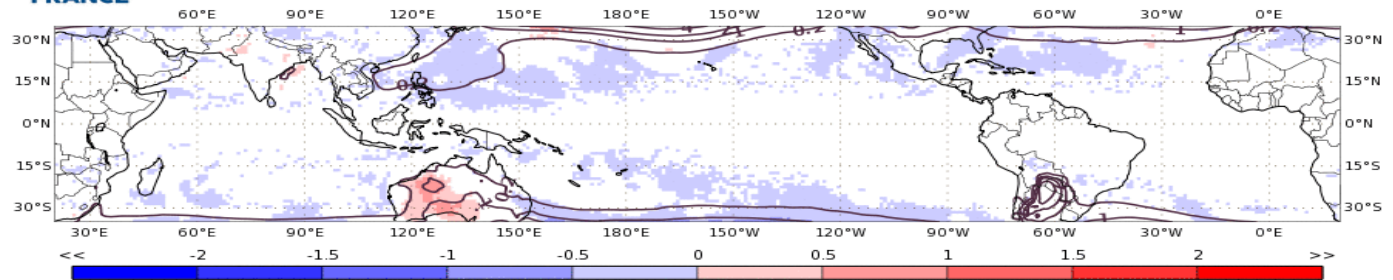
mean sea level pressure lower than 1000hPa

unit : % (white = no signal)

3-months ensemble mean anomaly and its climatology contour



Meteo-France system 8 - Forecast For OND 2021 (issued September 2021)



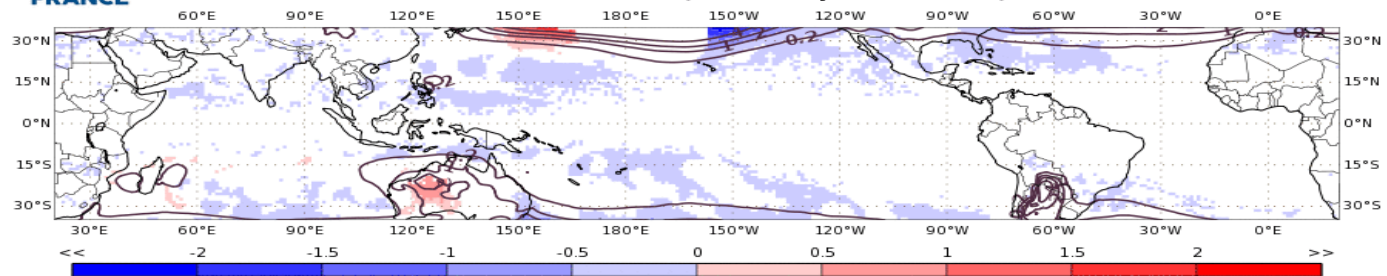
mean sea level pressure lower than 1000hPa

unit : % (white = no signal)

3-months ensemble mean anomaly and its climatology contour



Meteo-France system 8 - Forecast For NDJ 2021-2022 (issued September 2021)



mean sea level pressure lower than 1000hPa

unit : % (white = no signal)

3-months ensemble mean anomaly and its climatology contour

DRY AND WET YEAR

SELECTION OF THE DRY YEARS



Station	Lon	Lat	1991	1996	1997	2001	MEAN_DRY_YEAR
ABONG-MBANG	13.2	3.96666	102.506302	78.7602397	55.5527657	91.6869938	82.1265753
ALINDAO	21.2	5.05	104.978742	82.4269958	40.8762089	91.490595	79.9431354
AM-TIMAN	20.28333	11.03333	103.888945	106.68885	99.3735839	60.6945652	92.6614859
BAFIA	11.25	4.73333	93.2032314	76.7135865	66.8654482	90.5362692	81.8296338
BAFWASENDE	27.13333	1.08333	90.776714	80.448972	98.2851609	106.18602	93.9242166
BAIA-DOS-TIGRES	11.71666	-16.6	29.0917851	5.99512198	14.7720967	16.0082622	16.4668165
BAMBARI	20.65	5.85	104.266634	87.4002095	41.6065943	78.8079637	78.0203503
BAMENDA	10.11666	6.05	76.8219818	80.6935502	108.296026	94.235327	90.0117213
BANDUNDU	17.35	-3.3	72.7958825	72.2713671	76.4921021	115.612667	84.2930046
BANGASSOU	22.83333	4.73333	105.798471	74.2972086	54.4654685	95.1466965	82.4269611
BANGUI	18.51666	4.4	94.9998164	89.8907013	43.2227155	84.5148966	78.1570325
BANYO	11.81666	6.78333	84.6717961	85.779268	84.1943184	77.8769079	83.1305726
BASANKUSU	19.8	1.21666	93.6291827	83.0331088	59.6205127	146.860446	95.7858125
BASOKO	23.6	1.25	99.7801312	79.4867203	77.0102591	114.868905	92.7865038
BATA-RIO-MUNI	9.8	1.9	73.3959335	65.7258758	46.5183661	83.2711787	67.2278385
BATOURI	14.36666	4.46666	106.081477	82.9048562	49.0312421	84.867891	80.7213666
BERBERATI	15.8	4.25	102.33888	85.0892355	41.1241277	84.5728315	78.2812687
BERTOUA	13.73333	4.6	107.537136	82.0307369	51.8754348	84.3530309	81.4490847
BETARE-OYA	14.06666	5.6	115.696351	88.1936285	44.1322512	67.6197421	78.9104932
BIE-SILVA-PORTO	16.95	-12.38333	99.7278325	58.7424427	82.4687657	75.95775	79.2241977
BIRAO	22.78333	10.28333	83.0301244	92.4140733	55.3875361	51.9822348	70.7034921
BITAM	11.48333	2.08333	84.5439943	75.0265994	47.0620188	92.1937857	74.7065996
BOENDE	20.85	-0.21666	91.2390886	84.584869	69.9246914	126.989549	93.1845496
BOMA	13.1	-5.85	63.646856	57.396596	128.723774	59.1660201	77.2333116
BONDO	23.81666	3.8	114.651673	70.932245	65.4915646	100.071601	87.7867708
BOSSANGO	17.43333	6.48333	116.830297	98.0364858	41.1115751	63.0840268	79.7655963

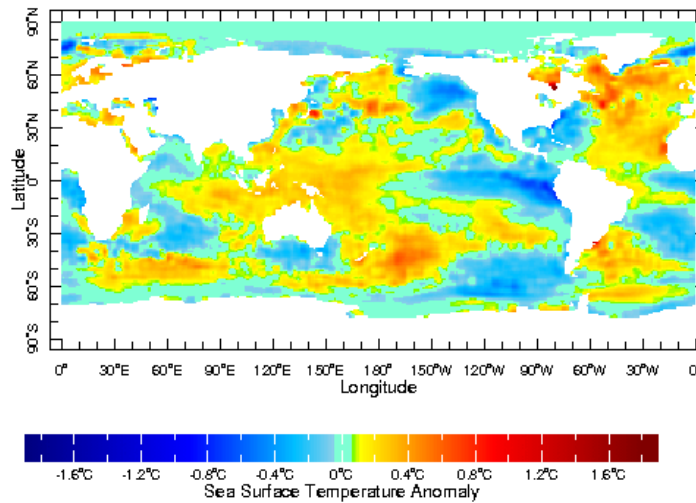
SELECTION OF THE WET YEARS



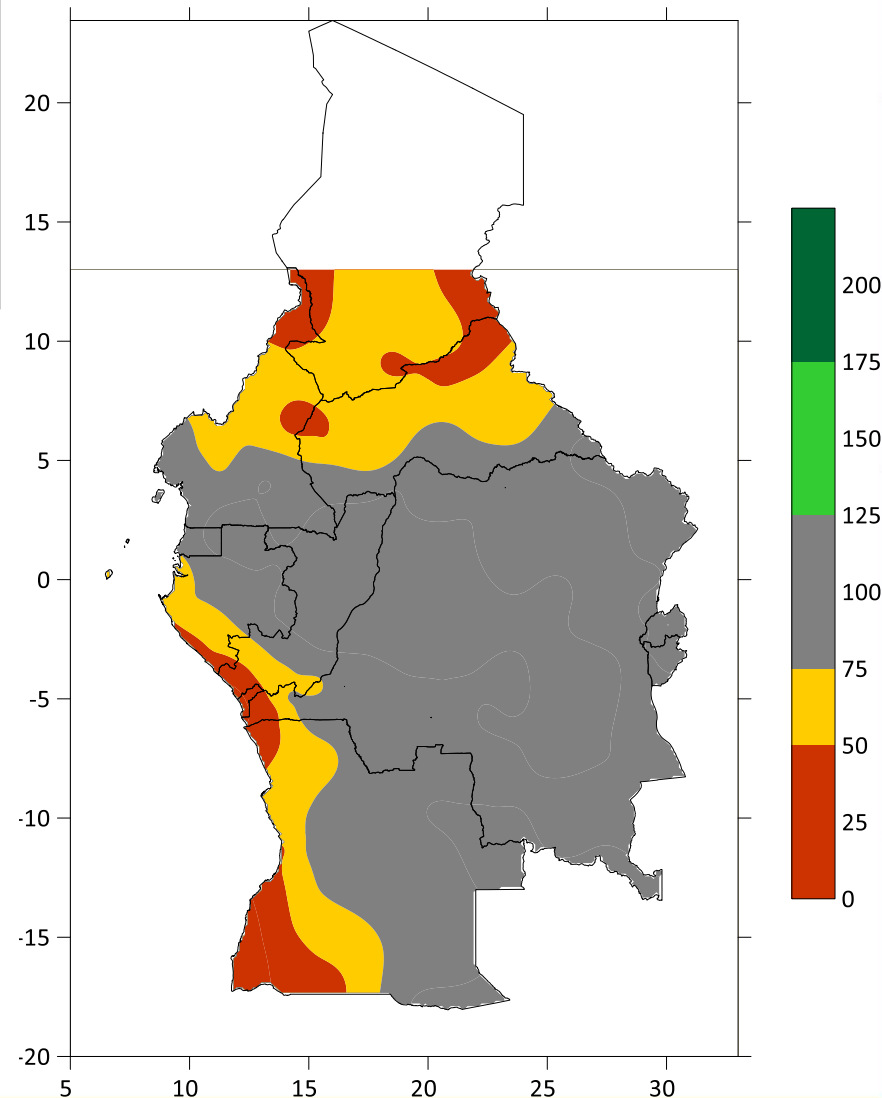
Station	Lon	Lat	2003	2010	2016	2019	MEAN_WET_YEAR
ABONG-MBANG	13.2	3.96666	112.74529	108.950183	109.754017	131.646203	115.773923
ALINDAO	21.2	5.05	117.965523	123.359062	131.865554	130.943115	126.033313
AM-TIMAN	20.28333	11.03333	118.363746	259.227122	63.0333526	256.542923	174.291786
ARUA	30.91666	3.05	115.031214	100.997983	79.68569	152.581583	112.074118
BAFIA	11.25	4.73333	118.691134	126.272803	110.047927	107.361479	115.593336
BAFWASENDE	27.13333	1.08333	117.056504	99.1551895	100.854054	101.401452	104.6168
BAMBARI	20.65	5.85	131.495057	126.14368	146.603962	121.533536	131.444059
BAMENDA	10.11666	6.05	132.457122	120.022747	108.54938	123.429862	121.114778
BANDUNDU	17.35	-3.3	83.634636	116.993935	93.4771127	133.43545	106.885283
BANGASSOU	22.83333	4.73333	158.014736	102.410184	107.164318	126.951956	123.635298
BANGUI	18.51666	4.4	96.5089051	126.113826	144.285772	144.195406	127.775977
BANYO	11.81666	6.78333	123.752904	113.425174	100.81528	133.762474	117.938958
BASANKUSU	19.8	1.21666	97.2380603	113.754763	110.628546	120.048244	110.417403
BASOKO	23.6	1.25	133.550531	115.325683	106.926009	91.7787226	111.895236
BATA-RIO-MUNI	9.8	1.9	121.159313	125.222335	125.246469	119.805532	122.858413
BATOURI	14.36666	4.46666	88.367226	103.100288	131.016174	121.607211	111.022725
BERBERATI	15.8	4.25	78.4969753	116.783959	134.354832	111.761209	110.349244
BERTOUA	13.73333	4.6	107.98451	104.798202	110.665251	104.894084	107.085512
BETARE-OYA	14.06666	5.6	125.542816	112.871035	119.777907	112.735867	117.731906
BIE-SILVA-PORTO	16.95	-12.38333	116.336656	115.233237	111.034436	113.111283	113.928903
BITAM	11.48333	2.08333	98.1020017	121.621372	118.395587	135.637656	118.439154
BOENDE	20.85	-0.21666	99.5899866	126.018997	99.2245503	113.536041	109.592394
BOMA	13.1	-5.85	120.998634	152.577576	165.268402	220.049411	164.723506
BONDO	23.81666	3.8	134.924812	114.368829	110.409174	124.204271	120.976771
BOSSANGO	17.43333	6.48333	106.30081	159.199489	117.920526	127.581148	127.750493

SST AND PRECIPITATION COMPOSITE OF THE DRY AND WET YEAR

COMPOSITE OF THE OND DRY YEARS



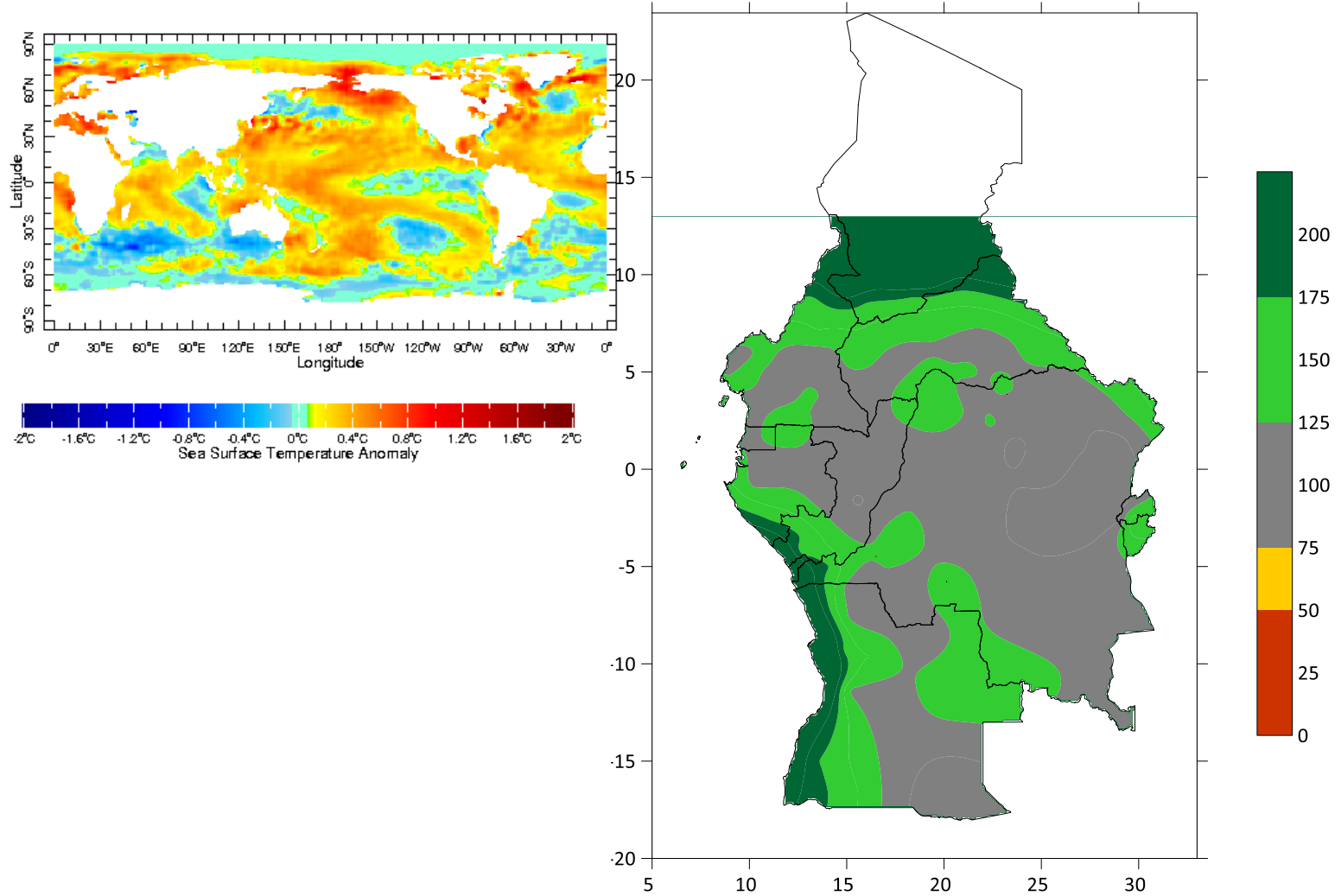
COMPOSITE DRY YEAR OND



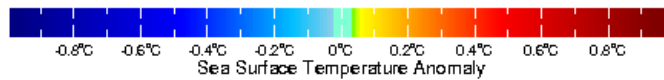
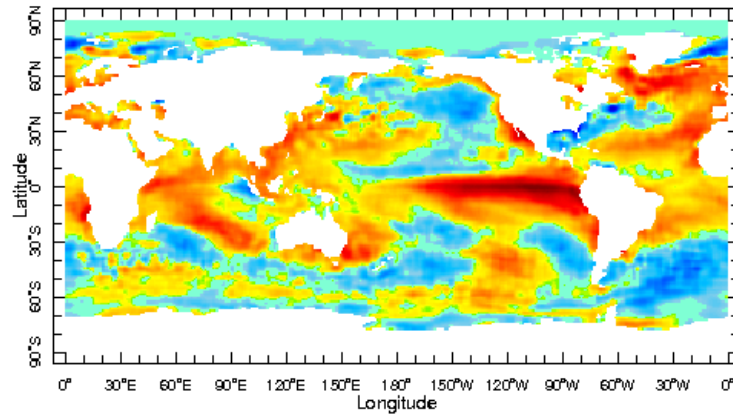
COMPOSITE OF THE OND WET YEARS



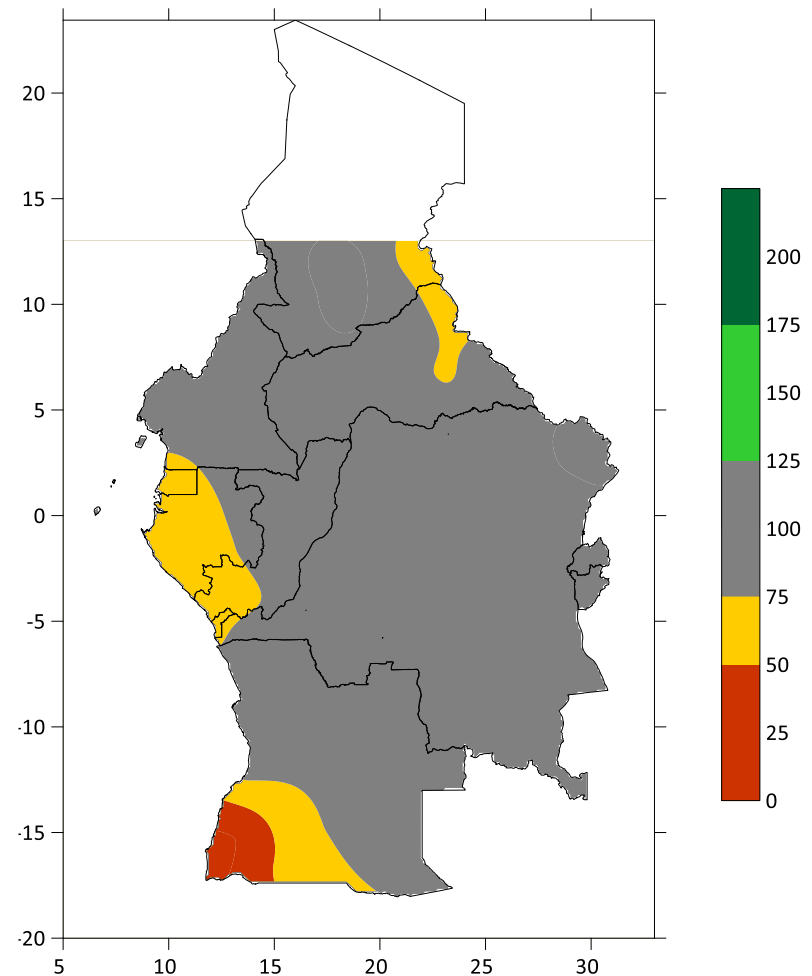
COMPOSITE WET YEAR OND



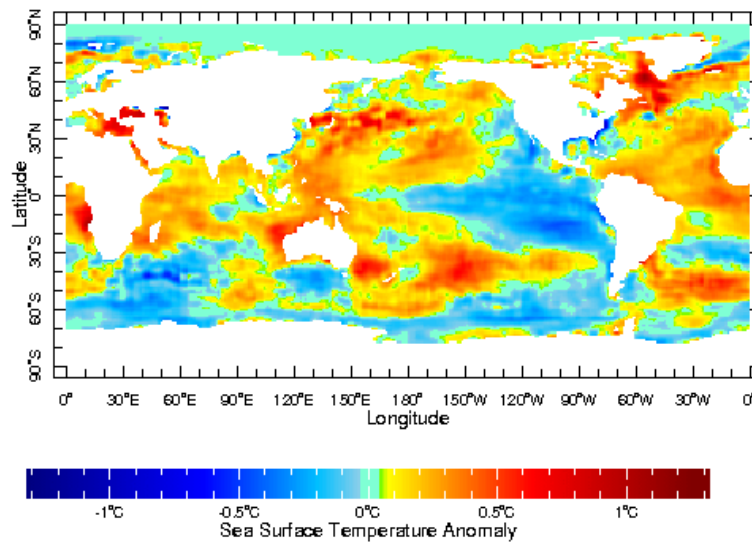
COMPOSITE OF THE NDJ DRY YEARS



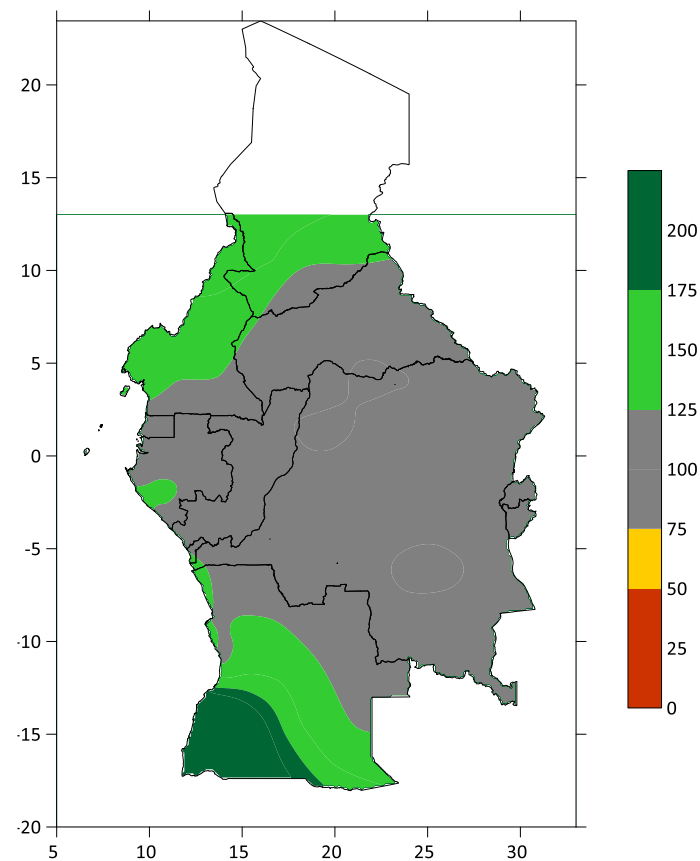
COMPOSITE DRY YEAR NDJ



COMPOSITE OF THE NDJ WET YEARS

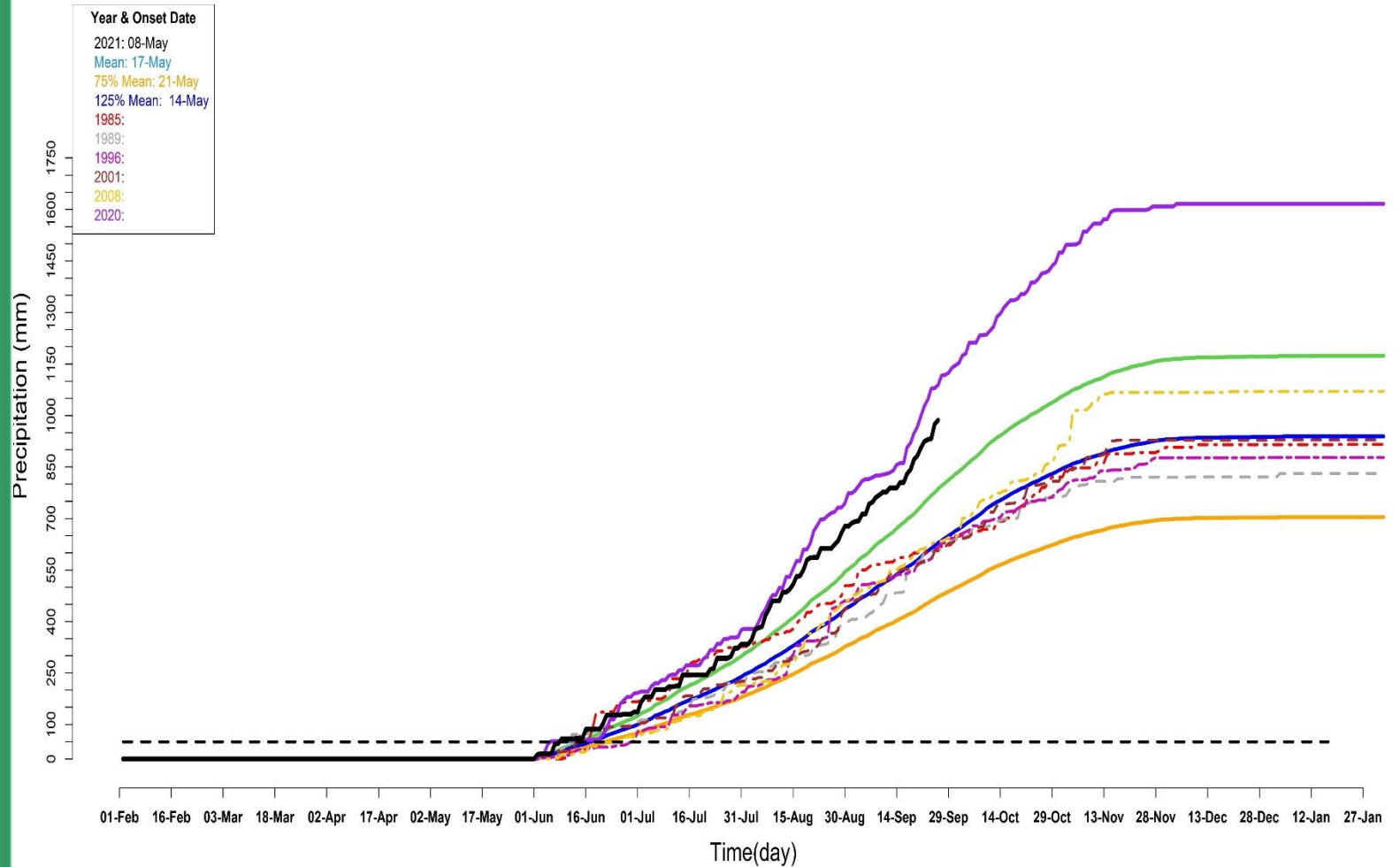


COMPOSITE WET YEAR NDJ

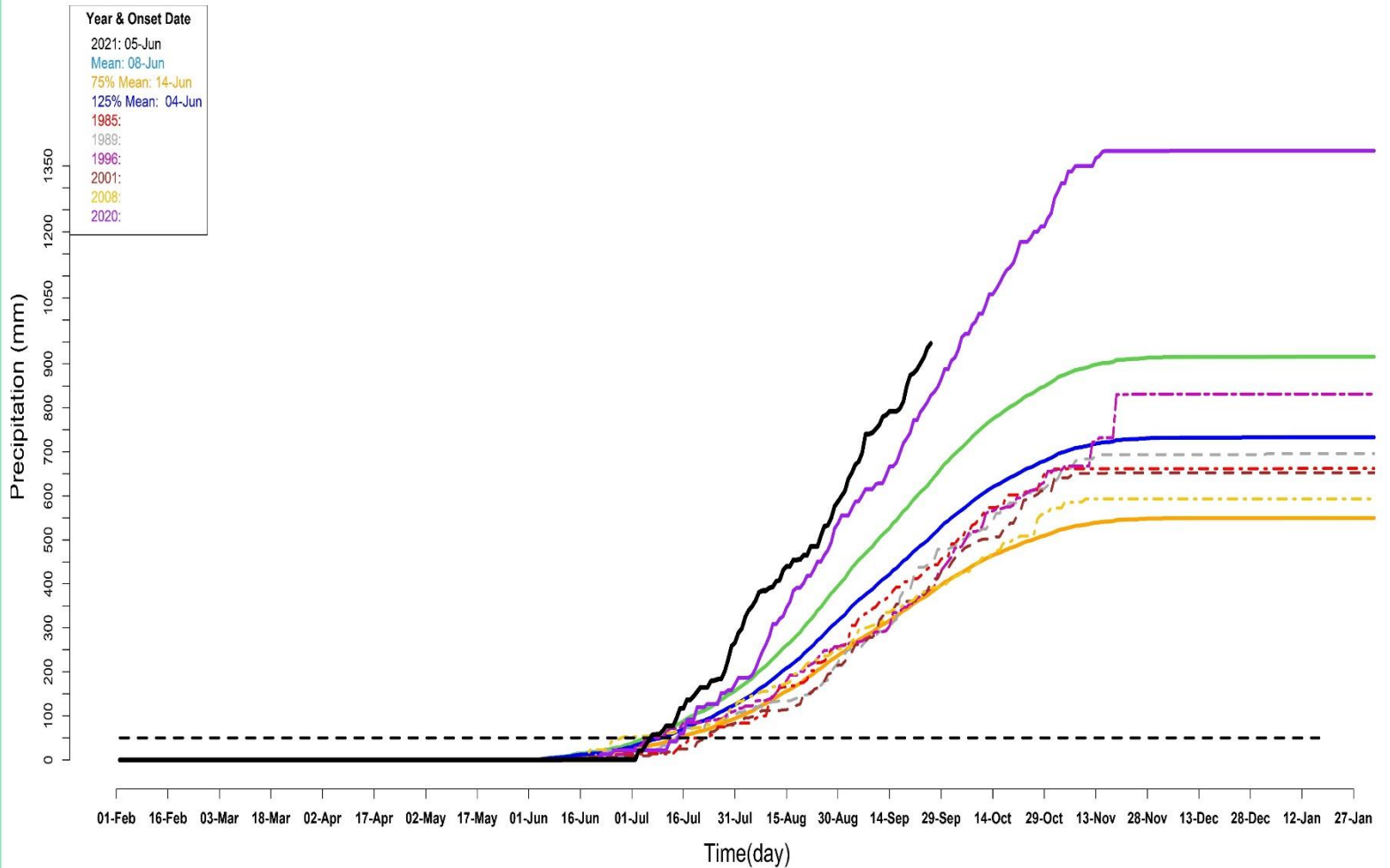


ESTIMATED CUMULATIVE PRECIPITATION GRAPHS FOR CENTRAL AFRICA

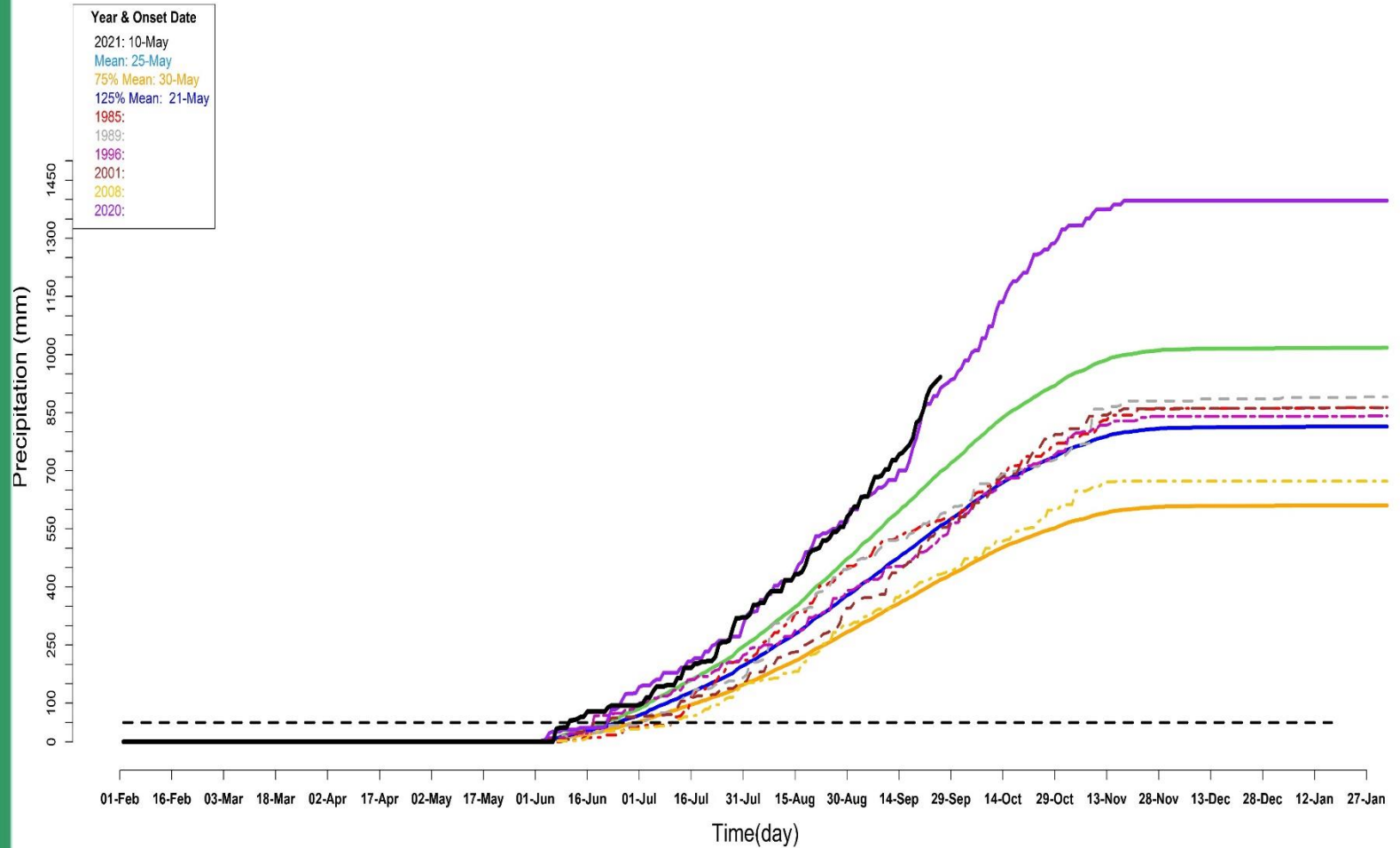
Chad : Cumulative precipitation for MOUNDOU
Data source: ARC2, Last update: 2021-08-25



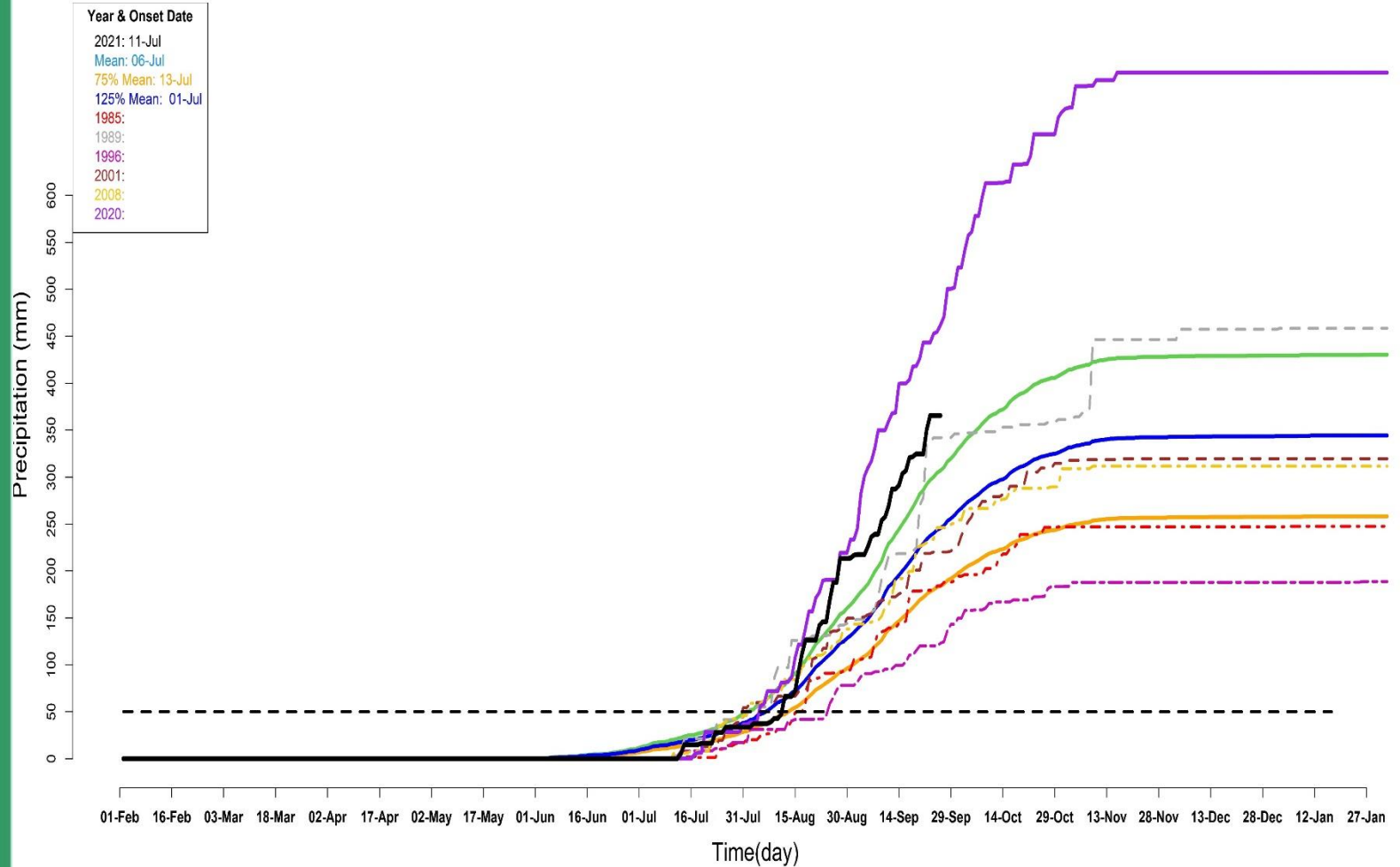
Chad : Cumulative precipitation for GOZ-BEIDA
Data source: ARC2, Last update: 2021-08-25



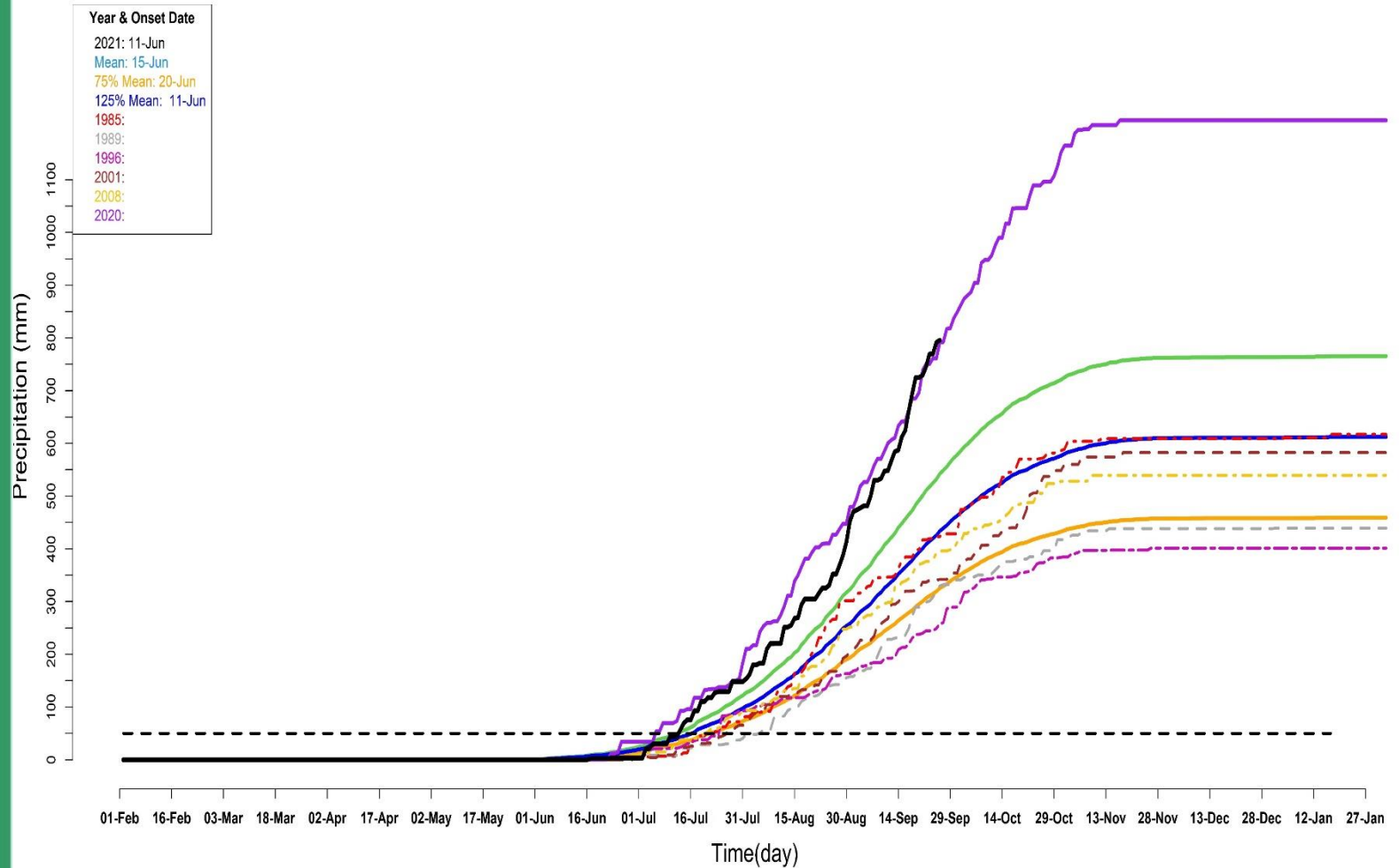
Chad : Cumulative precipitation for BOUSSO
Data source: ARC2, Last update: 2021-08-25



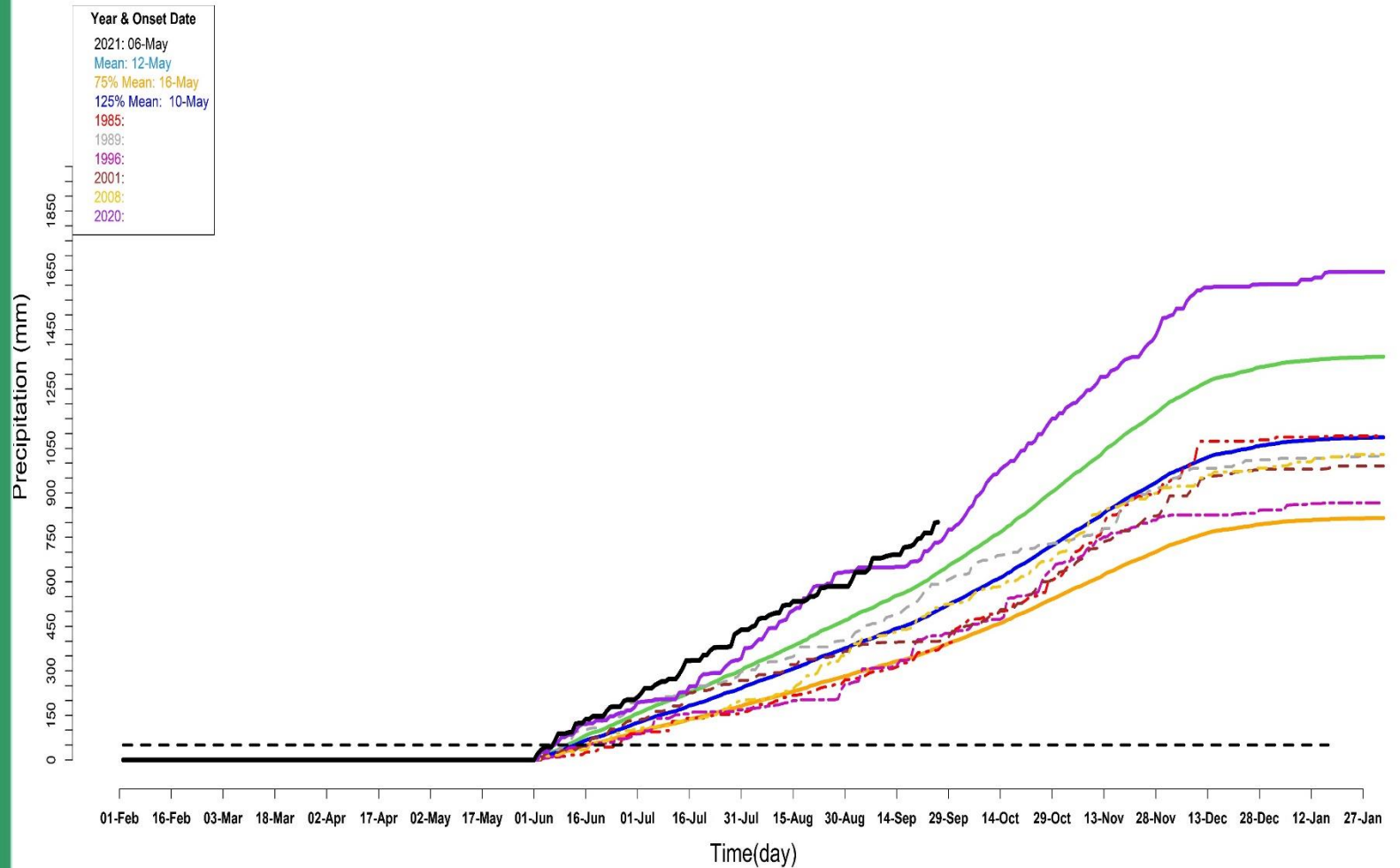
Chad : Cumulative precipitation for BOL-BERIM
Data source: ARC2, Last update: 2021-08-25



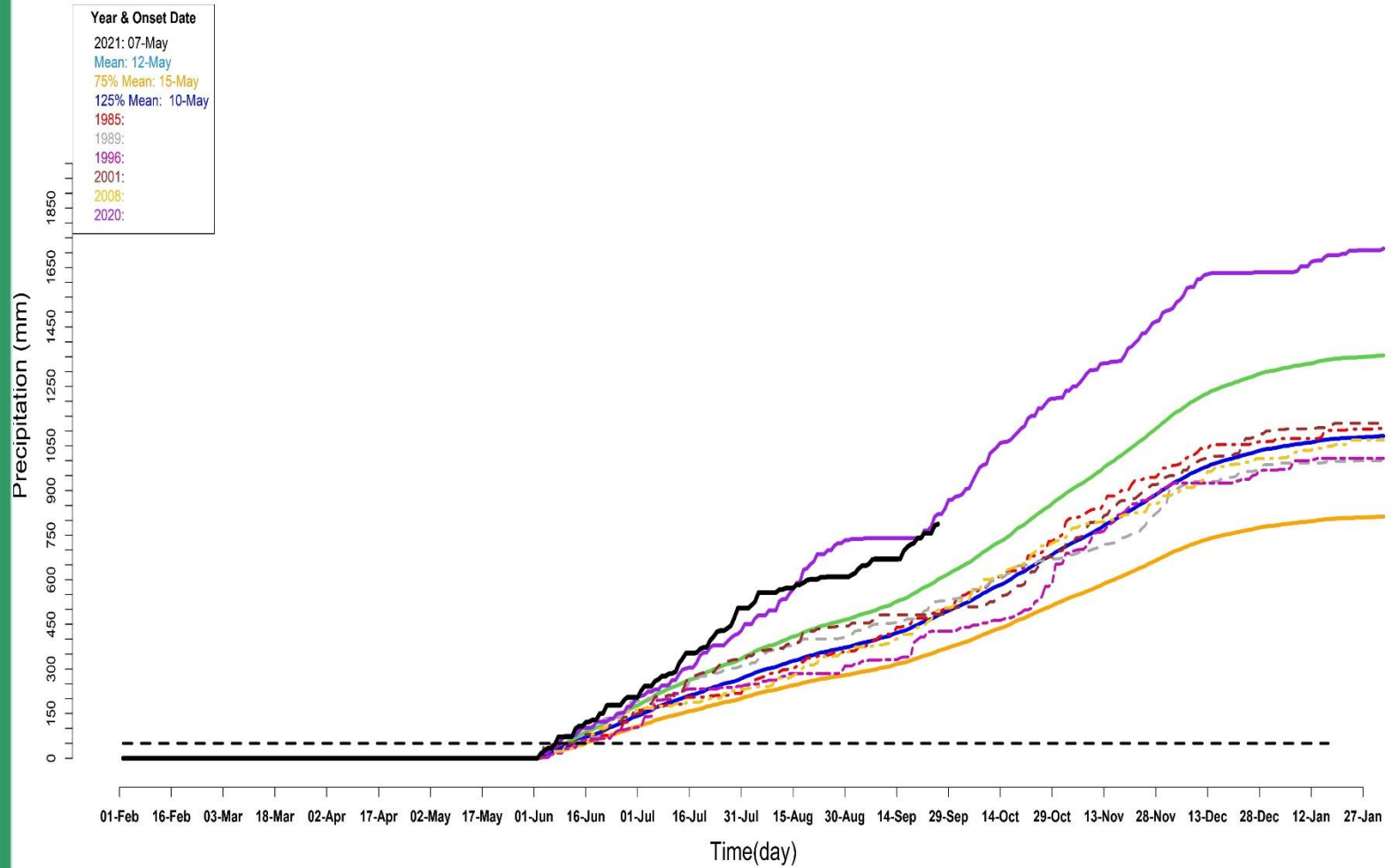
Chad : Cumulative precipitation for BOKORO
Data source: ARC2, Last update: 2021-08-25



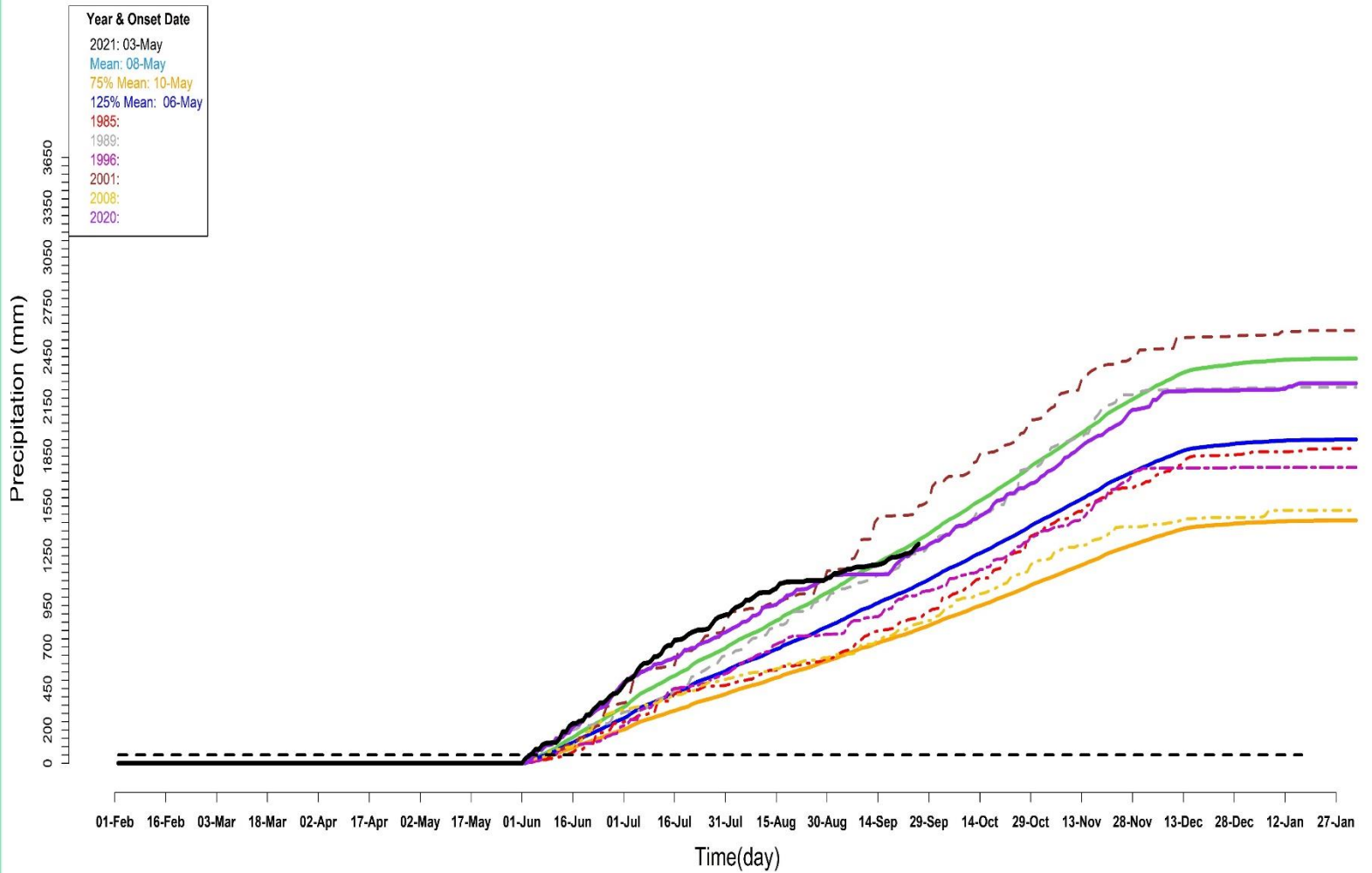
Cameroon : Cumulative precipitation for BATOURI
Data source: ARC2, Last update: 2021-08-25



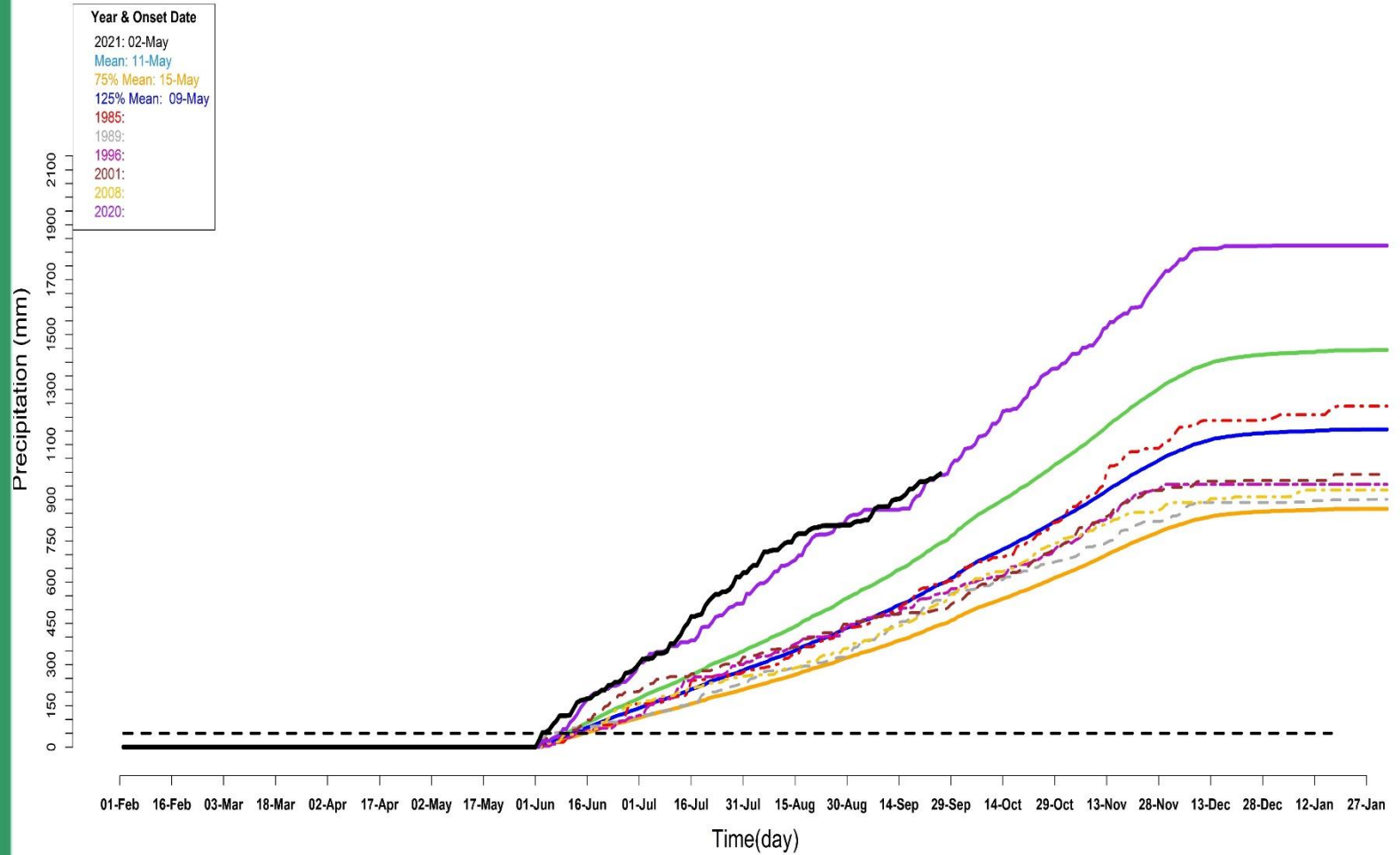
Cameroon : Cumulative precipitation for LOMIE
Data source: ARC2, Last update: 2021-08-25



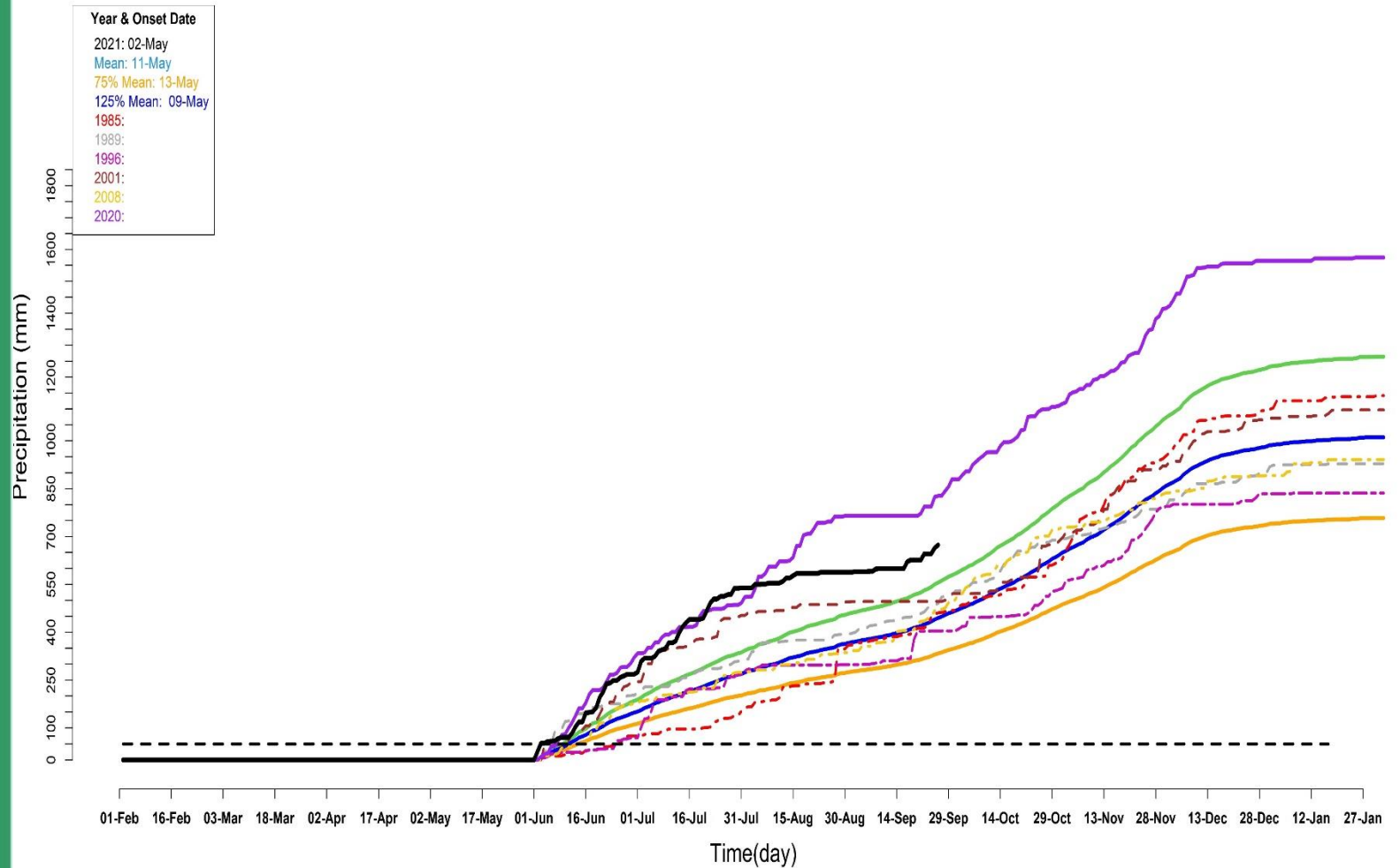
Cameroon : Cumulative precipitation for MAMFE
Data source: ARC2, Last update: 2021-08-25



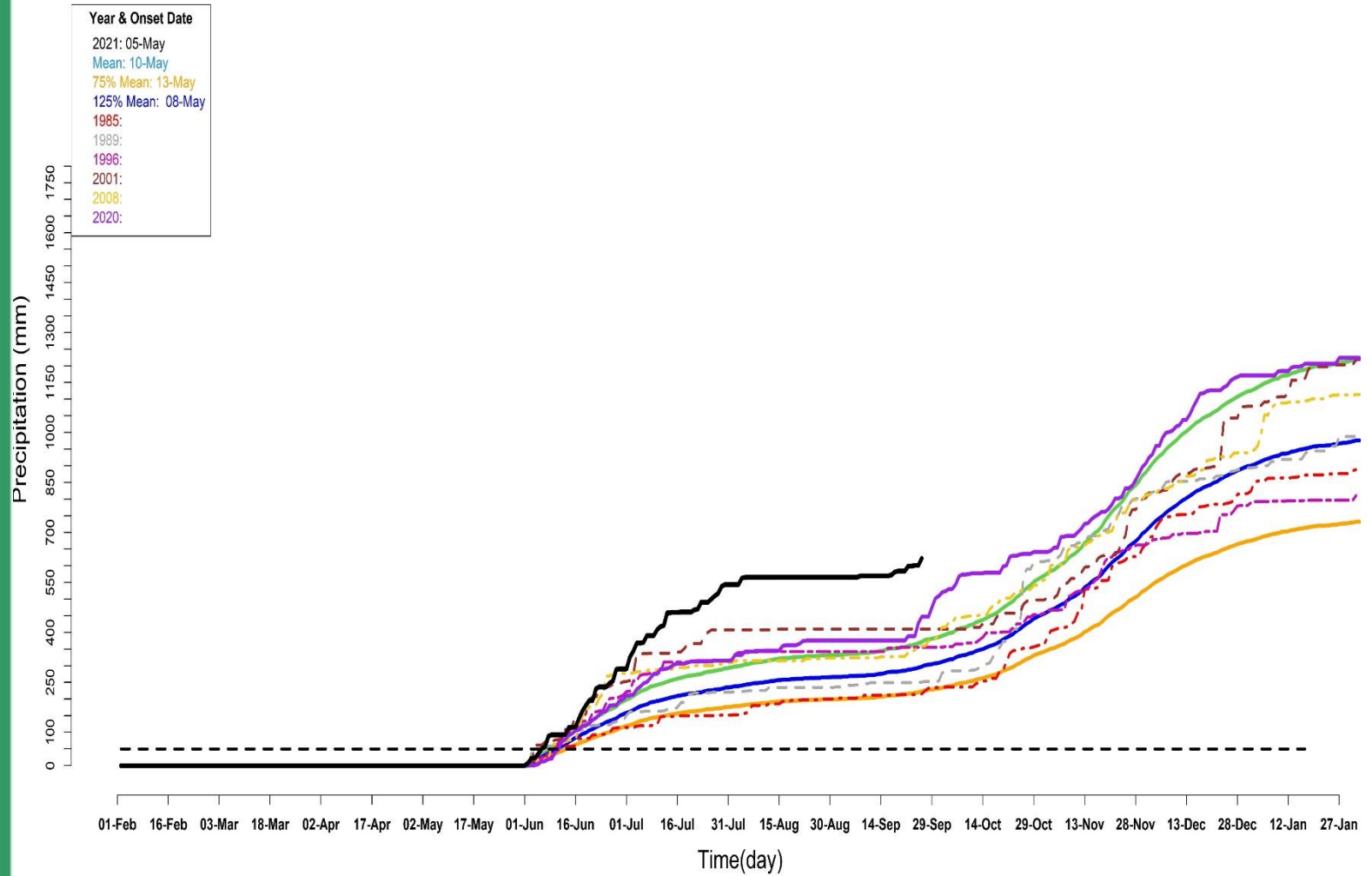
Cameroon : Cumulative precipitation for YOKO
Data source: ARC2, Last update: 2021-08-25



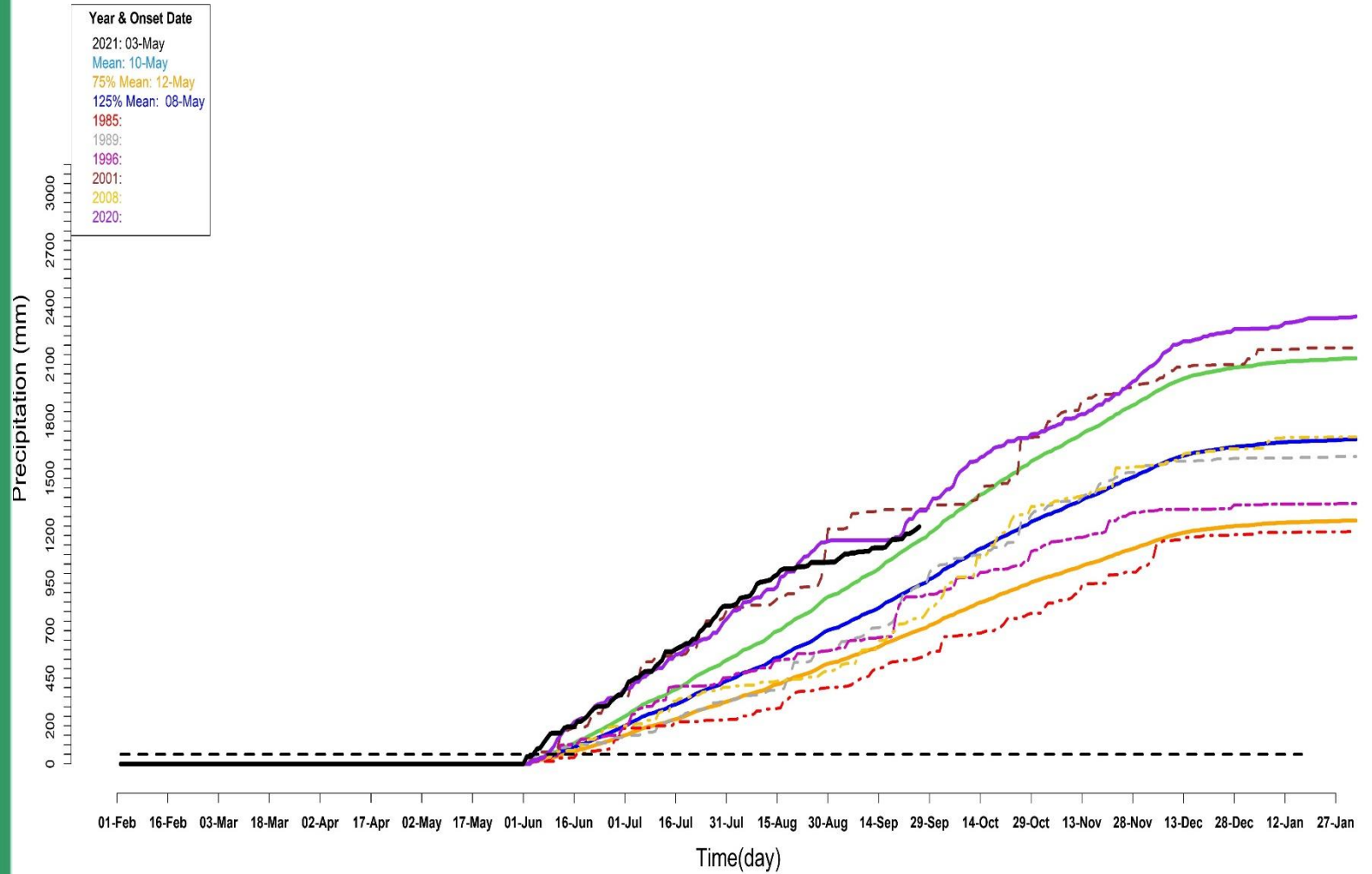
Cameroon : Cumulative precipitation for YAOUNDE
Data source: ARC2, Last update: 2021-08-25



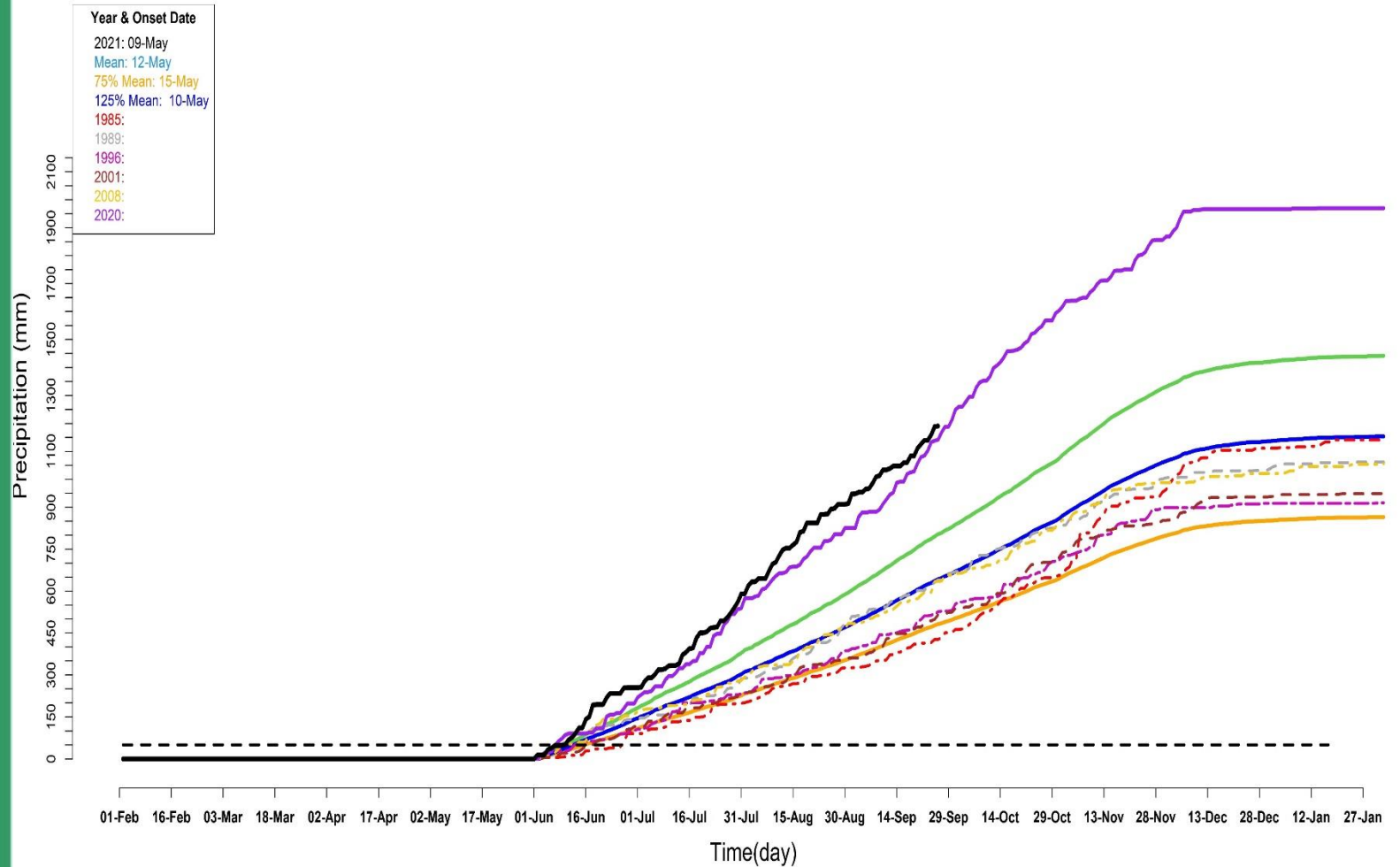
GuineaE : Cumulative precipitation for BATA-RIO-MUNI
Data source: ARC2, Last update: 2021-08-25



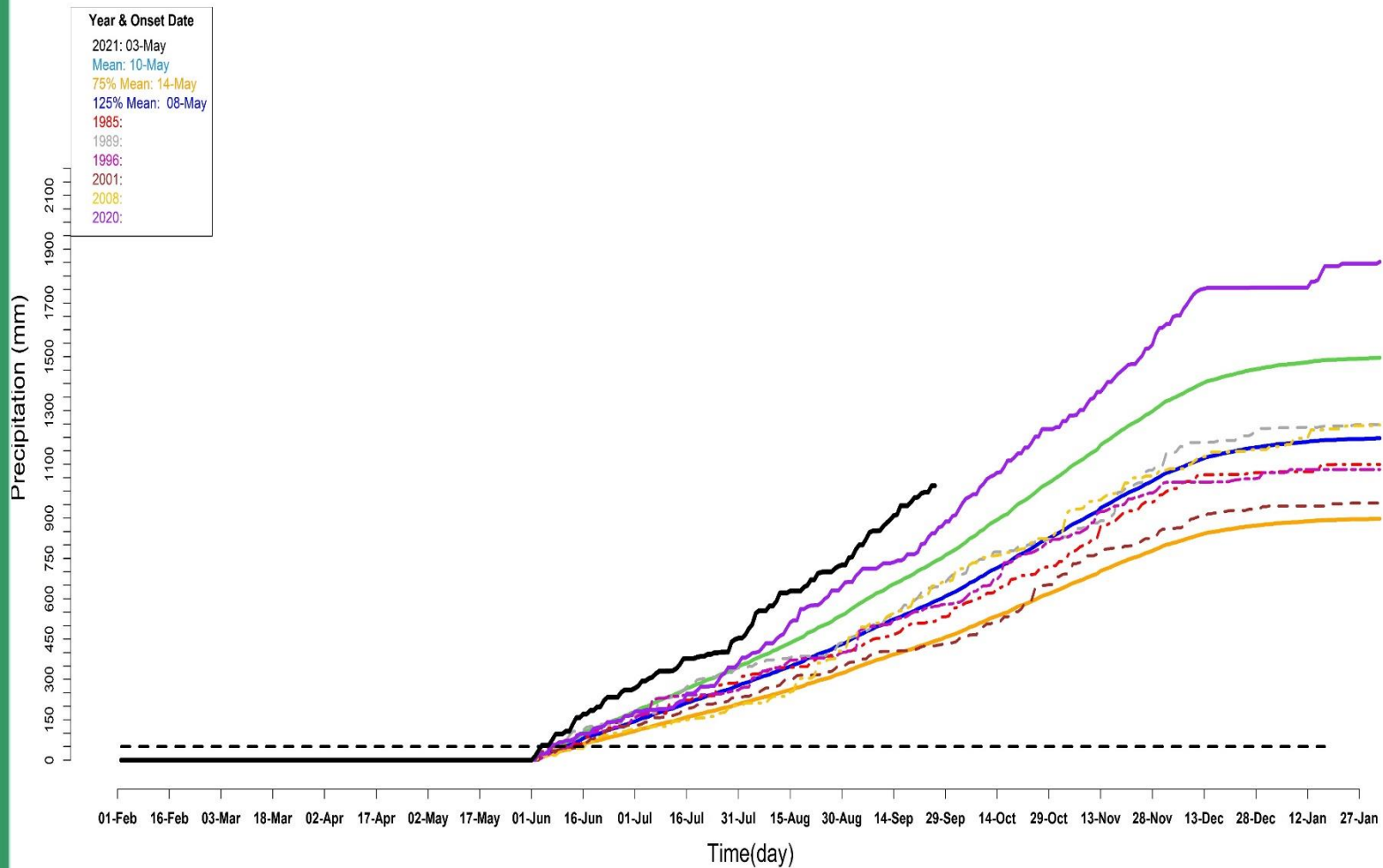
GuineaE : Cumulative precipitation for MALABO
Data source: ARC2, Last update: 2021-08-25



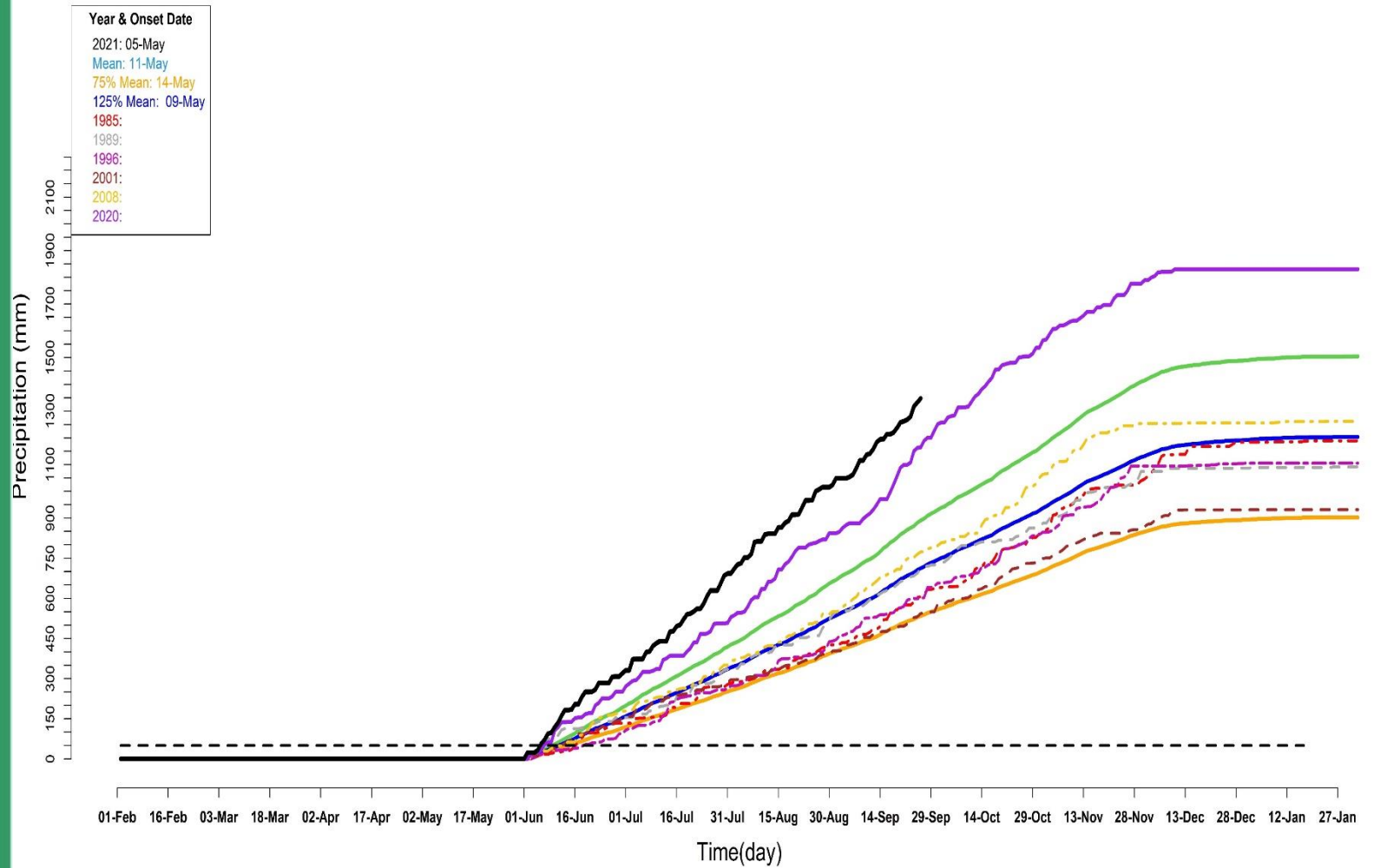
Centrafrique : Cumulative precipitation for BAMBARI
Data source: ARC2, Last update: 2021-08-25



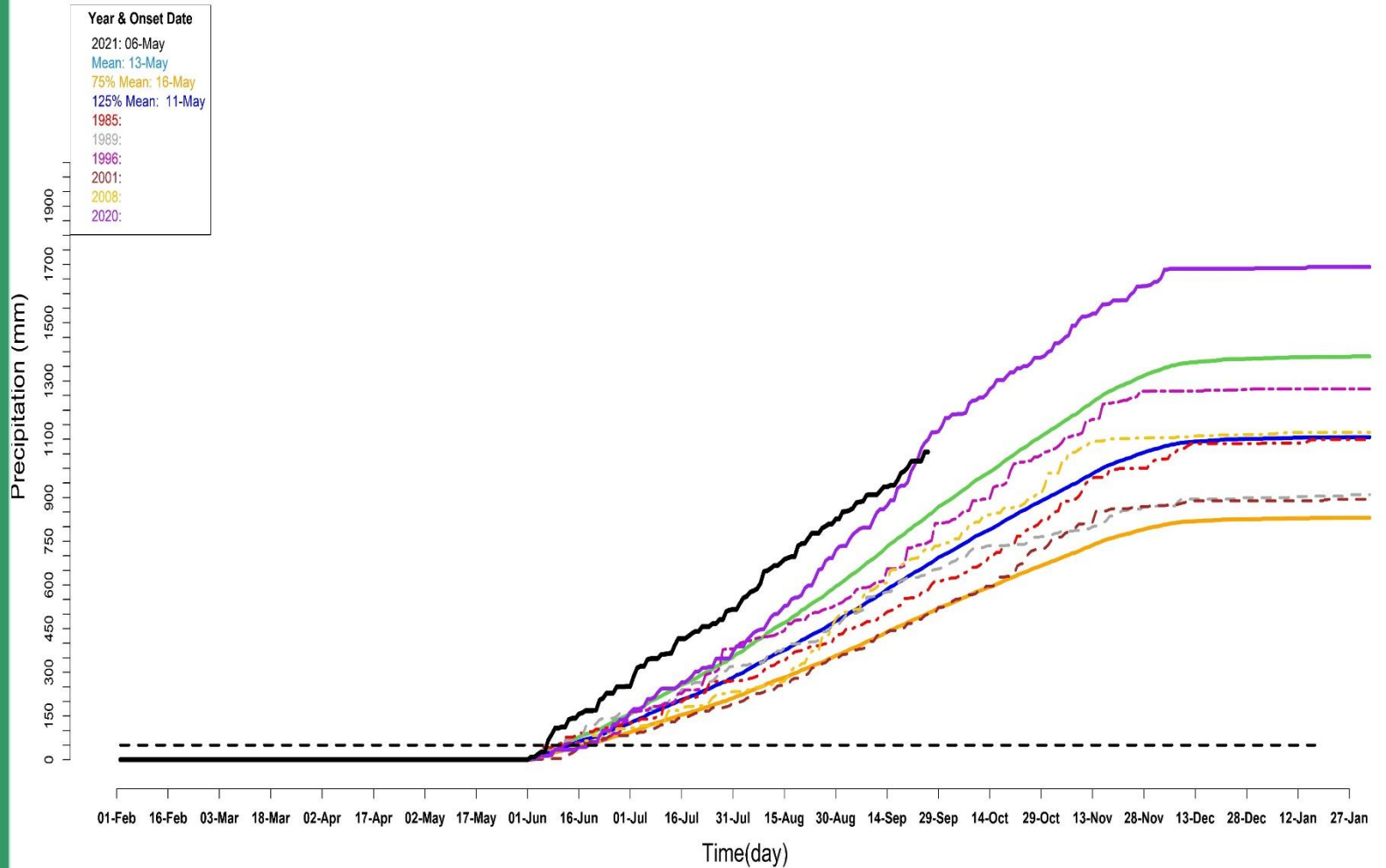
Centrafrique : Cumulative precipitation for BERBERATI
Data source: ARC2, Last update: 2021-08-25



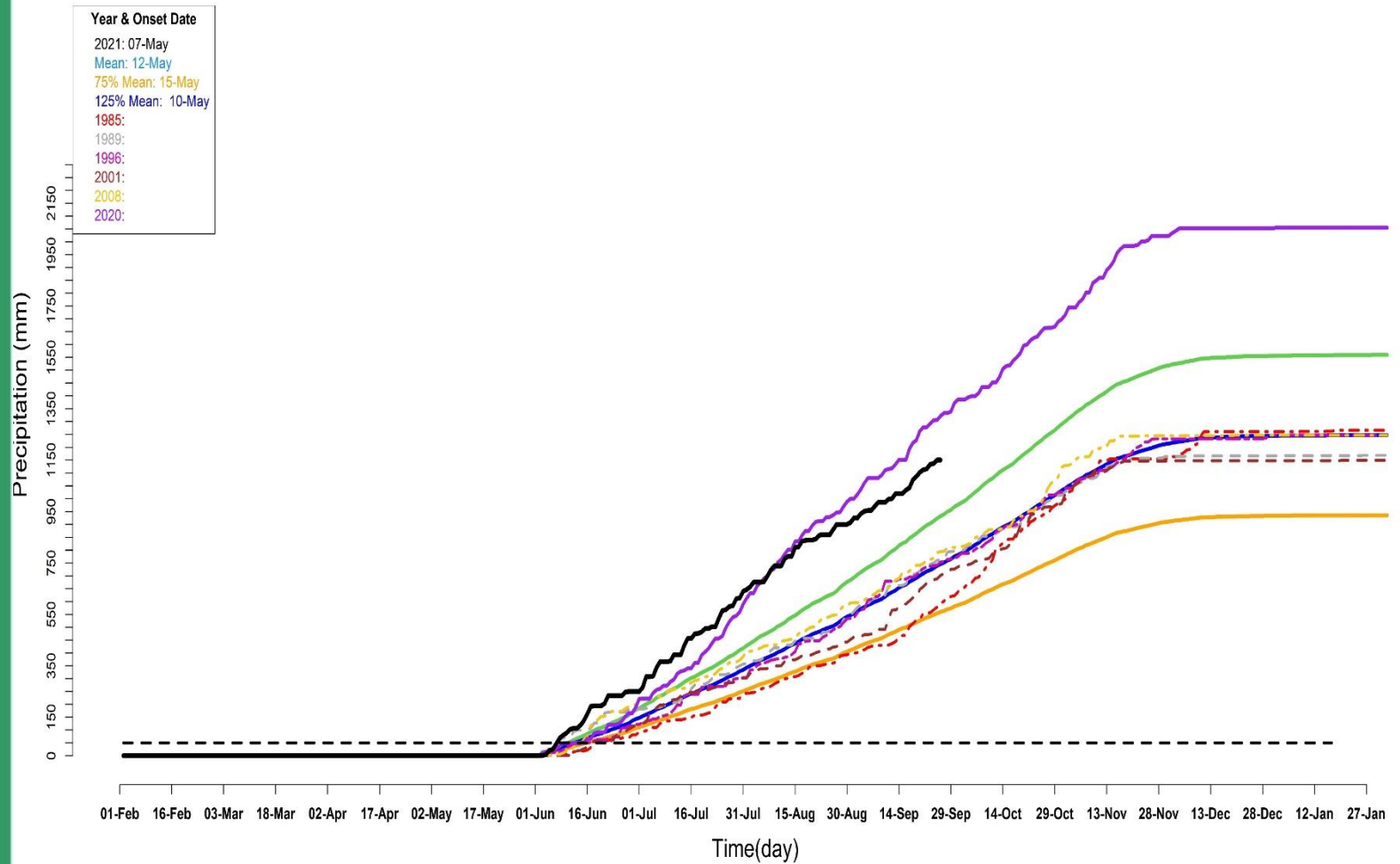
Centrafrique : Cumulative precipitation for YALINGA
Data source: ARC2, Last update: 2021-08-25



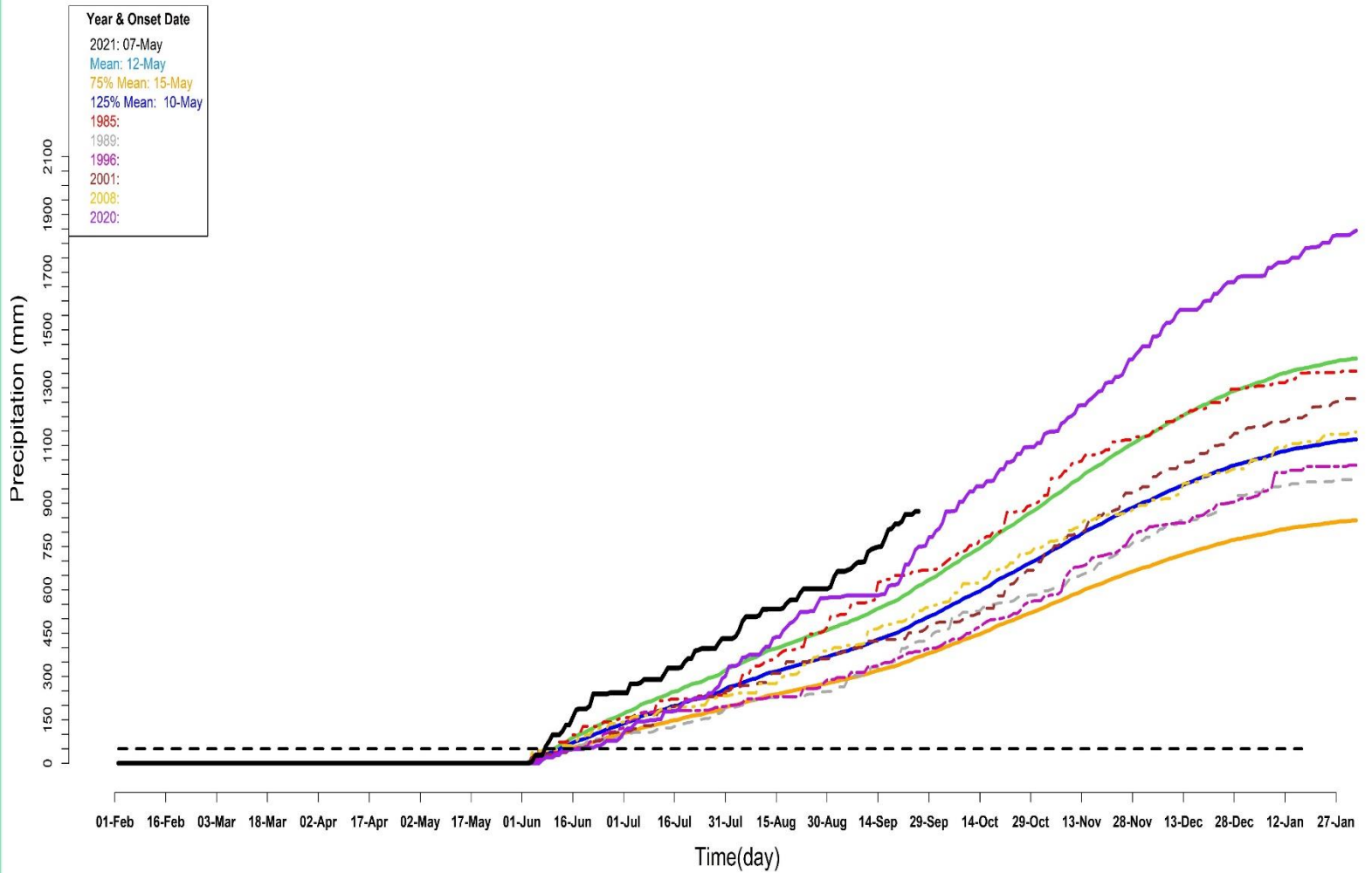
Centrafrique : Cumulative precipitation for BOSSANGO
Data source: ARC2, Last update: 2021-08-25



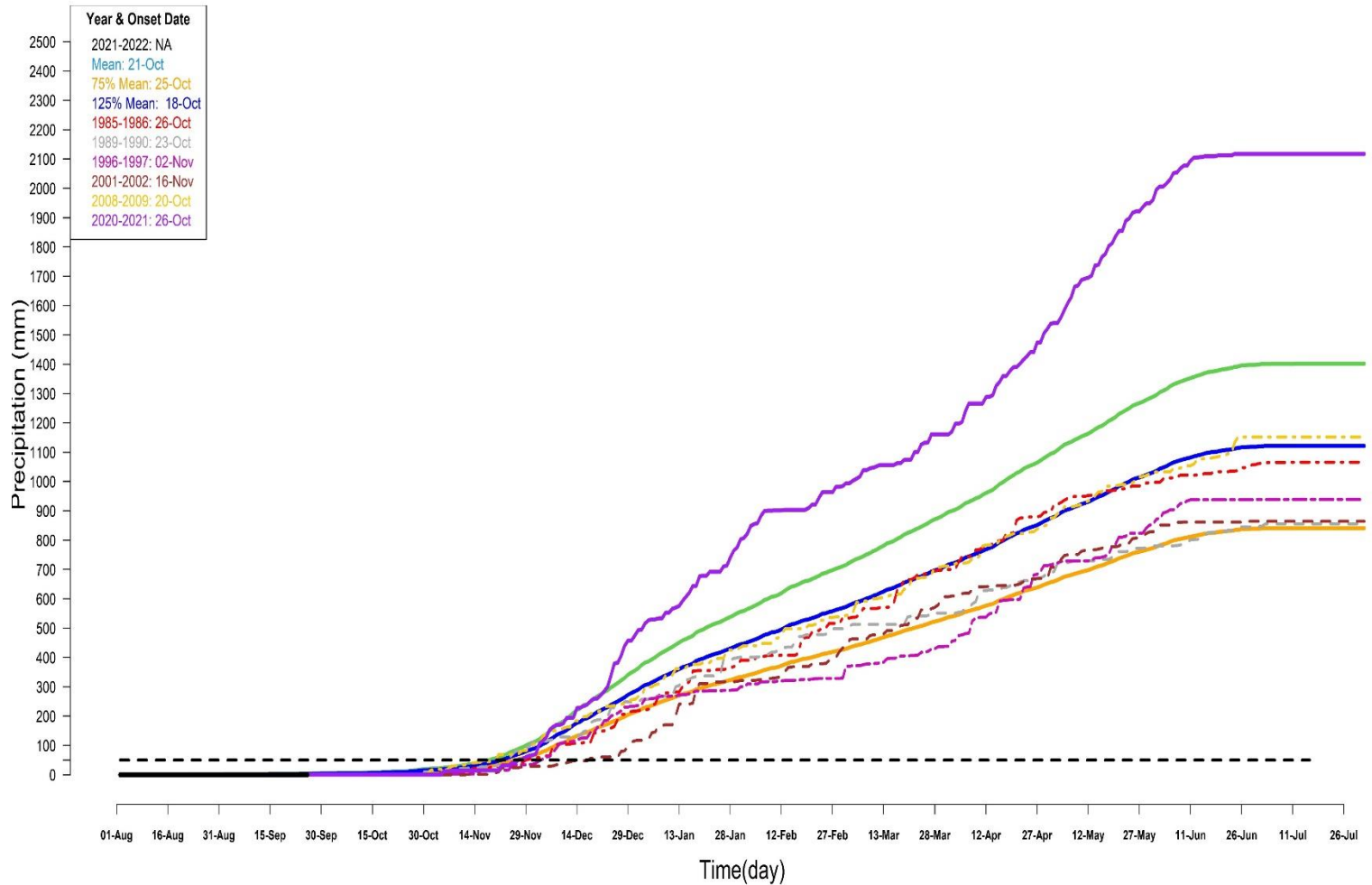
Centrafrique : Cumulative precipitation for N_DELE
Data source: ARC2, Last update: 2021-08-25



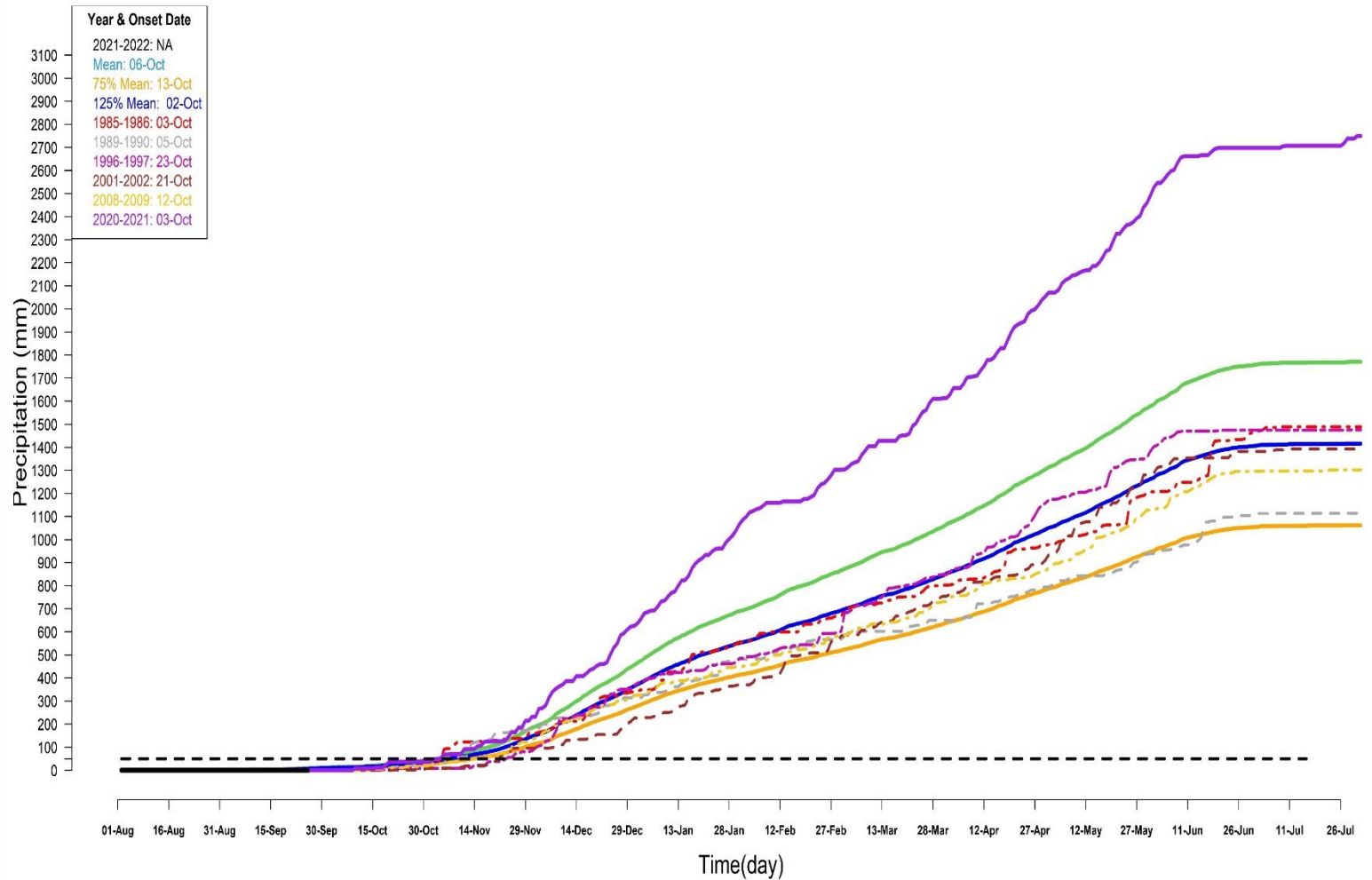
Congo : Cumulative precipitation for OUESSO
Data source: ARC2, Last update: 2021-08-25



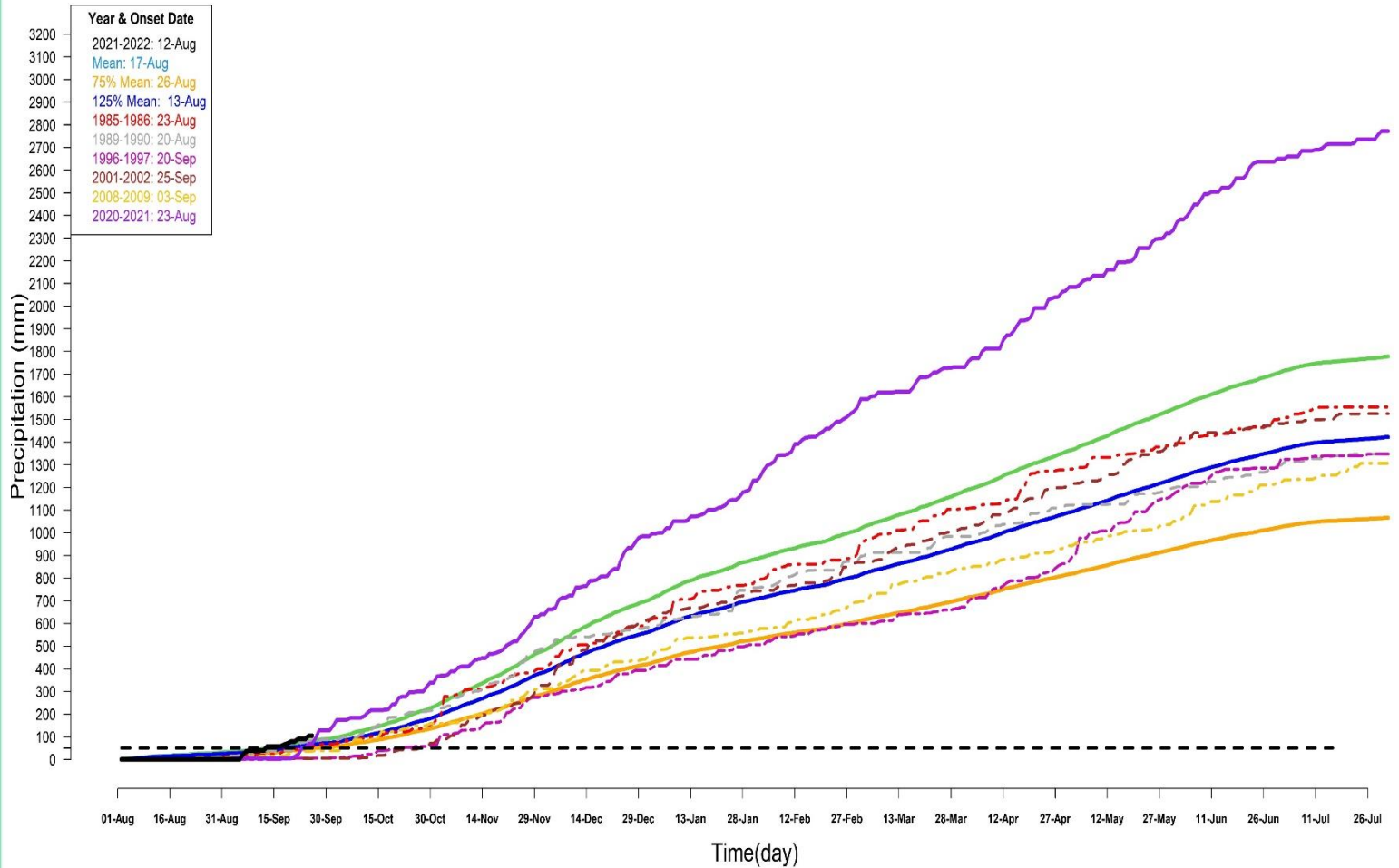
Congo : Cumulative precipitation for DOLISIE
Data source: ARC2, Last update: 2021-08-25



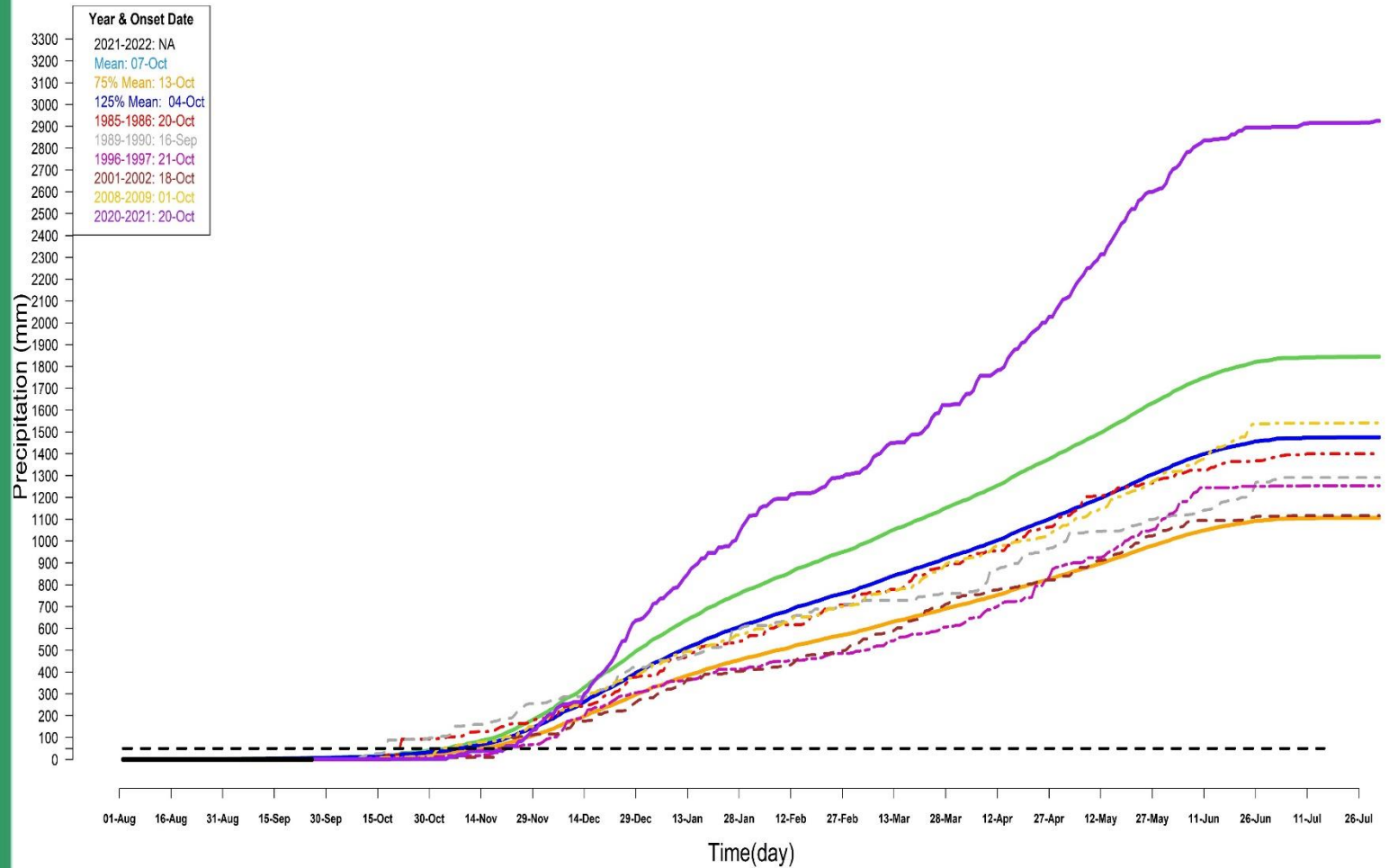
Congo : Cumulative precipitation for EWO
Data source: ARC2, Last update: 2021-08-25



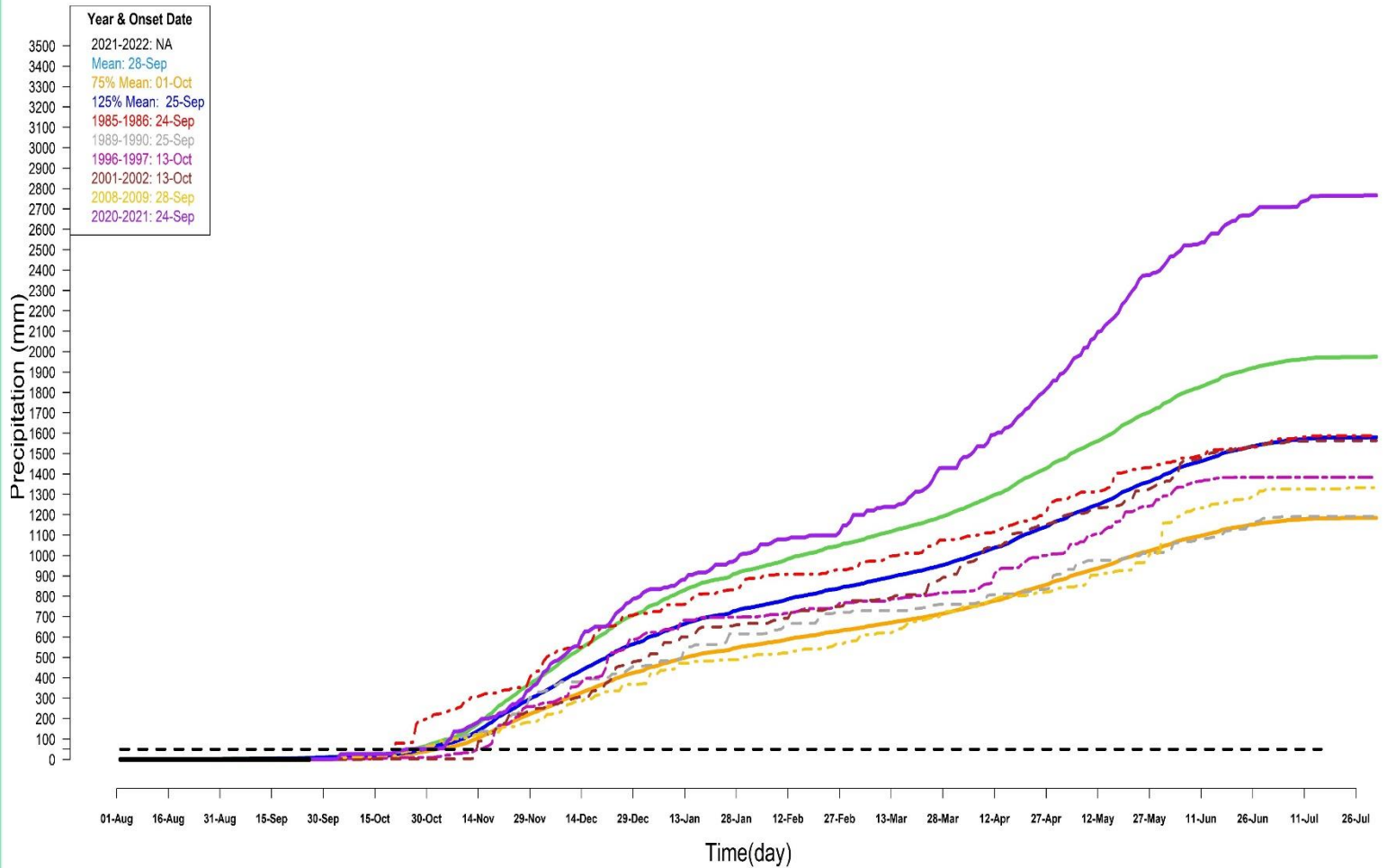
Congo : Cumulative precipitation for MAKOUA
Data source: ARC2, Last update: 2021-08-25



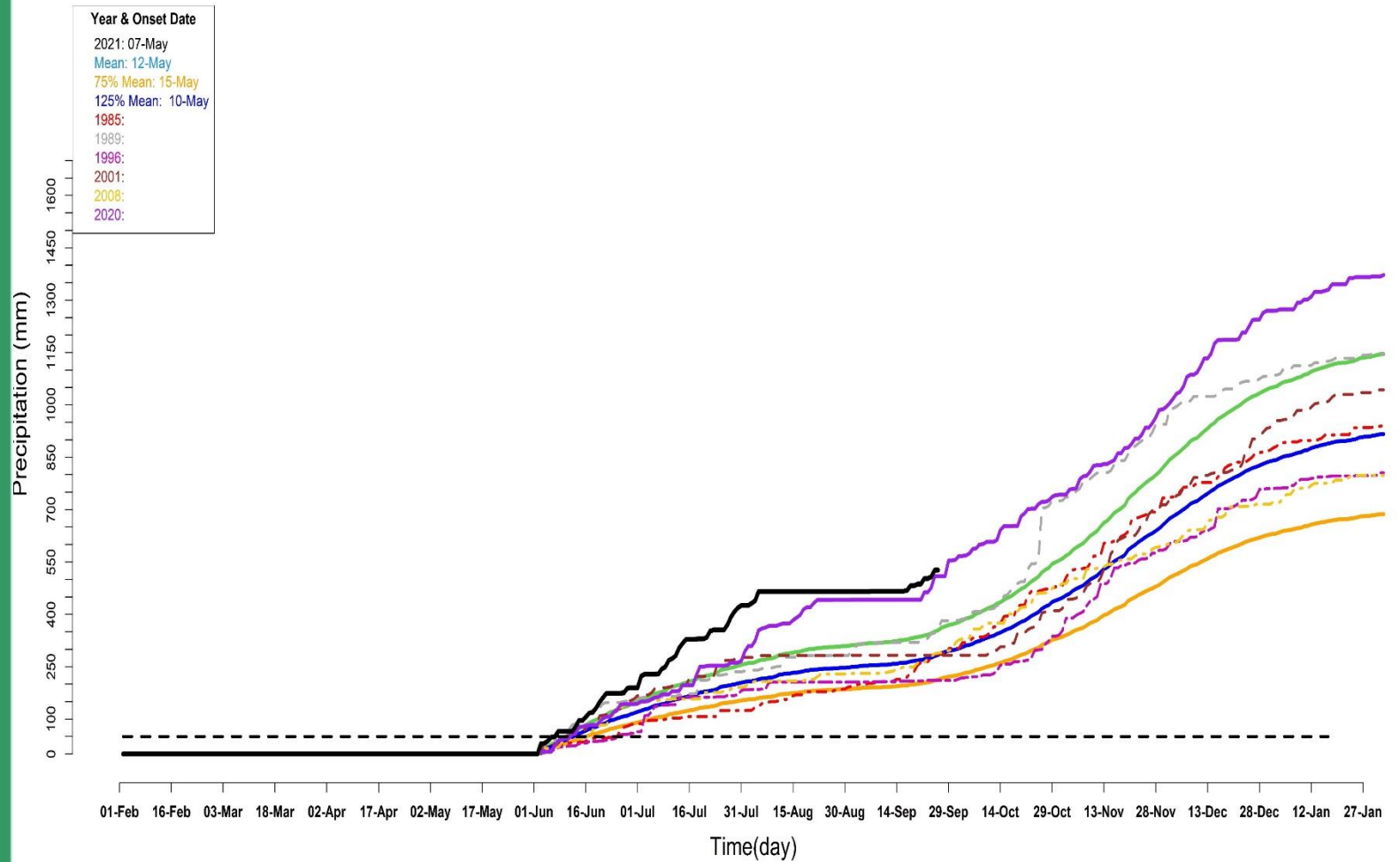
Congo : Cumulative precipitation for SIBITI
Data source: ARC2, Last update: 2021-08-25



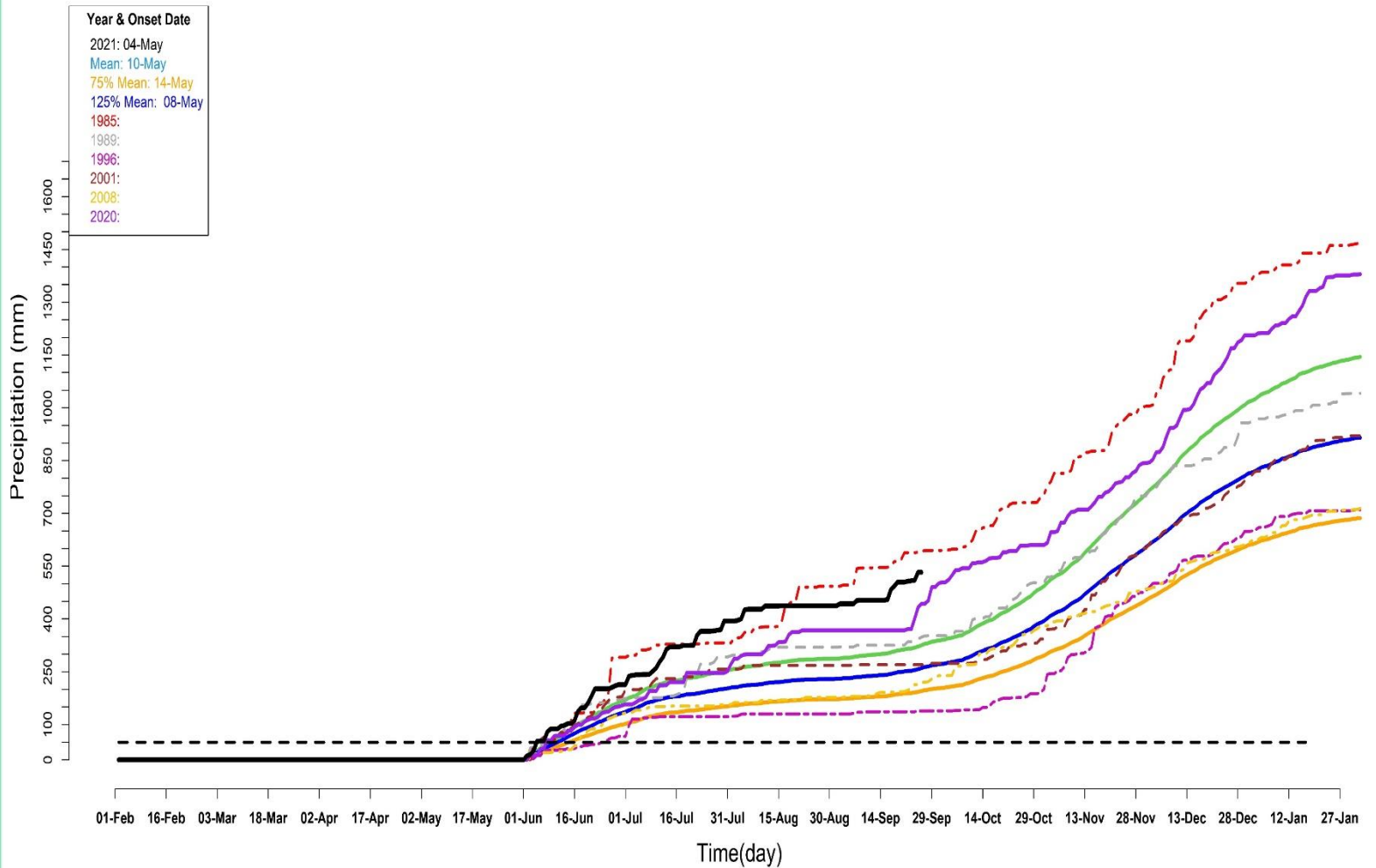
Gabon : Cumulative precipitation for LAMBARENE
Data source: ARC2, Last update: 2021-08-25



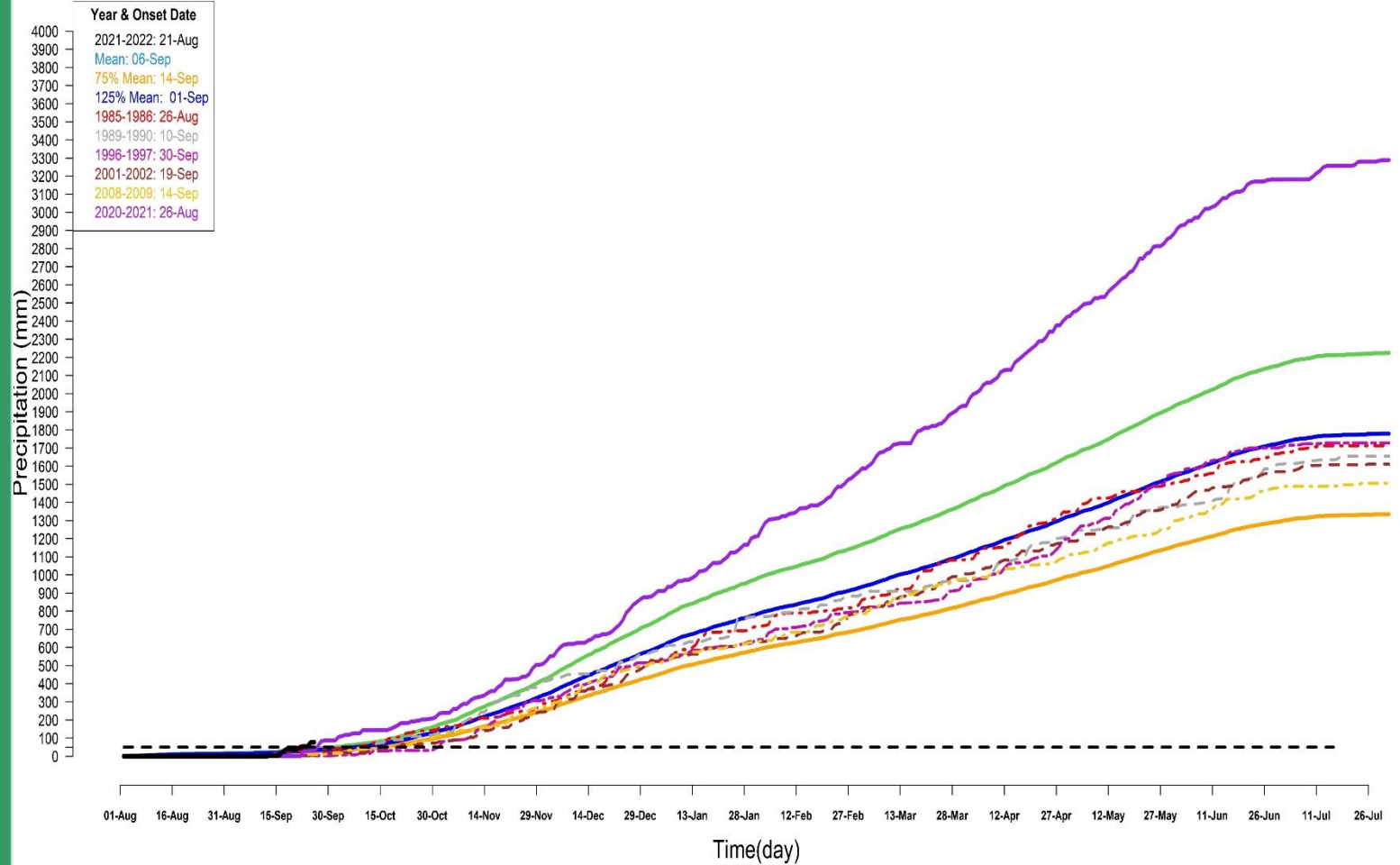
Gabon : Cumulative precipitation for OYEM
Data source: ARC2, Last update: 2021-08-25



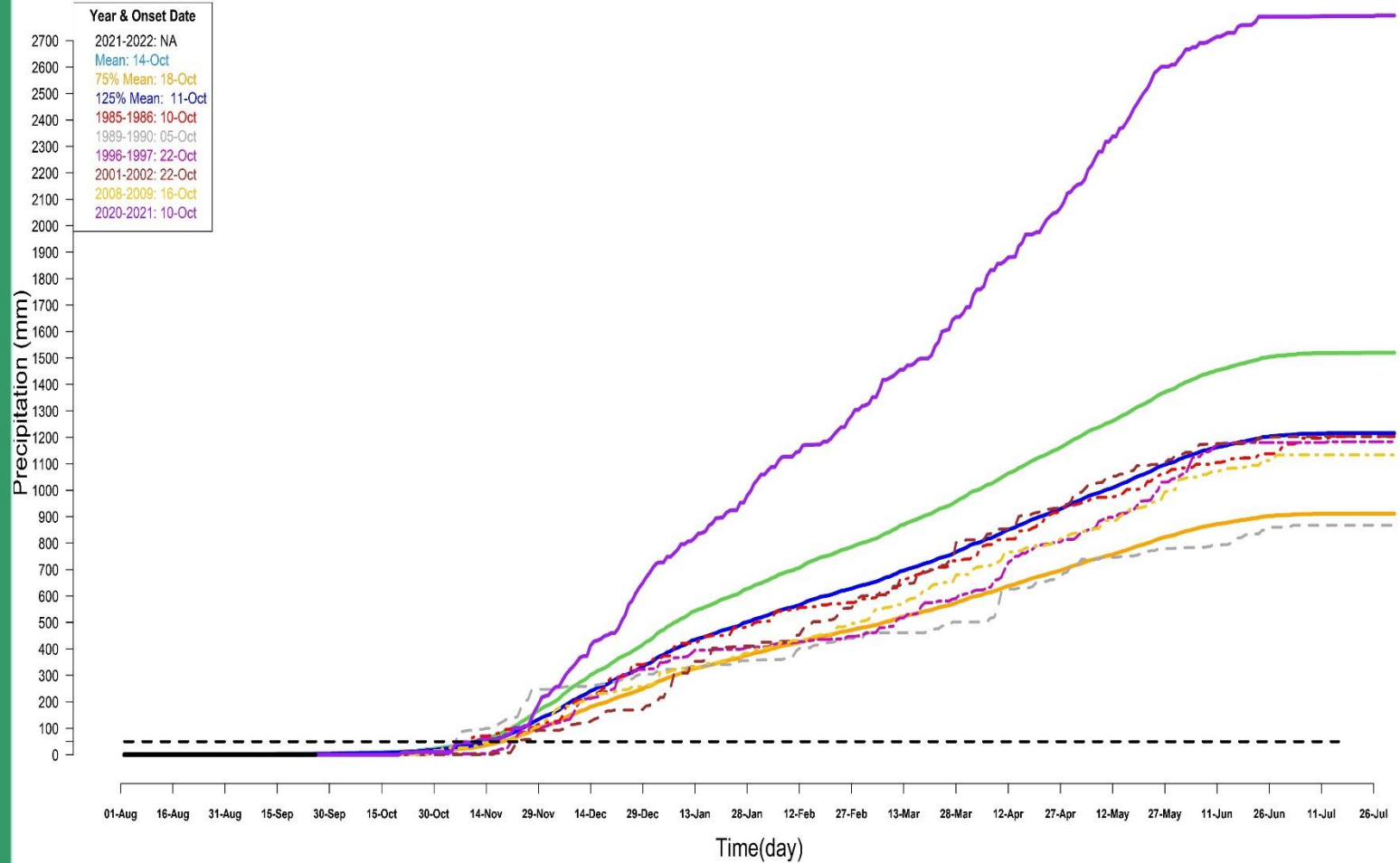
Gabon : Cumulative precipitation for MAKOKOU
Data source: ARC2, Last update: 2021-08-25



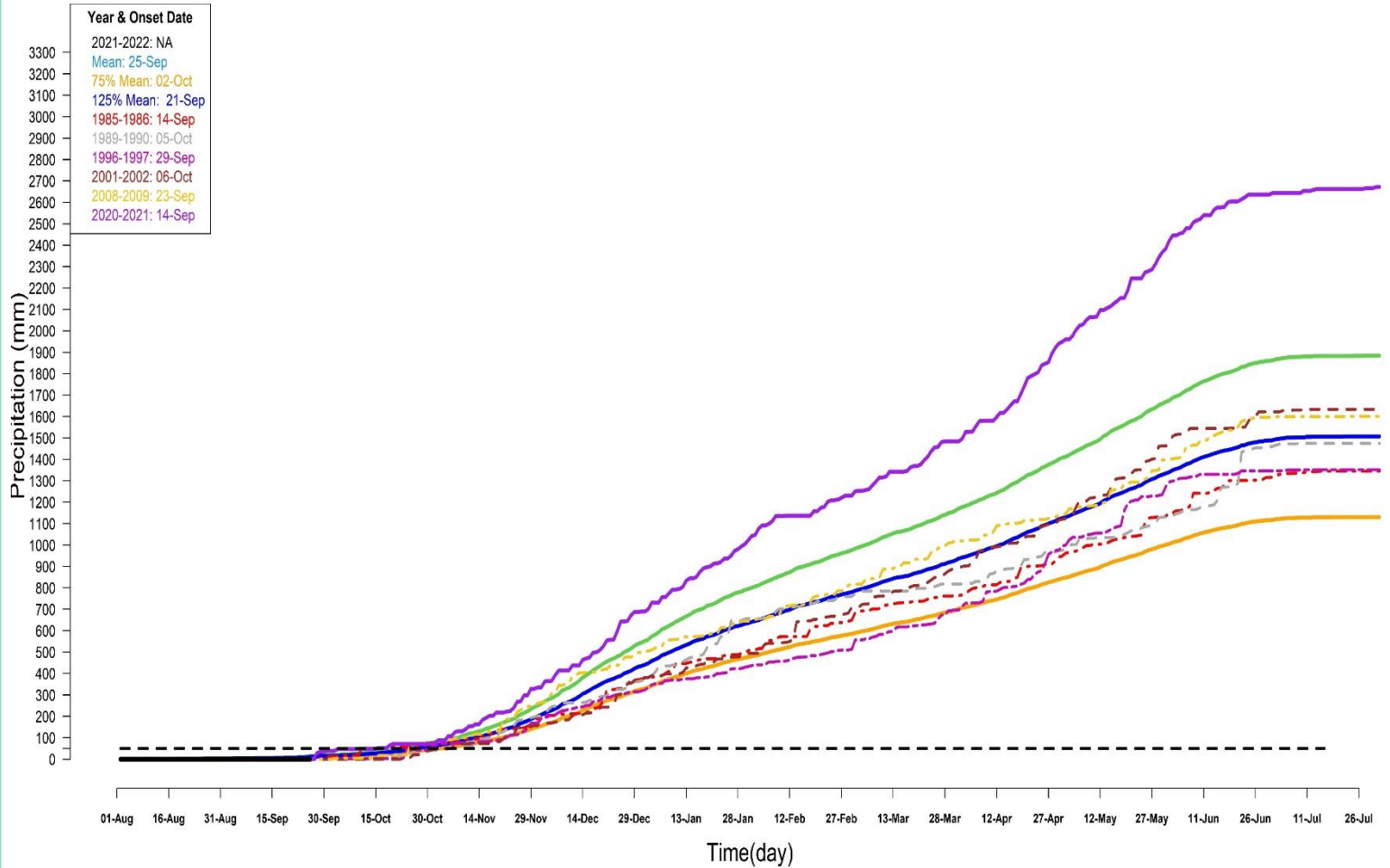
Gabon : Cumulative precipitation for MVENGUE
Data source: ARC2, Last update: 2021-08-25



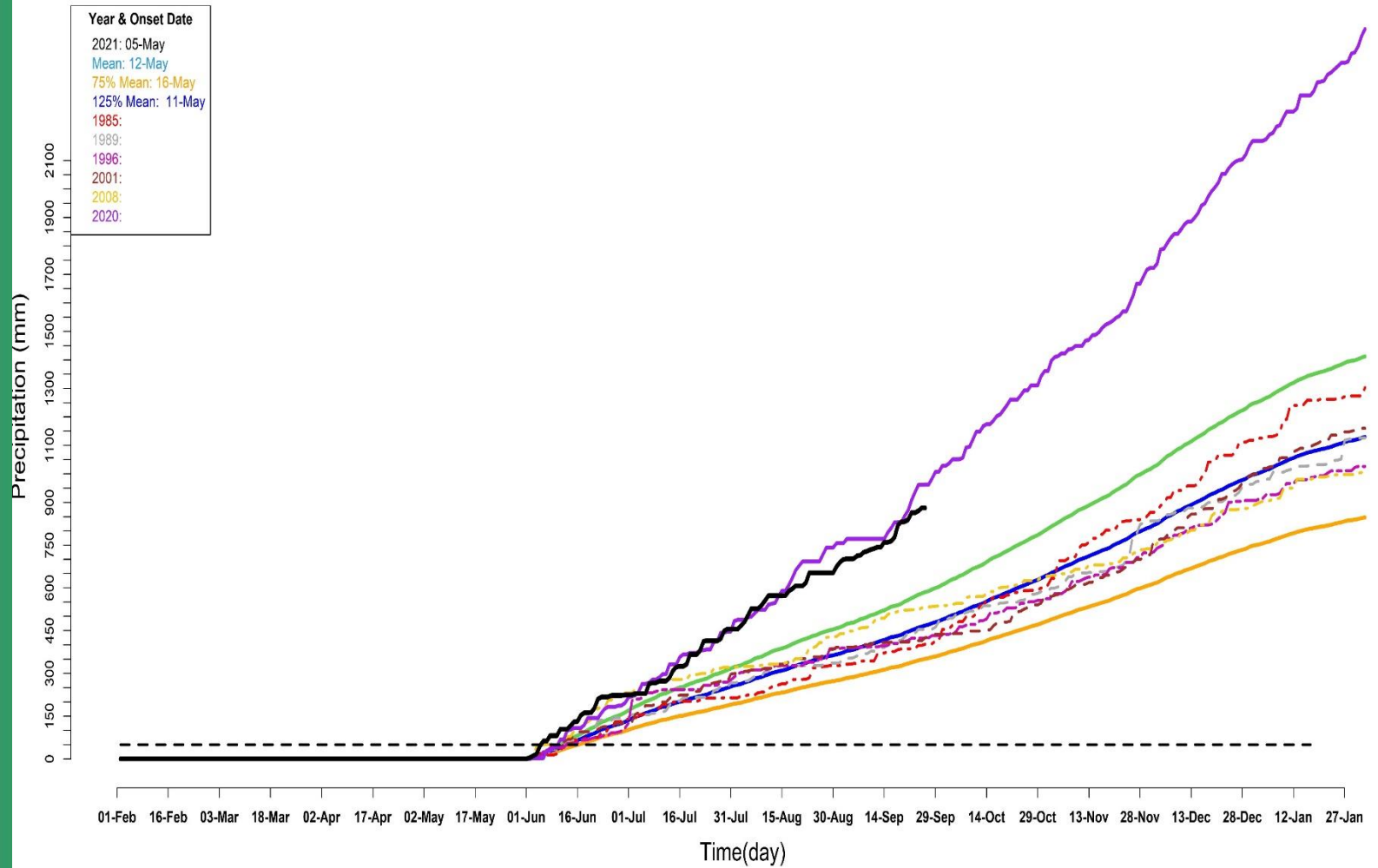
Gabon : Cumulative precipitation for TCHIBANGA
Data source: ARC2, Last update: 2021-08-25



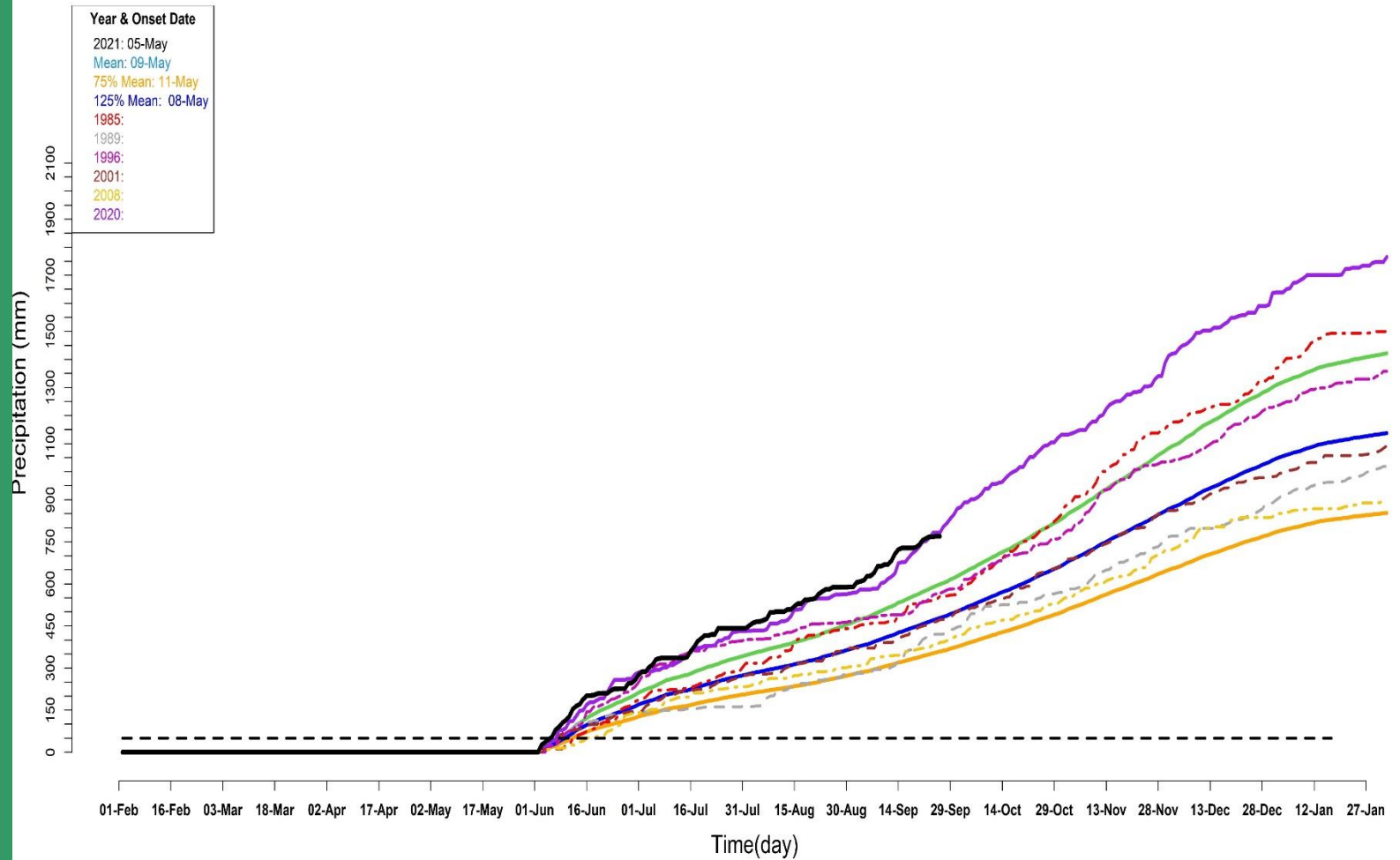
DRC : Cumulative precipitation for KINSHASA_N_DOLO
Data source: ARC2, Last update: 2021-08-25



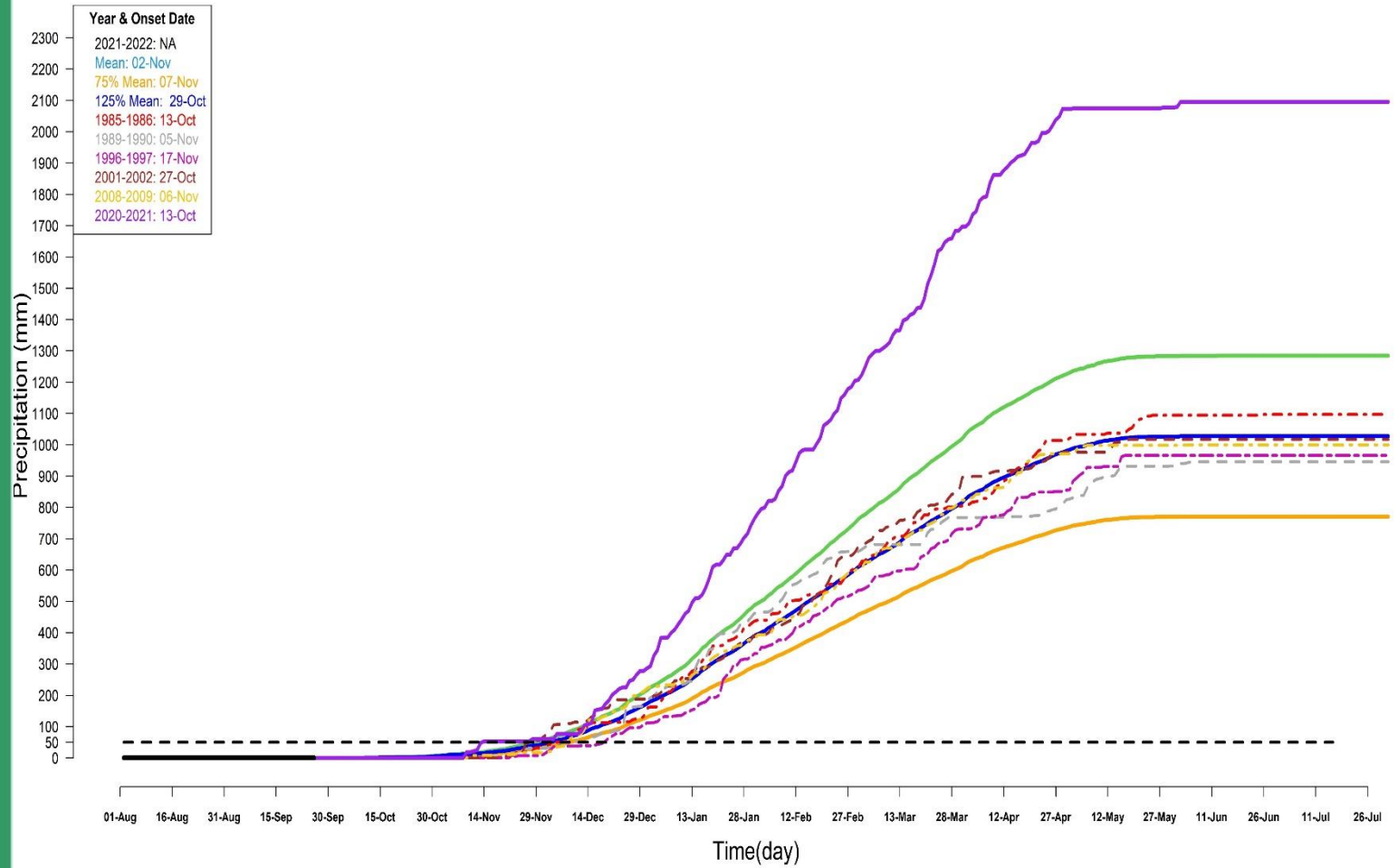
DRC : Cumulative precipitation for MBANDAKA
Data source: ARC2, Last update: 2021-08-25



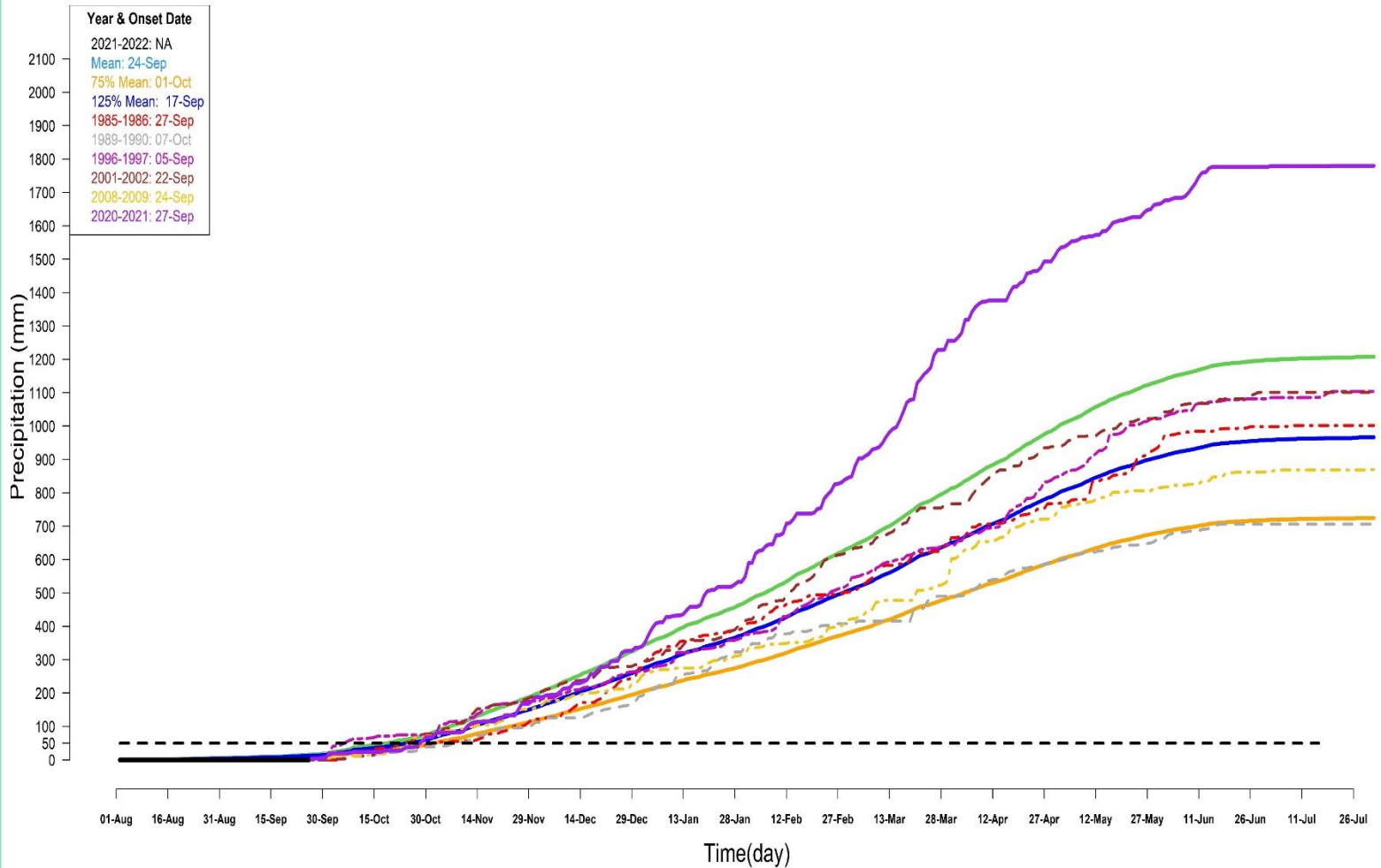
DRC : Cumulative precipitation for BUTEMBO
Data source: ARC2, Last update: 2021-08-25



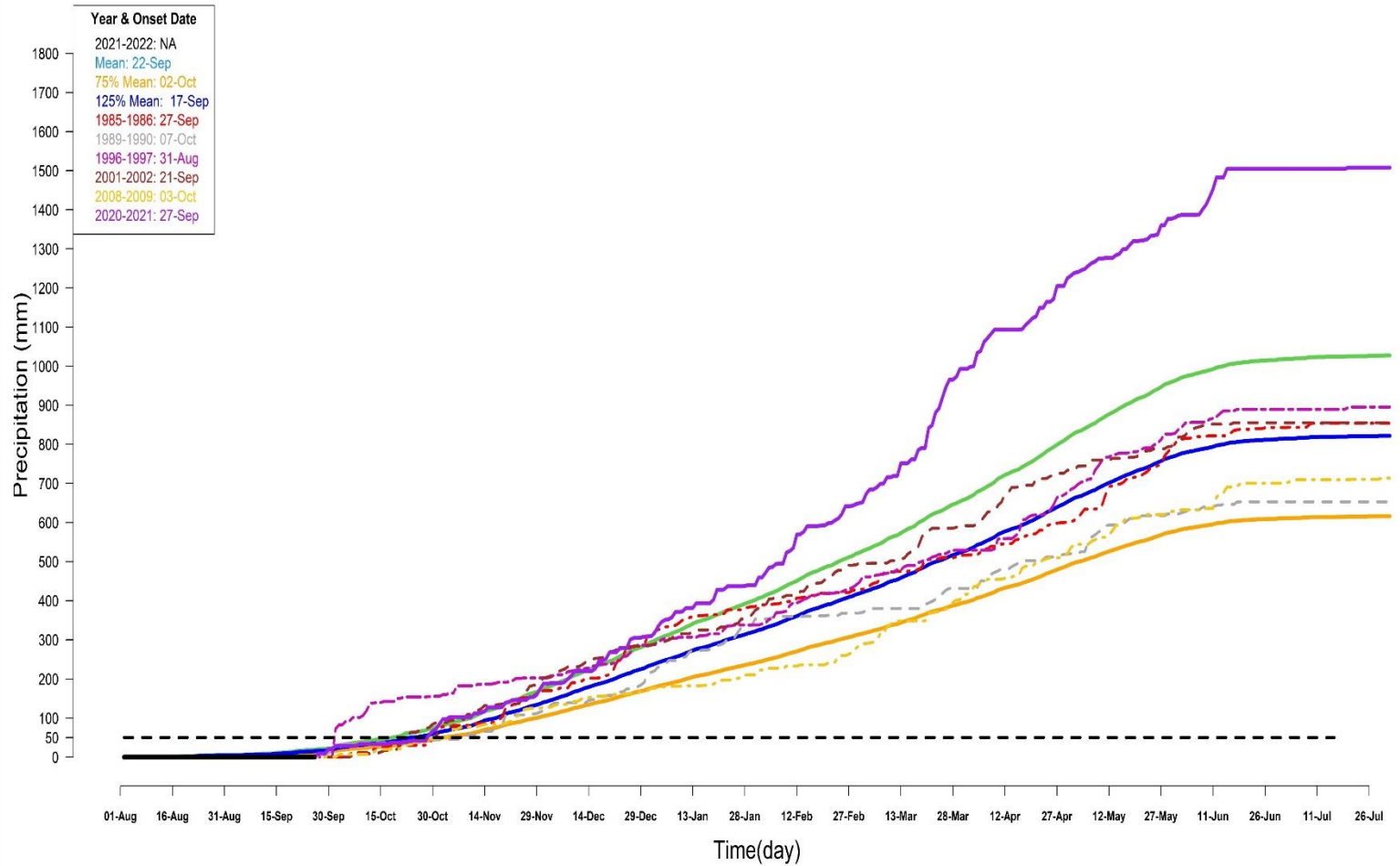
DRC : Cumulative precipitation for LUBUMBASHI-LUANO
Data source: ARC2, Last update: 2021-08-25



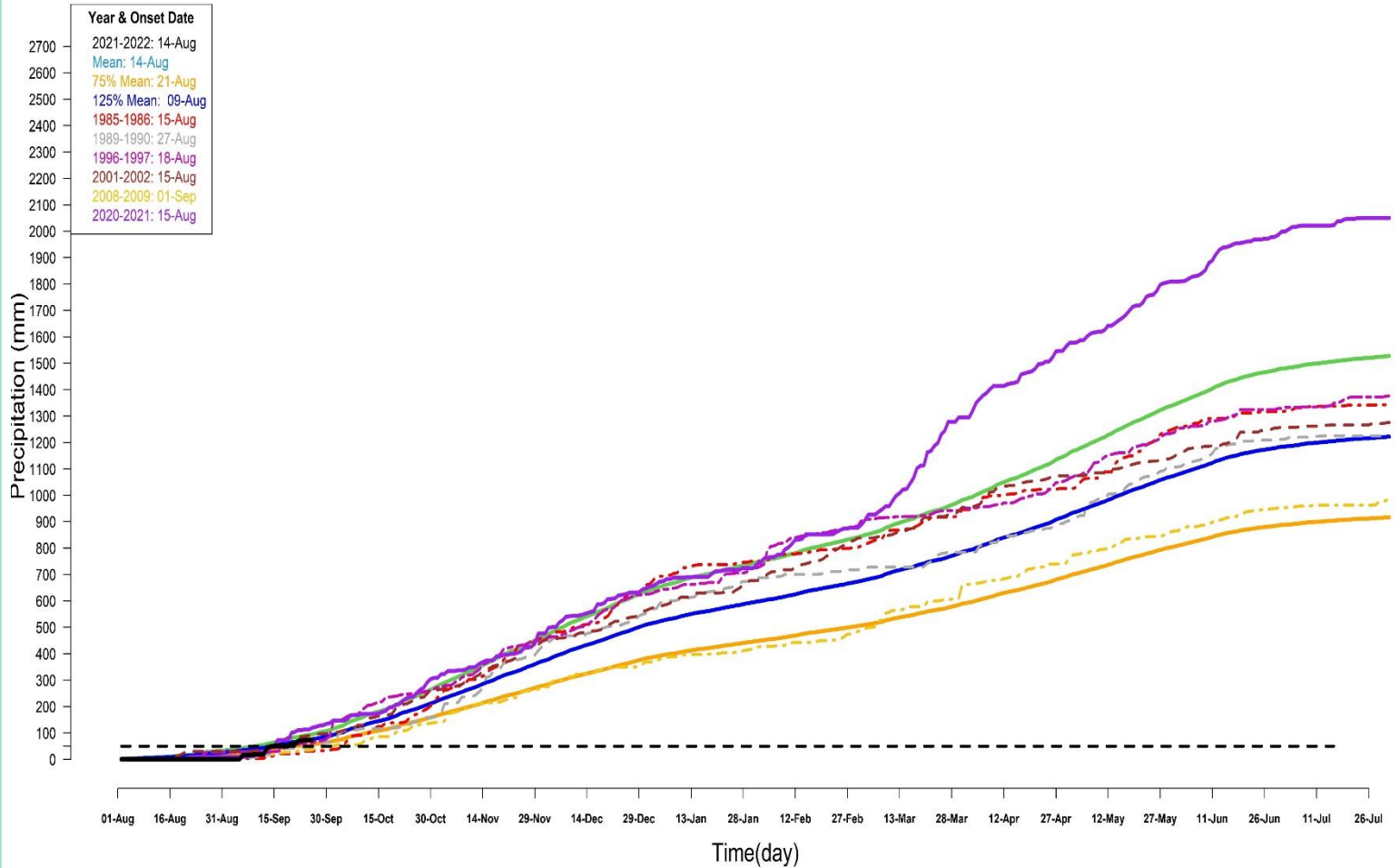
Burundi : Cumulative precipitation for BUJUMBURA
Data source: ARC2, Last update: 2021-08-25



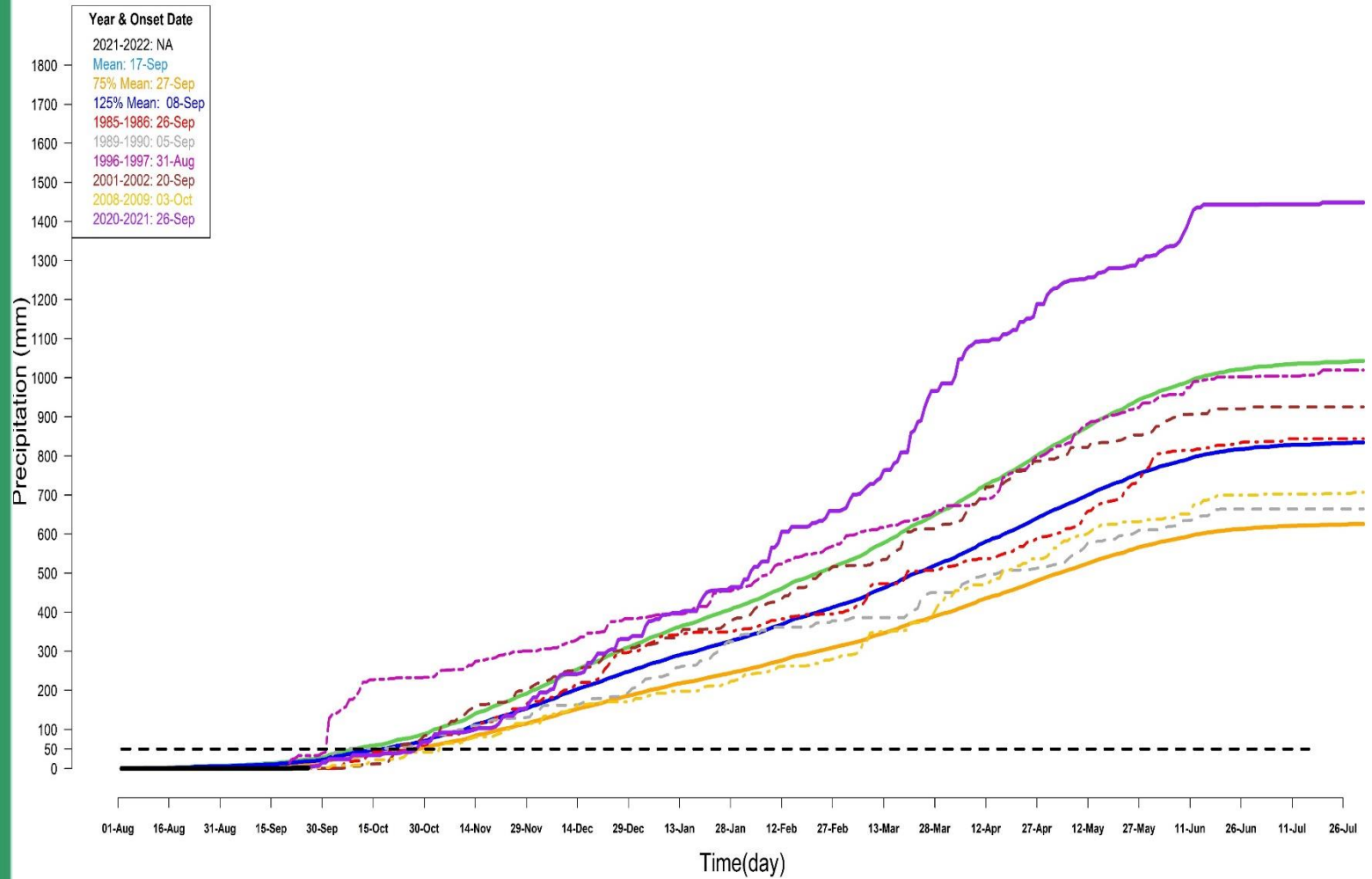
Burundi : Cumulative precipitation for MUYINGA
Data source: ARC2, Last update: 2021-08-25



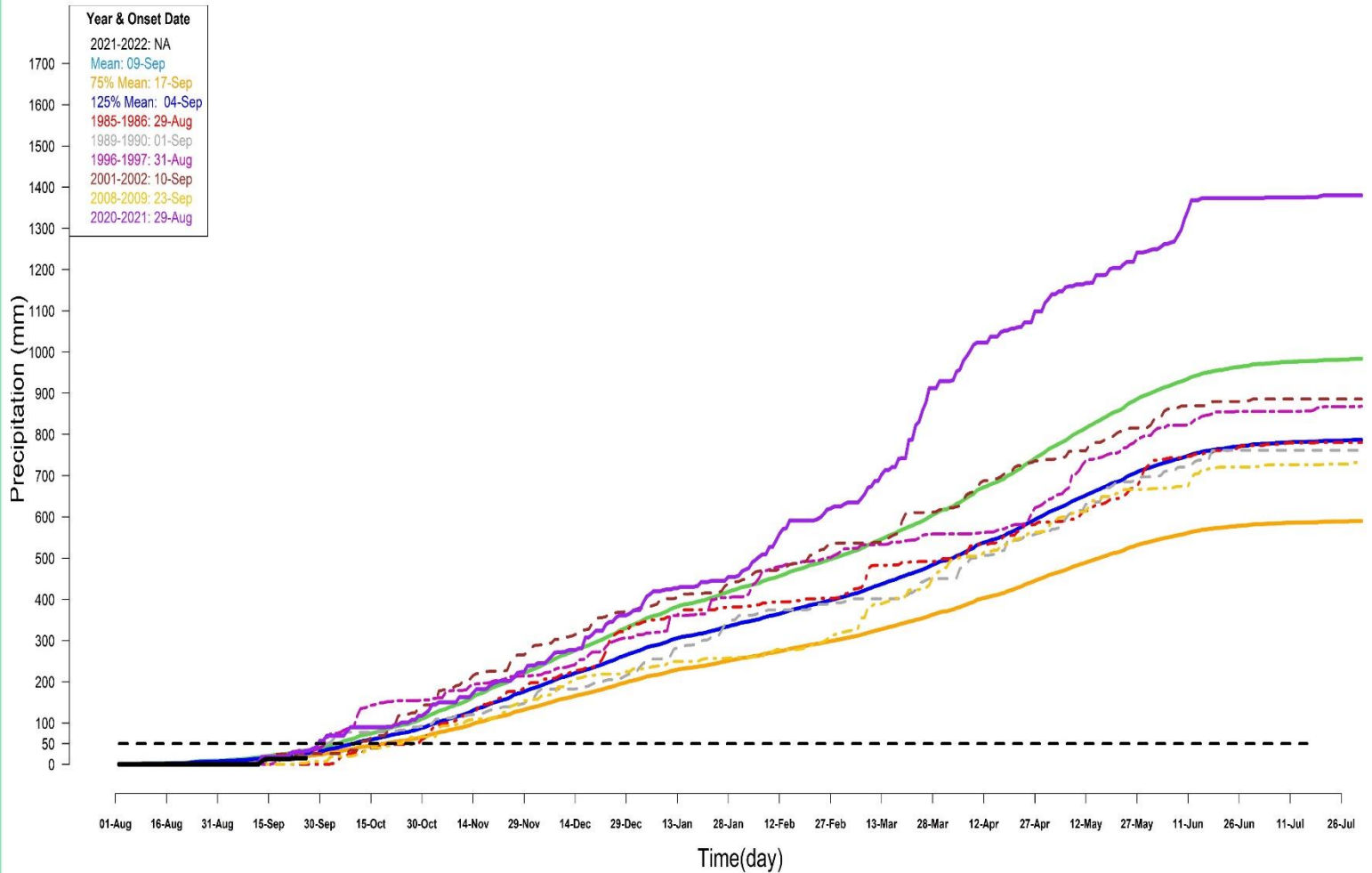
Rwanda : Cumulative precipitation for GISENYI
Data source: ARC2, Last update: 2021-08-25



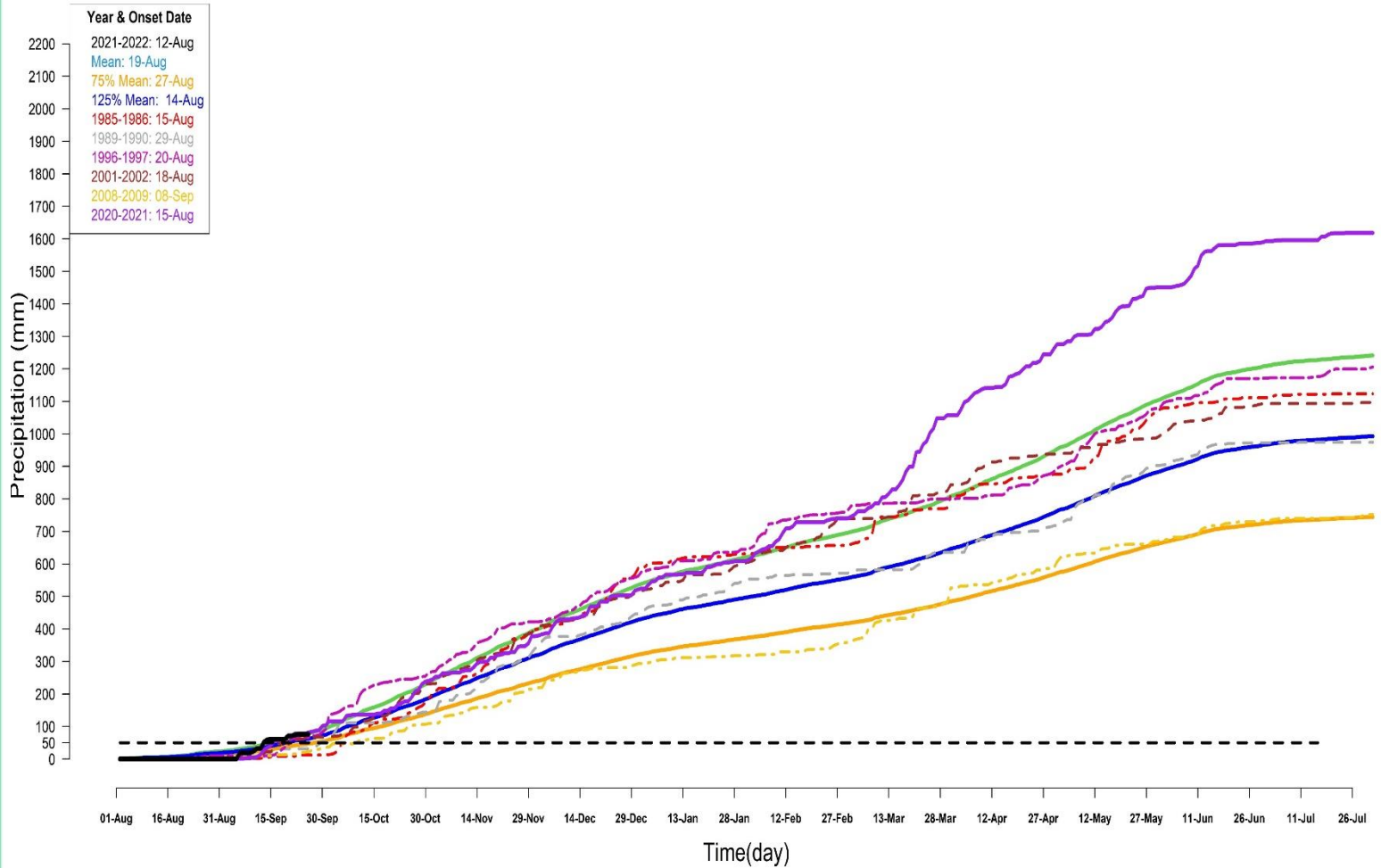
Rwanda : Cumulative precipitation for BUTARE
Data source: ARC2, Last update: 2021-08-25



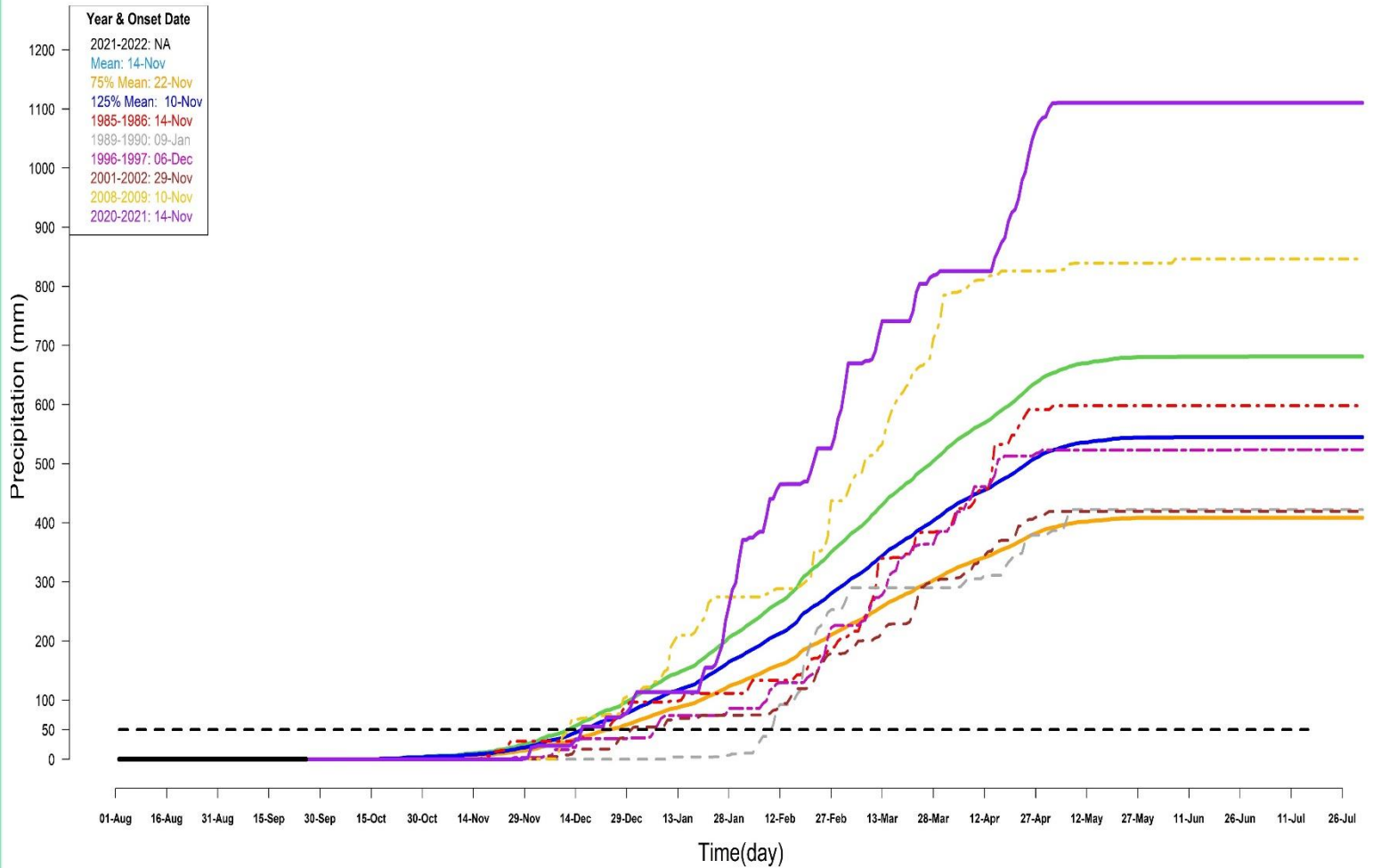
Rwanda : Cumulative precipitation for KIGALI
Data source: ARC2, Last update: 2021-08-25



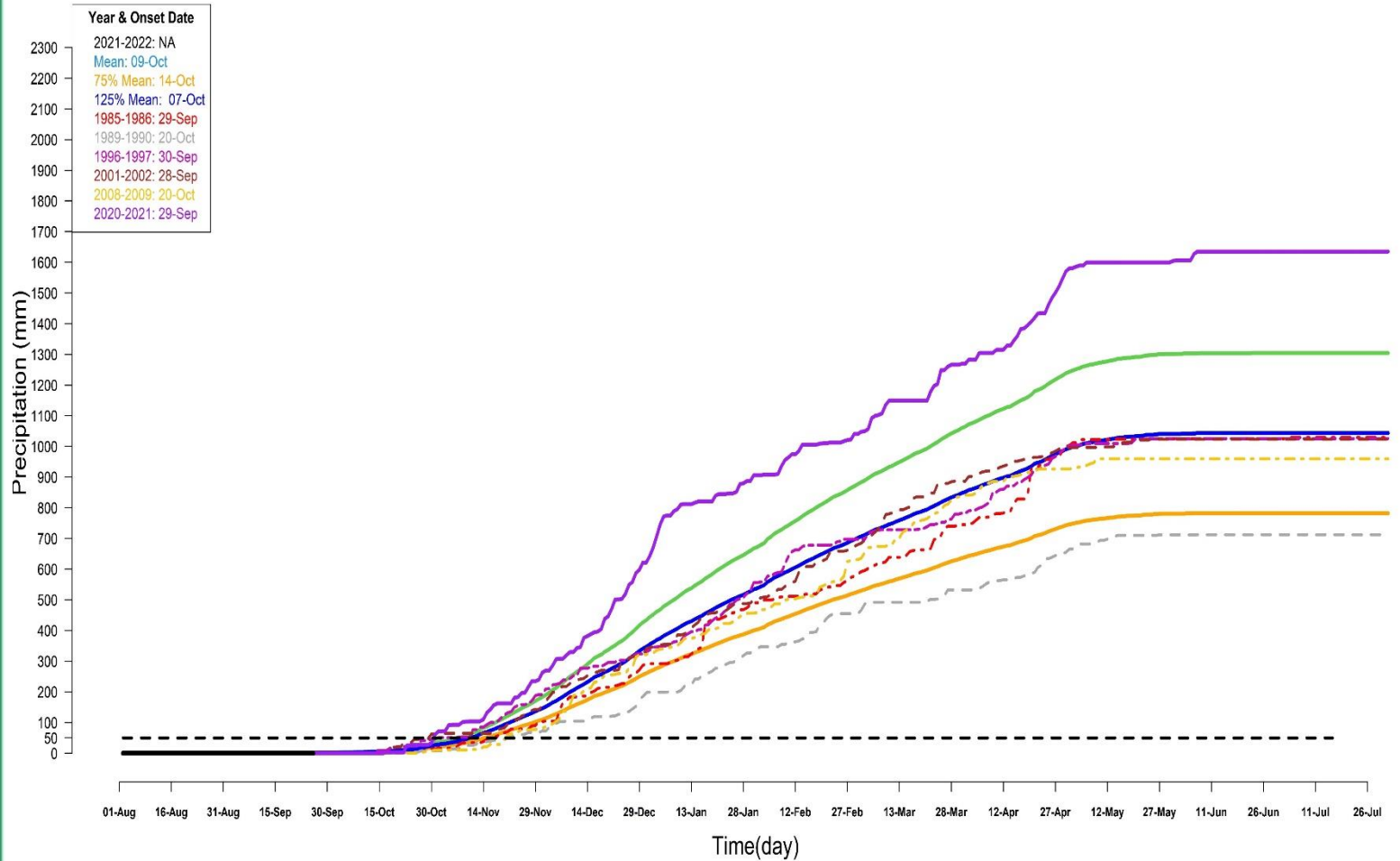
Rwanda : Cumulative precipitation for RUHENGARI
Data source: ARC2, Last update: 2021-08-25



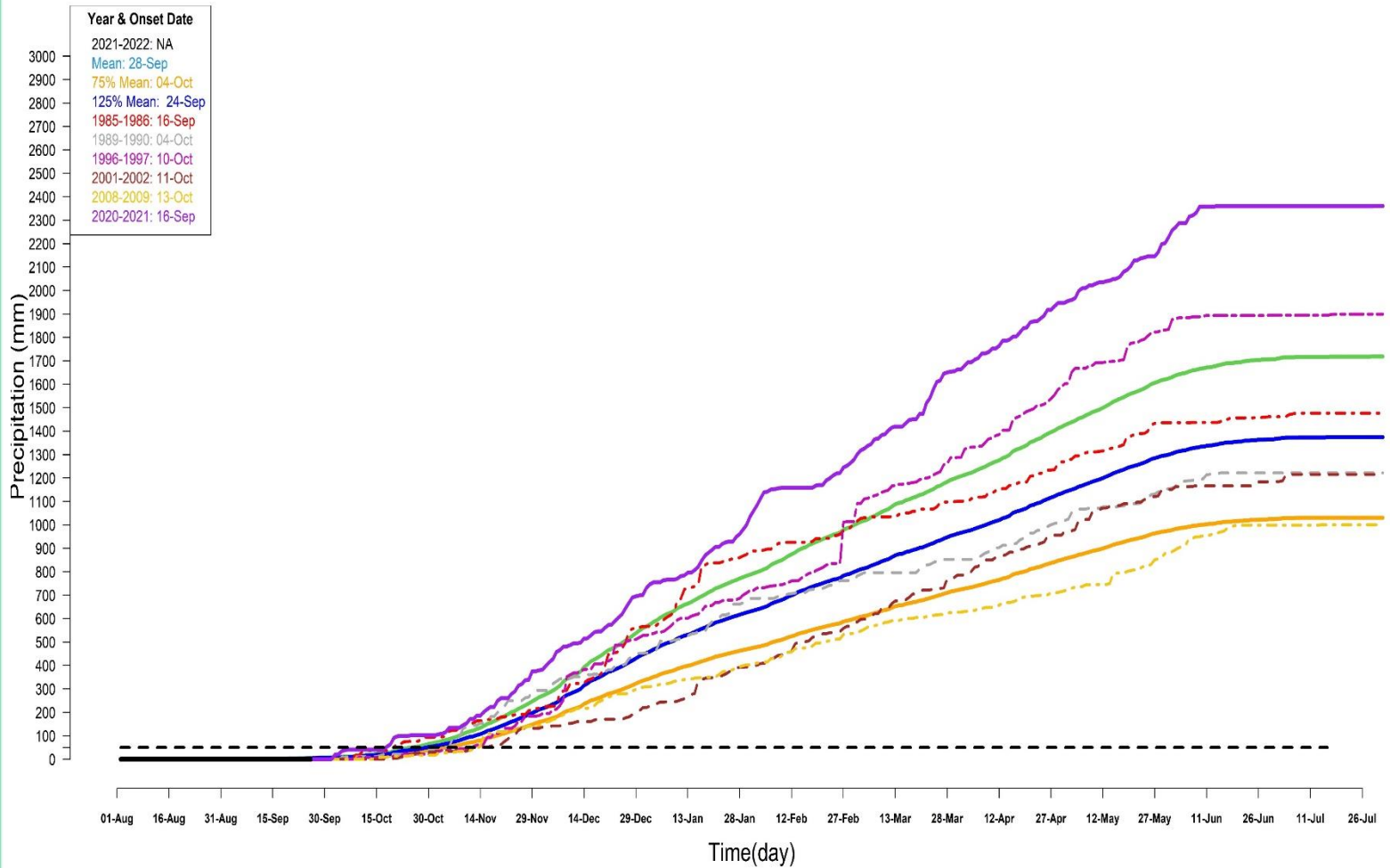
Angola : Cumulative precipitation for PEREIRA-DE-ECA
Data source: ARC2, Last update: 2021-08-25



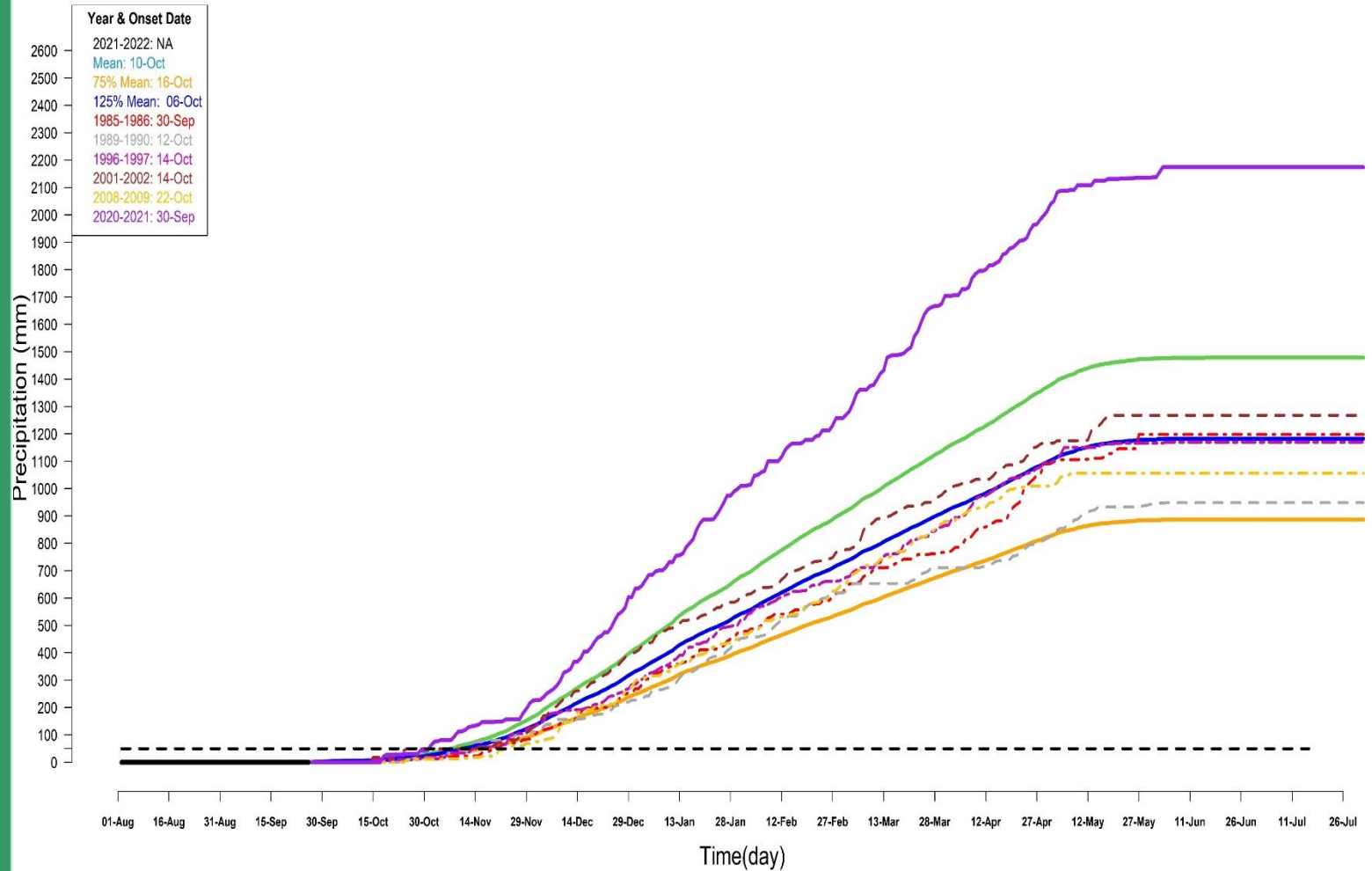
Angola : Cumulative precipitation for BIE-SILVA-PORTO
Data source: ARC2, Last update: 2021-08-25



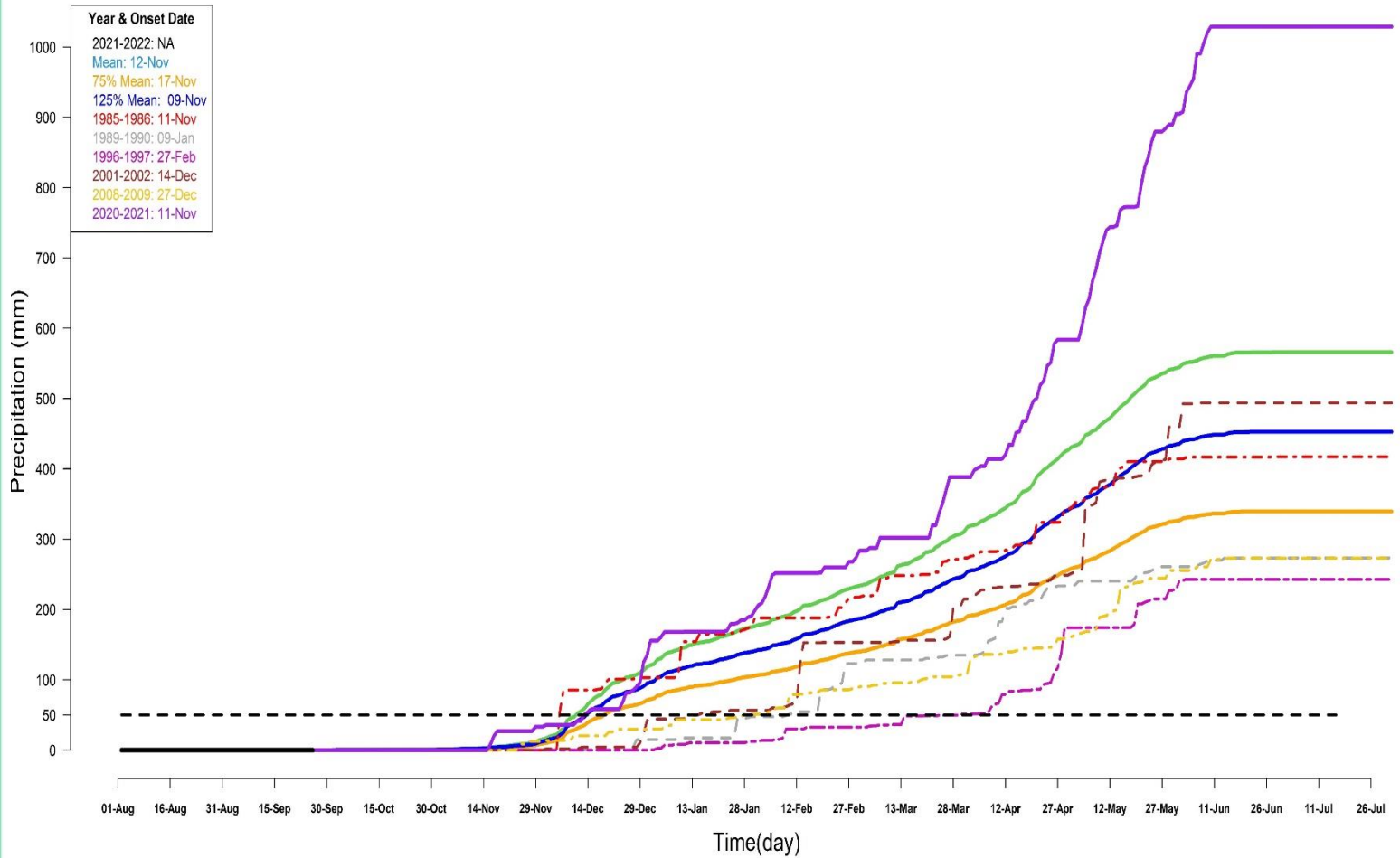
Angola : Cumulative precipitation for NEGAGE
Data source: ARC2, Last update: 2021-08-25



Angola : Cumulative precipitation for CAZOMBO
Data source: ARC2, Last update: 2021-08-25



Angola : Cumulative precipitation for LUANDA
Data source: ARC2, Last update: 2021-08-25

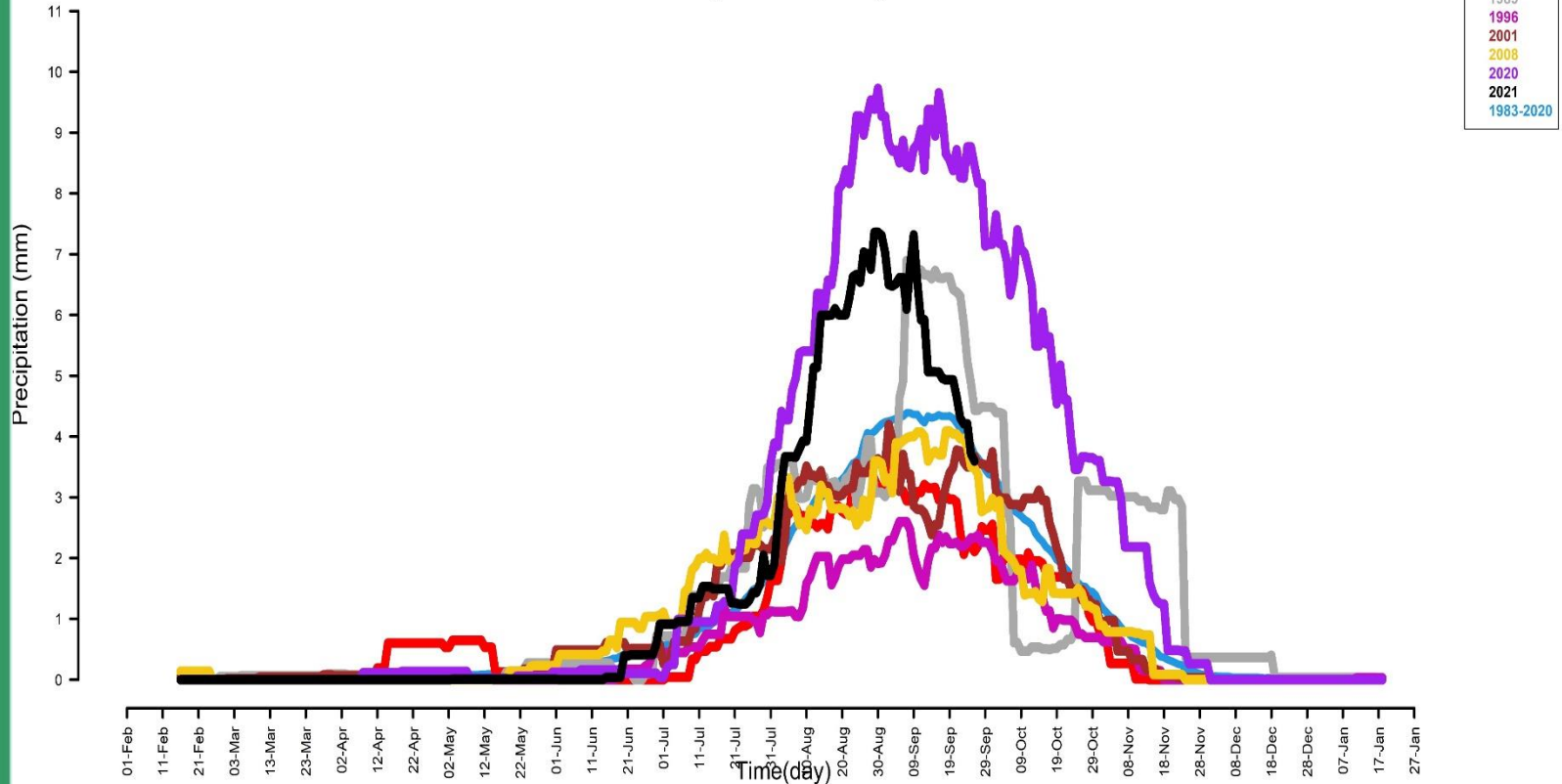




Annual Cycle of Precipitation

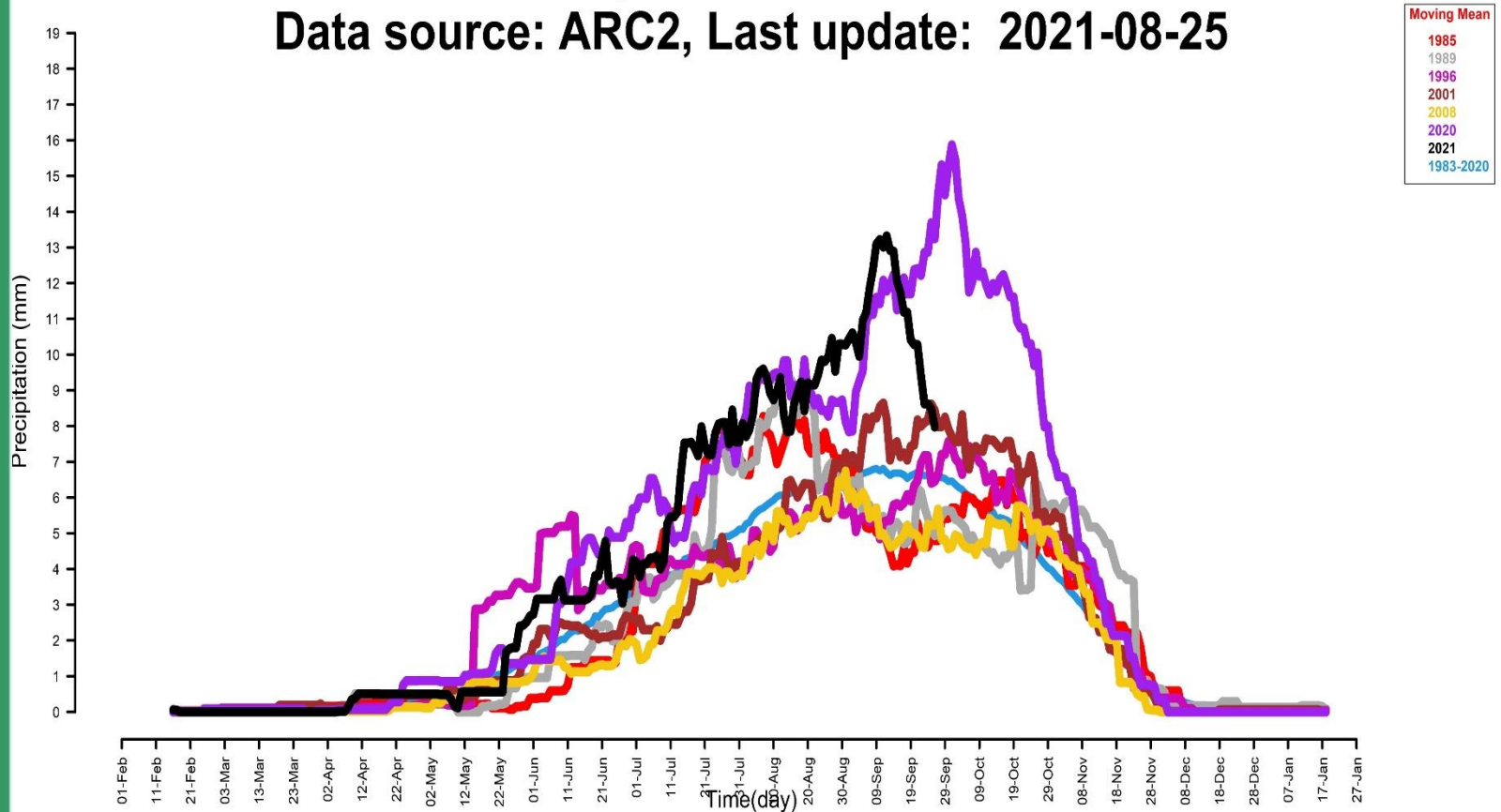
Annual Cycle Chad : BOL-BERIM

Data source: ARC2, Last update: 2021-08-25



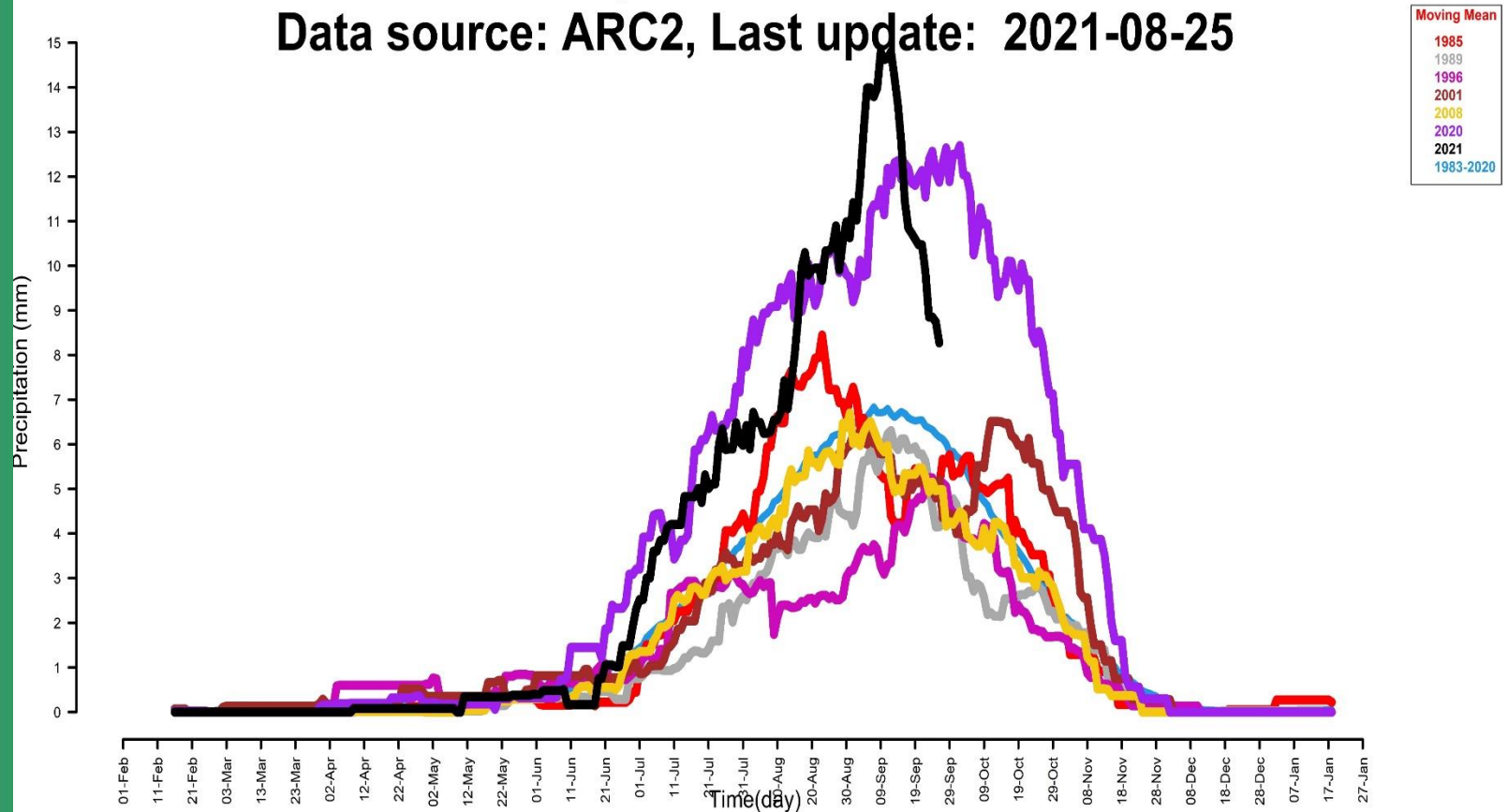
Annual Cycle Chad : BOUSSO

Data source: ARC2, Last update: 2021-08-25



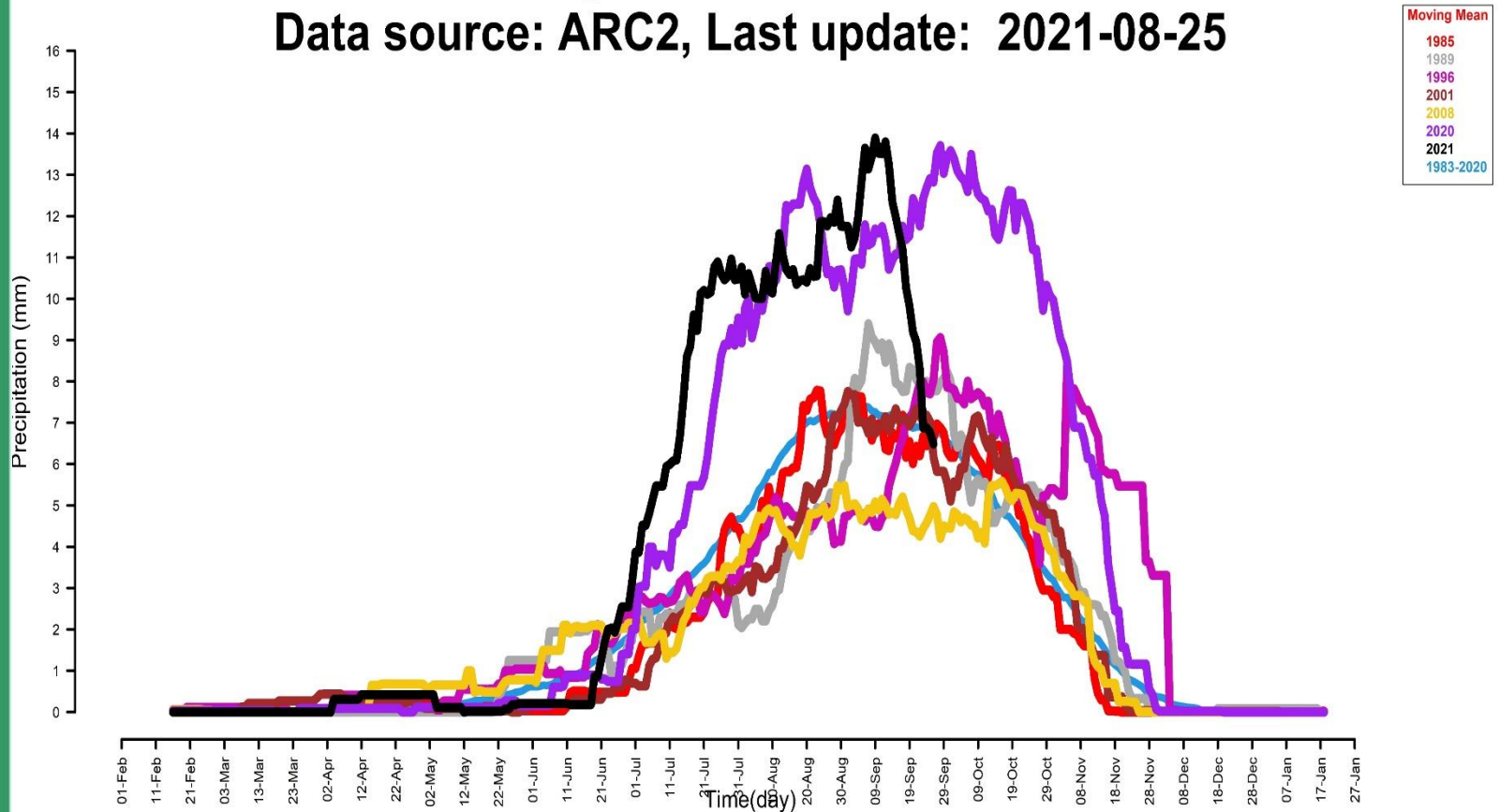
Annual Cycle Chad : BOKORO

Data source: ARC2, Last update: 2021-08-25



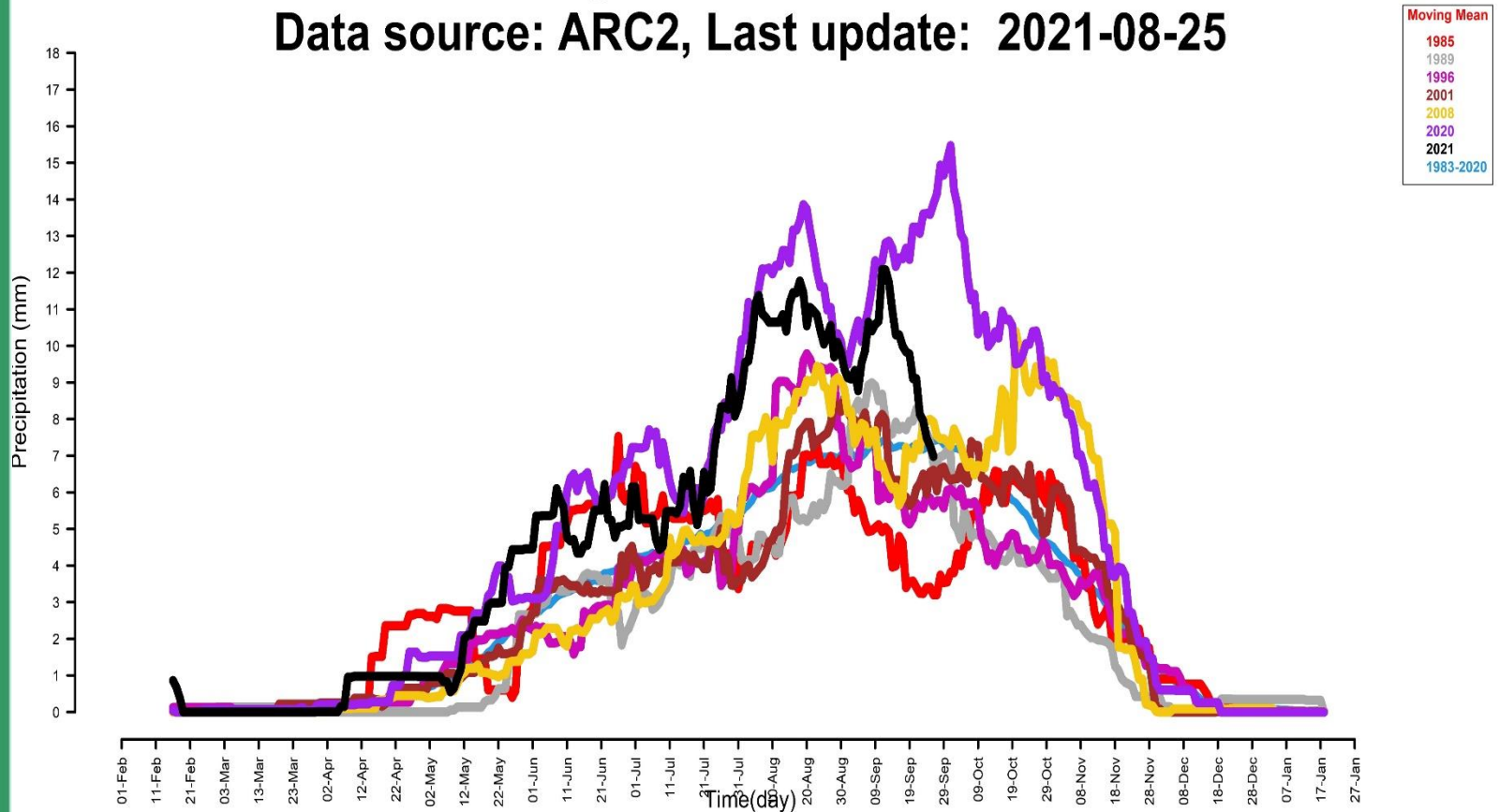
Annual Cycle Chad : GOZ-BEIDA

Data source: ARC2, Last update: 2021-08-25



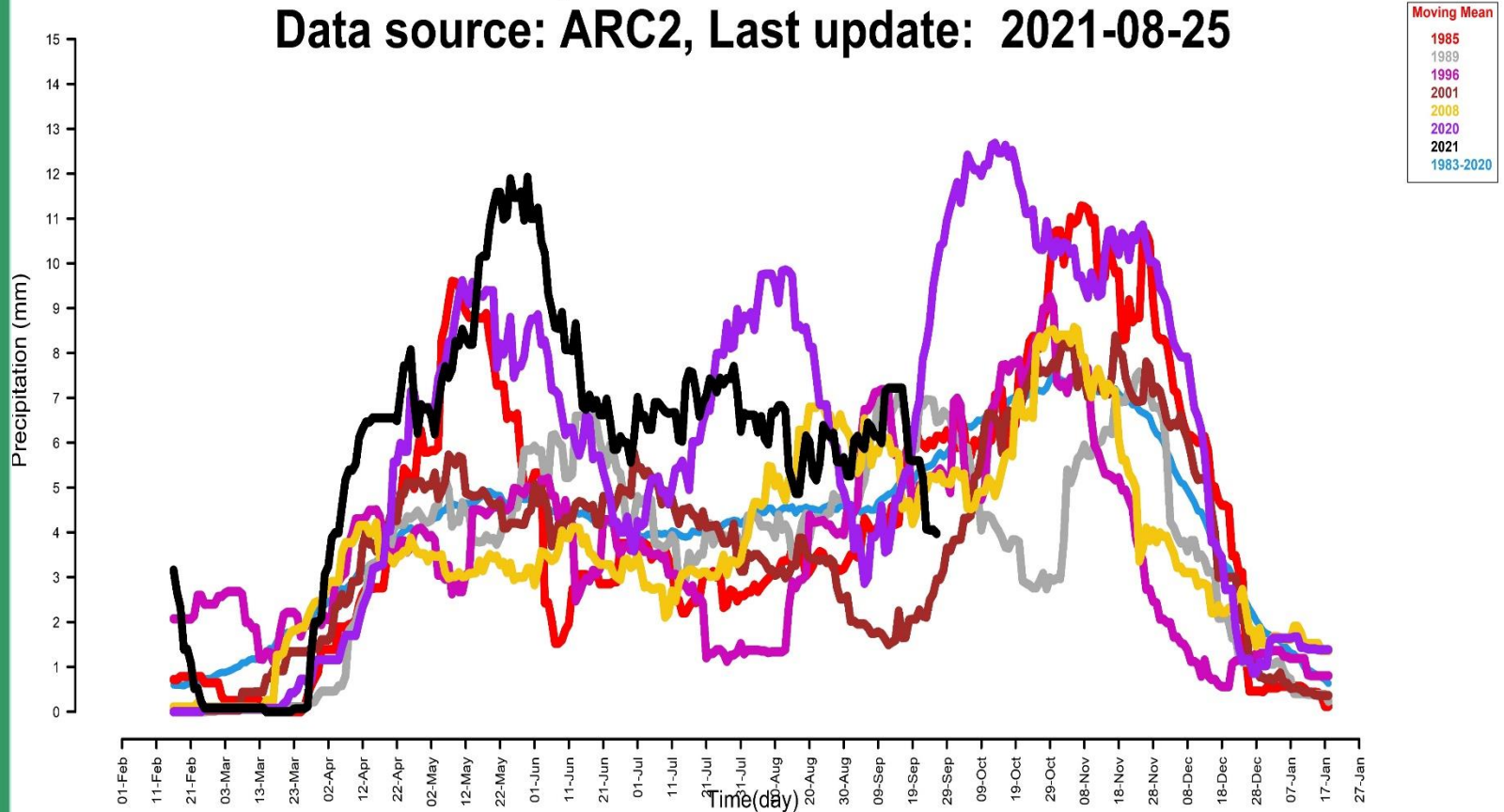
Annual Cycle Chad : MOUNDOU

Data source: ARC2, Last update: 2021-08-25



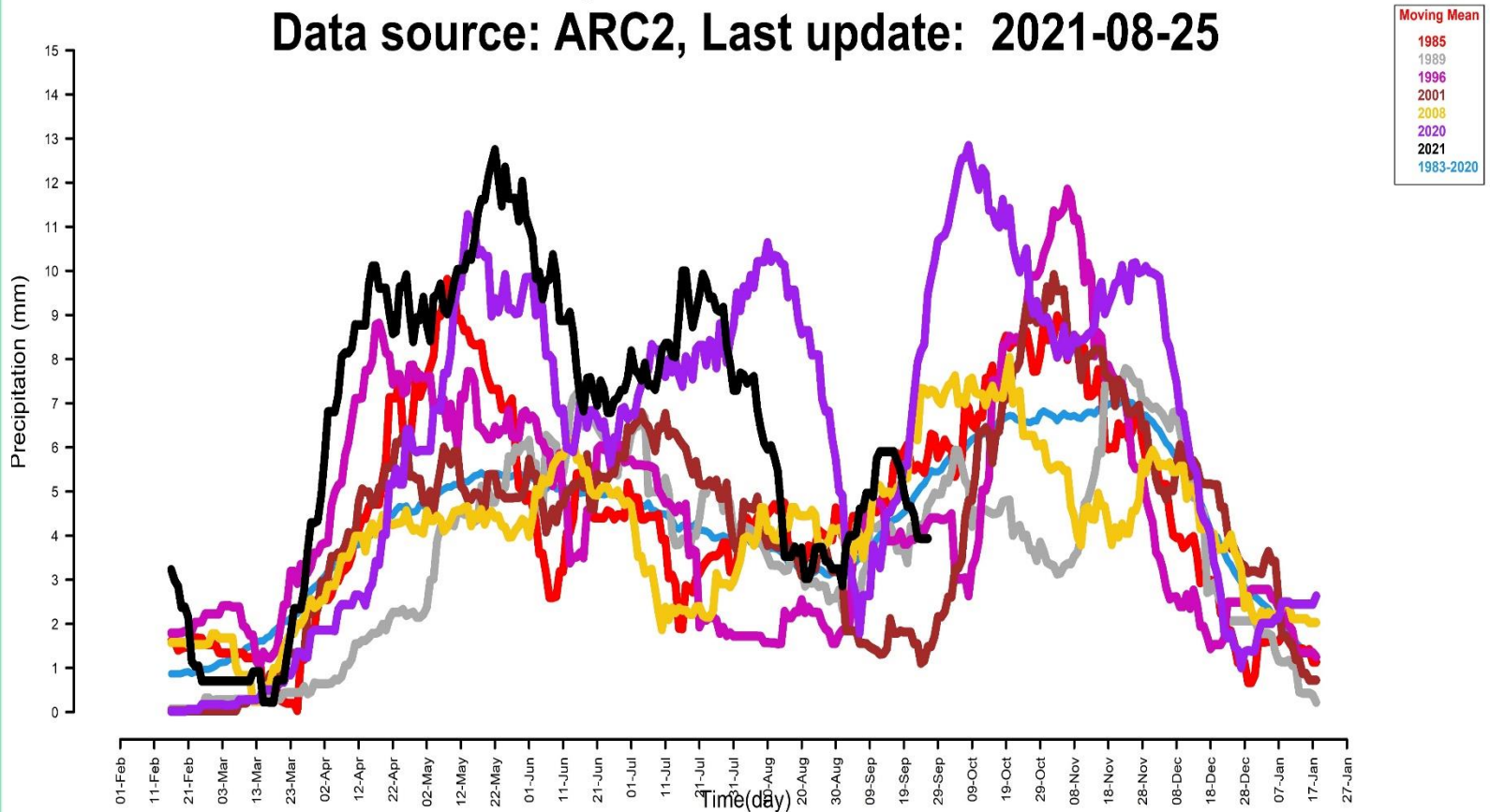
Annual Cycle Cameroon : BATOURI

Data source: ARC2, Last update: 2021-08-25



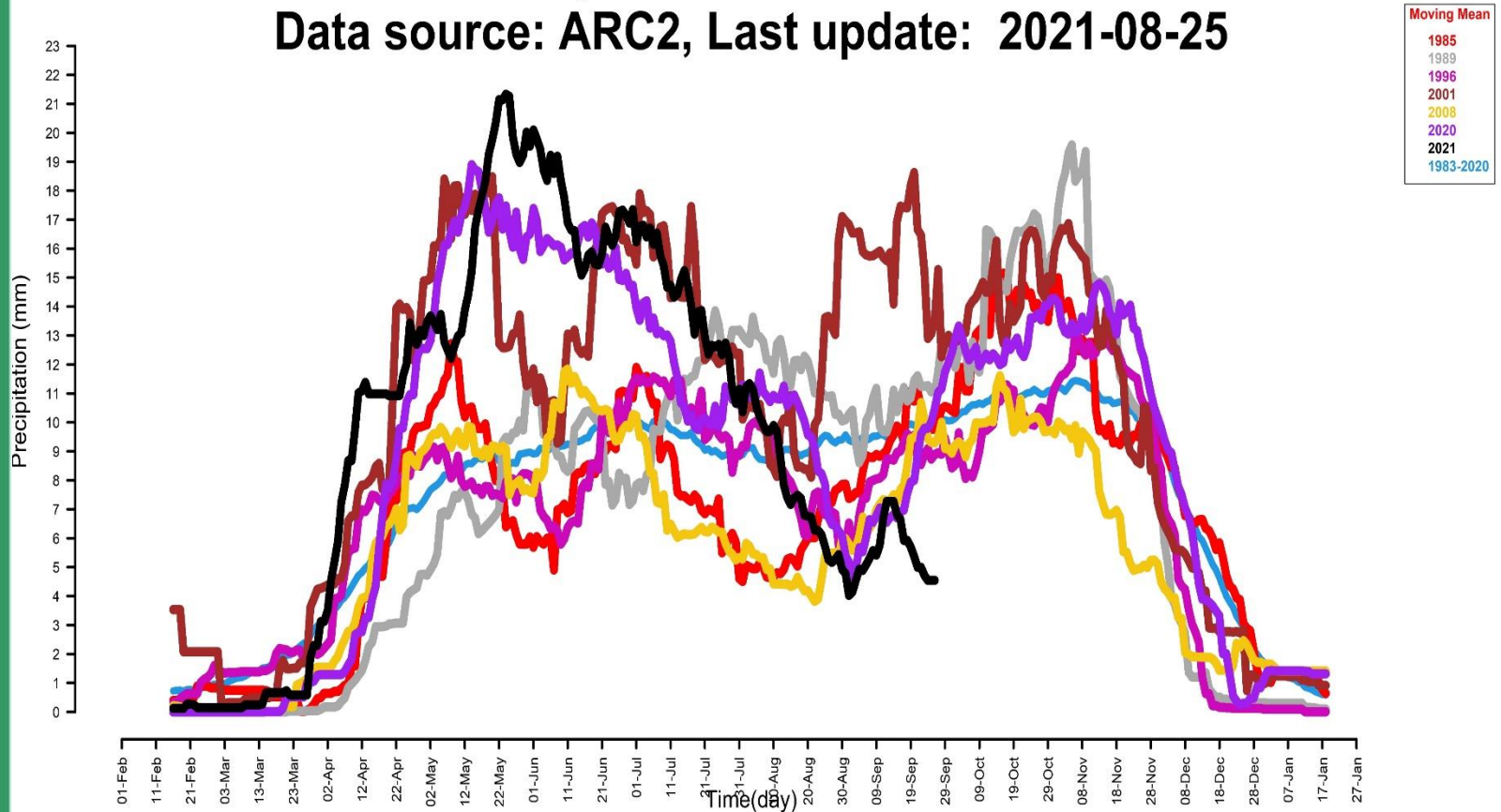
Annual Cycle Cameroon : LOMIE

Data source: ARC2, Last update: 2021-08-25



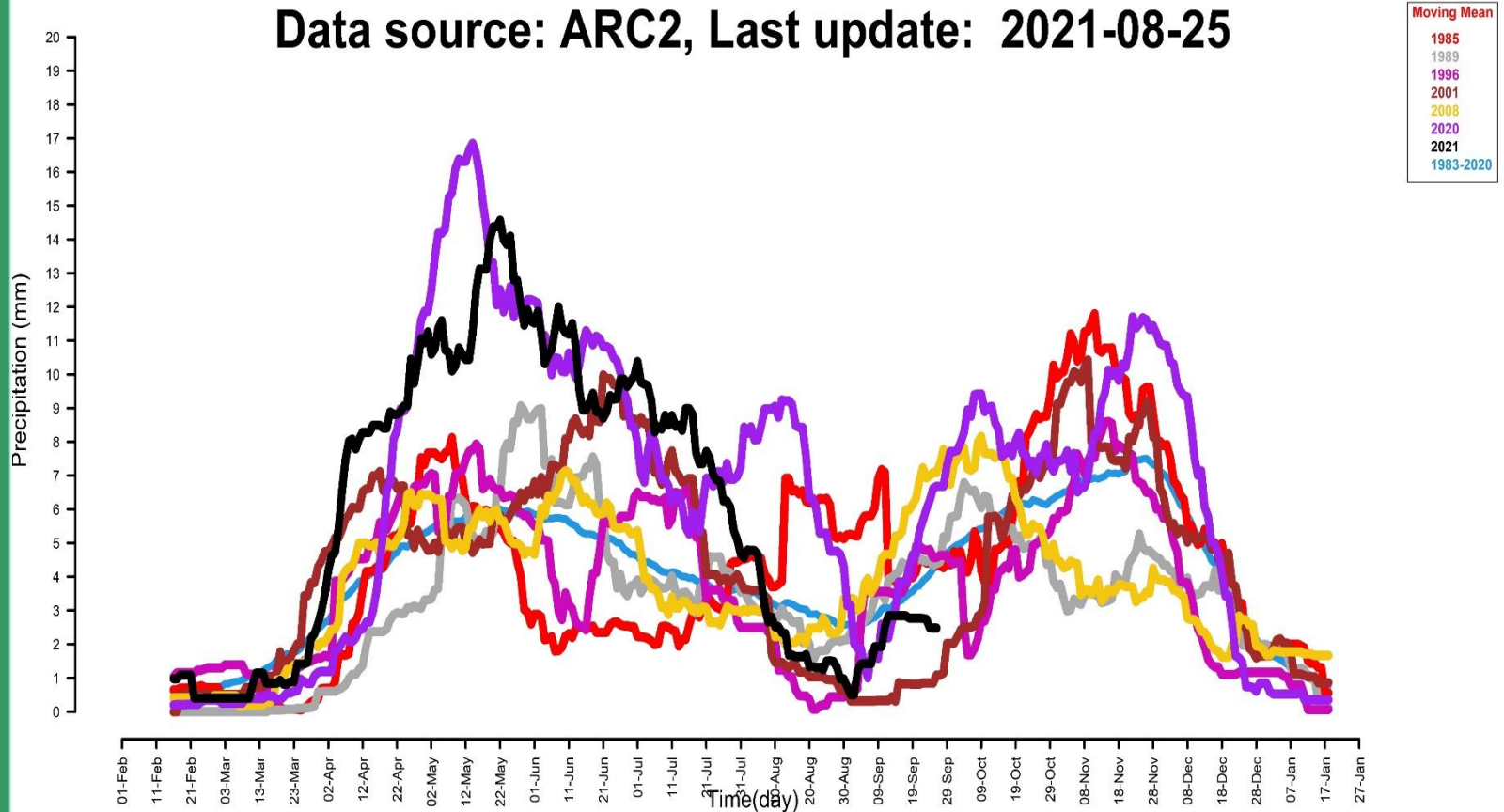
Annual Cycle Cameroon : MAMFE

Data source: ARC2, Last update: 2021-08-25



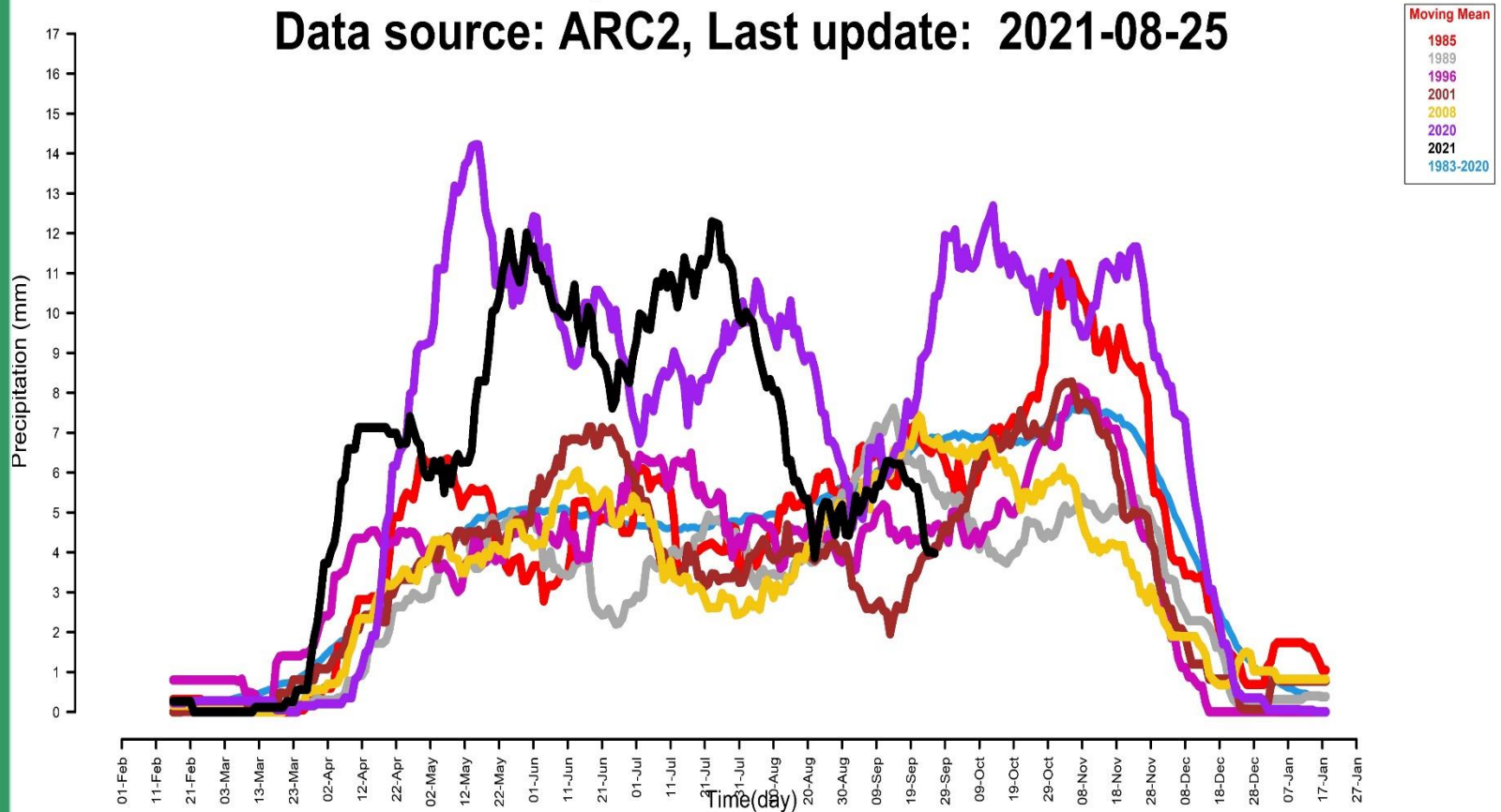
Annual Cycle Cameroon : YAOUNDE

Data source: ARC2, Last update: 2021-08-25



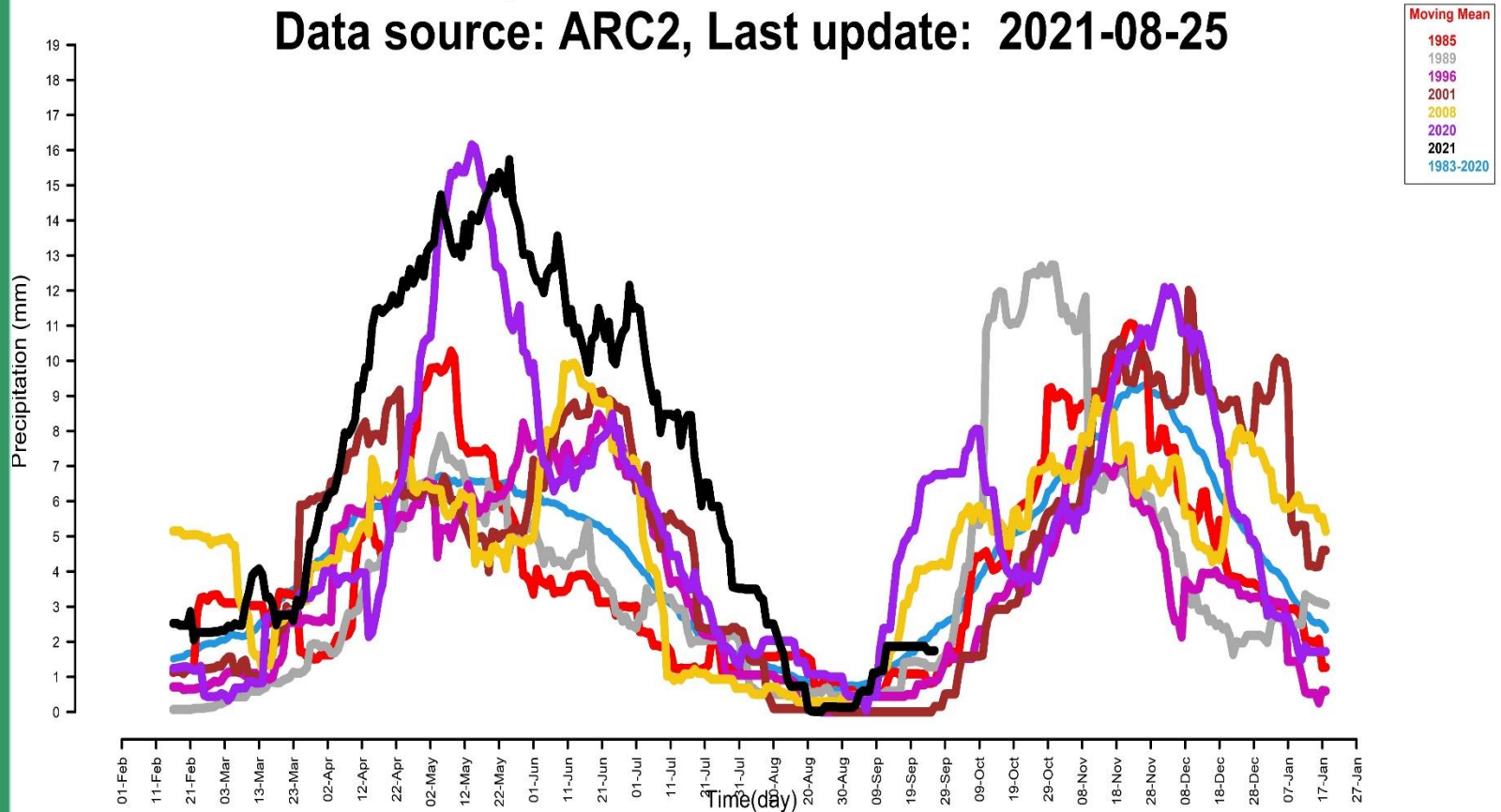
Annual Cycle Cameroon : YOKO

Data source: ARC2, Last update: 2021-08-25



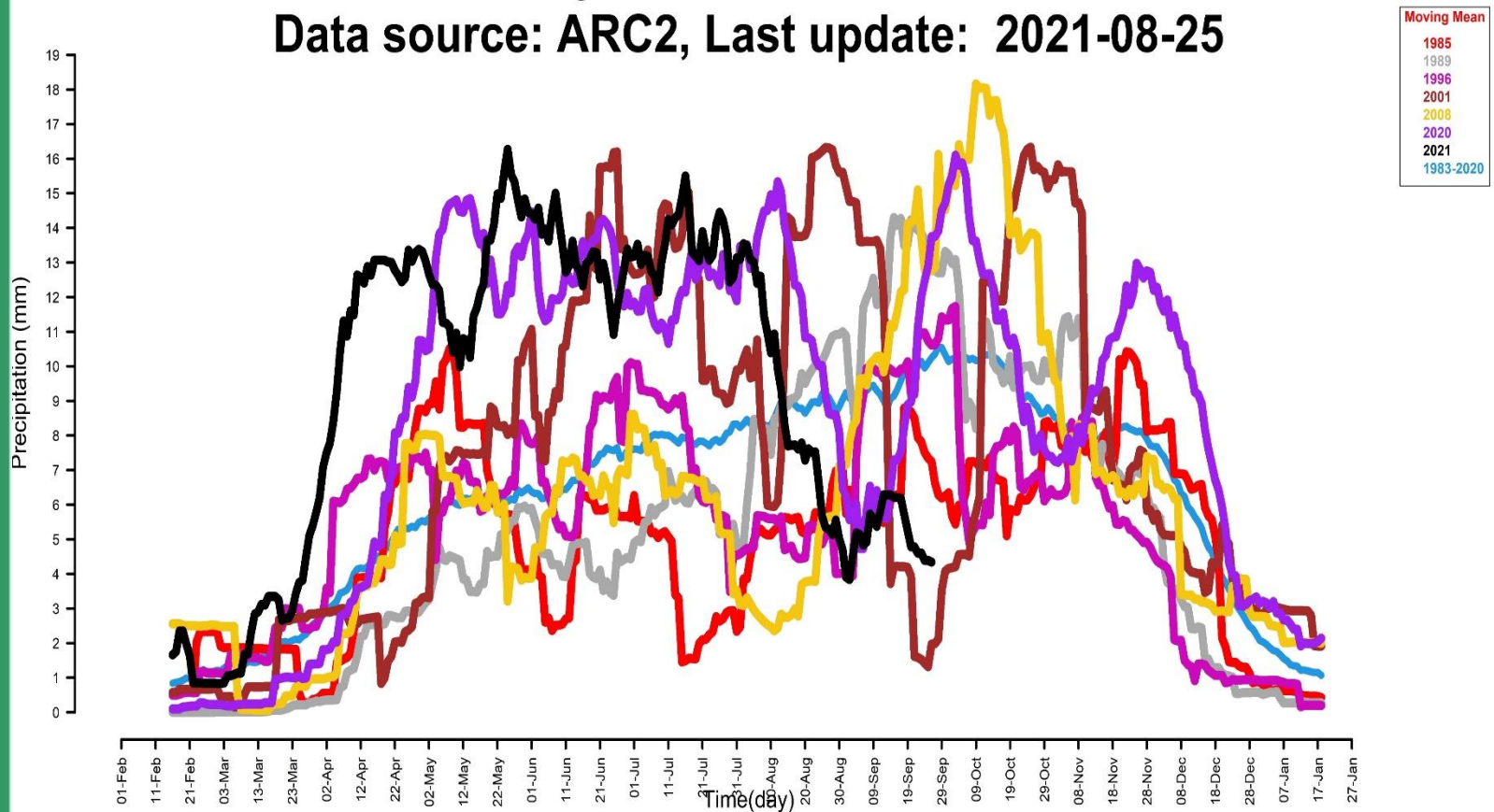
Annual Cycle GuineaE : BATA-RIO-MUNI

Data source: ARC2, Last update: 2021-08-25



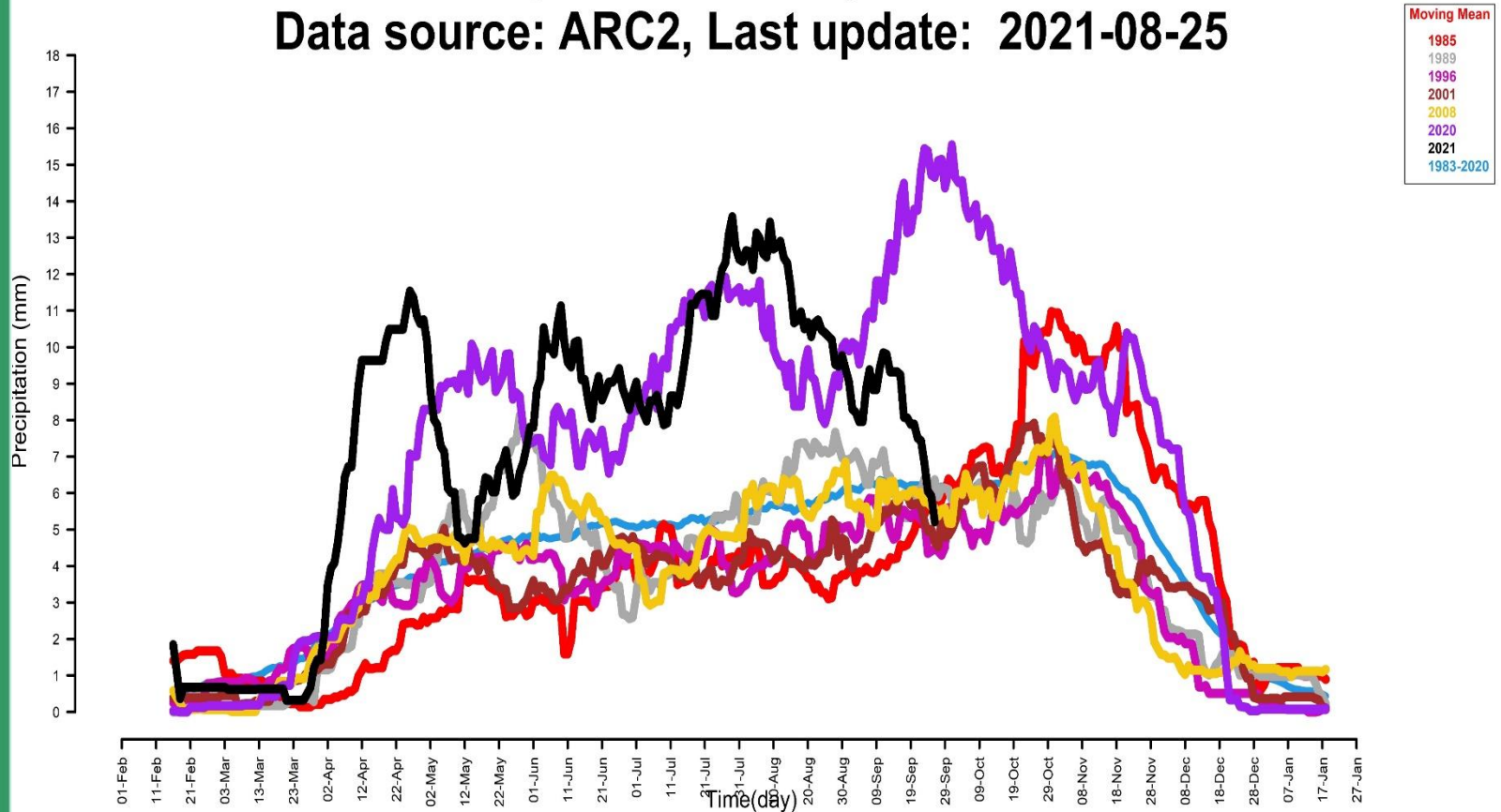
Annual Cycle GuineaE : MALABO

Data source: ARC2, Last update: 2021-08-25



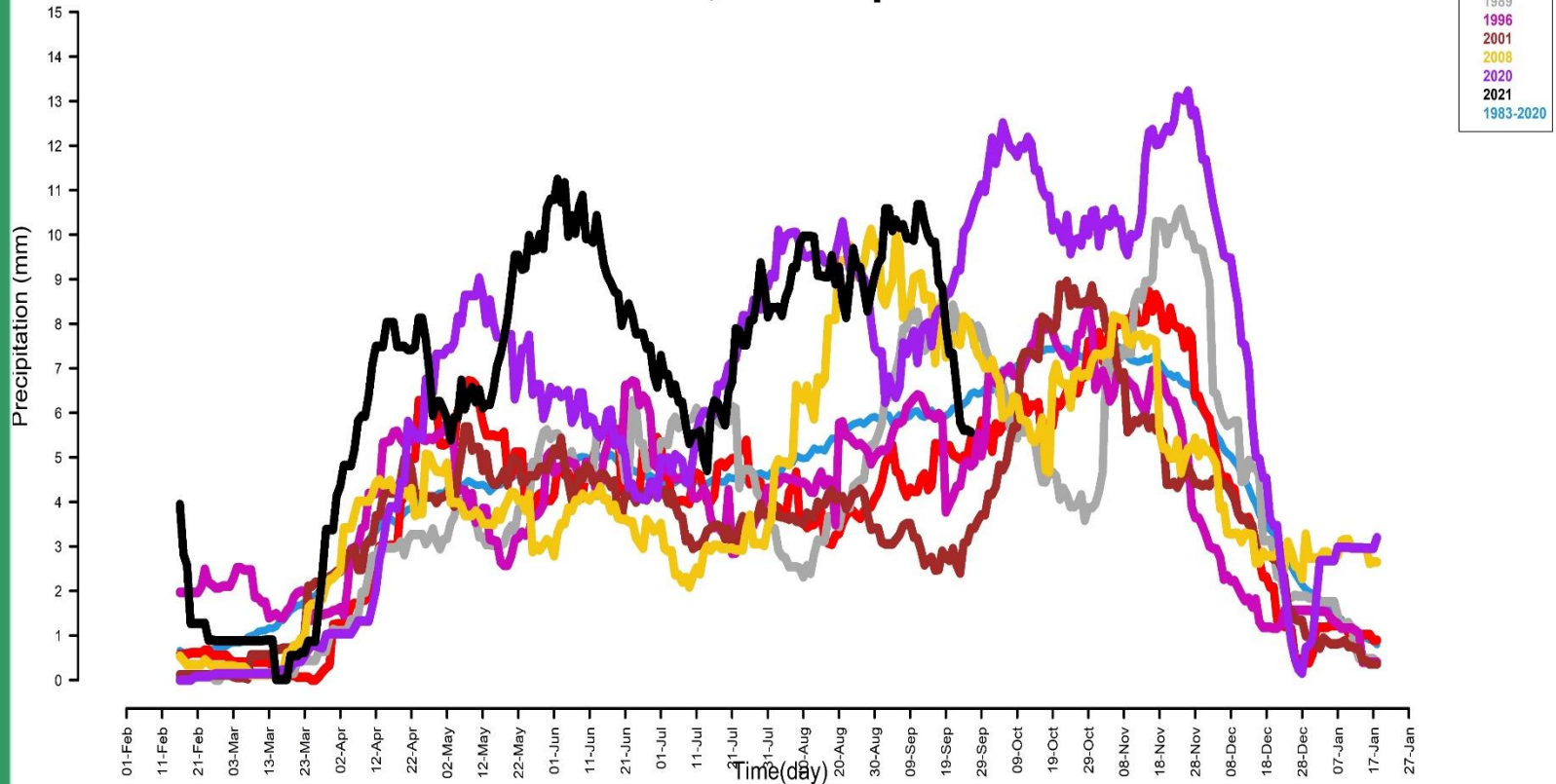
Annual Cycle Centrafrique : BAMBARI

Data source: ARC2, Last update: 2021-08-25



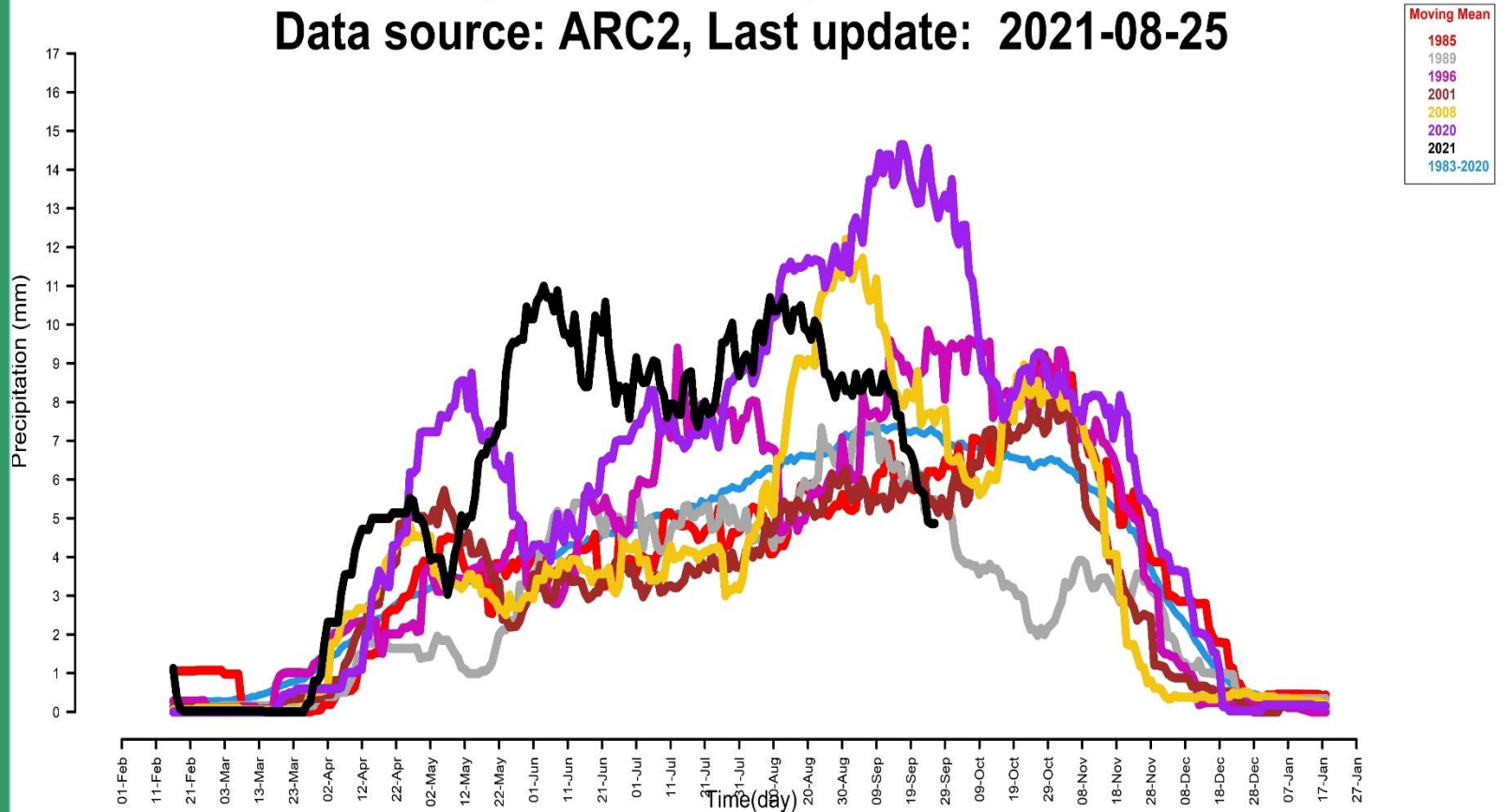
Annual Cycle Centrafrique : BERBERATI

Data source: ARC2, Last update: 2021-08-25



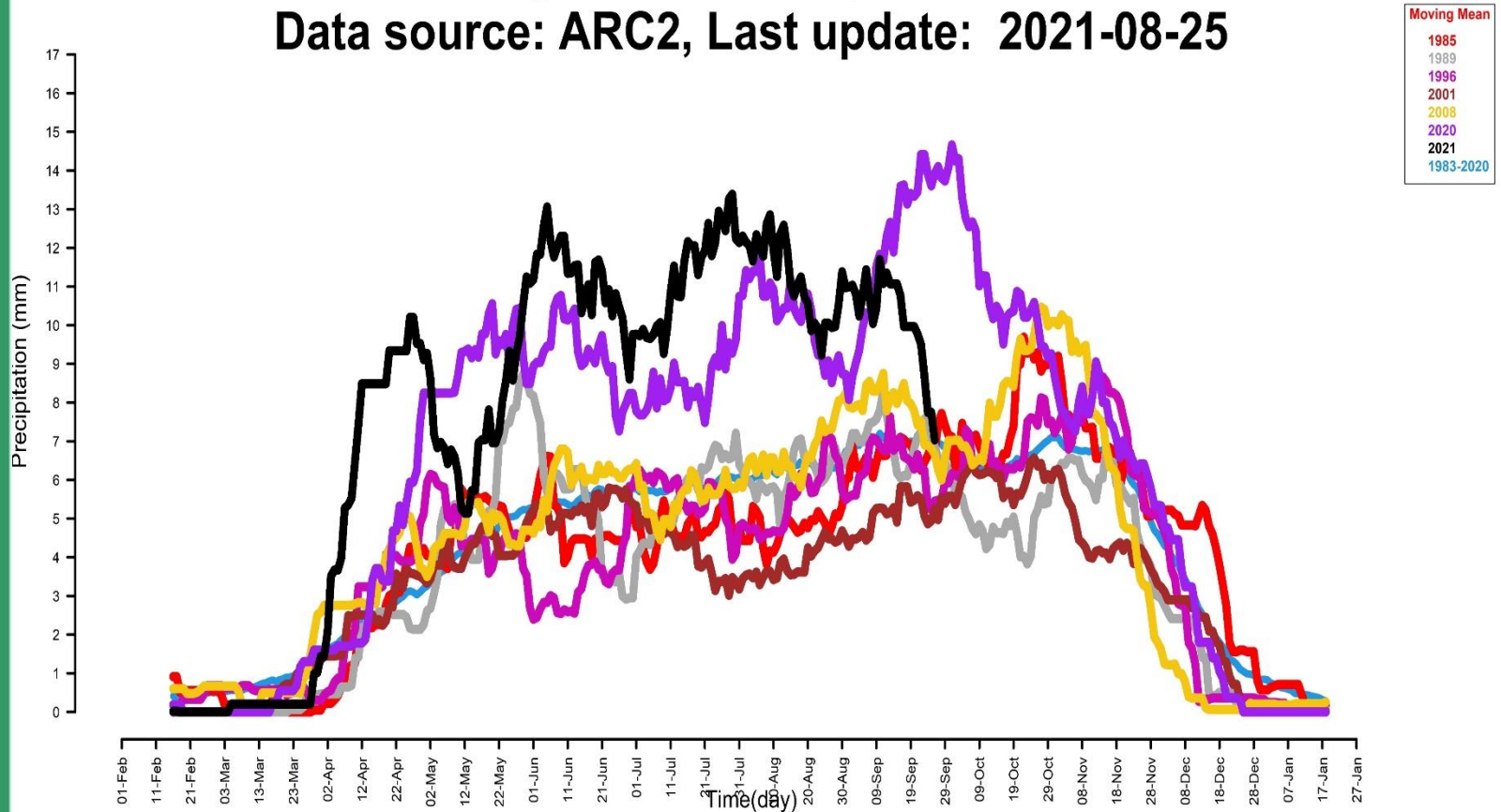
Annual Cycle Centrafrique : BOSSANGOA

Data source: ARC2, Last update: 2021-08-25



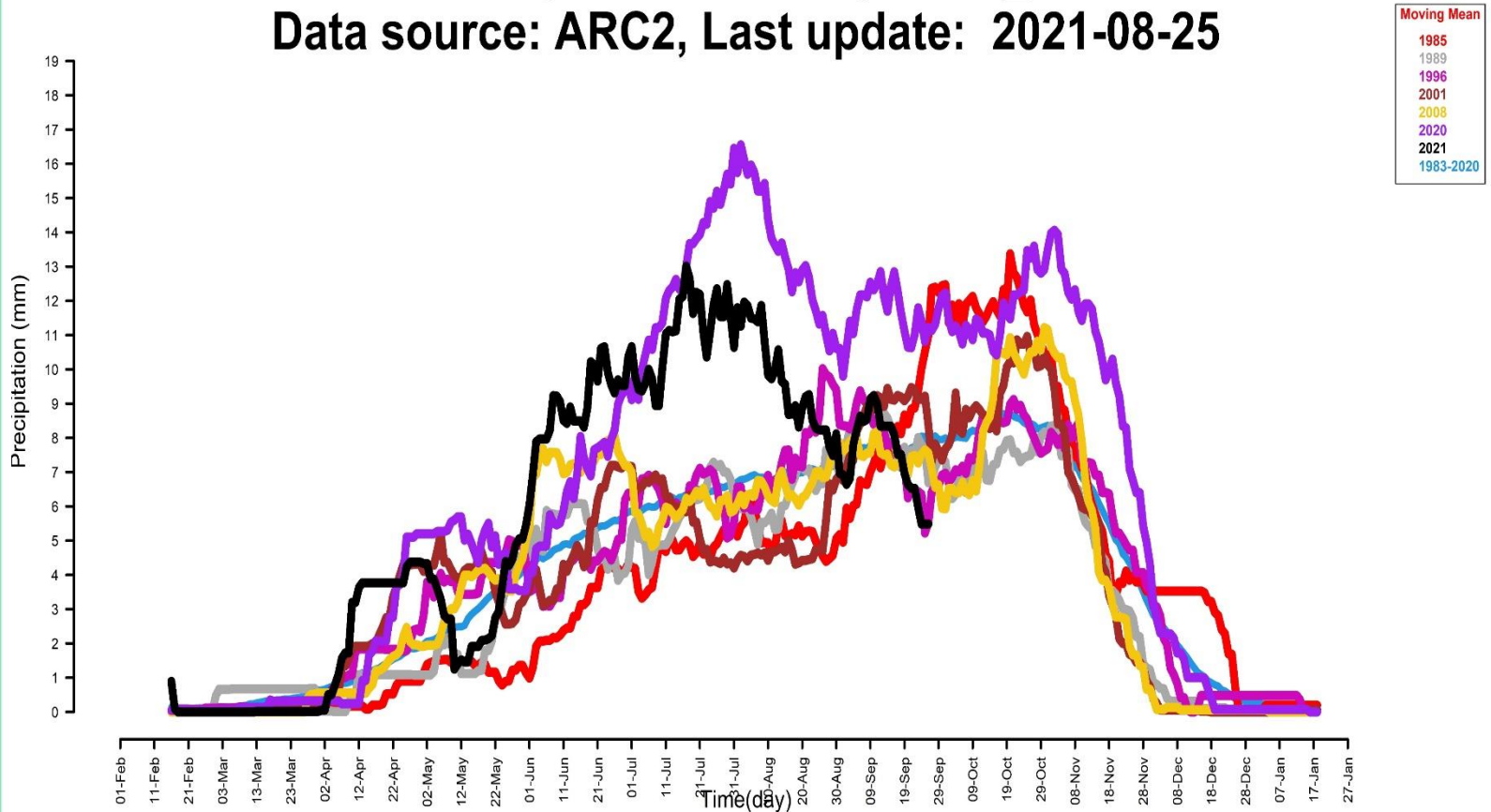
Annual Cycle Centrafrique : YALINGA

Data source: ARC2, Last update: 2021-08-25



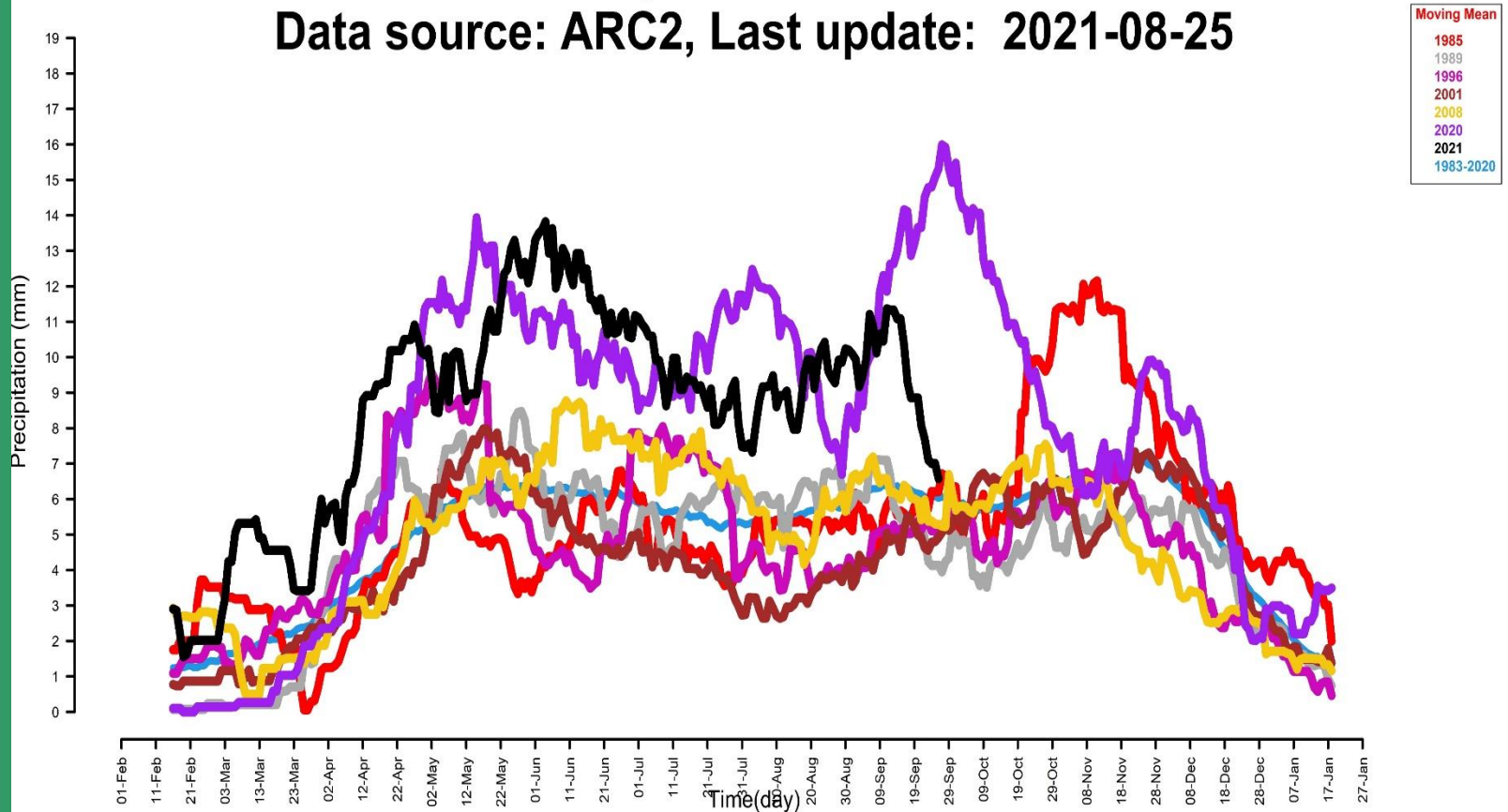
Annual Cycle Centrafrique : N_DELE

Data source: ARC2, Last update: 2021-08-25



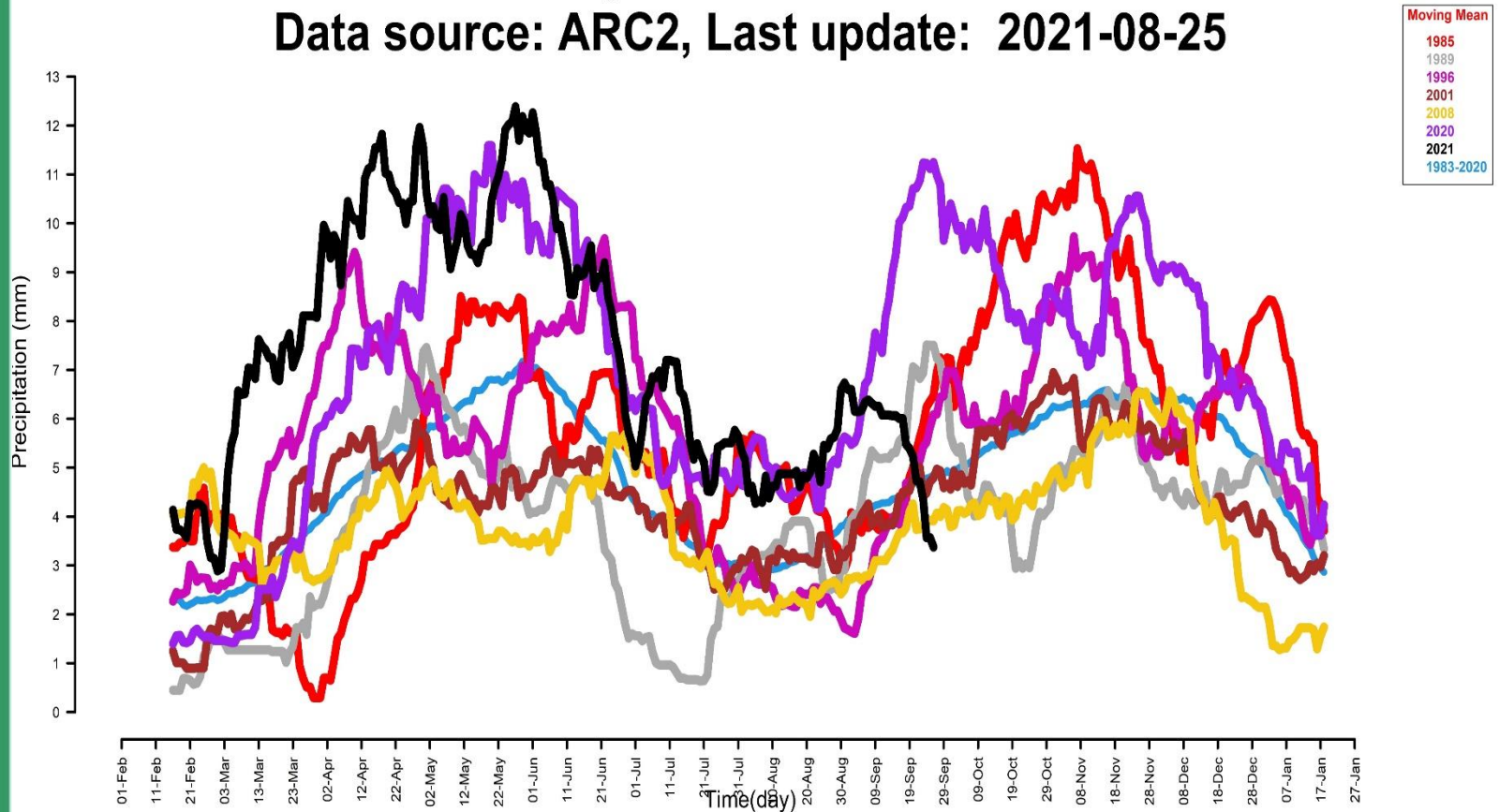
Annual Cycle DRC : BONDO

Data source: ARC2, Last update: 2021-08-25



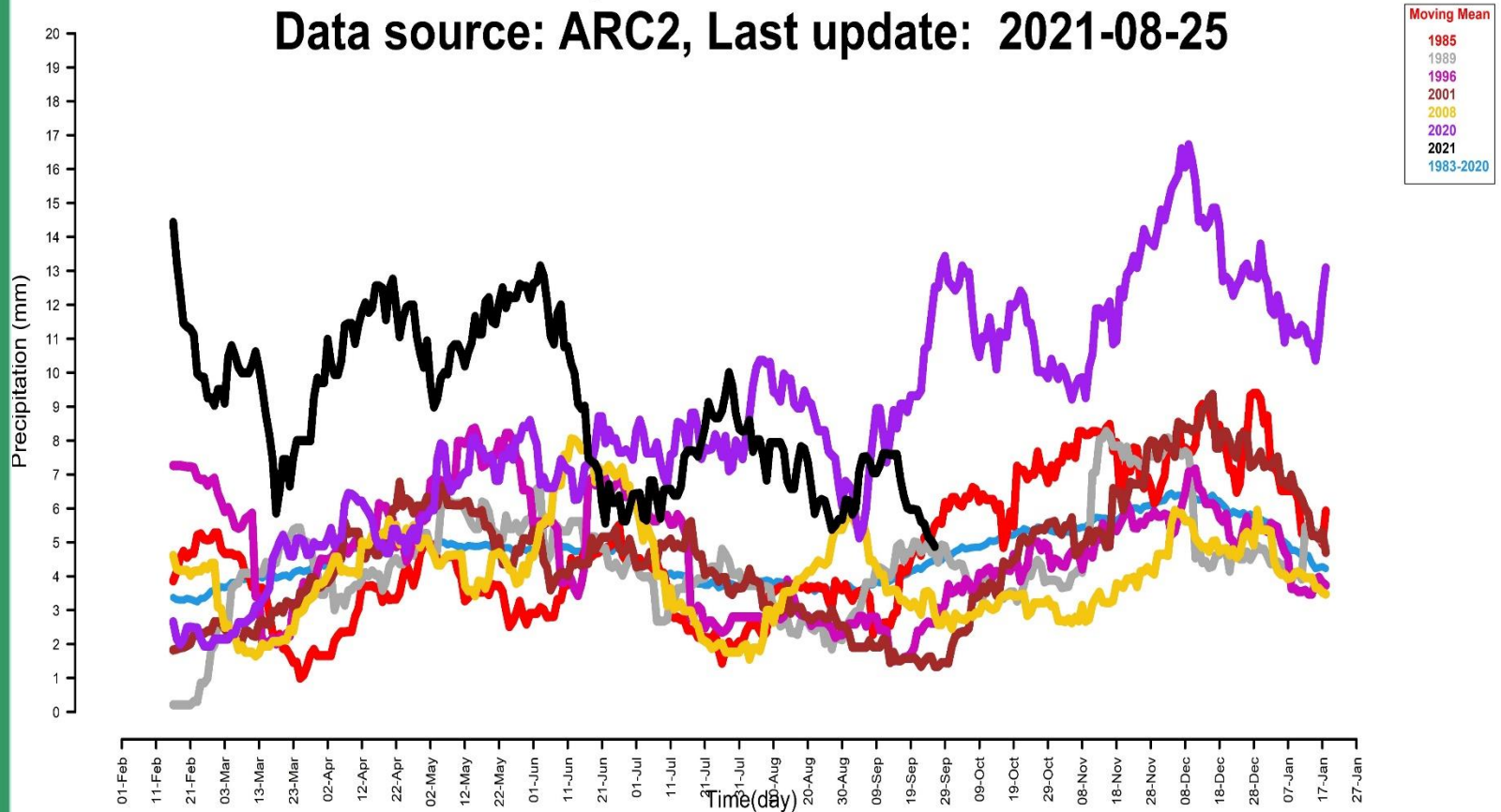
Annual Cycle DRC : BUTEMBO

Data source: ARC2, Last update: 2021-08-25



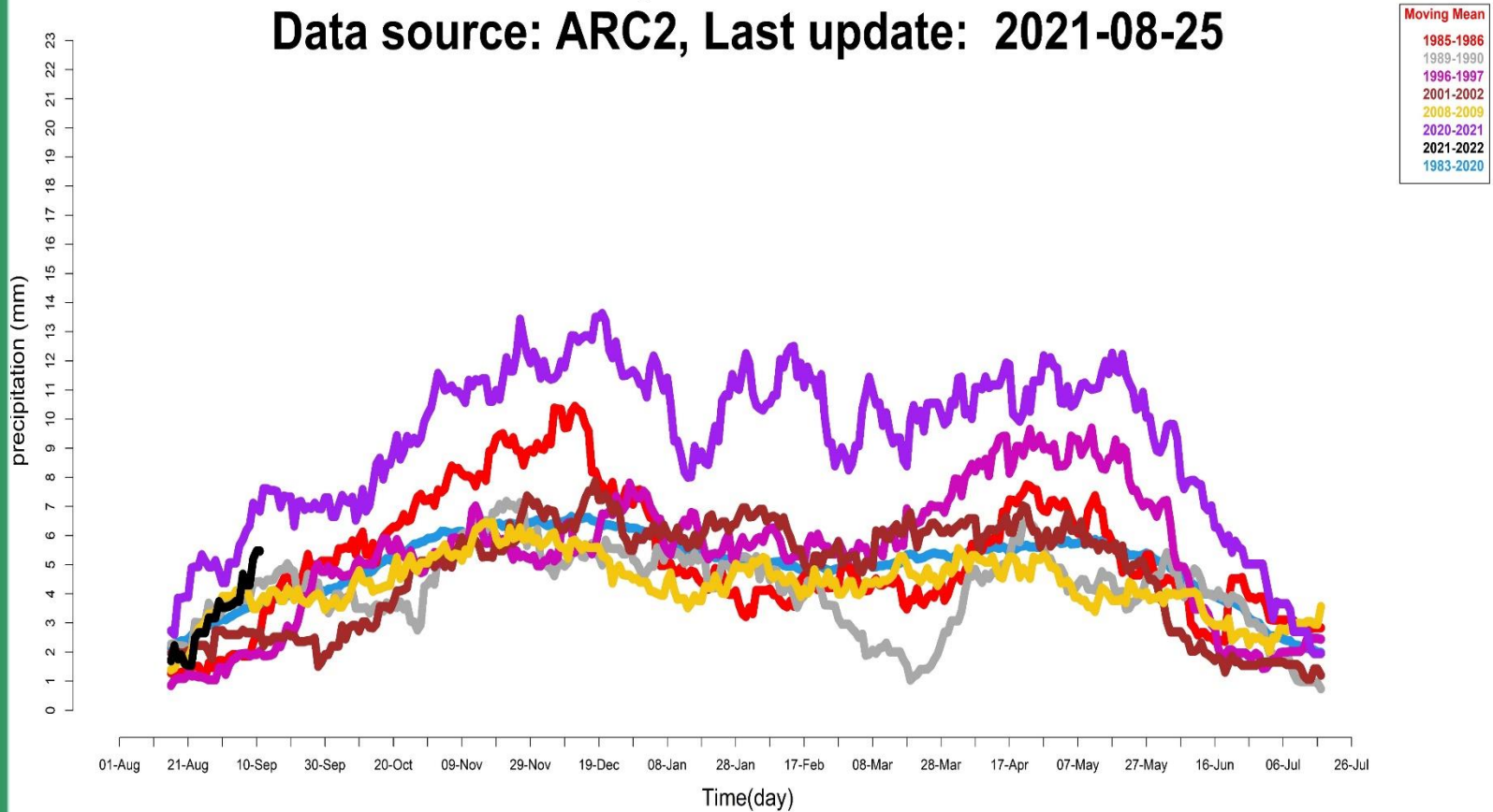
Annual Cycle DRC : MBANDAKA

Data source: ARC2, Last update: 2021-08-25



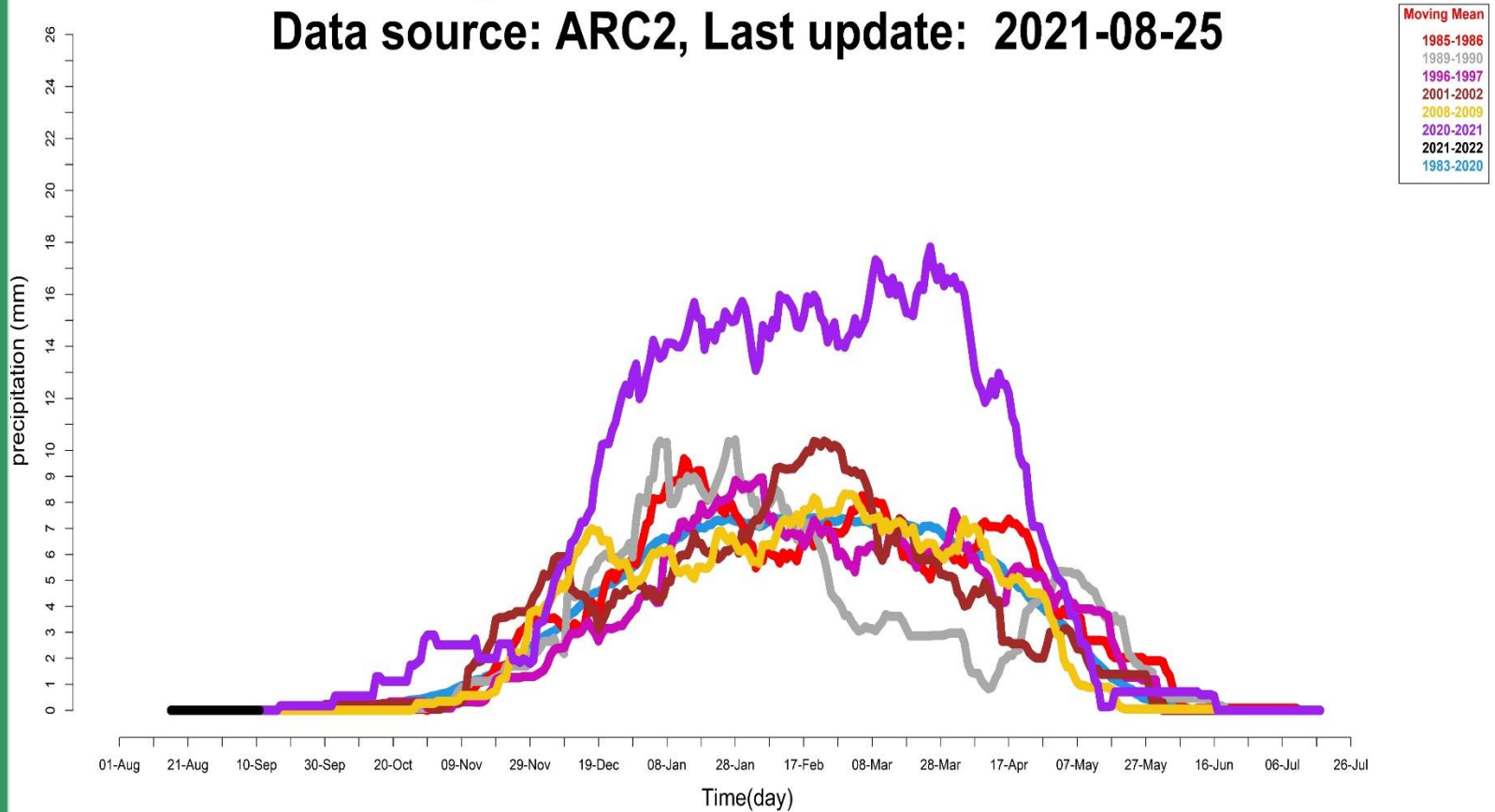
Annual Cycle DRC : LODJA

Data source: ARC2, Last update: 2021-08-25



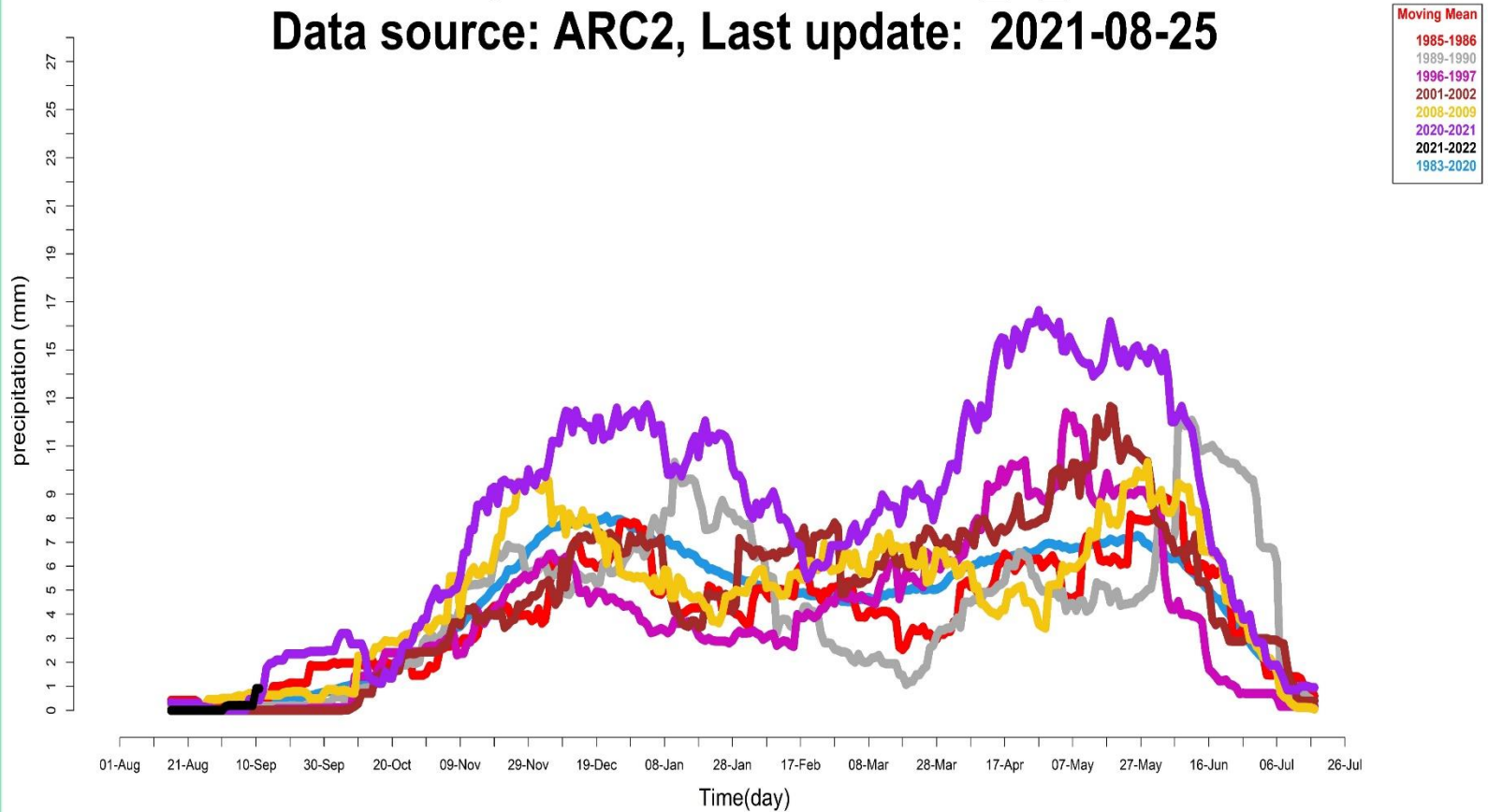
Annual Cycle DRC : LUBUMBASHI-LUANO

Data source: ARC2, Last update: 2021-08-25



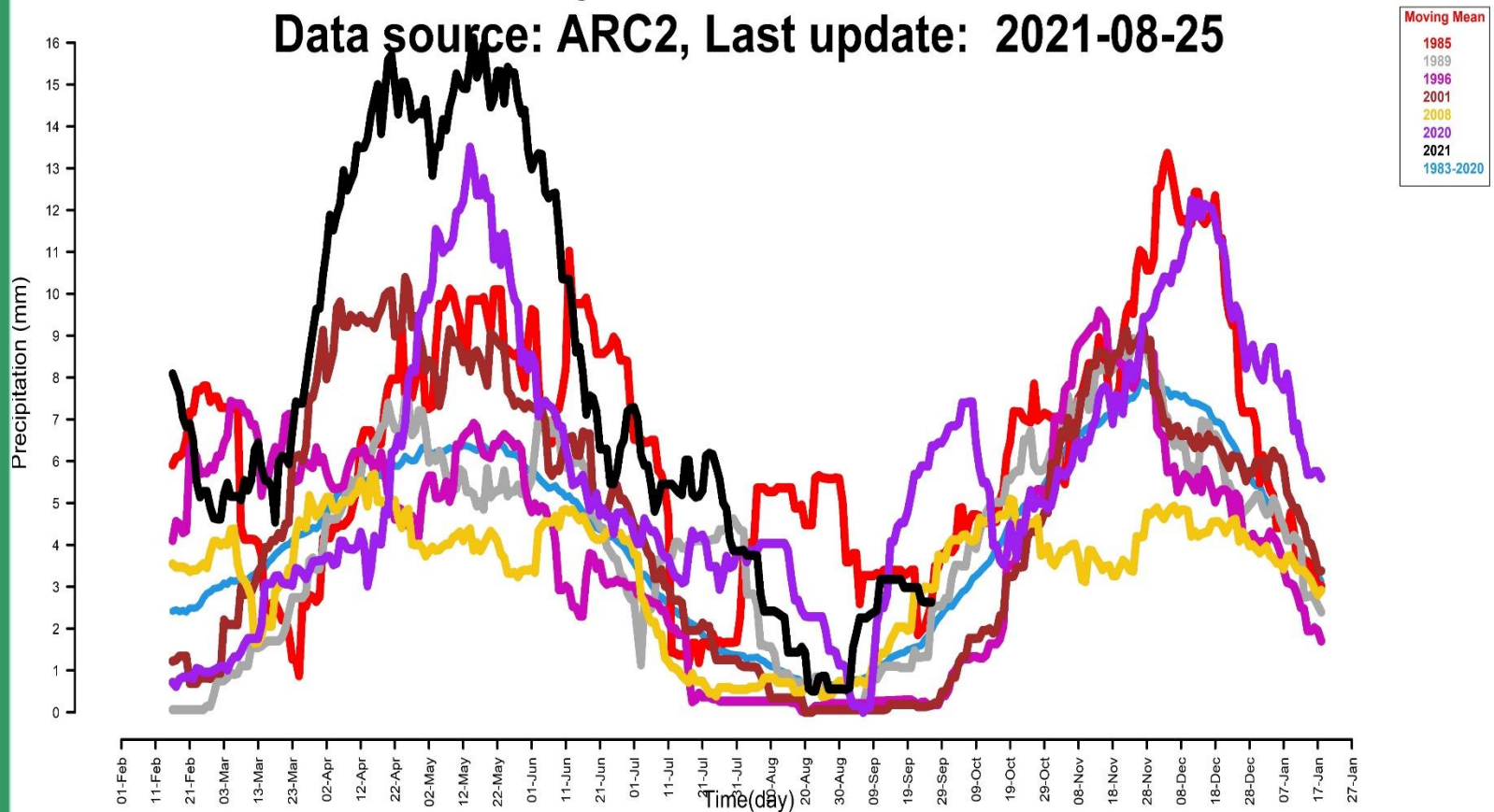
Annual Cycle DRC : KINSHASA_N_DOLO

Data source: ARC2, Last update: 2021-08-25



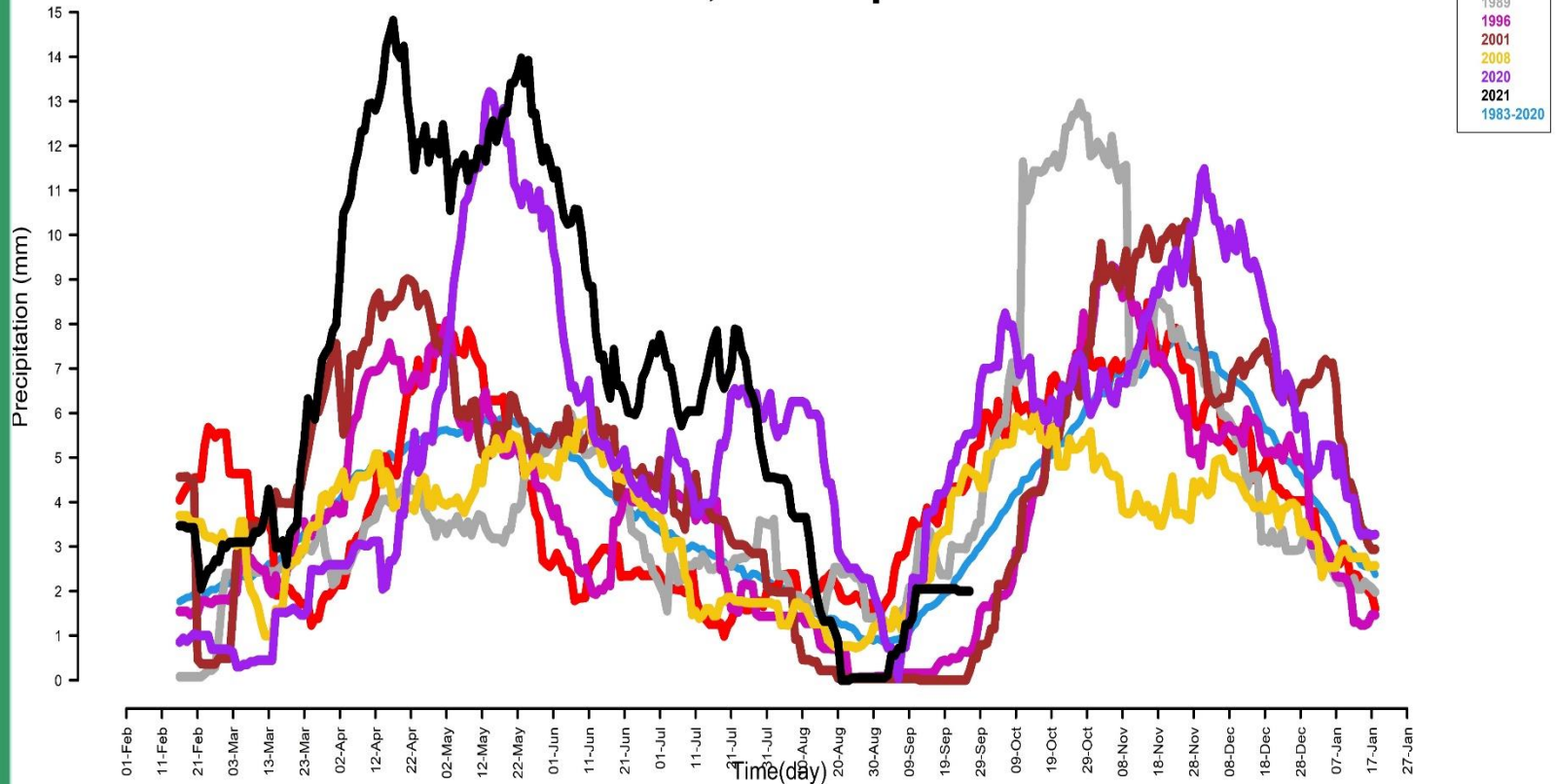
Annual Cycle Gabon : MAKOKOU

Data source: ARC2, Last update: 2021-08-25



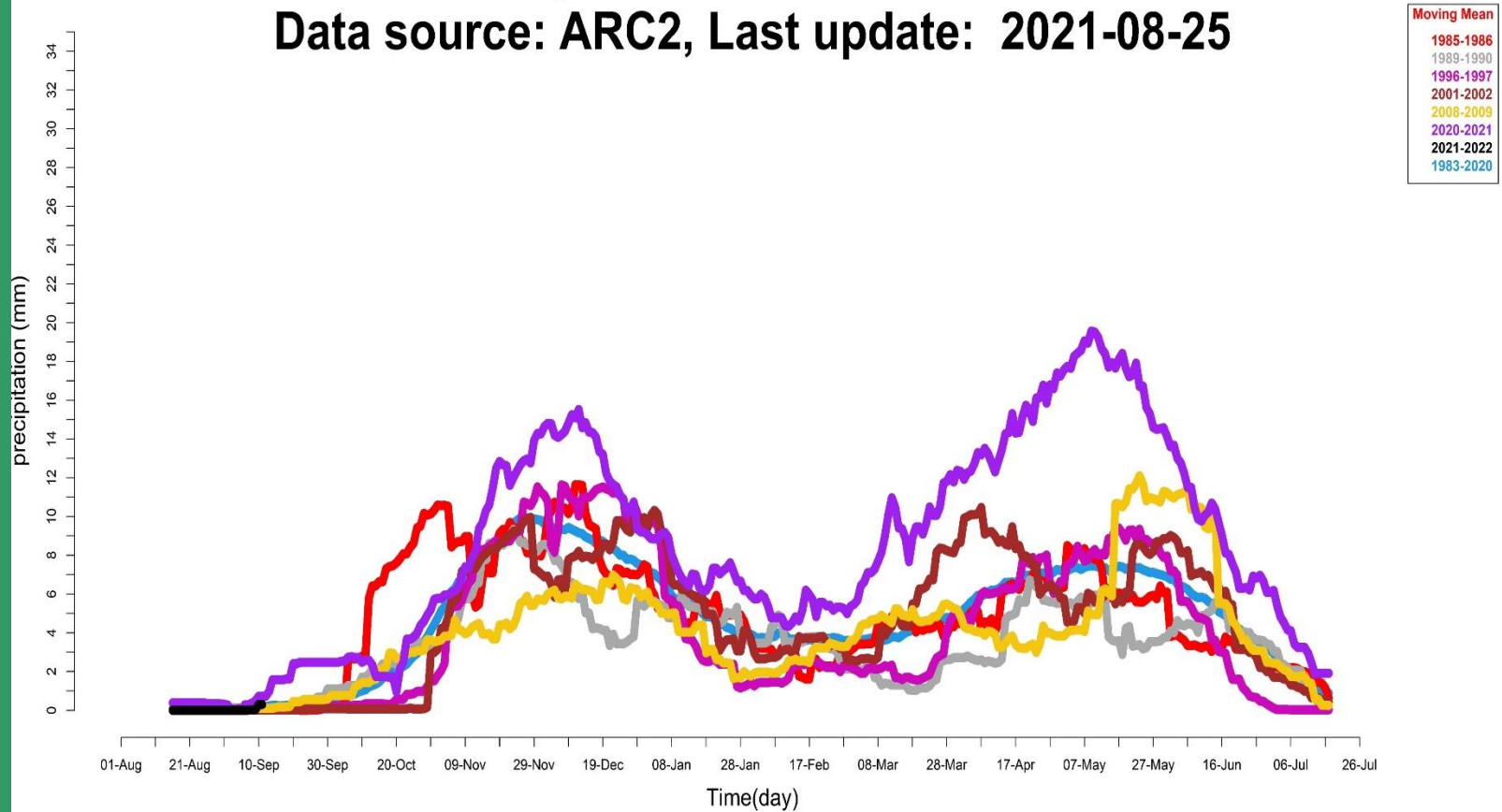
Annual Cycle Gabon : OYEM

Data source: ARC2, Last update: 2021-08-25



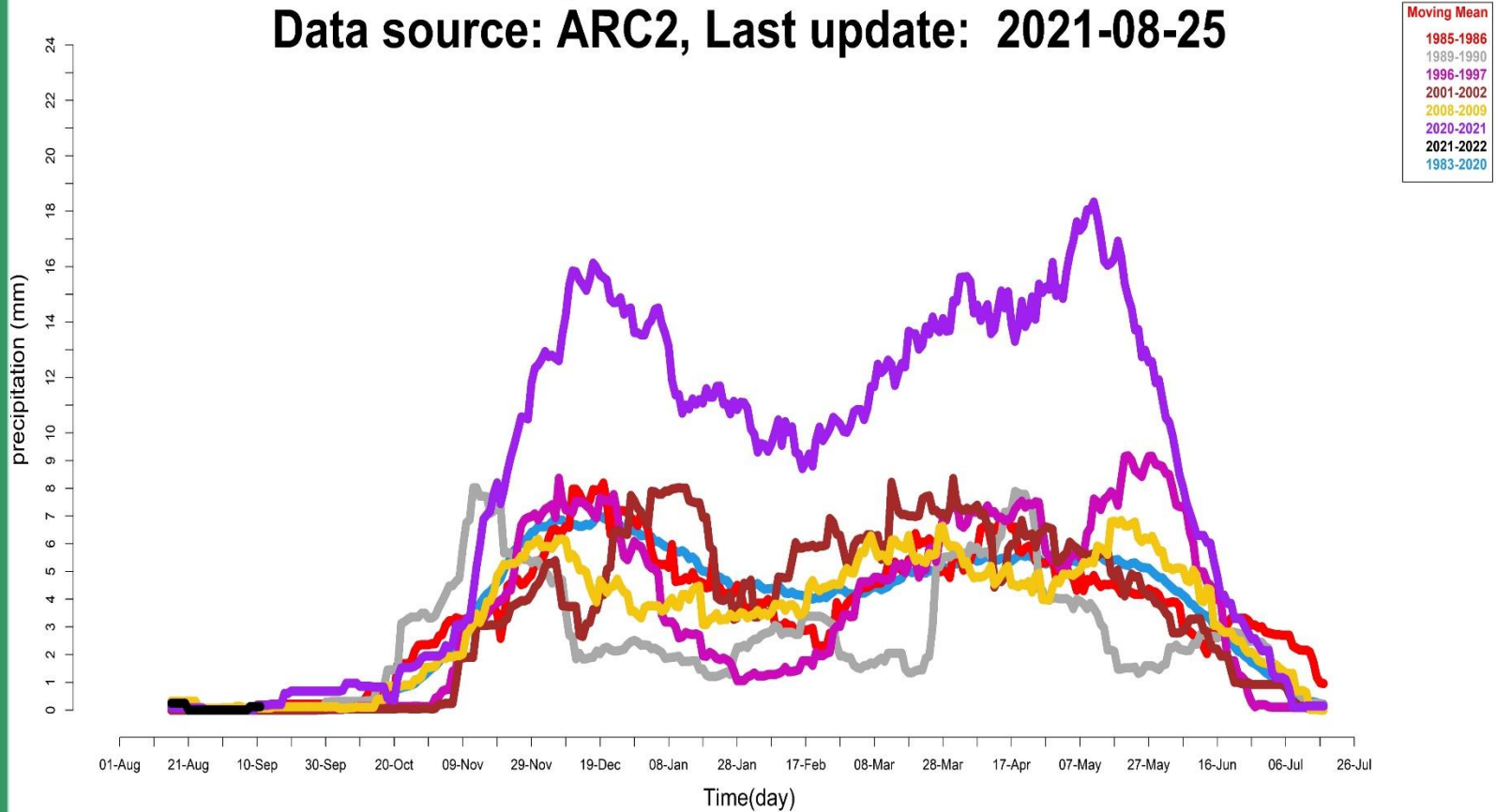
Annual Cycle Gabon : LAMBARENE

Data source: ARC2, Last update: 2021-08-25



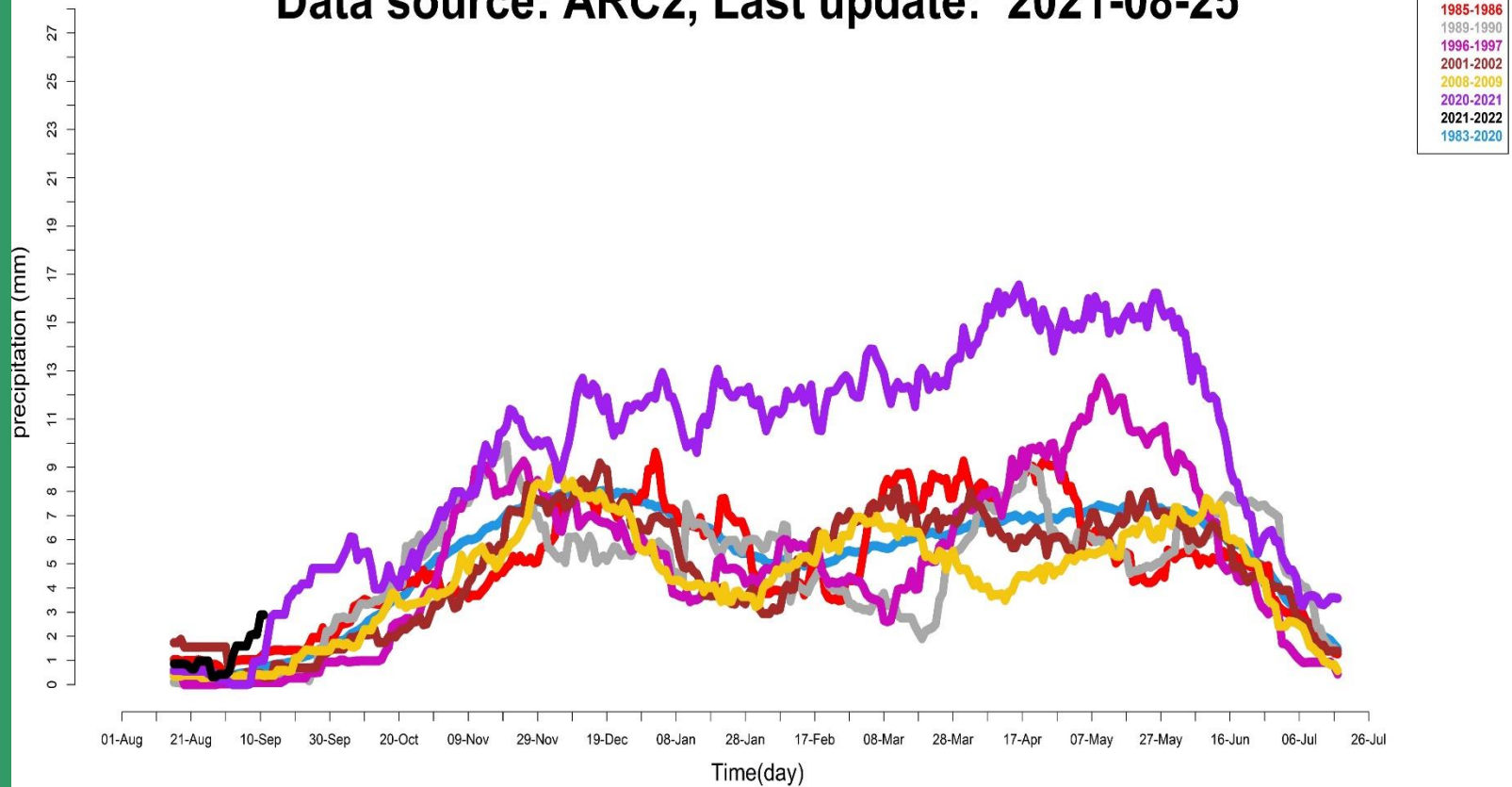
Annual Cycle Gabon : TCHIBANGA

Data source: ARC2, Last update: 2021-08-25



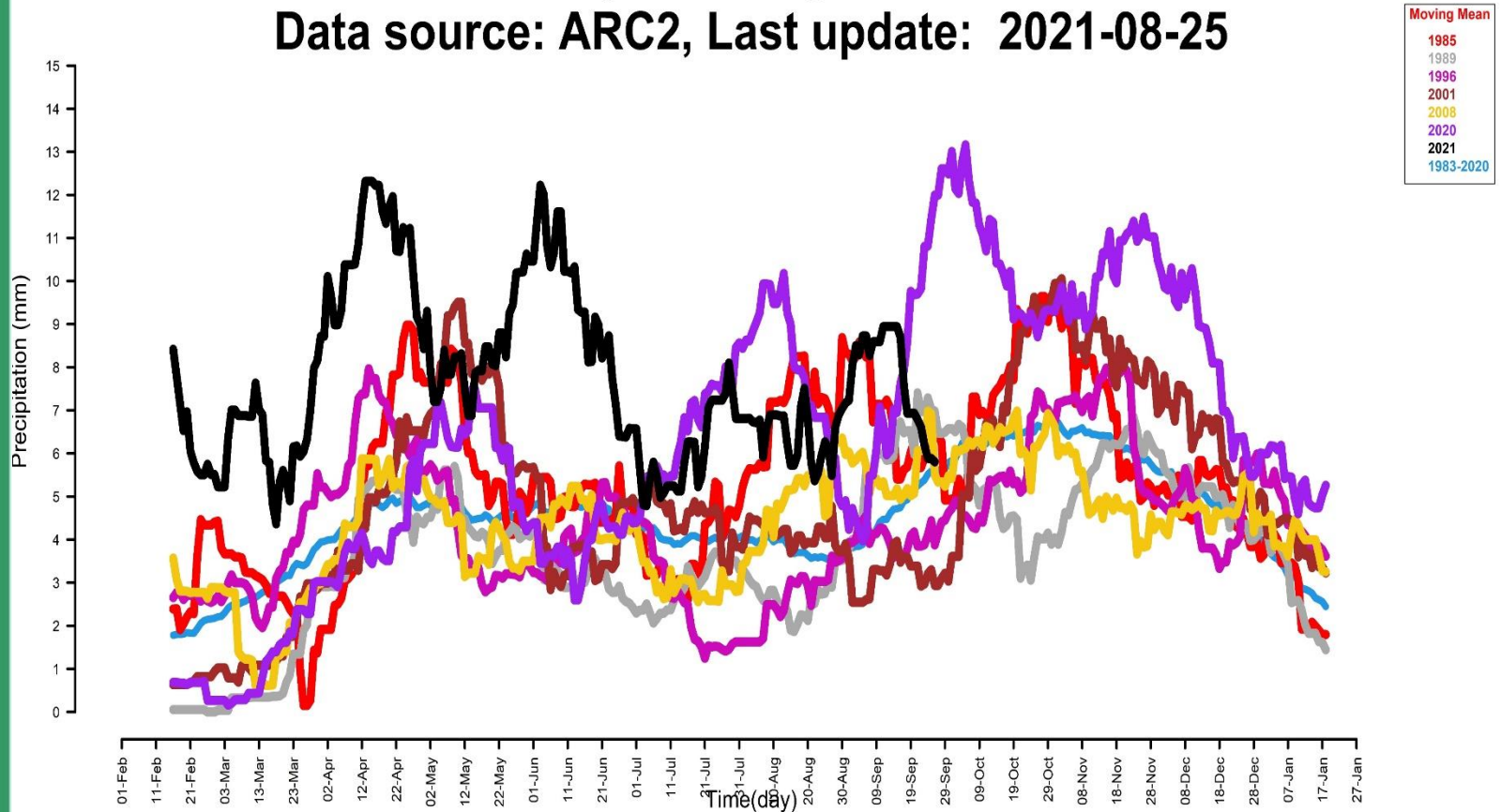
Annual Cycle Gabon : MVENGUE

Data source: ARC2, Last update: 2021-08-25



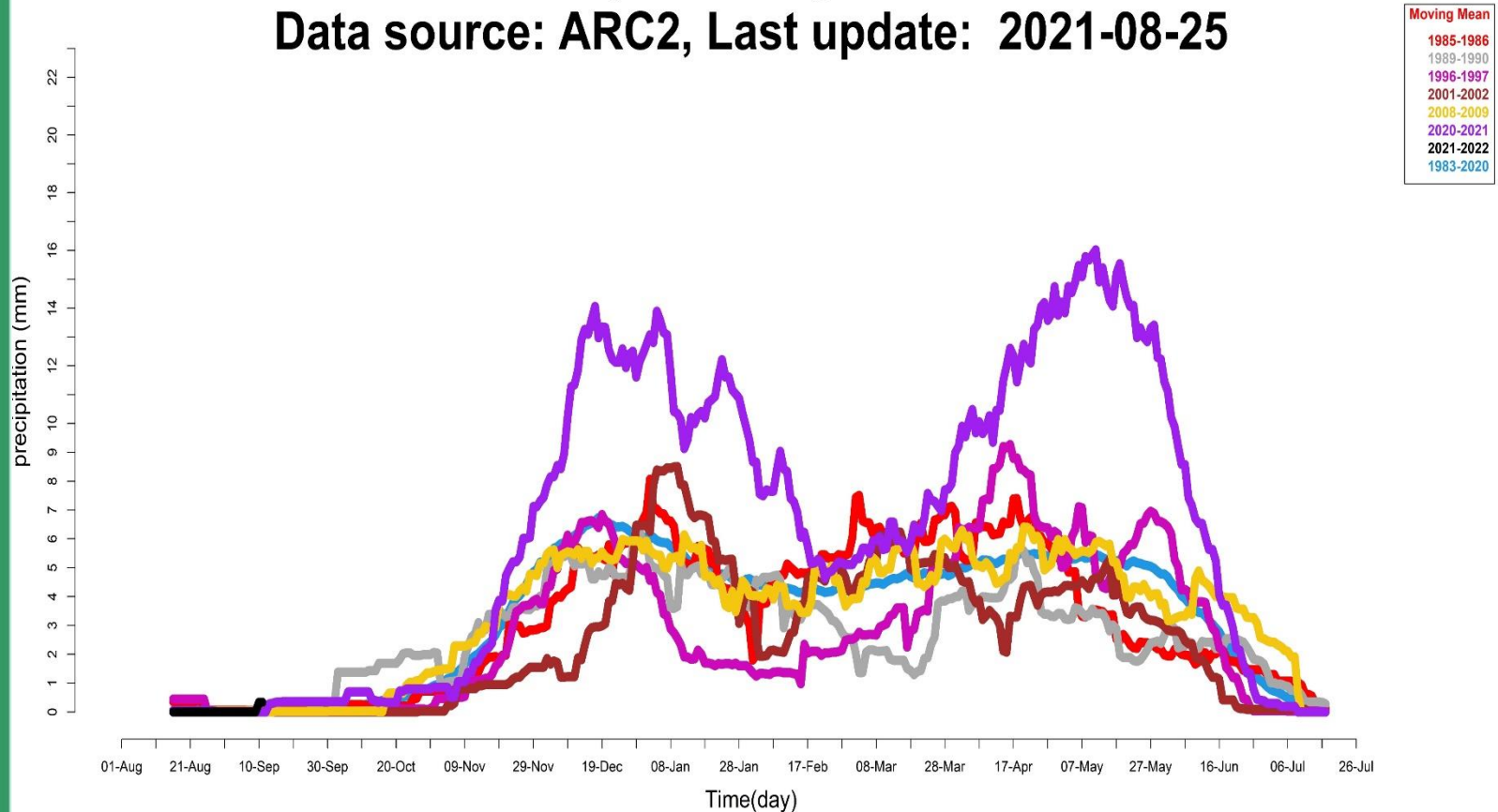
Annual Cycle Congo : OUESSO

Data source: ARC2, Last update: 2021-08-25



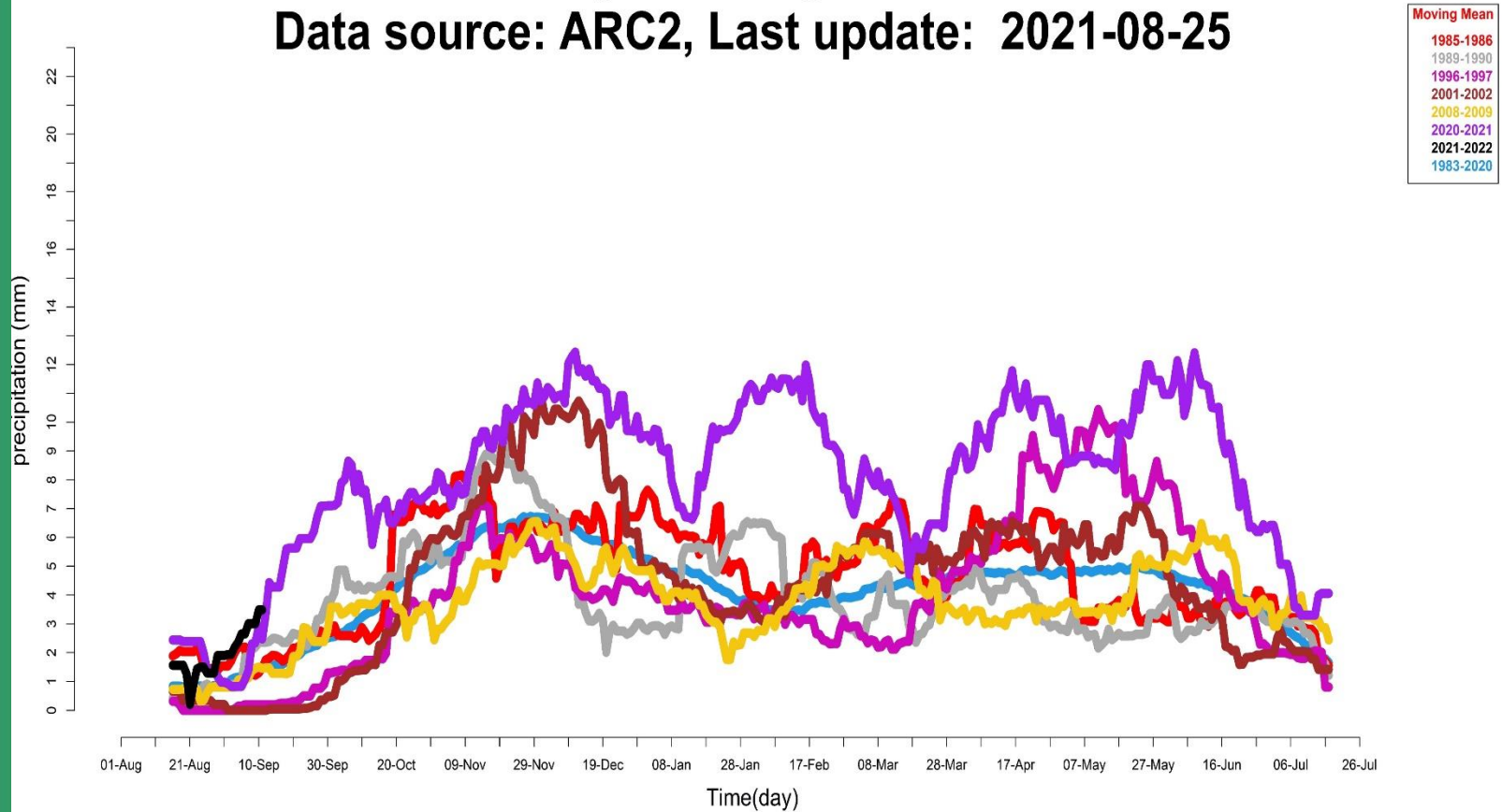
Annual Cycle Congo : DOLISIE

Data source: ARC2, Last update: 2021-08-25



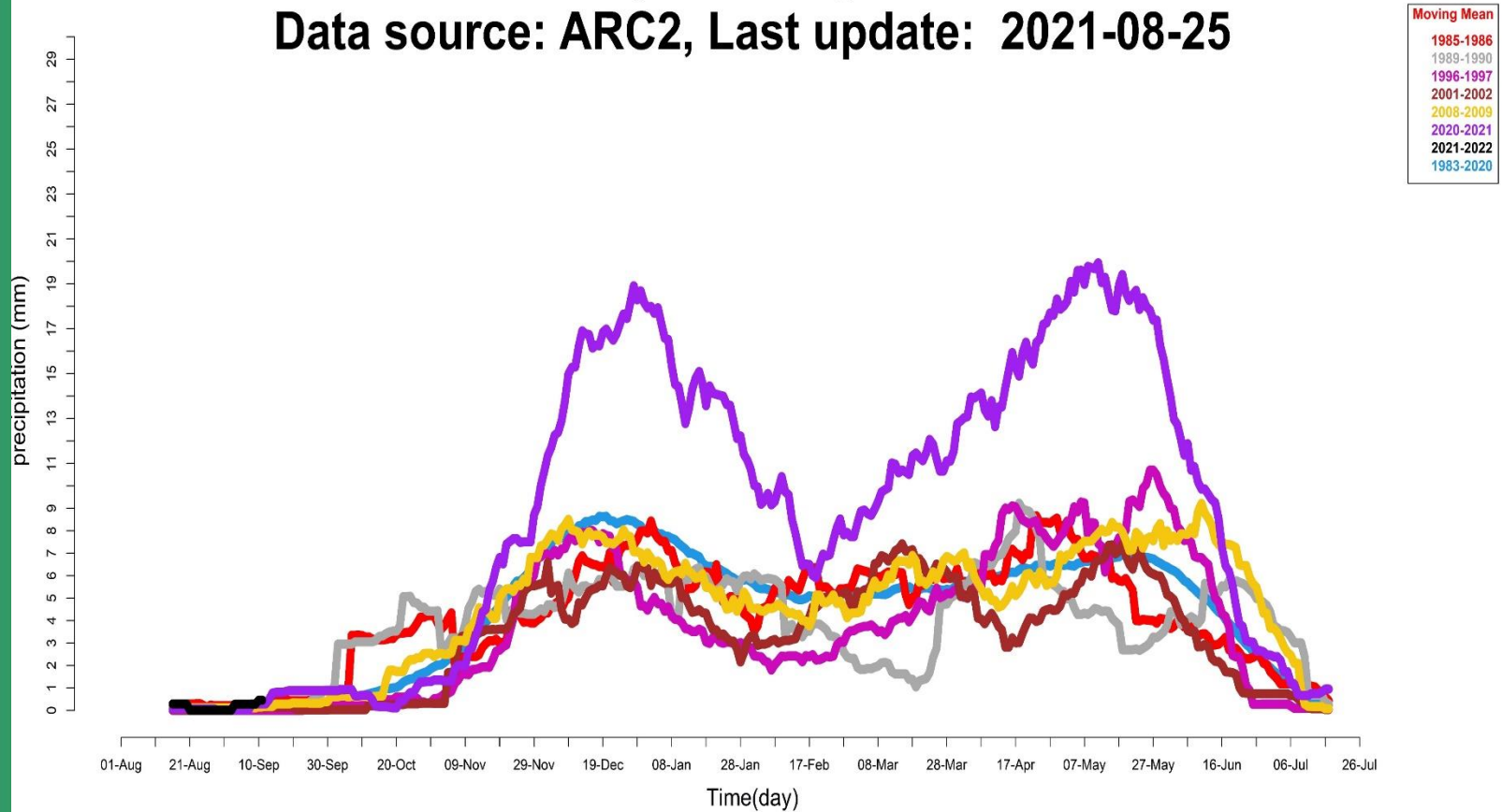
Annual Cycle Congo : MAKOUA

Data source: ARC2, Last update: 2021-08-25



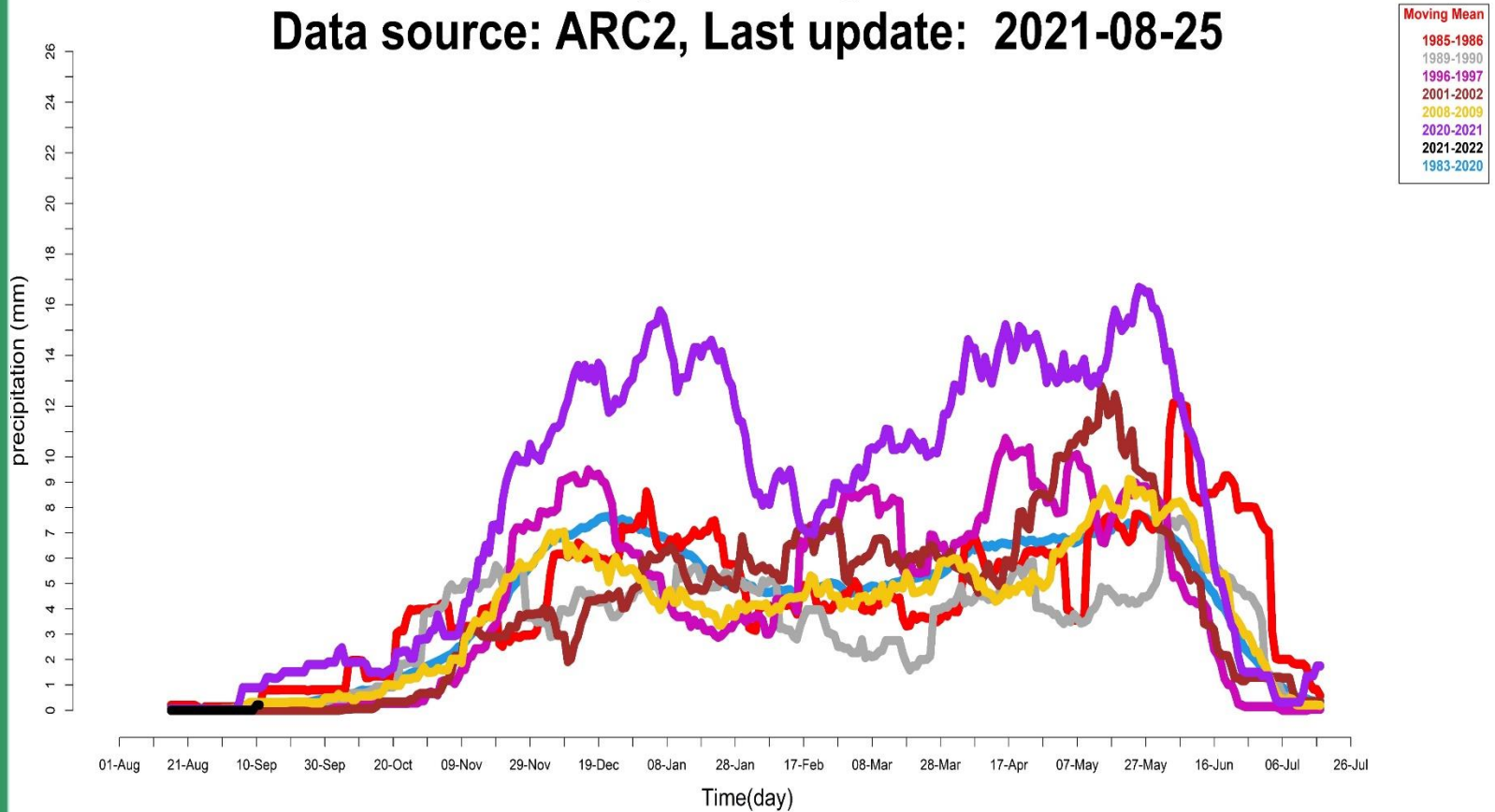
Annual Cycle Congo : SIBITI

Data source: ARC2, Last update: 2021-08-25



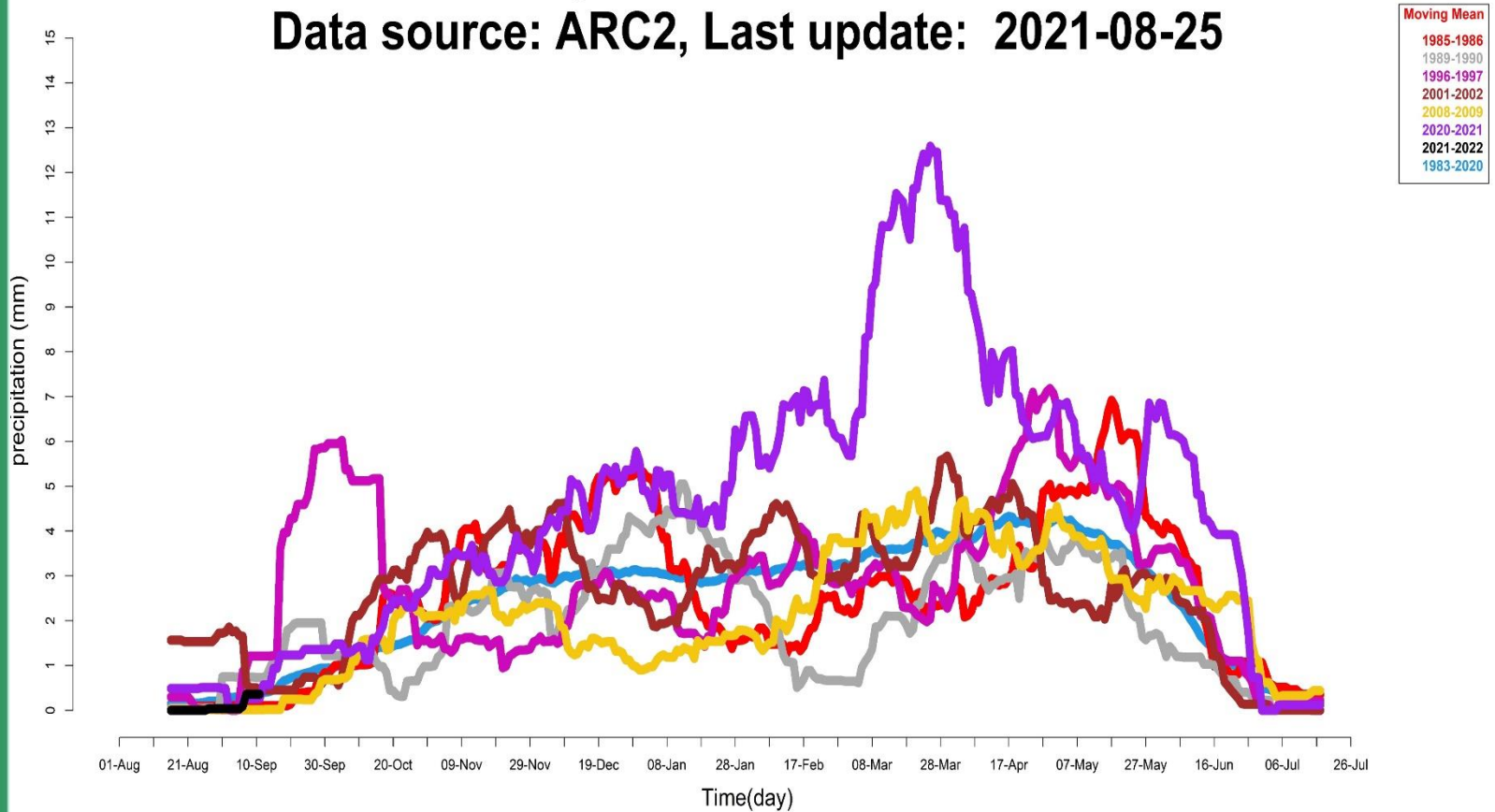
Annual Cycle Congo : EWO

Data source: ARC2, Last update: 2021-08-25



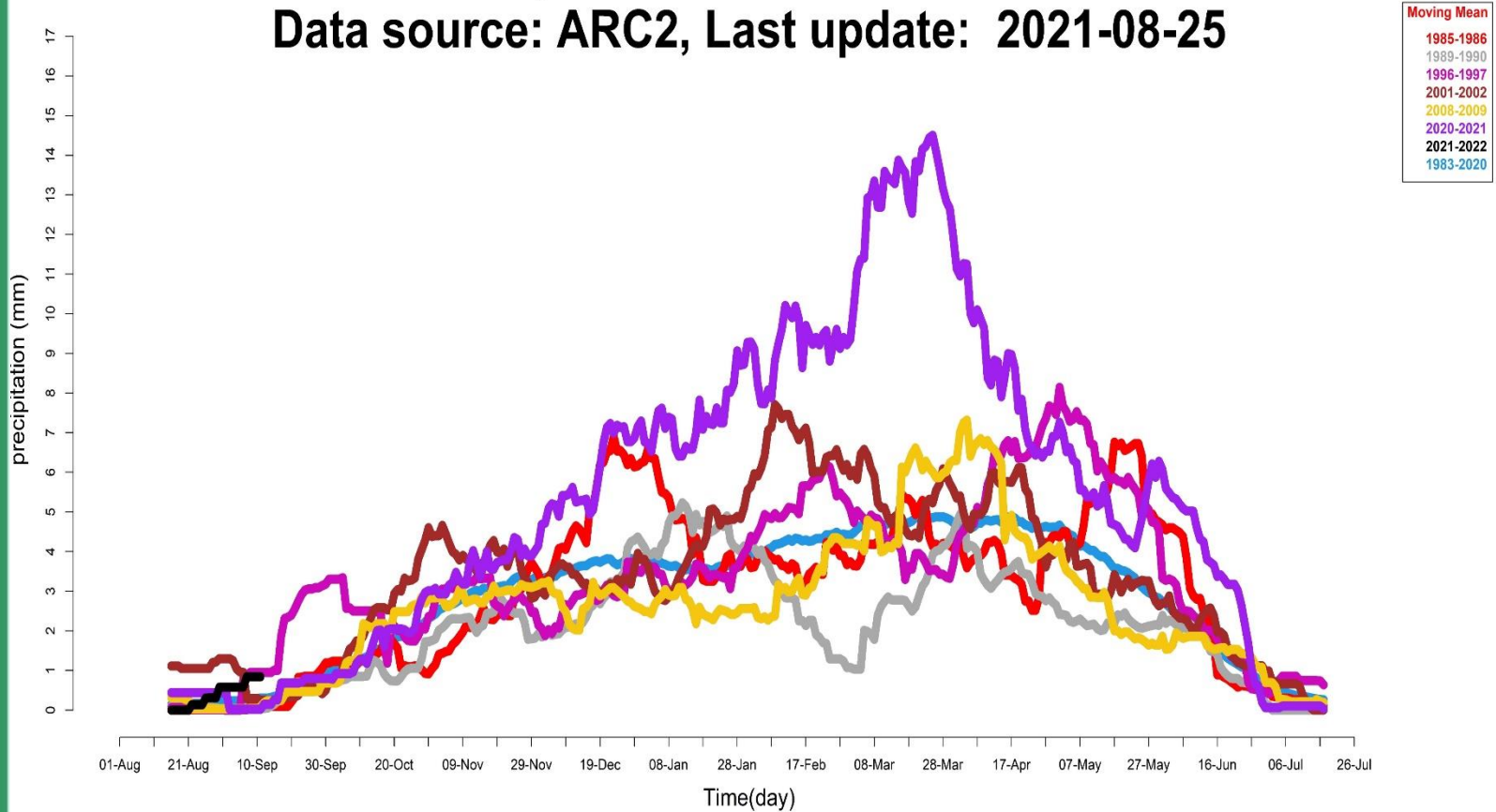
Annual Cycle Burundi : MUYINGA

Data source: ARC2, Last update: 2021-08-25



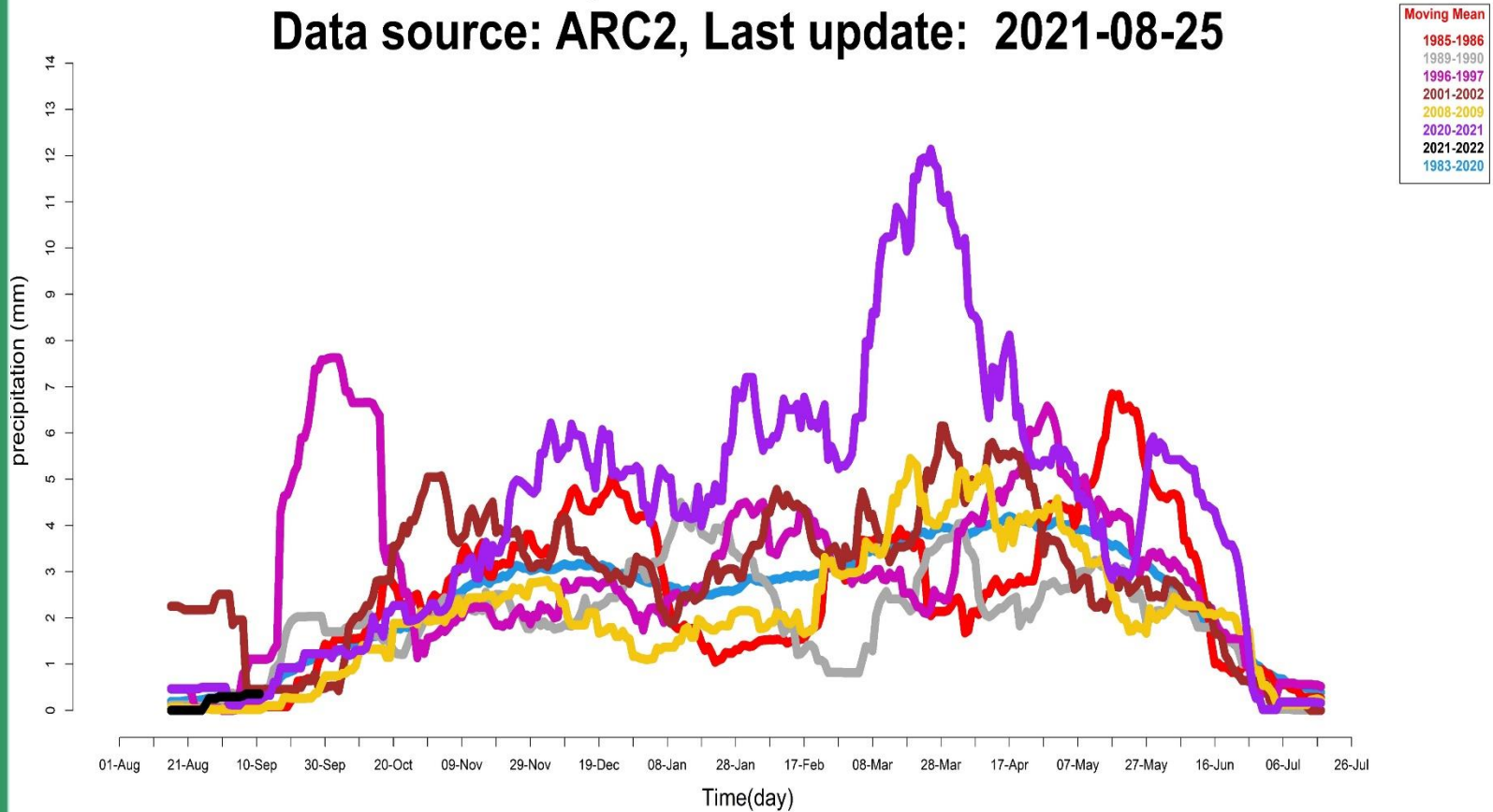
Annual Cycle Burundi : BUJUMBURA

Data source: ARC2, Last update: 2021-08-25



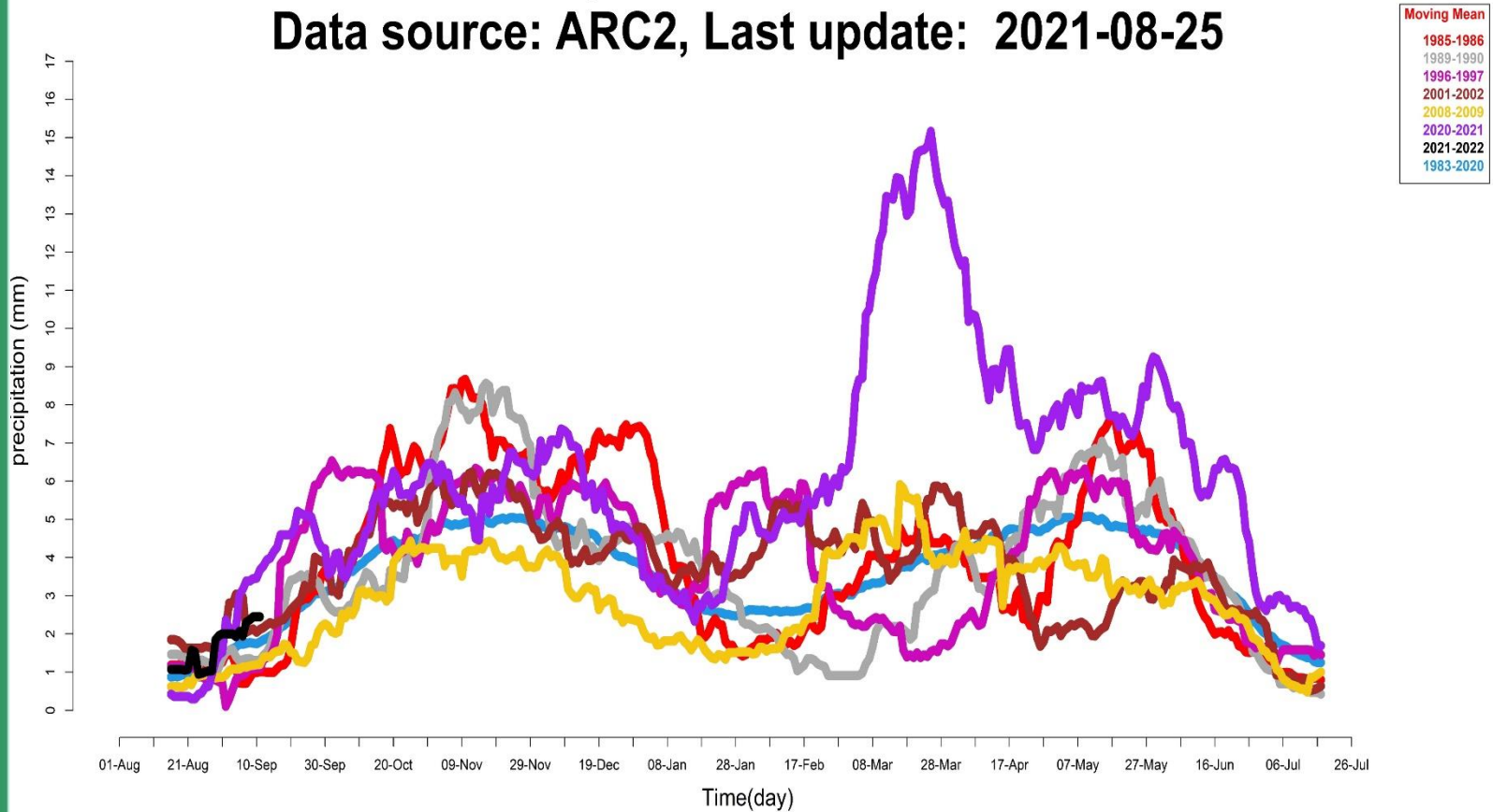
Annual Cycle Rwanda : BUTARE

Data source: ARC2, Last update: 2021-08-25



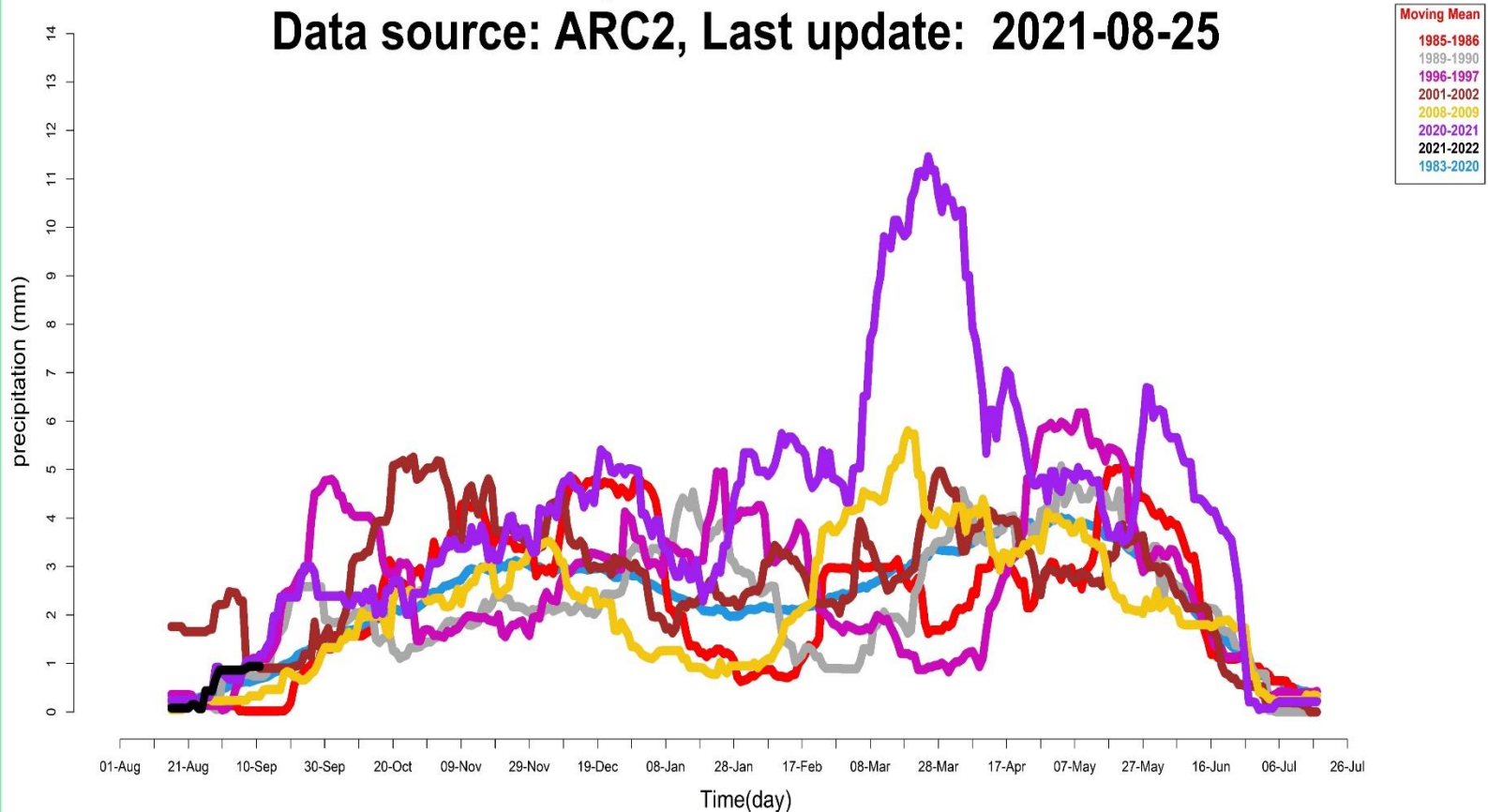
Annual Cycle Rwanda : GISENYI

Data source: ARC2, Last update: 2021-08-25



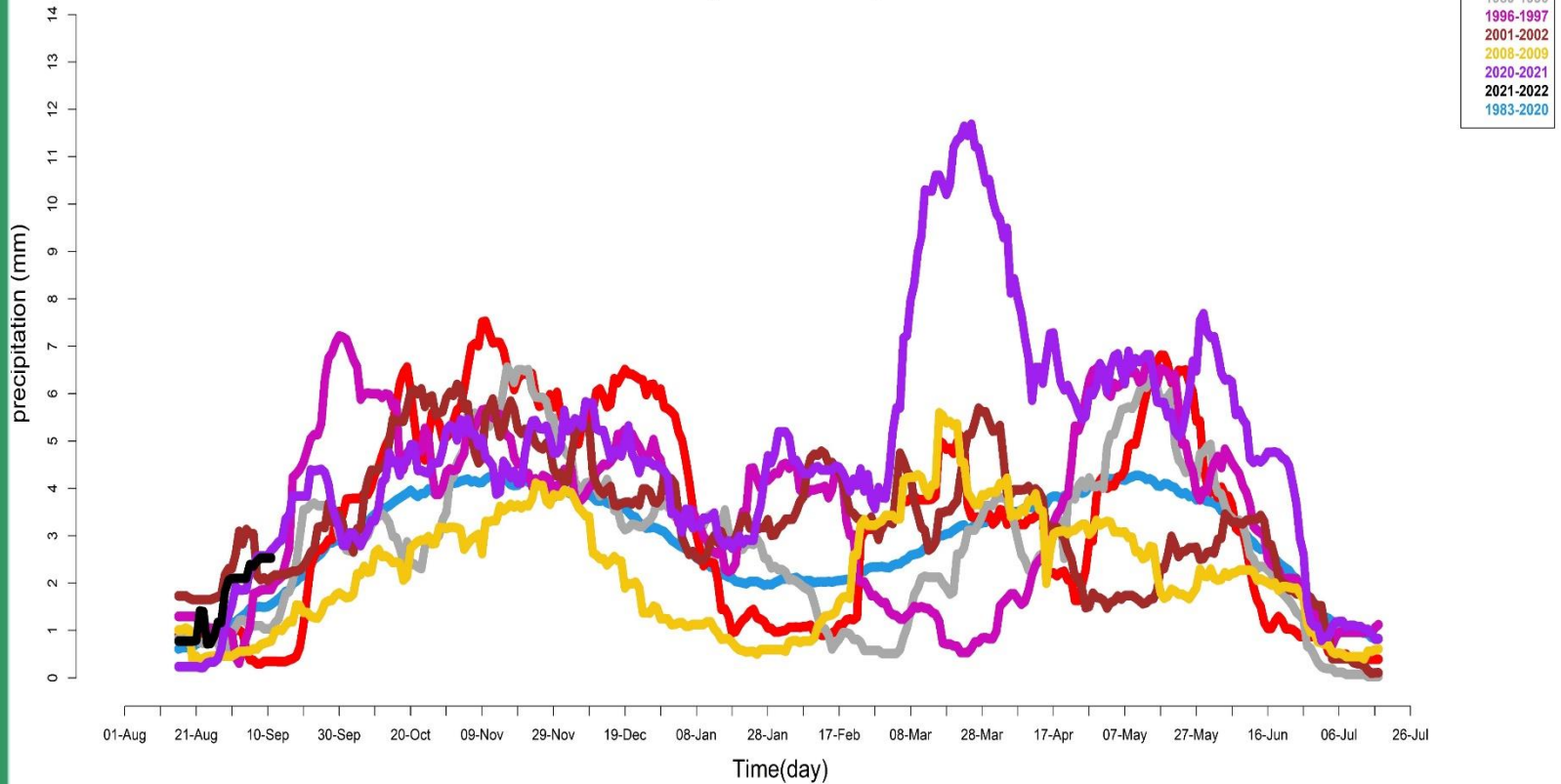
Annual Cycle Rwanda : KIGALI

Data source: ARC2, Last update: 2021-08-25



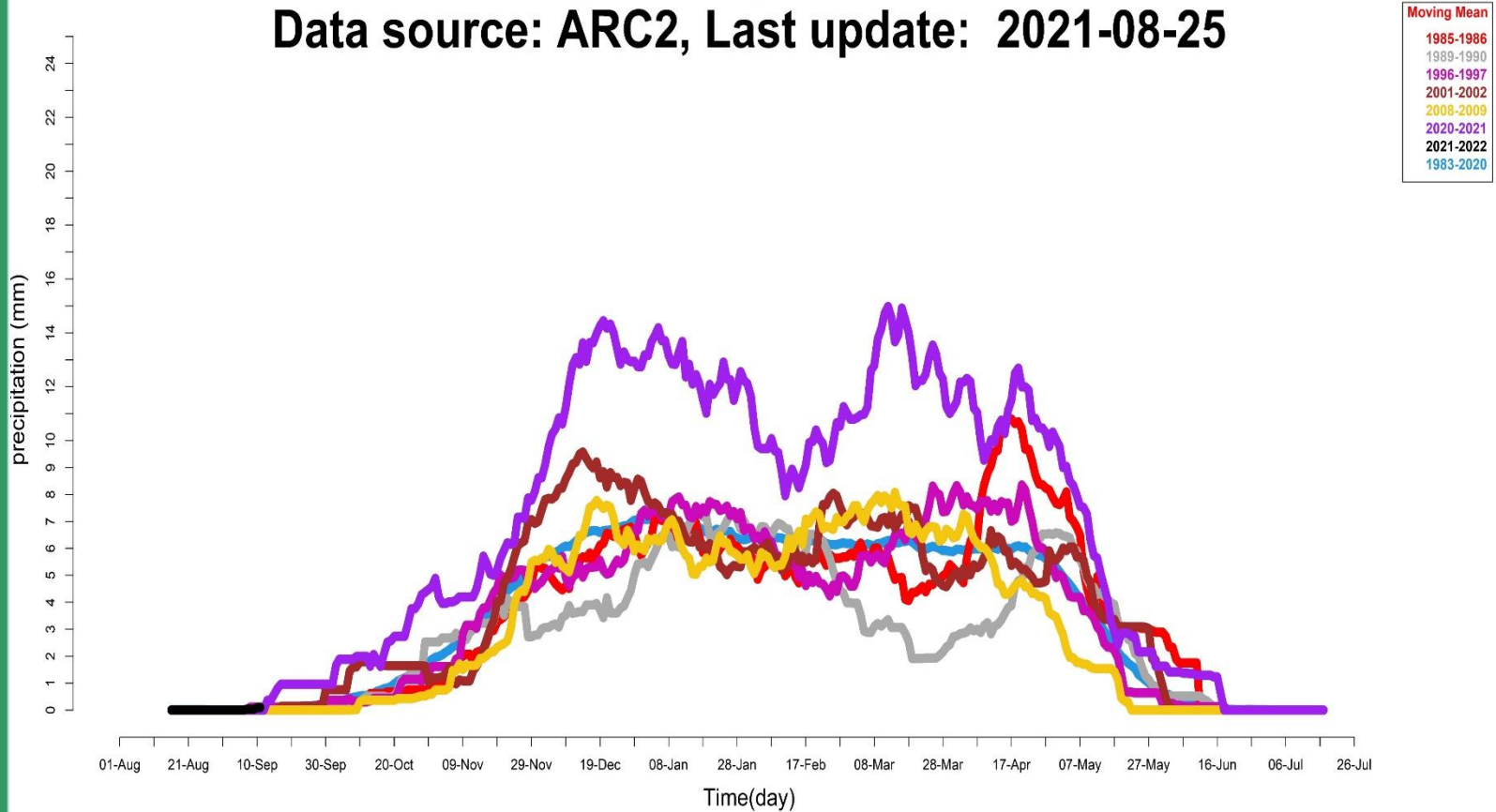
Annual Cycle Rwanda : RUHENGARI

Data source: ARC2, Last update: 2021-08-25



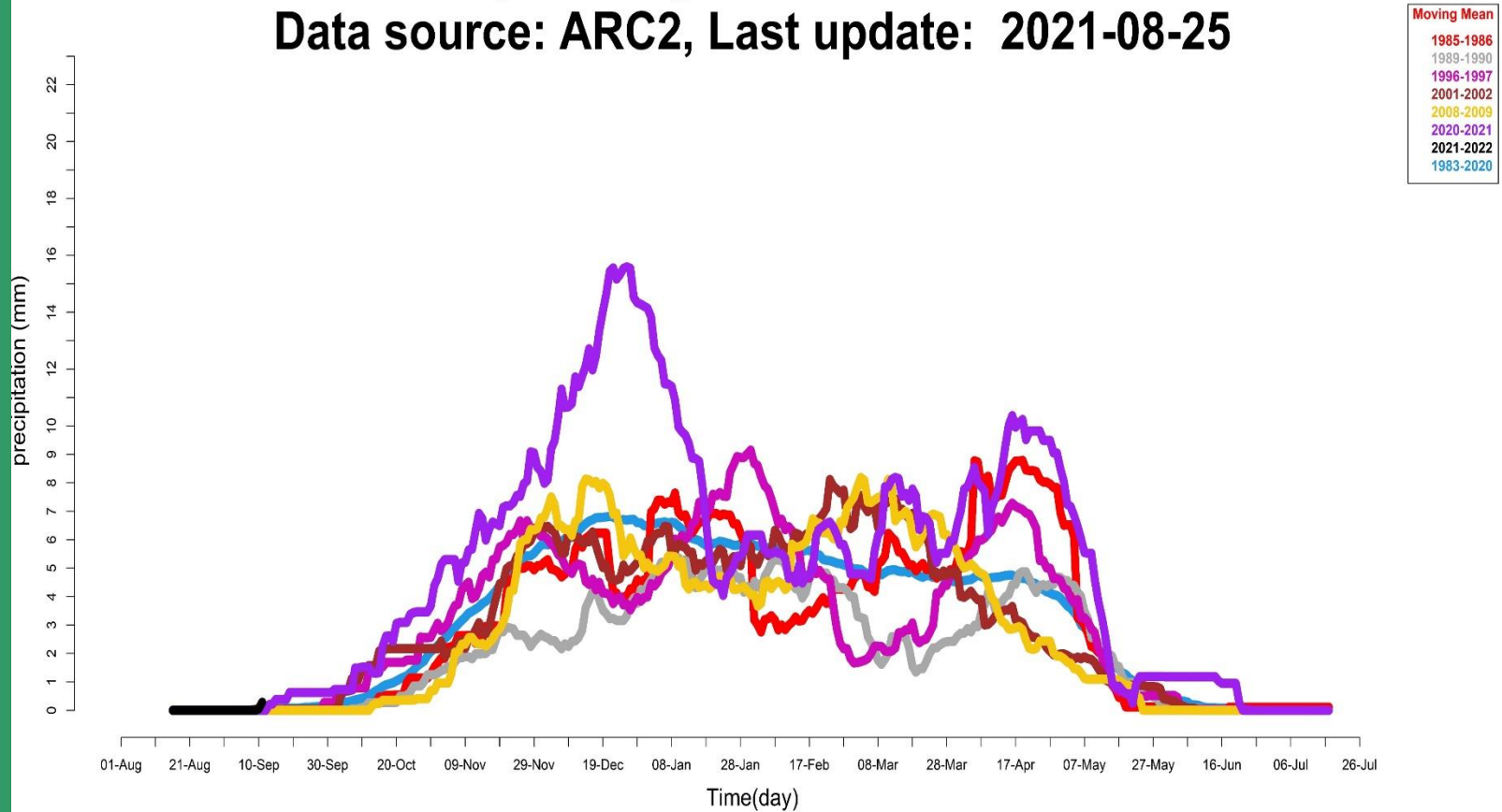
Annual Cycle Angola : CAZOMBO

Data source: ARC2, Last update: 2021-08-25



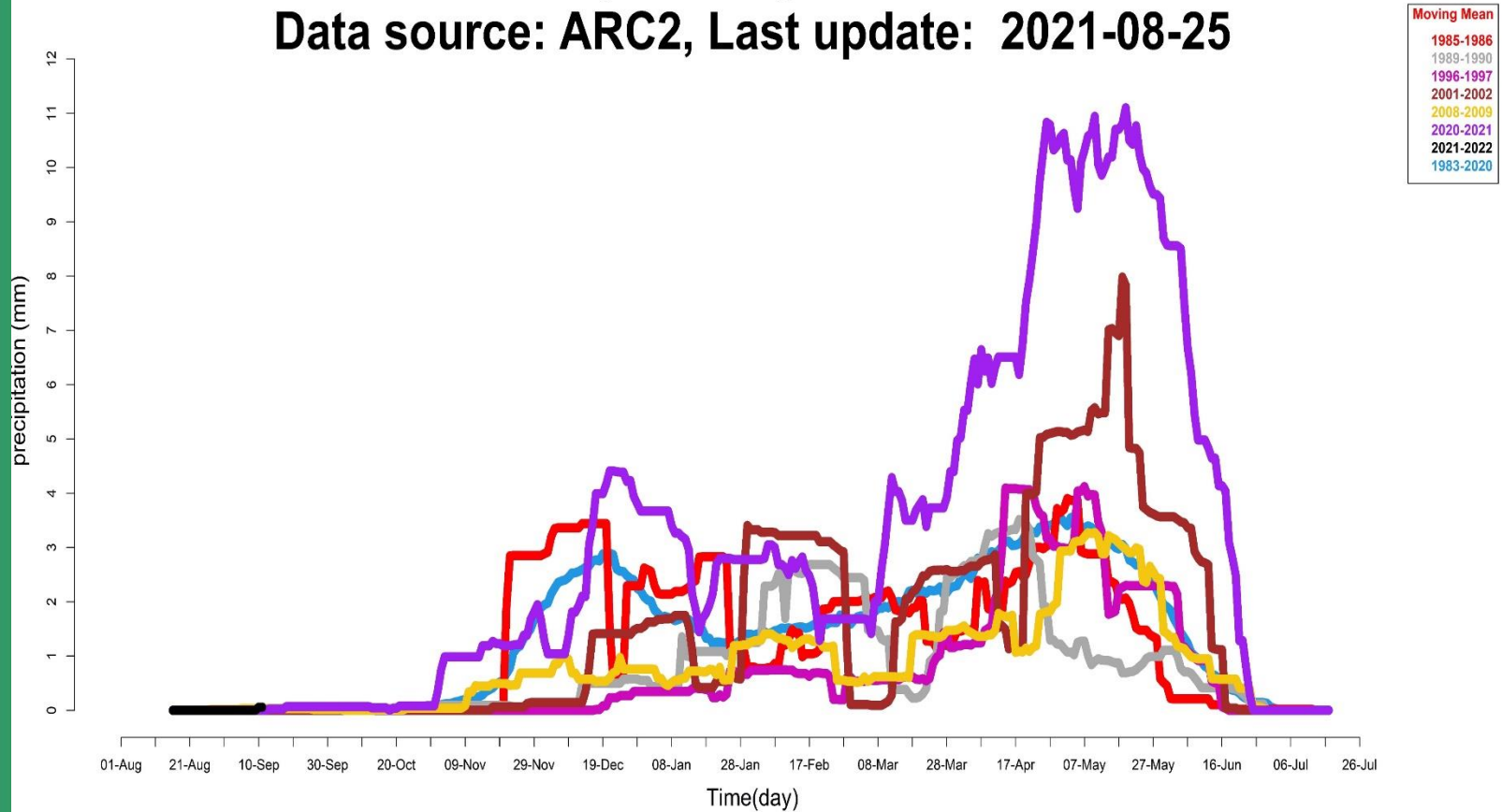
Annual Cycle Angola : BIE-SILVA-PORTO

Data source: ARC2, Last update: 2021-08-25



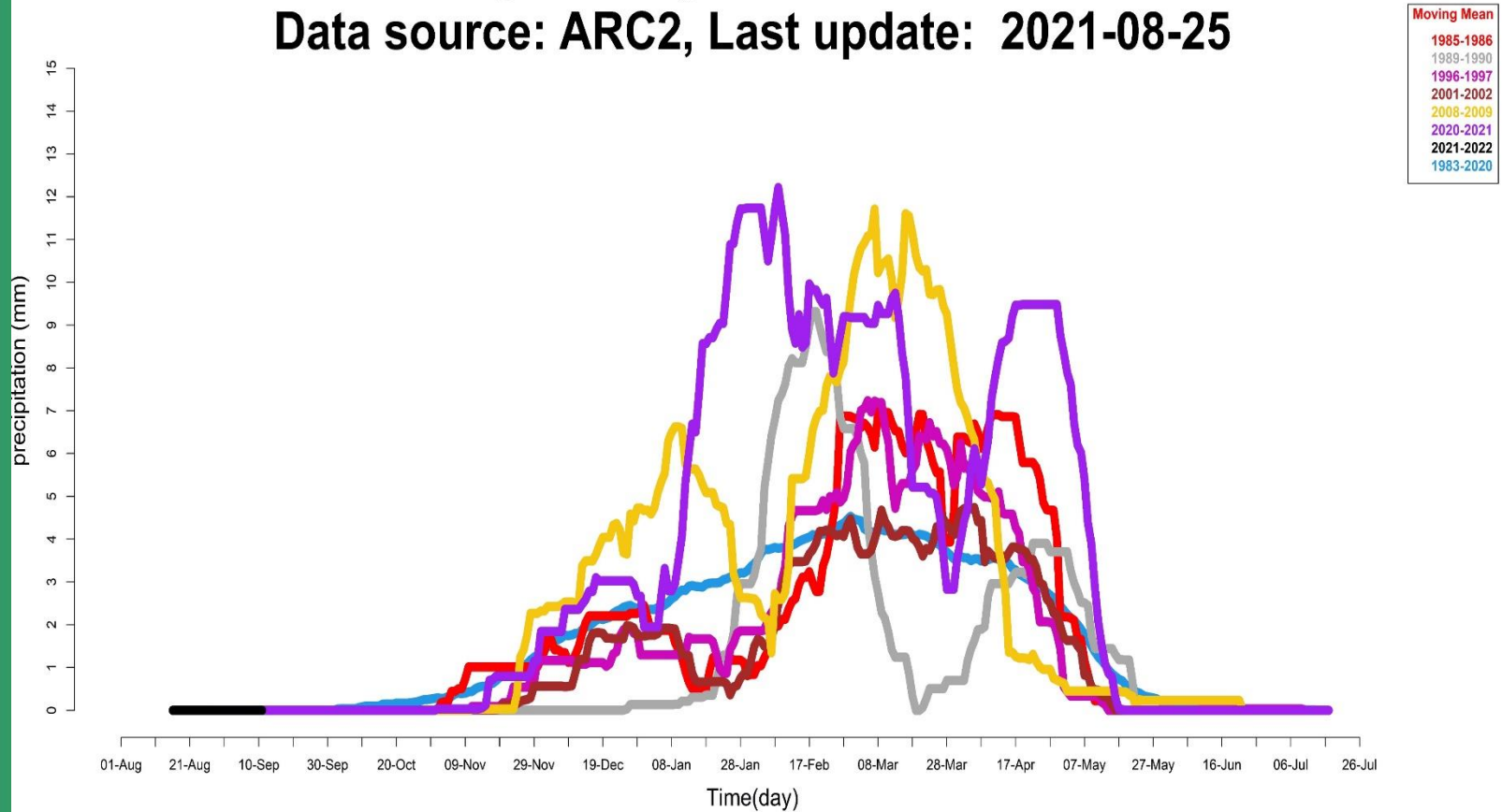
Annual Cycle Angola : LUANDA

Data source: ARC2, Last update: 2021-08-25



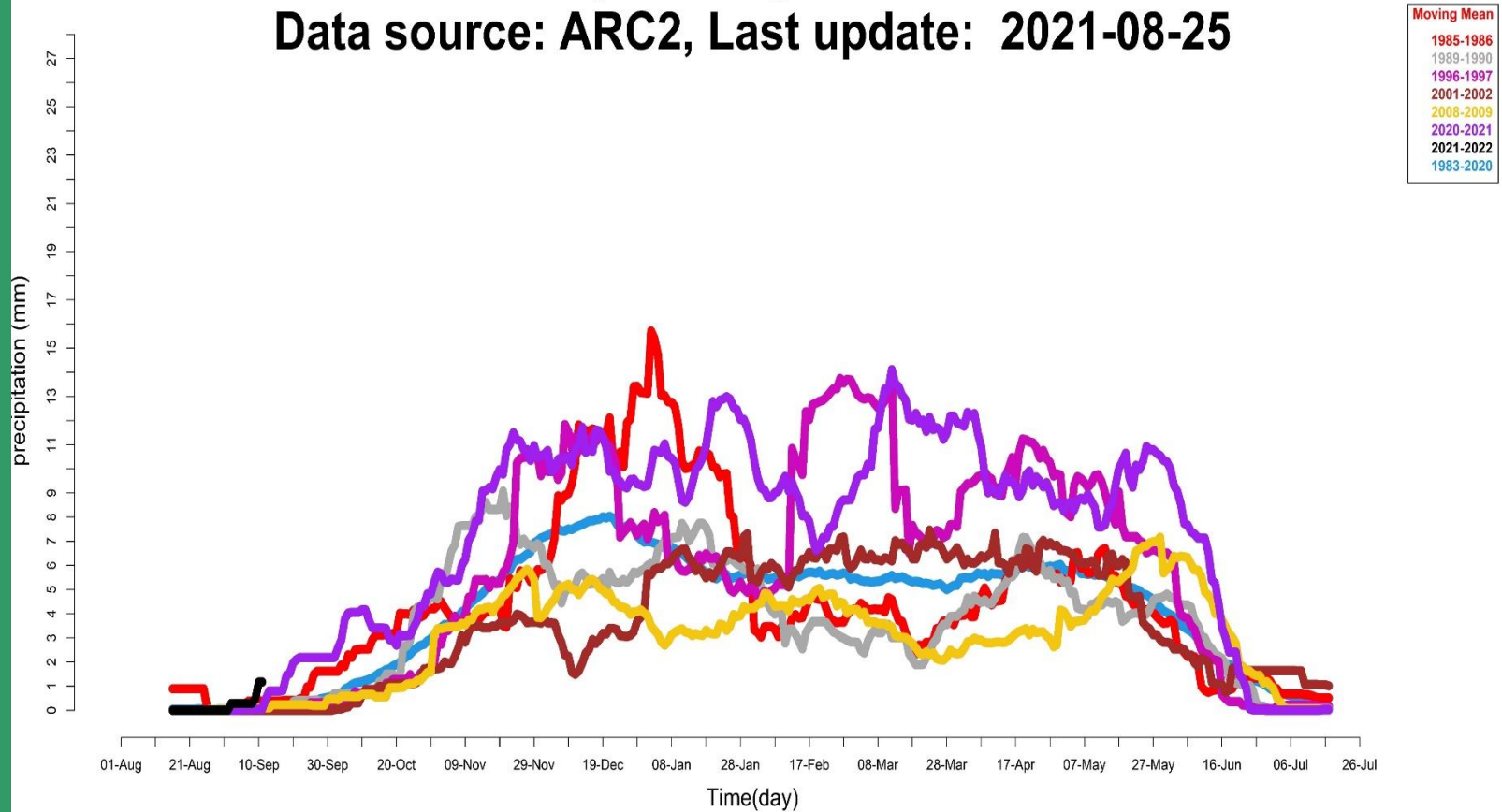
Annual Cycle Angola : PEREIRA-DE-ECA

Data source: ARC2, Last update: 2021-08-25



Annual Cycle Angola : NEGAGE

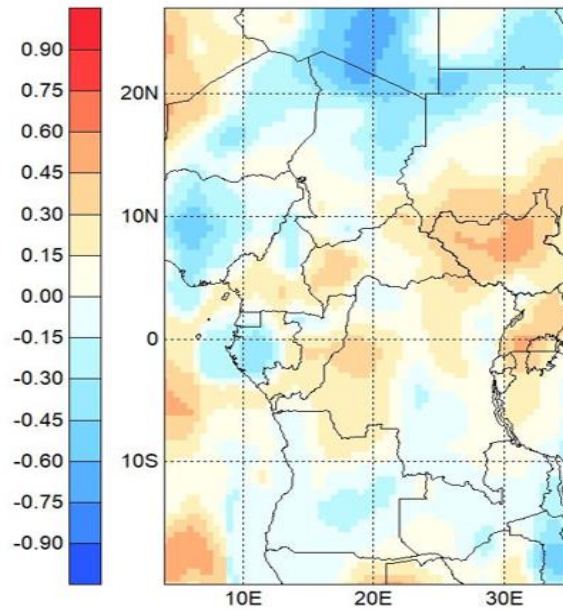
Data source: ARC2, Last update: 2021-08-25



CPT OUTLOOK (SON 2021)

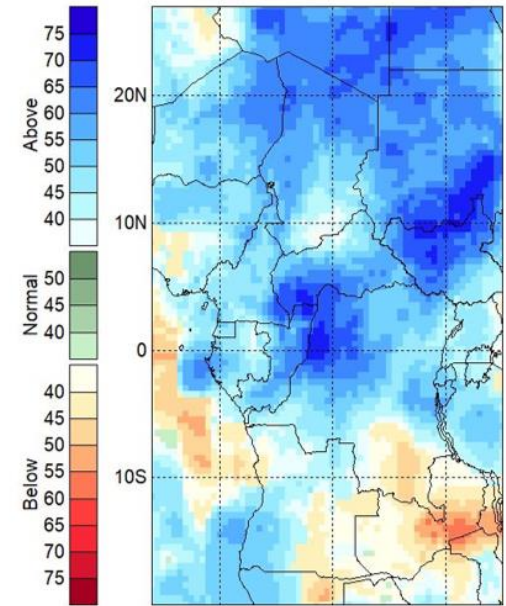


SKILL MAP CFSv2 SON 1991-2020

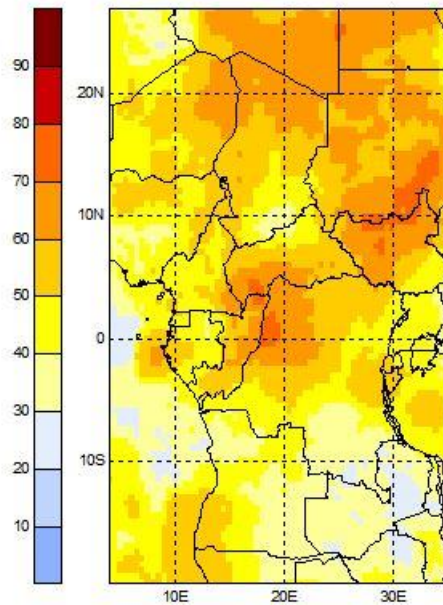


FCST_CFSv2
_SON_2021

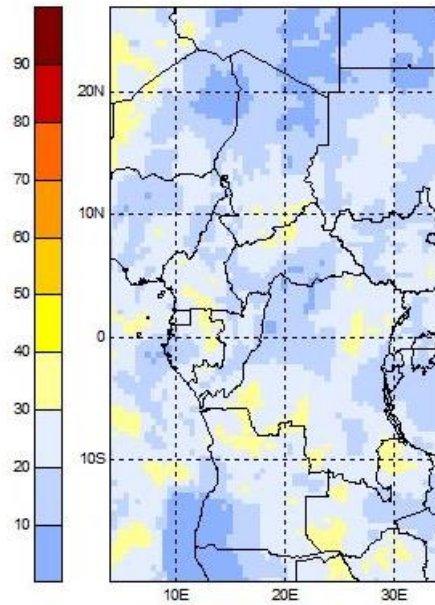
PROBABILISTIC FORECAST FOR SON 2021



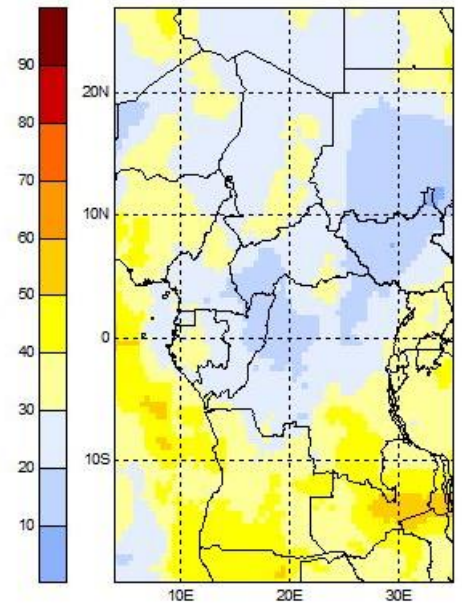
Above



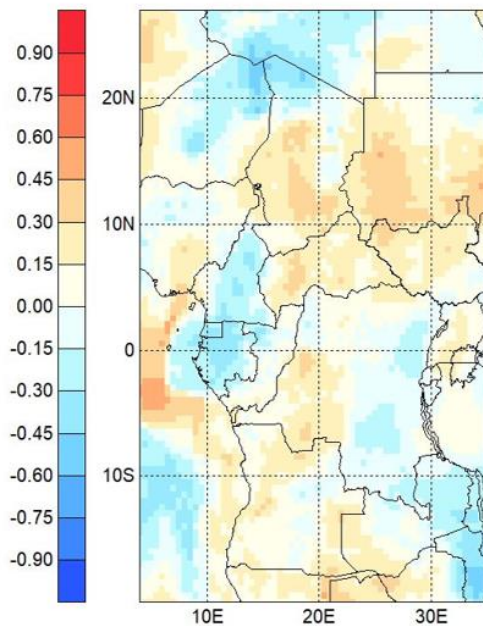
Normal



Below

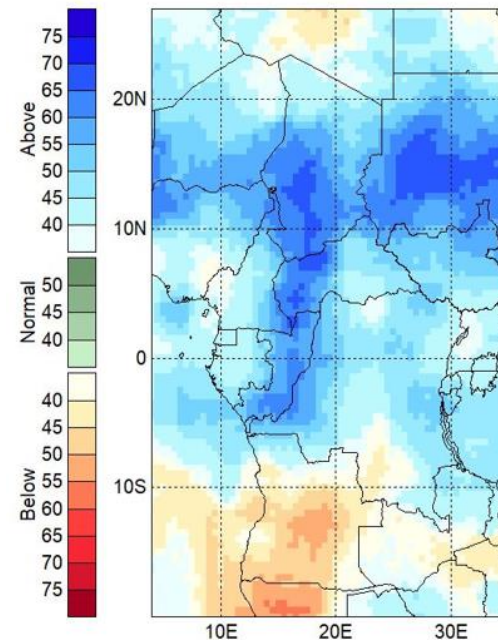


SKILL MAP CMC2 SON 1991-2020

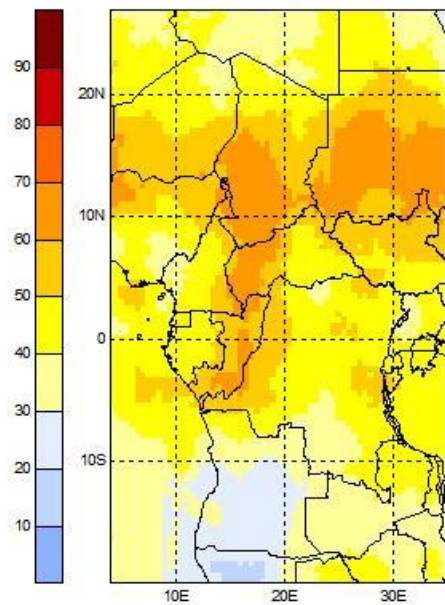


FCST_CMC2
_SON_2021

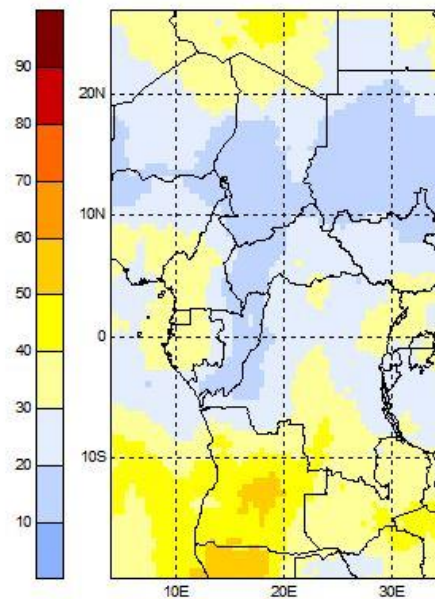
PROBABILISTIC FORECAST FOR SON 2021



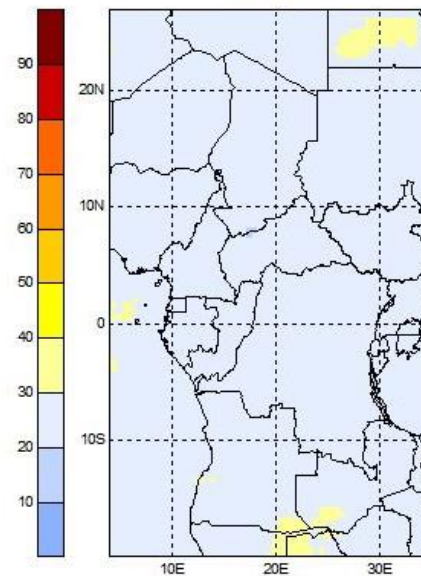
Above



Below

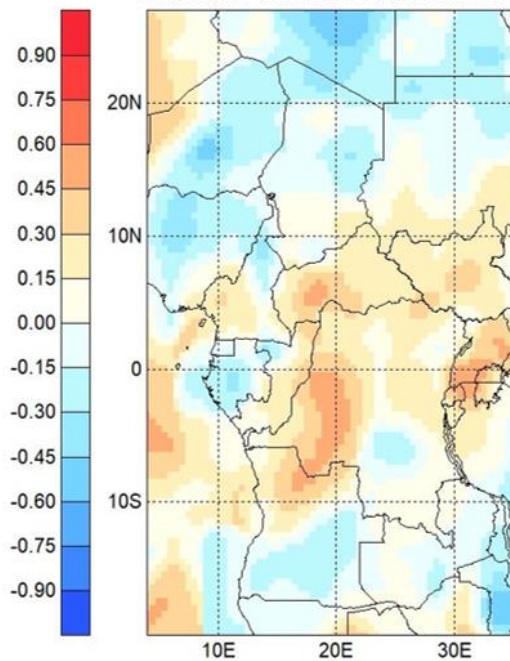


Normal

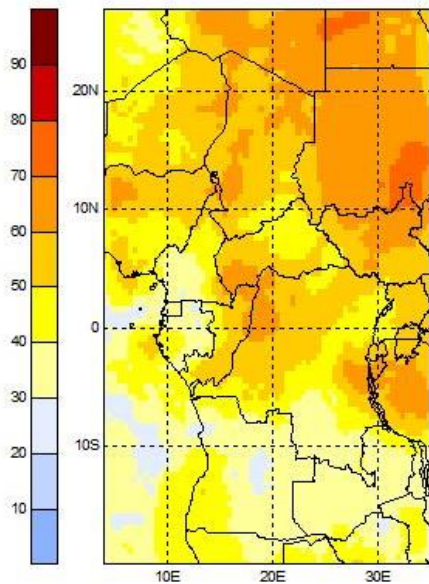




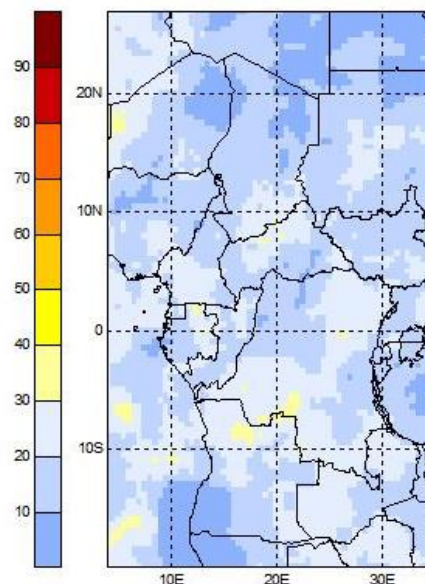
SKILL MAP NMME SON 1991-2020



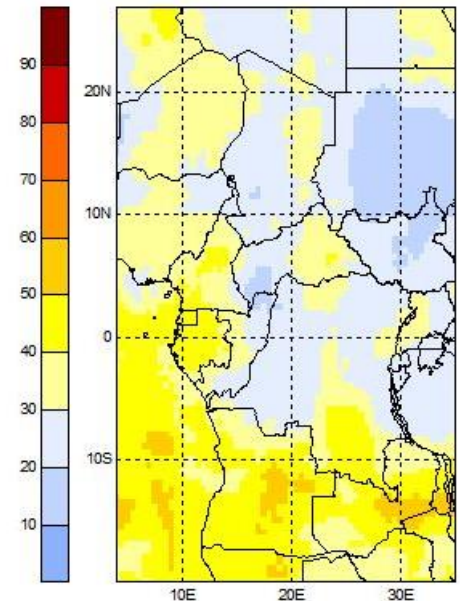
Above



Normal

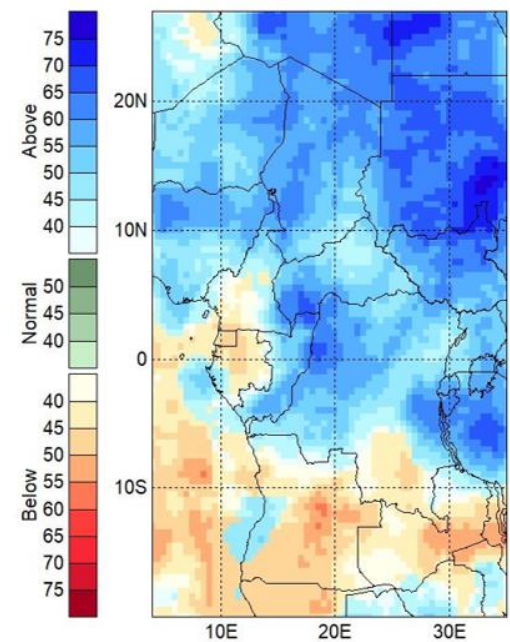


Below



FCST_NMME_ SON_2021

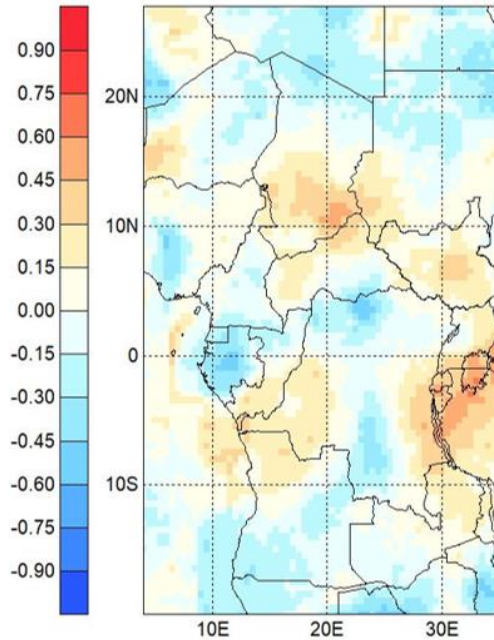
PROBABLISTIC FORECAST FOR SON 2021



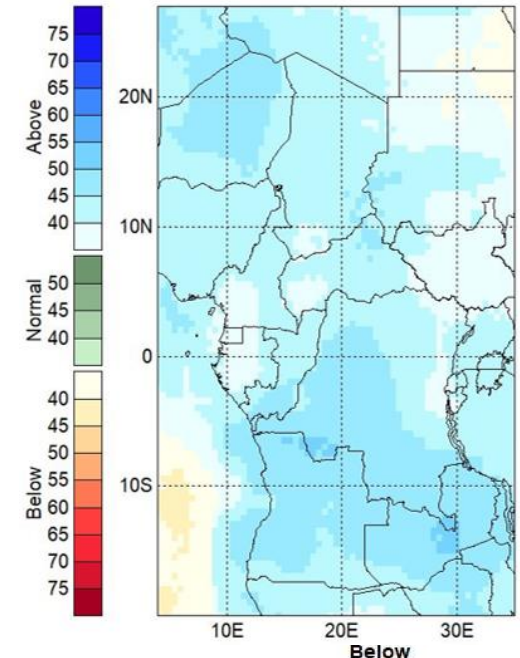


Rainfall FCST Based on SSTs Observed in September 2021 for the SON Season

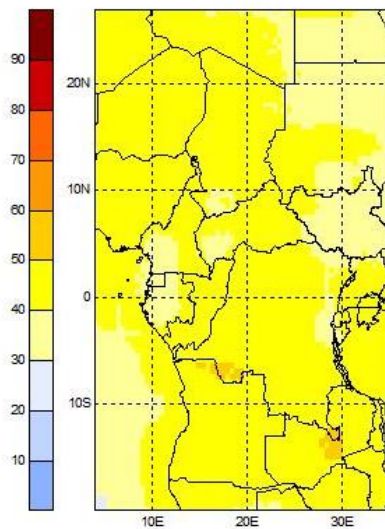
Skill Map SST (OBS) for SON 2021



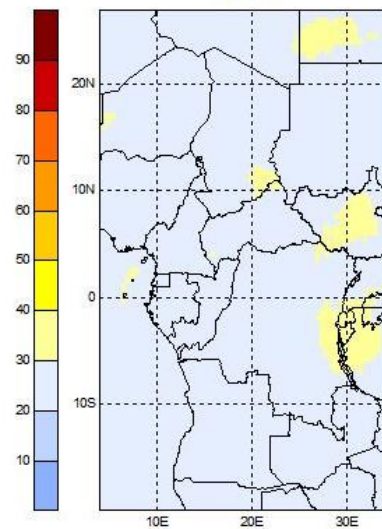
Probabilistic Forecast for SON 2021



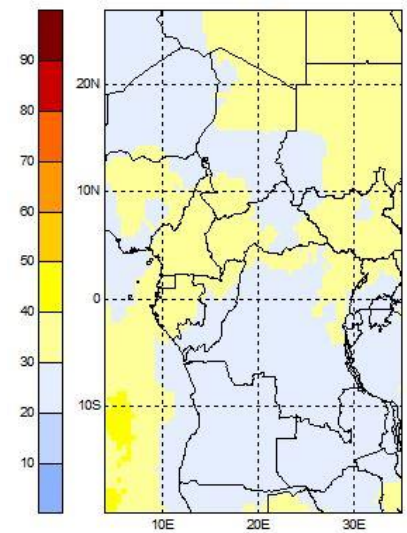
Above



Normal



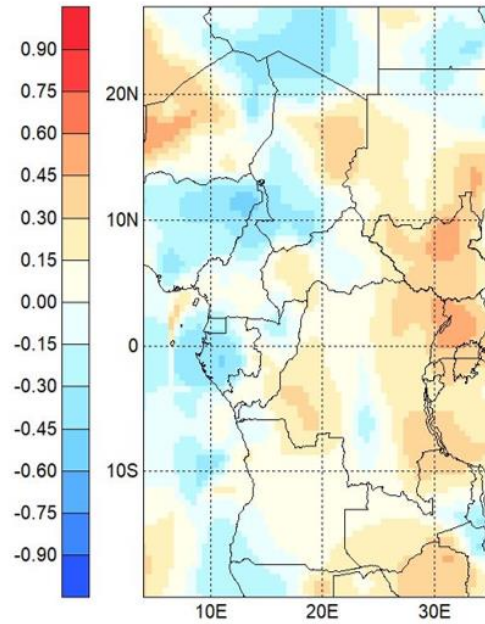
Below





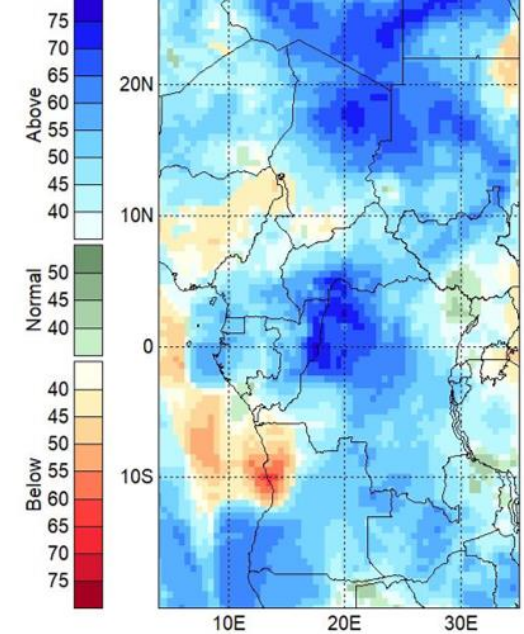
OND 2021 SEASON

SKILL MAP CFSv2 OND 1991-2020

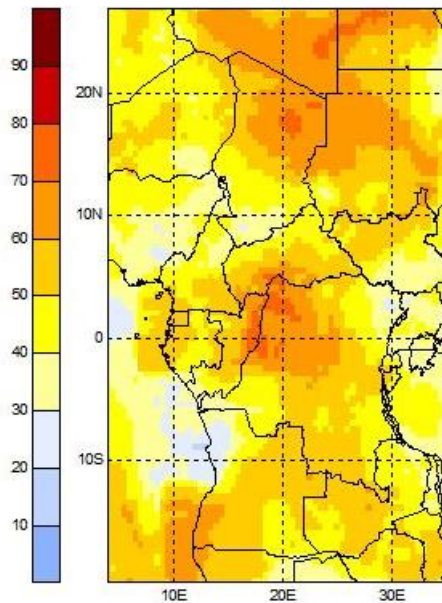


FCST_CFSv2_ OND_2021

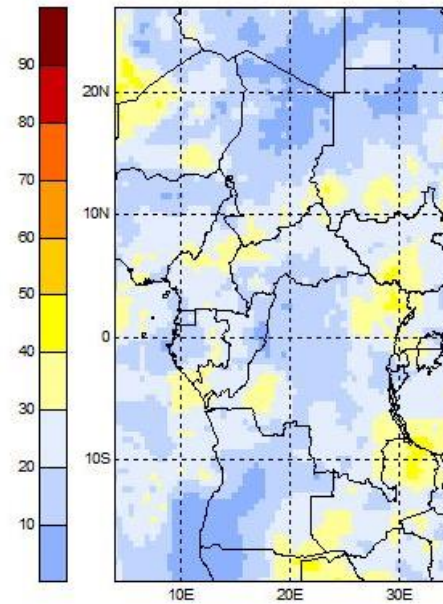
PROBABILISTIC FORECAST FOR OND 2021



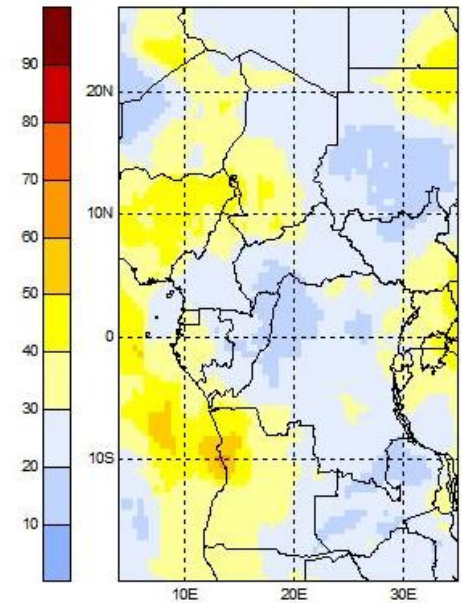
Above



Normal

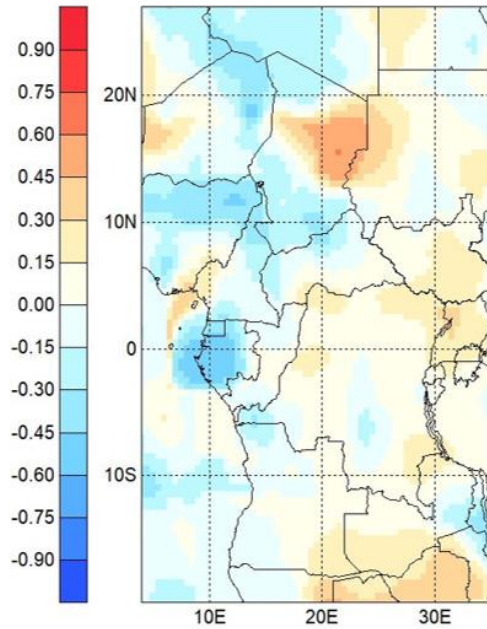


Below

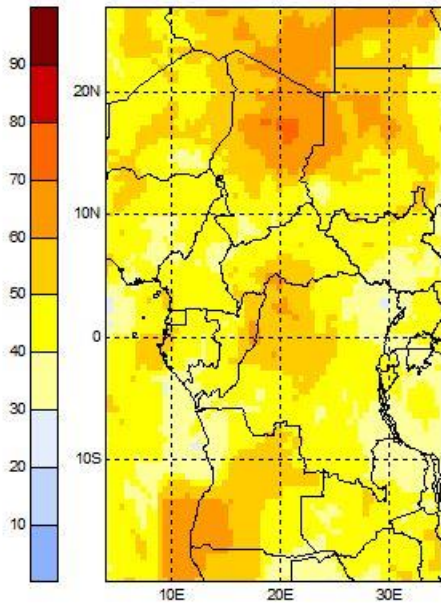




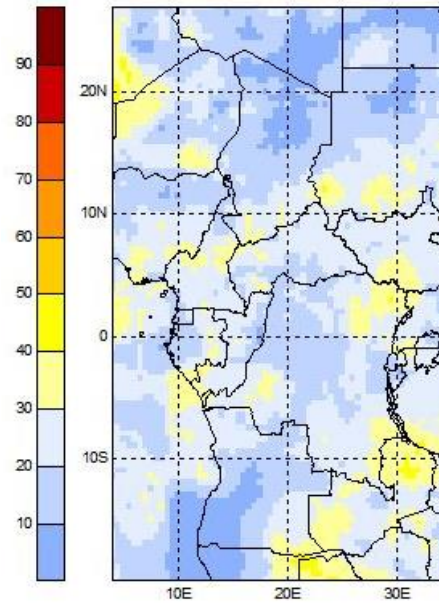
SKILL MAP CMC2 OND 1991-2020



Above

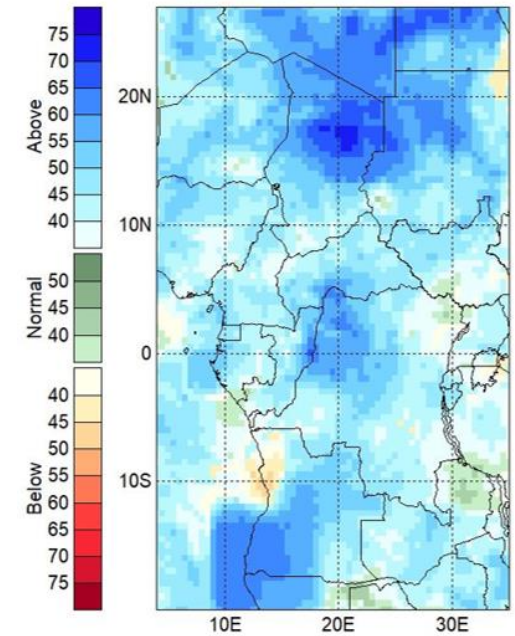


Normal



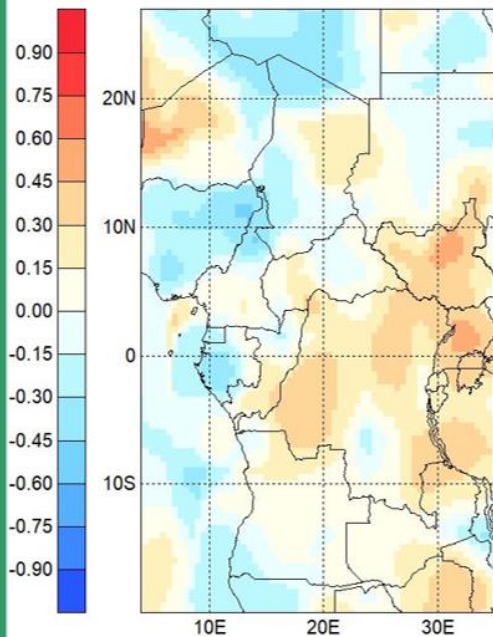
Below

PROBABLISTIC FORECAST FOR OND 2021

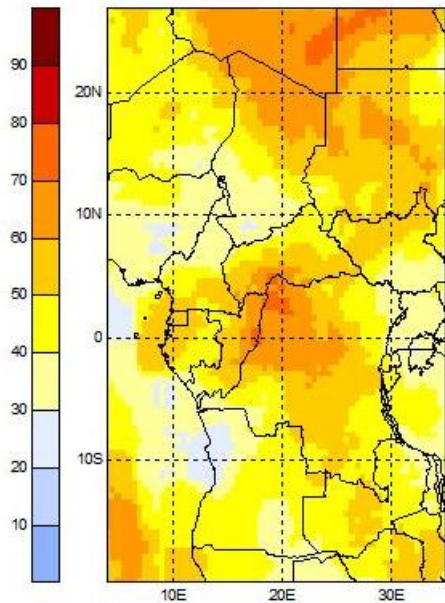




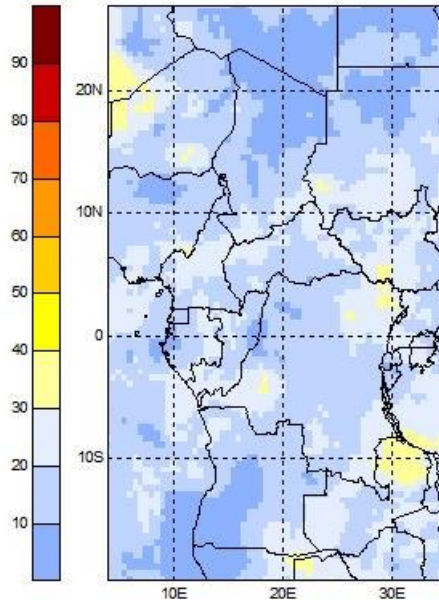
SKILL MAP NMME OND 1991-2020



Above

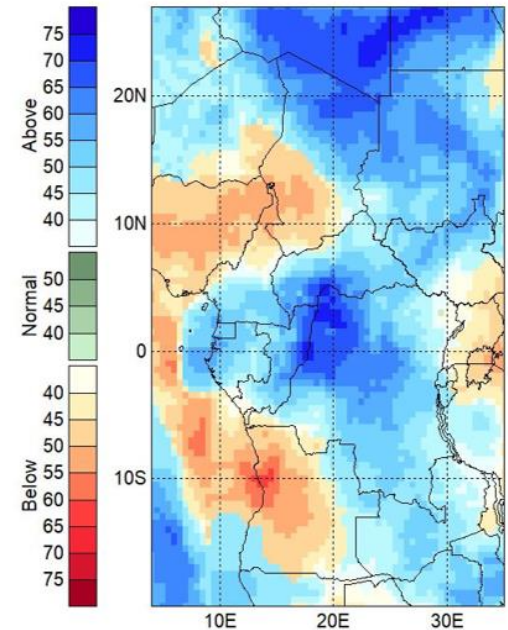


Normal



Below

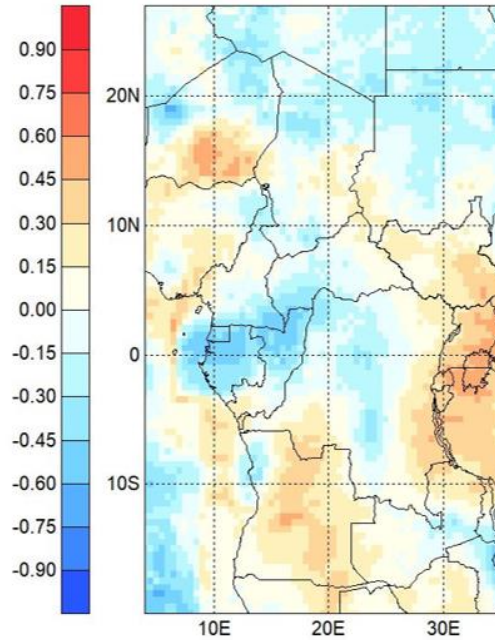
PROBABILISTIC FORECAST FOR OND 2021



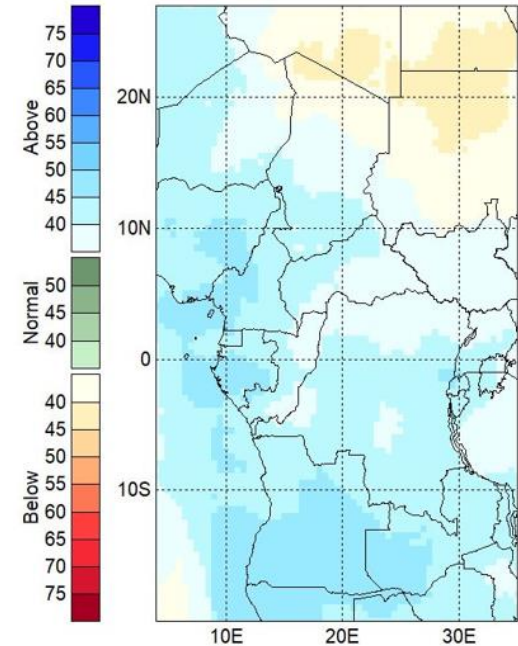


Rainfall FCST Based on SSTs Observed in September 2021 for the OND Season

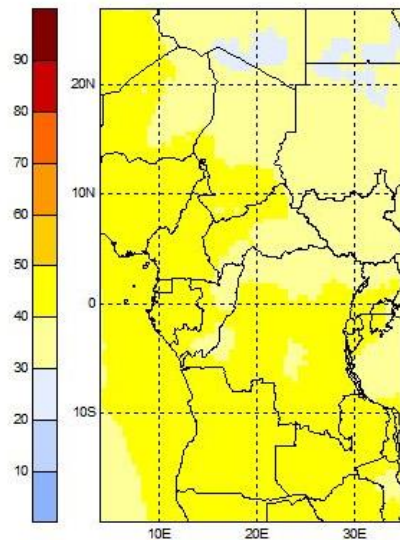
Skill Map SST (OBS) for OND 2021



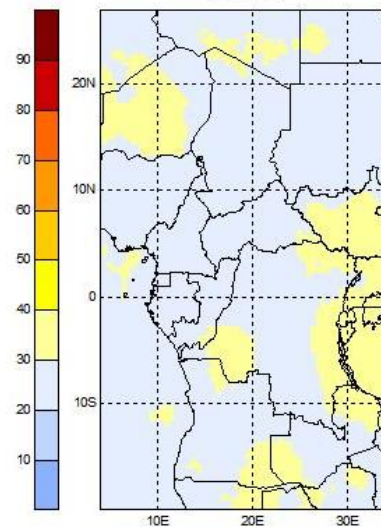
Probabilistic Forecast for OND 2021



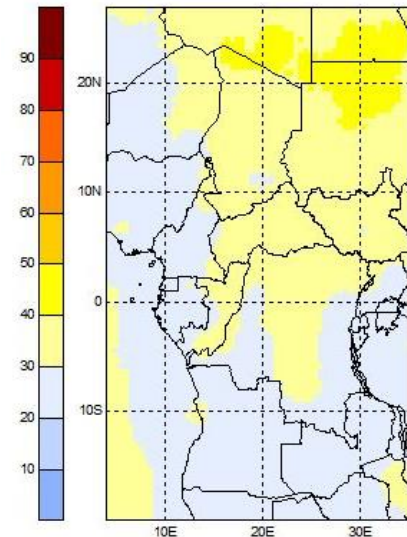
Above



Normal



Below

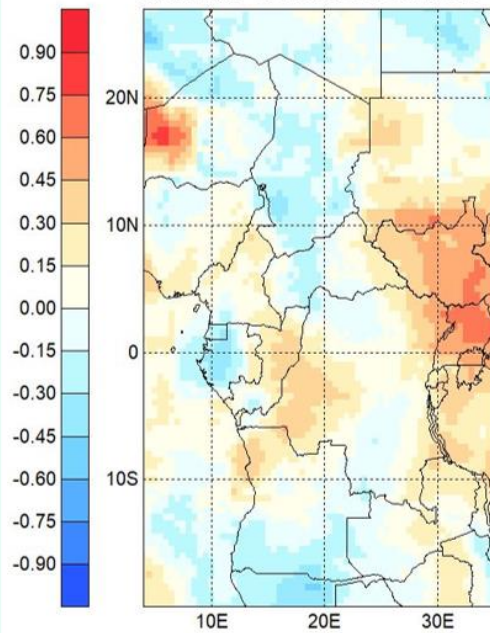




NDJ 2021 / 2022 SEASON

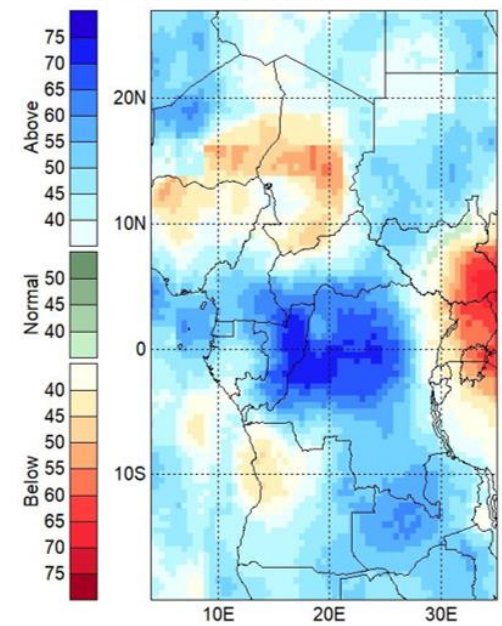


SKILL MAP CFSv2 NDJ 1991-2020

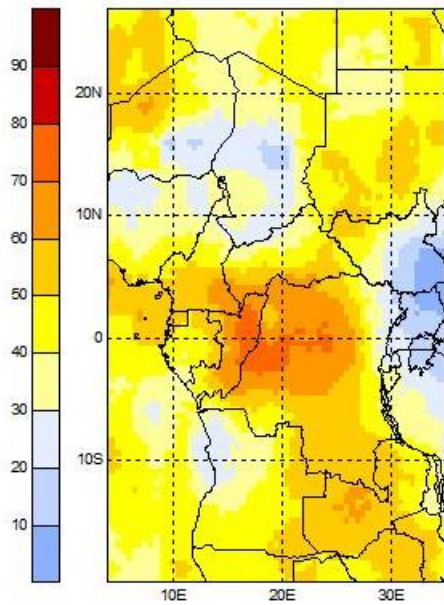


FCST_CFSv2_ NDJ_2021

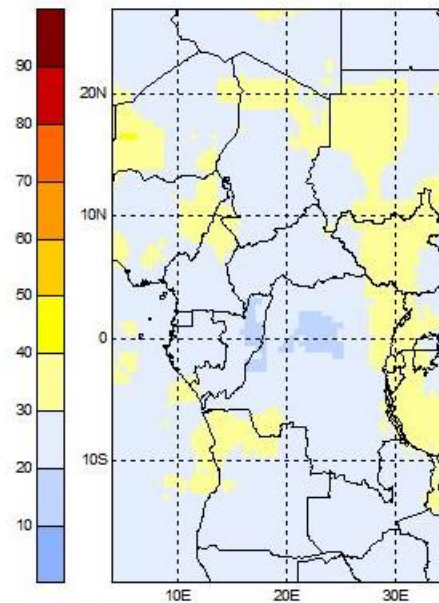
PROBABILISTIC FORECAST FOR NDJ 2021



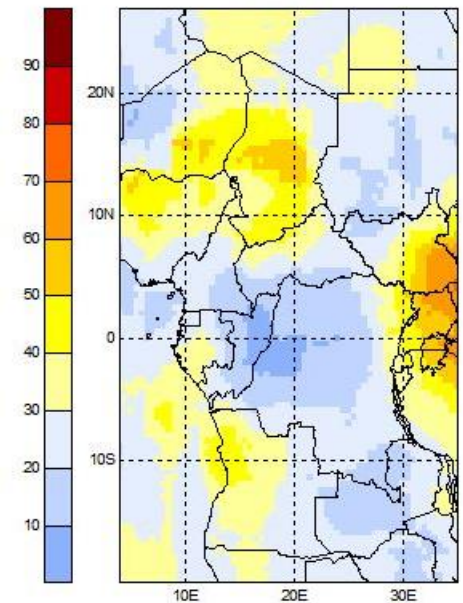
Above



Normal

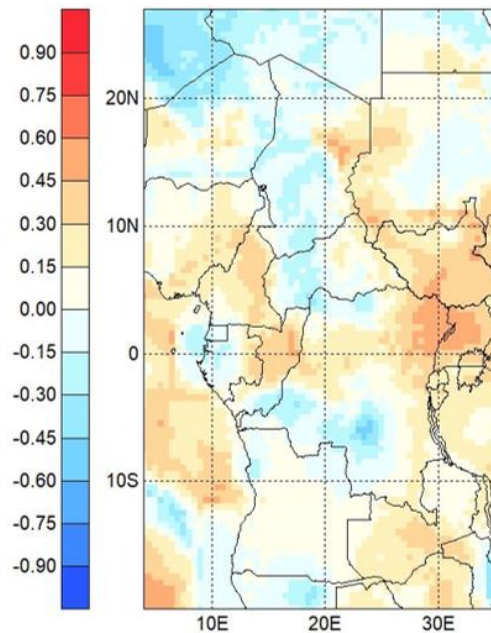


Below

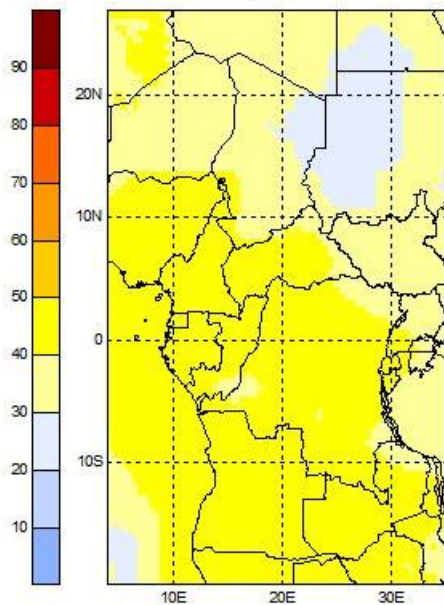




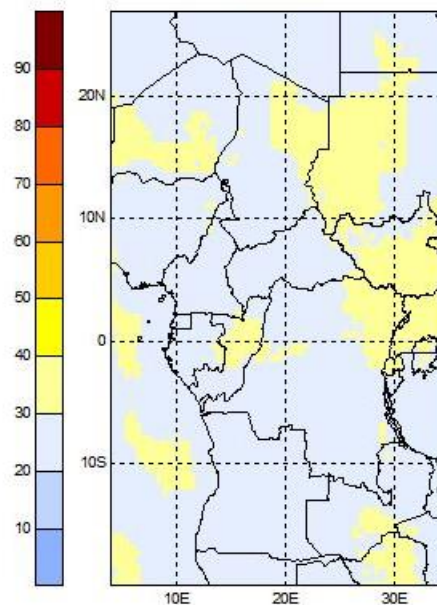
SKILL MAP CMC2 NDJ 1991-2020



Above

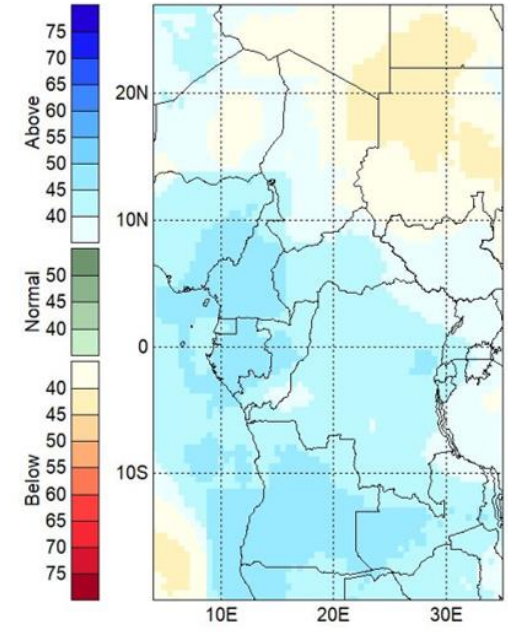


Normal



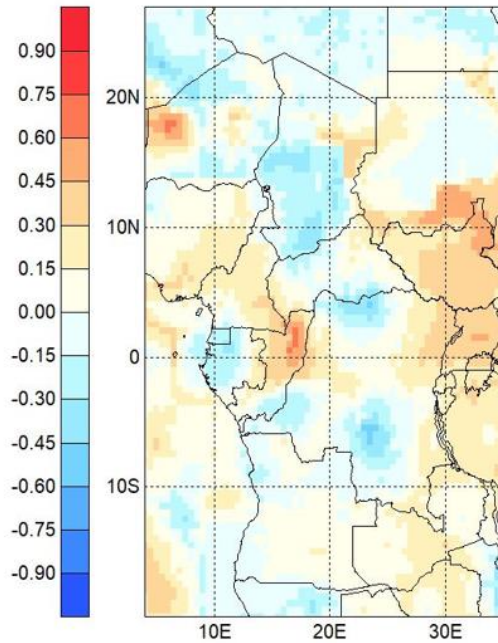
Below

PROBABILISTIC FORECAST FOR NDJ 2021

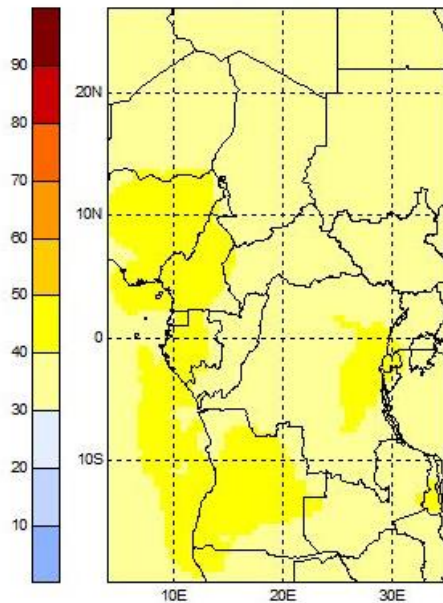




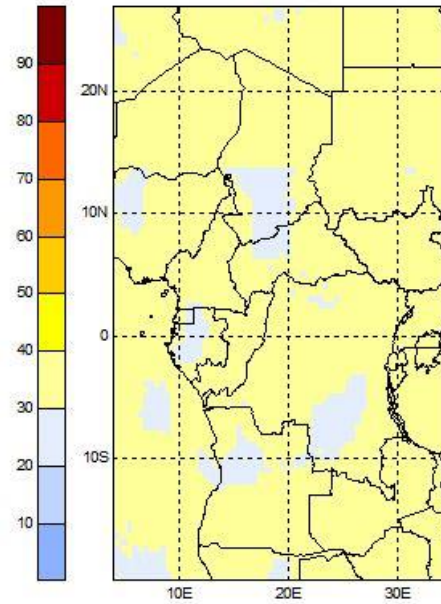
SKILL MAP NMME NDJ 1991-2020



Above

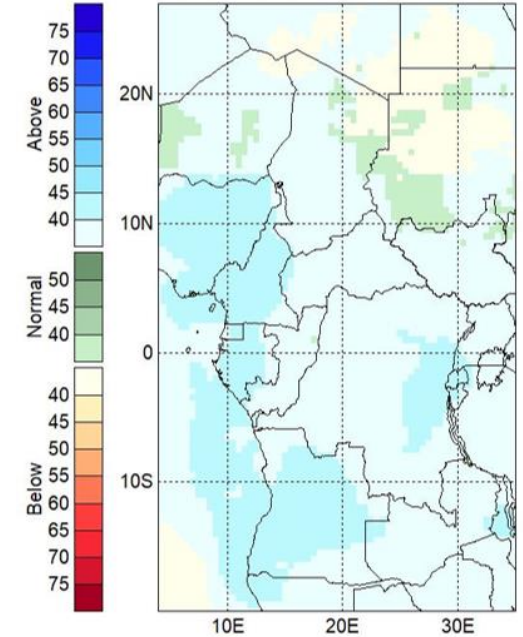


Normal



Below

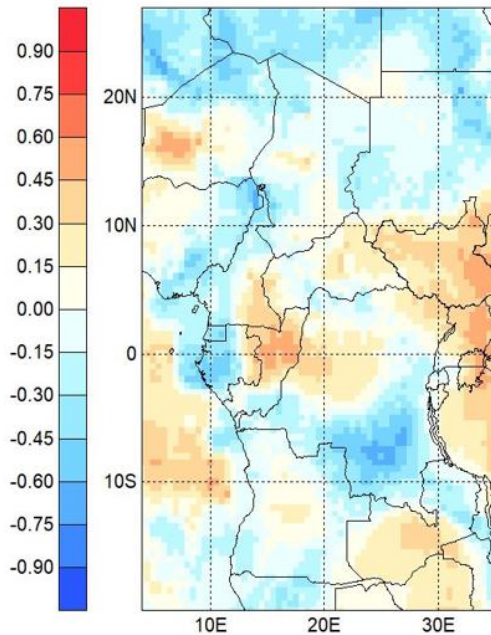
PROBABILISTIC FORECAST FOR NDJ 2021



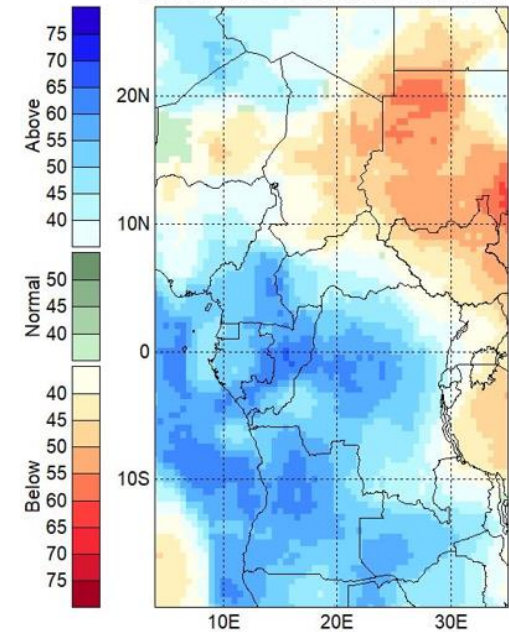


Rainfall FCST Based on SSTs Observed in September 2021 for the NDJ Season

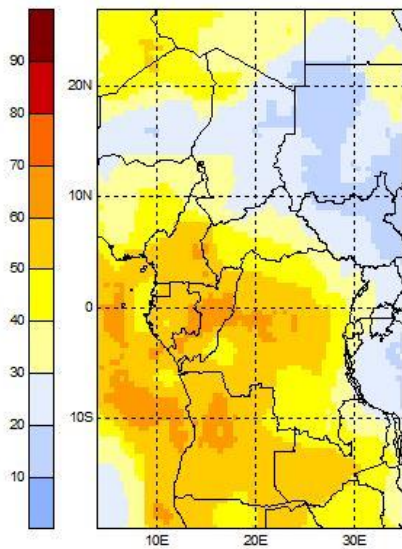
Skill Map SST (OBS) for NDJ 2021



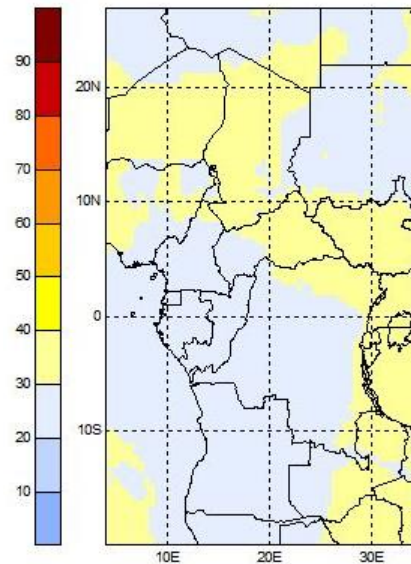
Probabilistic Forecast for NDJ 2021



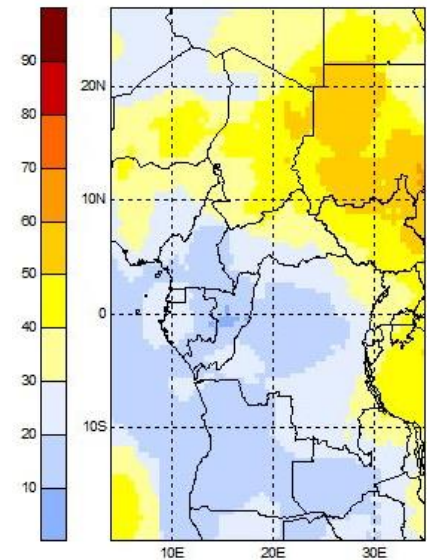
Above



Normal



Below



MONTHLY SSTs SKILLS (October, November, December 2021 and January 2022) FROM SINGLE MODELS

ANALYSIS OF EACH GLOBAL PRODUCING CENTRES FOR LONG RANGE FORECAST

(SEASONAL)

SEASONAL SSTs (OND) 2021 FROM SINGLE MODELS AND WMO LEAD CENTRES FOR LONG RANGE FORECAST

ECMWF MODEL

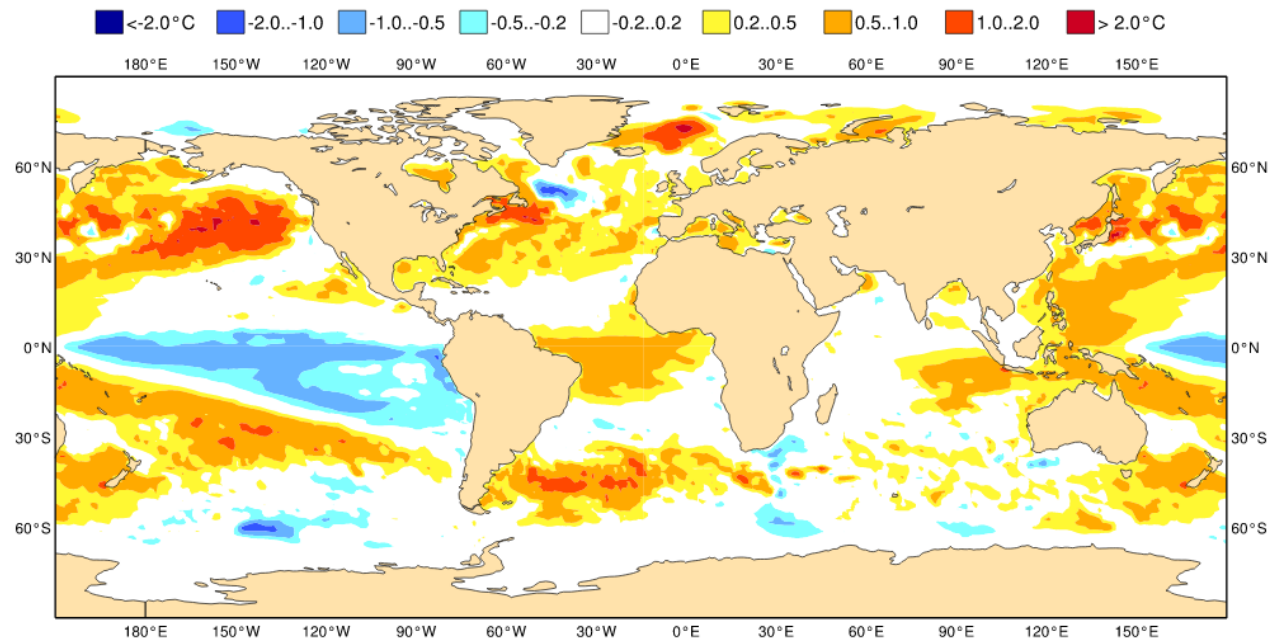
(a)

ECMWF Seasonal Forecast
Mean forecast SST anomaly

Forecast start is 01/09/21, climate period is 1993-2016
Ensemble size = 51, climate size = 600

(b)

System 5
OND 2021

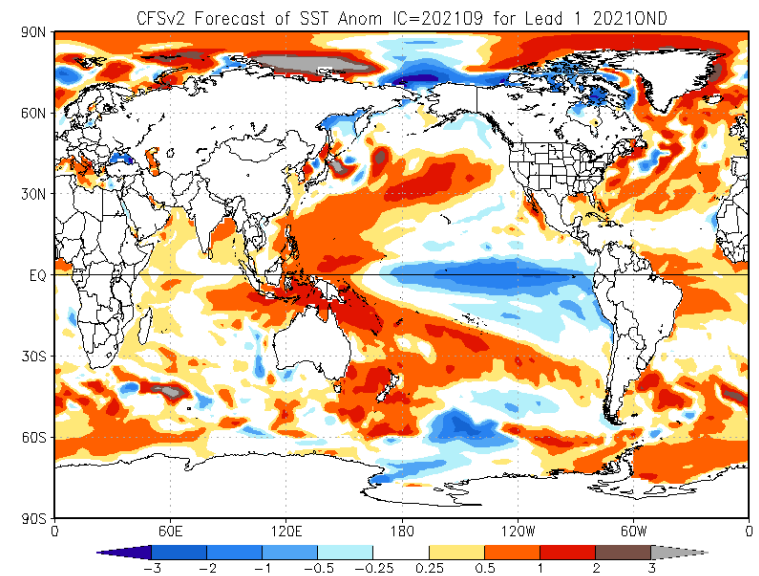
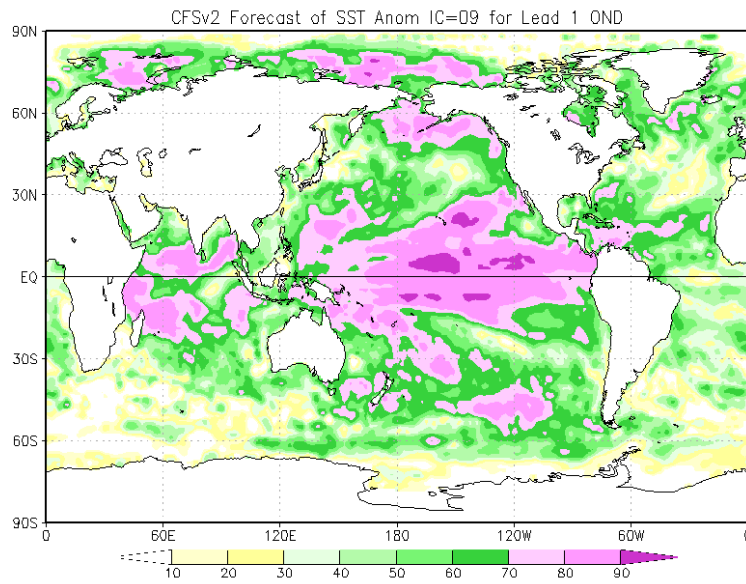


http://www.ecmwf.int/en/forecasts/charts/seasonal/sea-surface-temperature-long-range-forecast?time=2016020100,2880,2016053100&area=Global&forecast_type_and_skill_measures=ensemble%20mean

https://www.ecmwf.int/en/forecasts/charts/catalogue/seasonal_charts_ecmwf_sst?time=2017080100,2904,2017113000&area=Global&forecast_type_and_skill_measures=anomaly%20correlation

CFSv2 MODEL

(b)



http://www.cpc.ncep.noaa.gov/products/NMME/current/images/CFSv2_ensemble_tmpsfc_season1.png

http://www.cpc.ncep.noaa.gov/products/NMME/current/images/skill_CFSv2_ensemble_tmpsfc_season1.png

CanCM4i MODEL

(b)

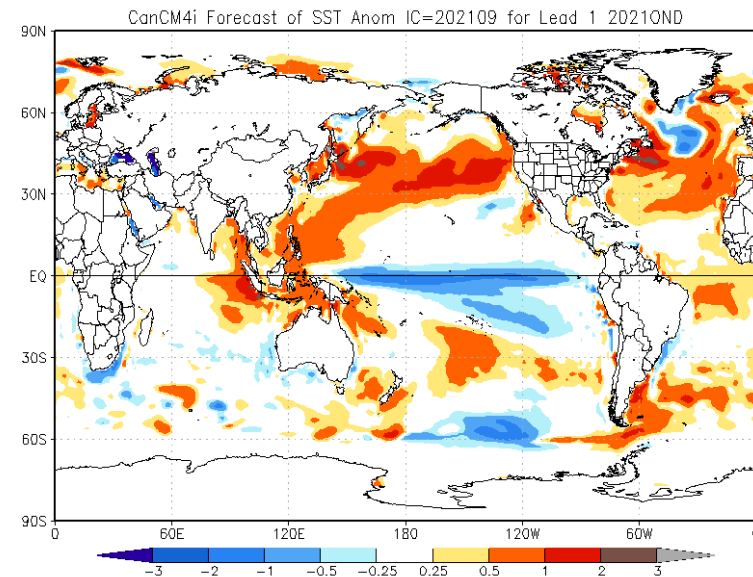
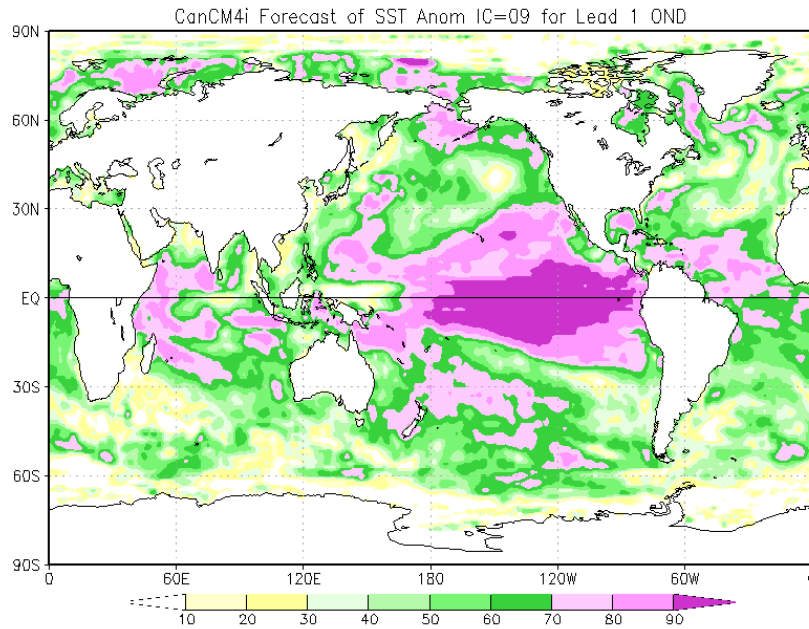
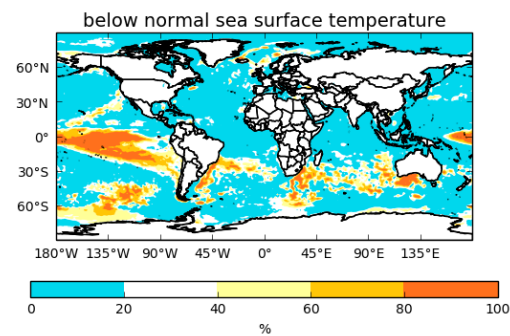
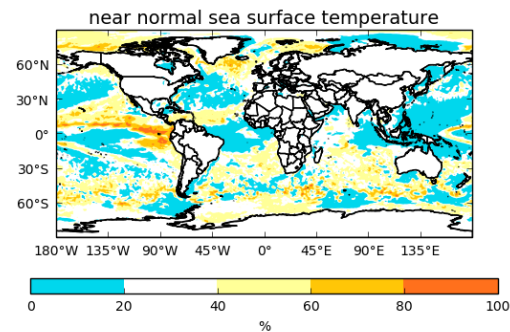
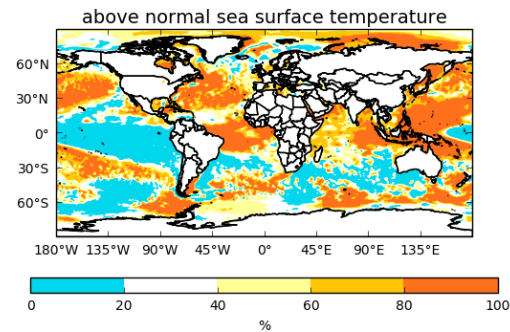


Figure
Model

http://www.cpc.ncep.noaa.gov/products/NMME/current/images/CMC2_ensemble_tmprfc_season1.png

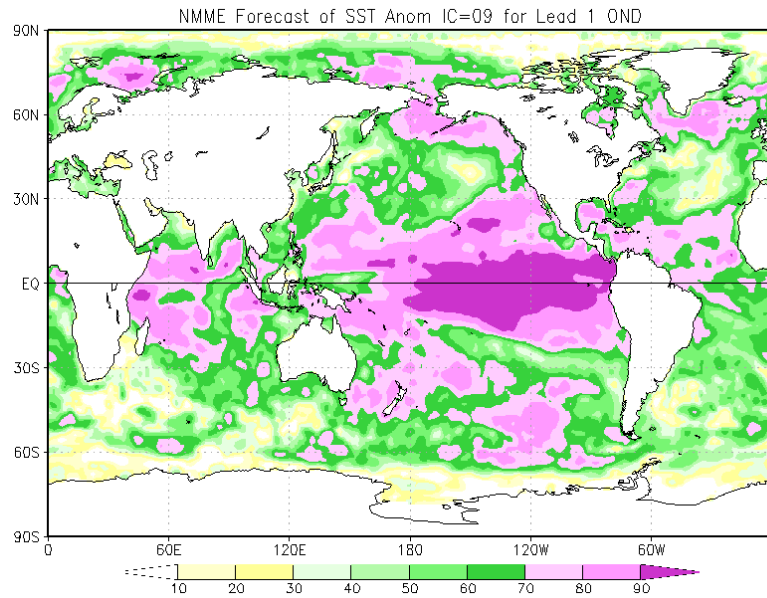
http://www.cpc.ncep.noaa.gov/products/NMME/current/images/skill_CMC2_ensemble_tmprfc_season1.png

Probability of tercile categories Oct/Nov/Dec Issued September 2021

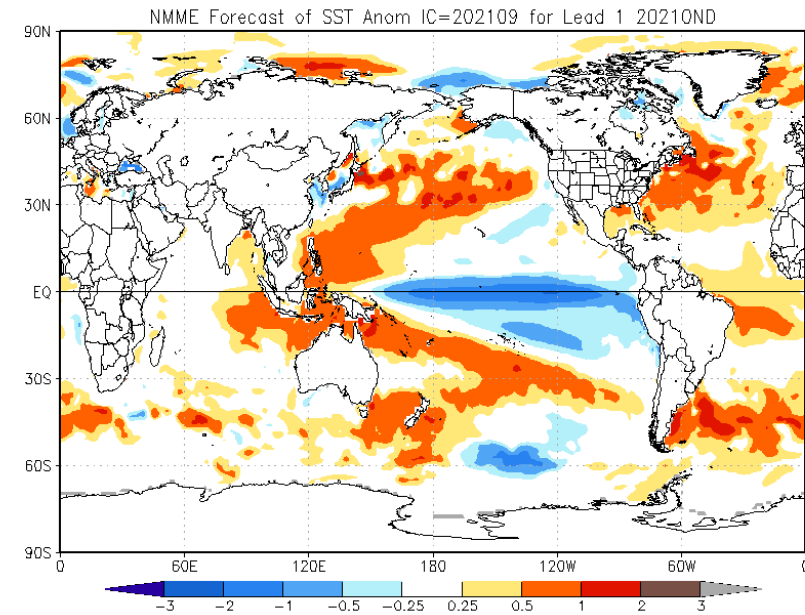


SEASONAL SSTs (OND) 2021 FROM MULTI MODELS AND WMO LEAD CENTRES FOR LONG RANGE FORECAST

(a)



(b)



http://www.cpc.ncep.noaa.gov/products/NMME/current/images/NMME_ensemble_tmpsfc_season1.png

http://www.cpc.ncep.noaa.gov/products/NMME/current/images/skill_NMME_ensemble_tmpsfc_season1.png

EUROSIP MULTI-MODEL

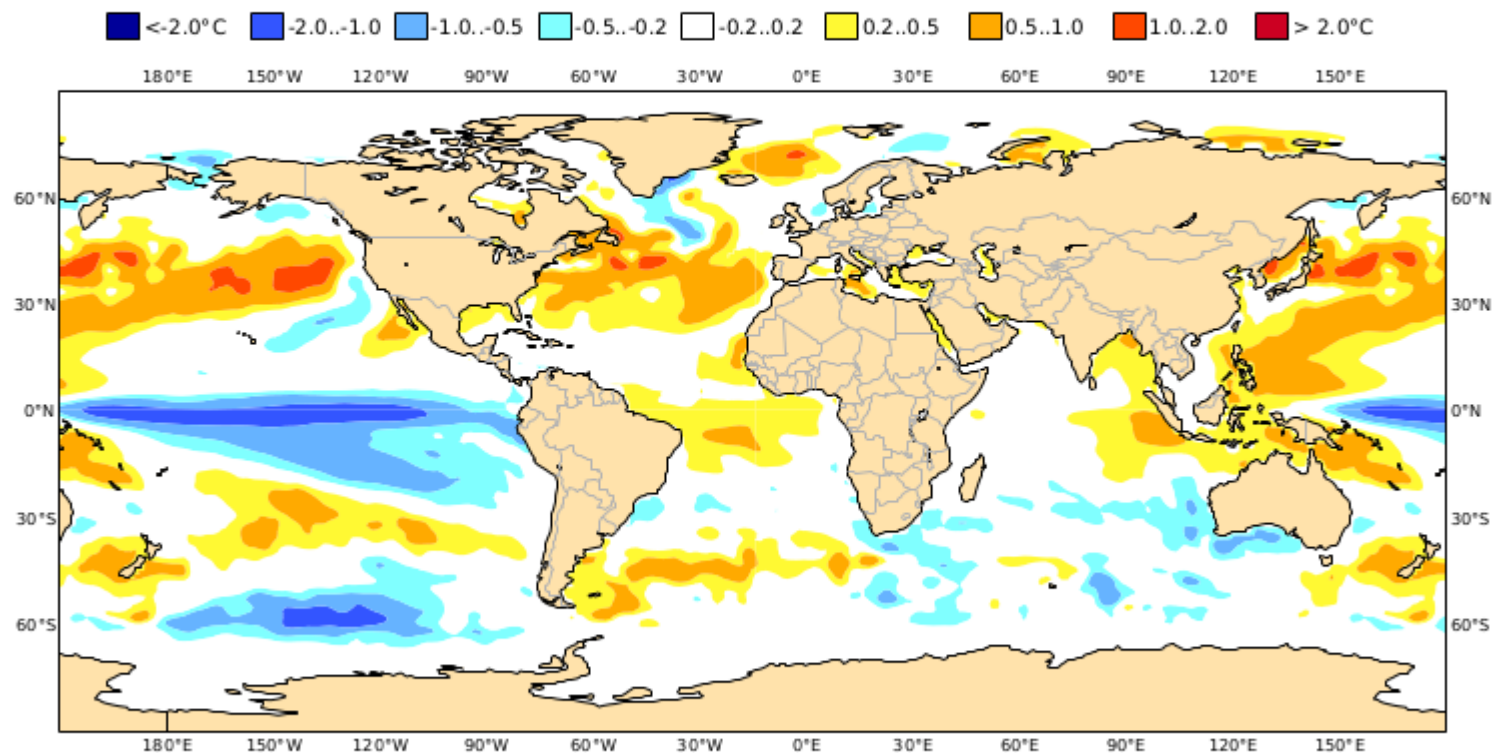
C3S: ECCO contribution

Mean forecast SST anomaly

Nominal forecast start: 01/09/21

Variance-standardized mean

OND 2021



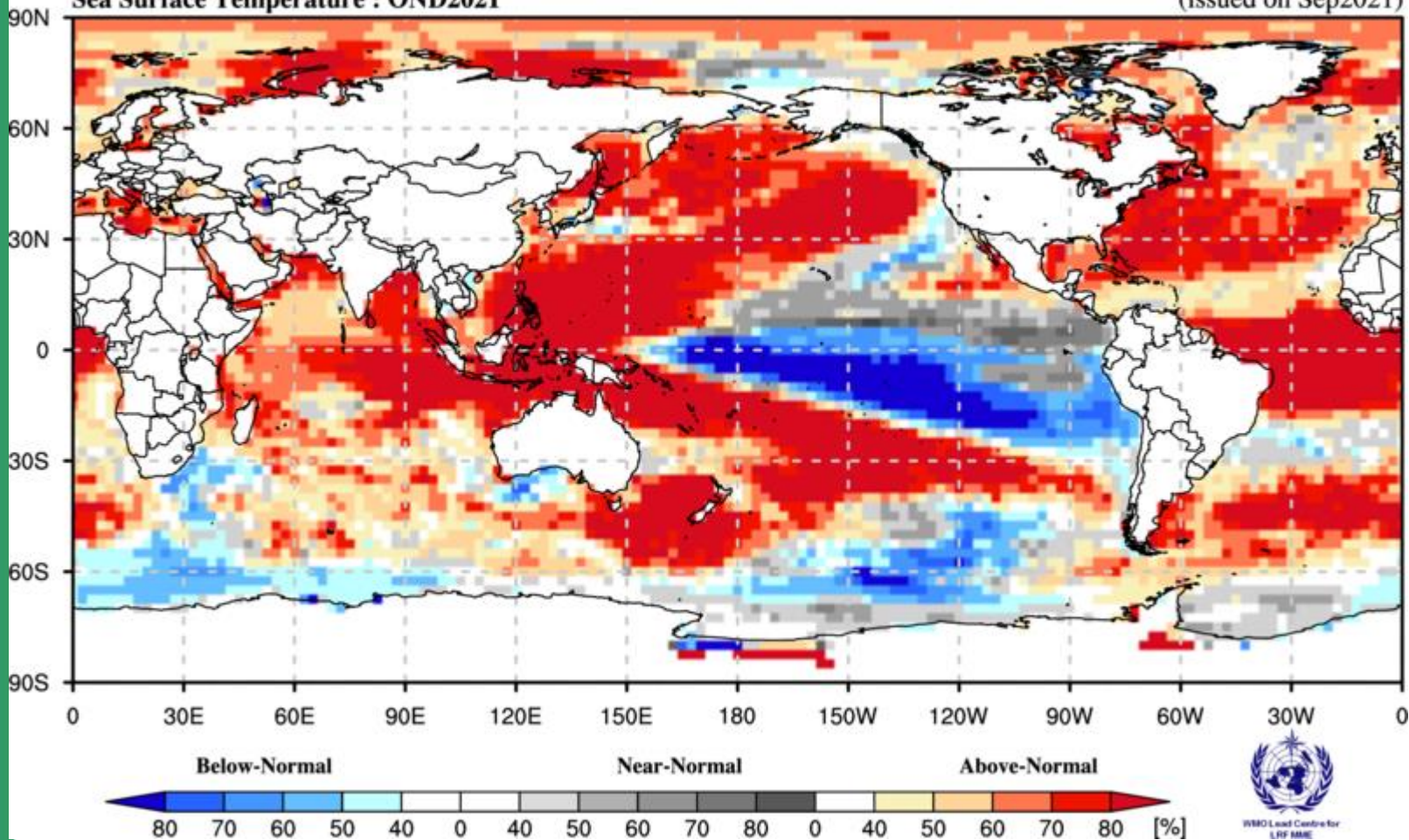
WMO LEAD CENTER

Probabilistic Multi-Model Ensemble Forecast

Beijing, Bologna, ECMWF, Exeter, Melbourne, Montreal, Moscow, Offenbach, Seoul, Tokyo, Toulouse, Washington

Sea Surface Temperature : OND2021

(issued on Sep2021)



SEASONAL SSTs (NDJ) 2021 FROM SINGLE MODELS AND WMO LEAD CENTRES FOR LONG RANGE FORECAST

ECMWF MODEL

(a)

ECMWF Seasonal Forecast

Mean forecast SST anomaly

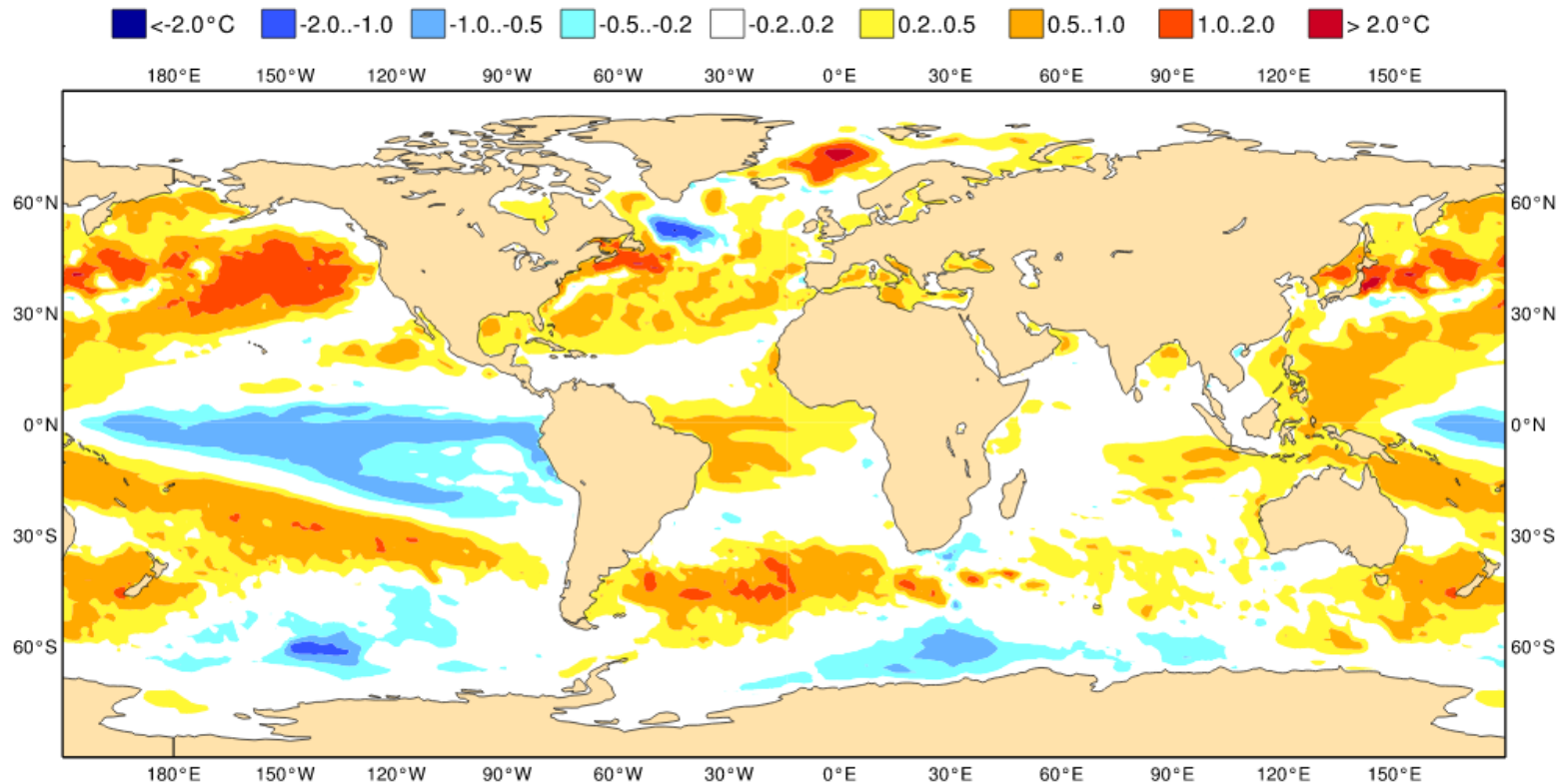
Forecast start is 01/09/21, climate period is 1993-2016

Ensemble size = 51, climate size = 600

(b)

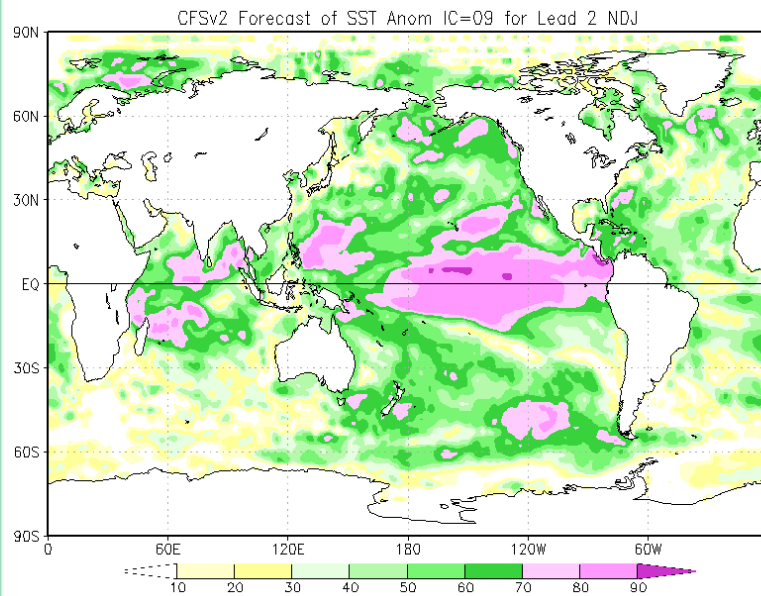
System 5

NDJ 2021/22

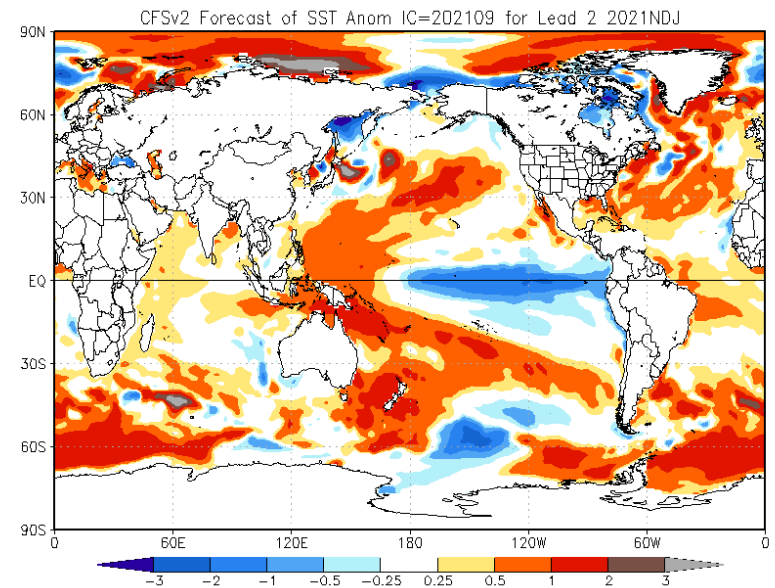


http://www.ecmwf.int/en/forecasts/charts/seasonal/sea-surface-temperature-long-range-forecast?time=2016020100,2880,2016053100&area=Global&forecast_type_and_skill_measures=ensemble%20mean

(a)



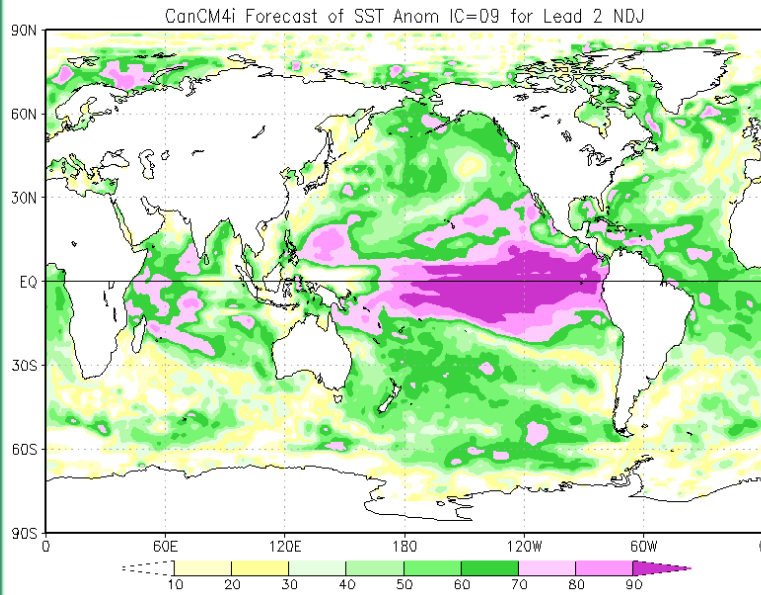
(b)



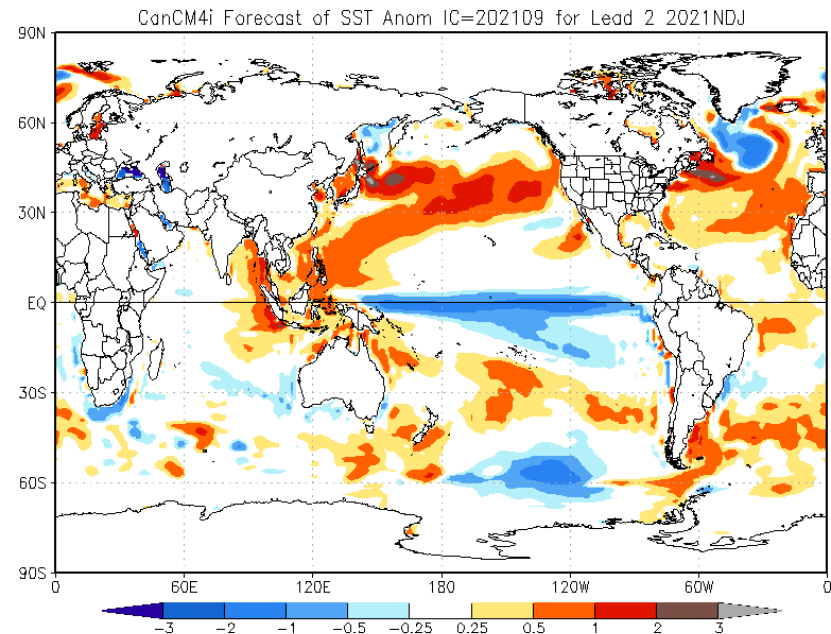
http://www.cpc.ncep.noaa.gov/products/NMME/current/images/CFSv2_ensemble_tmprsc_season2.png

http://www.cpc.ncep.noaa.gov/products/NMME/current/images/skill_CFSv2_ensemble_tmprsc_season2.png

(a)

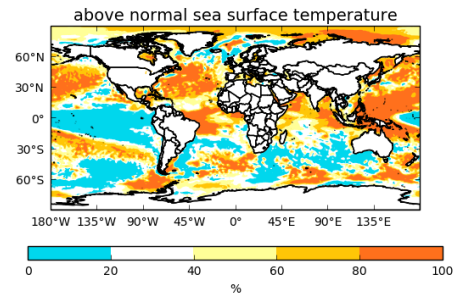


(b)

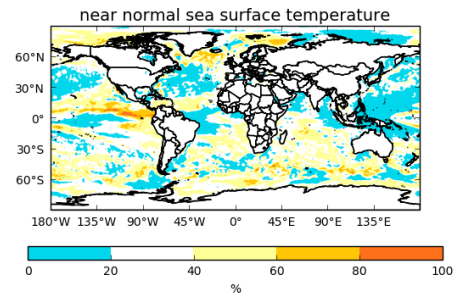


Probability of tercile categories Nov/Dec/Jan Issued September 2021

(a)



(b)



(c)

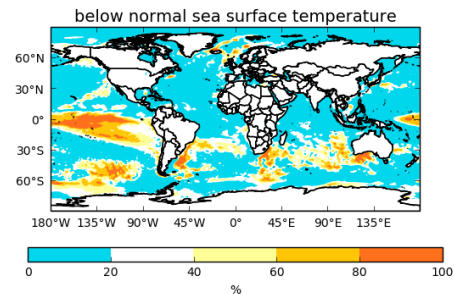
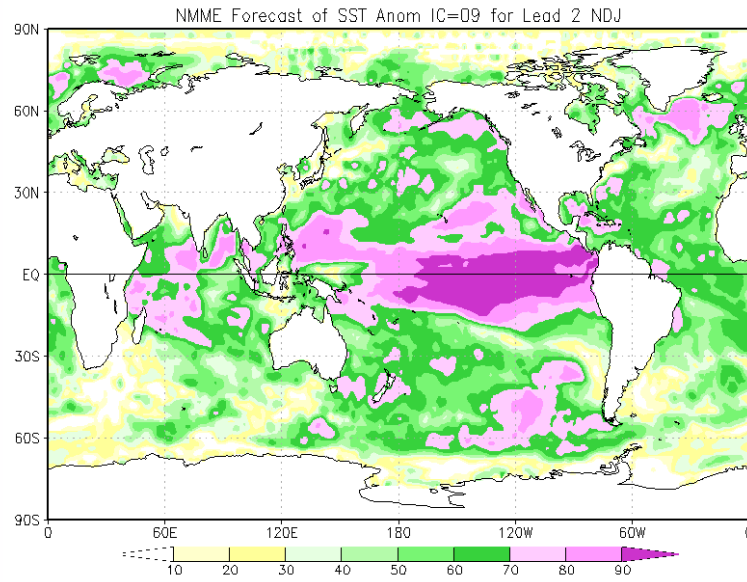


Figure
(b) I

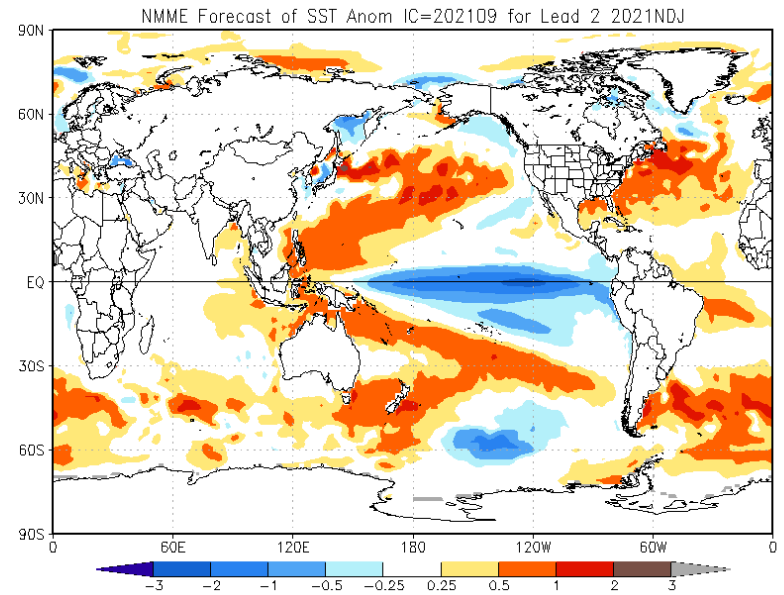
SEASONAL SSTs (NDJ) 2021 FROM MULTI MODELS AND WMO LEAD CENTRES FOR LONG RANGE FORECAST

NMME

(a)



(b)



EUROSIP MULTI-MODEL

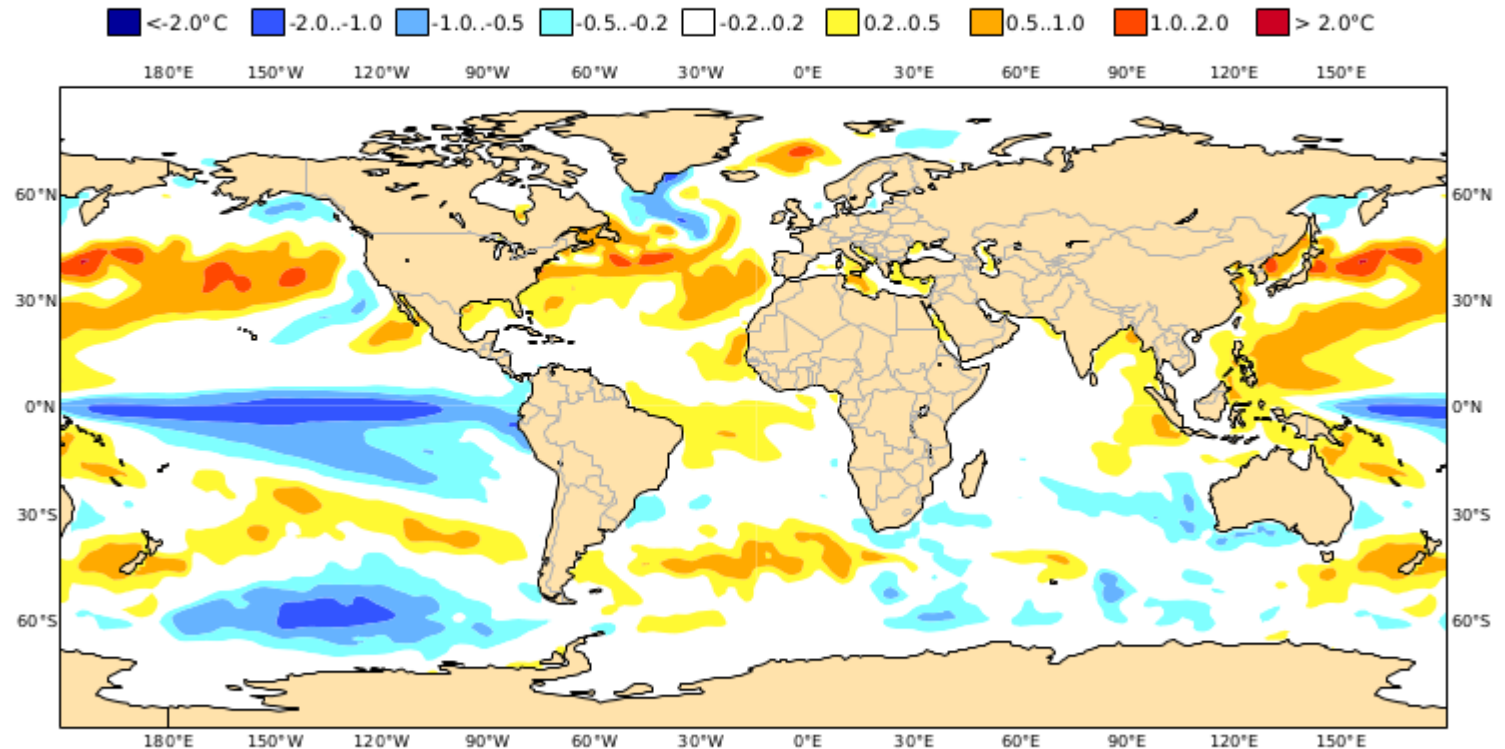
C3S: ECCC contribution

Mean forecast SST anomaly

Nominal forecast start: 01/09/21

Variance-standardized mean

NDJ 2021/22



October-November-December (OND) Precipitation Skill Forecast (a) and Anomaly Forecast (b) from CFSv2, CMC2 and NMME Multi- Model Centers

ECMWF Seasonal Forecast

Mean precipitation anomaly

Forecast start is 01/09/21, climate period is 1993-2016

Ensemble size = 51, climate size = 600

System 5

OND 2021

Shaded areas significant at 10% level

Solid contour at 1% level

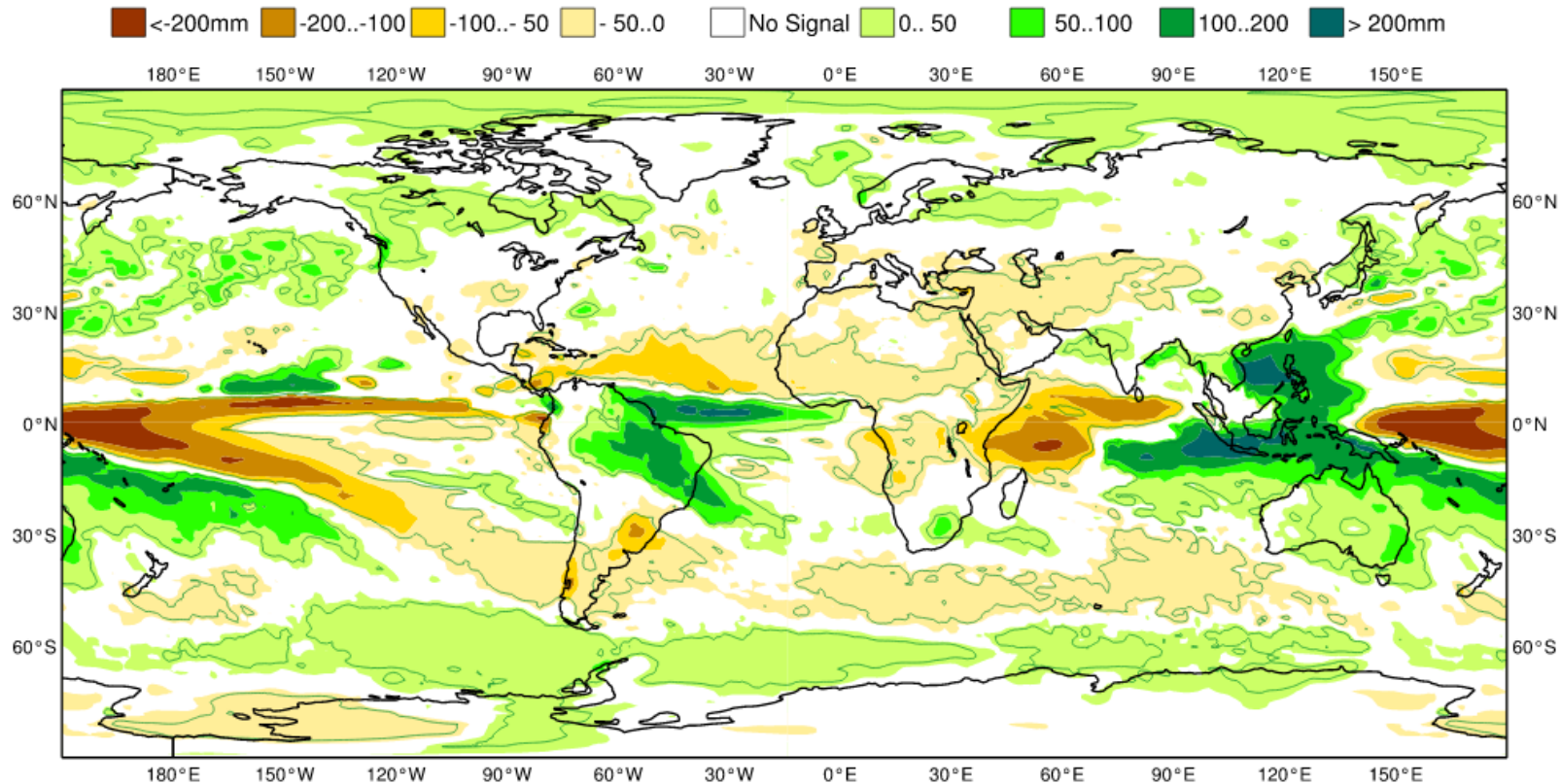


Figure PR1: skill (a) ECMWF Model anomaly forecast for OND precipitation

http://www.ecmwf.int/en/forecasts/charts/seasonal/rain-long-range-forecast?time=2016020100,2880,2016053100&area=Global&forecast_type_and_skill_measures=tercile%20summary

http://www.ecmwf.int/en/forecasts/charts/seasonal/rain-long-range-forecast?time=2016020100,2880,2016053100&area=Global&forecast_type_and_skill_measures=anomaly%20correlation

CFSv2 MODEL

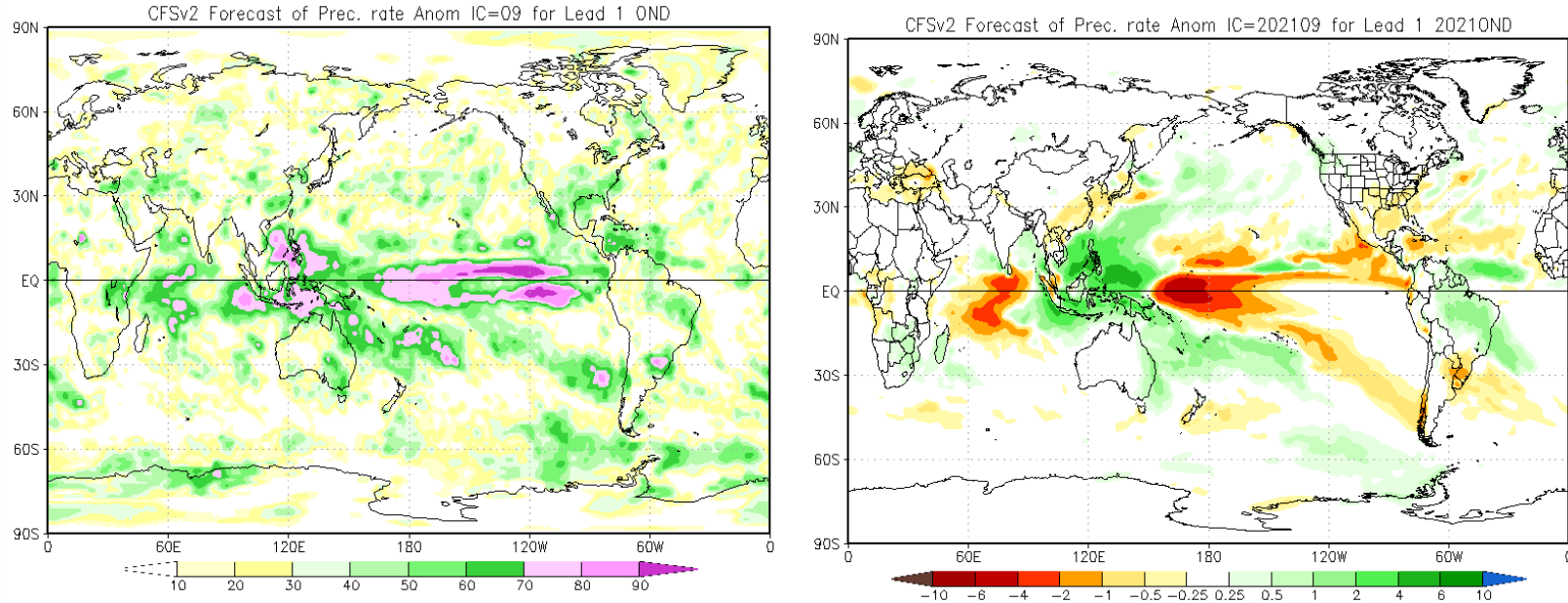


Figure PR2 : skill (a) CFSv2 Model anomaly forecast. Mean OND precipitation rate (b) CFSv2 Model forecast

CanCM4i MODEL

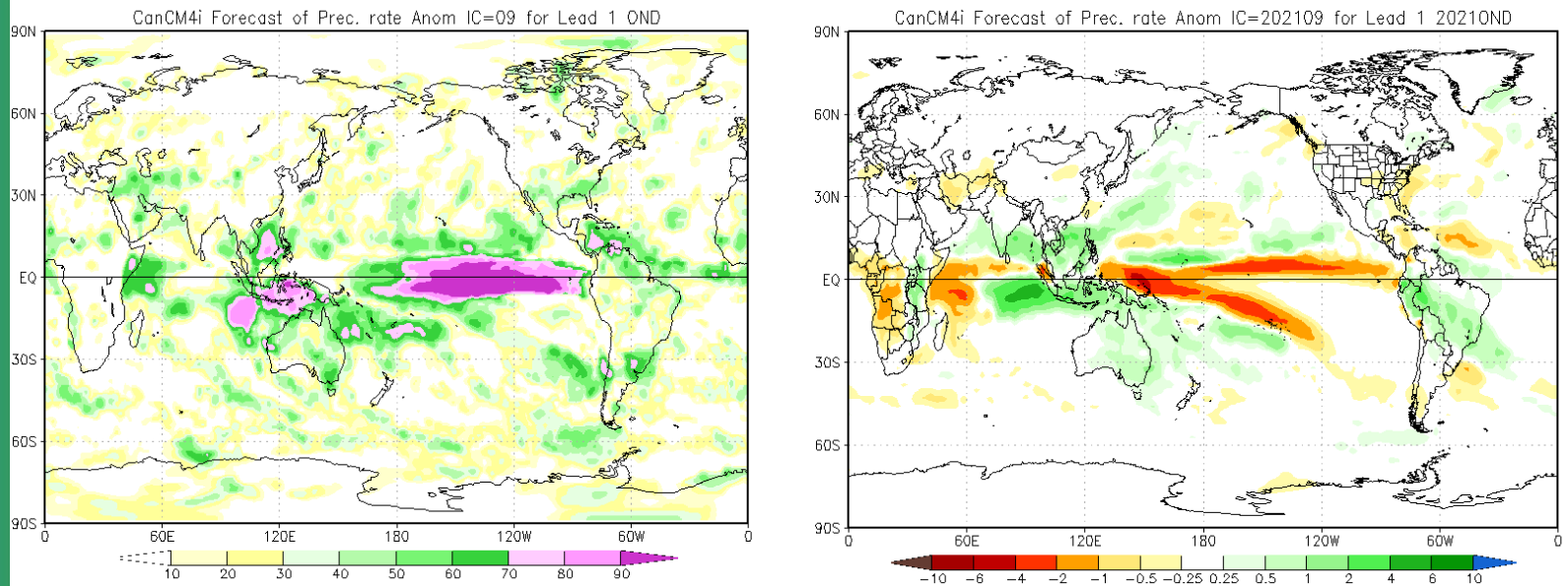
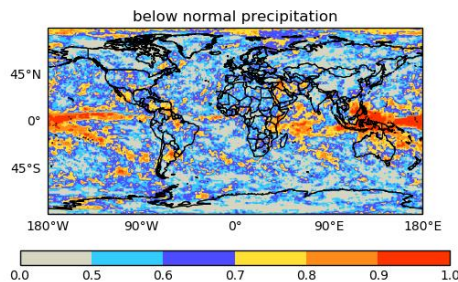
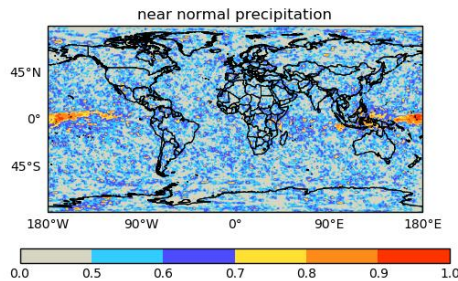
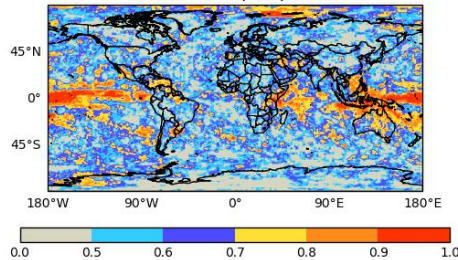


Figure PR3: skill (a) CMC2 Model anomaly forecast. Mean JFM precipitation rate (b) CMC2 Model forecast

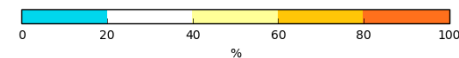
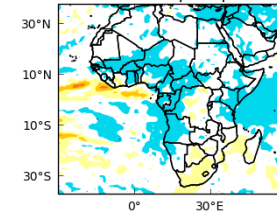
http://www.cpc.ncep.noaa.gov/products/NMME/current/images/skill_CMC2_ensemble_prate_season1.png

http://www.cpc.ncep.noaa.gov/products/NMME/current/images/CMC2_ensemble_prate_season1.png

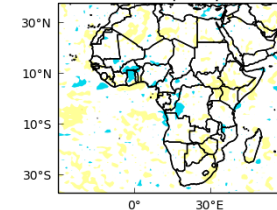
ROC scores for tercile categories Oct/Nov/Dec: Issued September
above normal precipitation



above normal precipitation



near normal precipitation



below normal precipitation

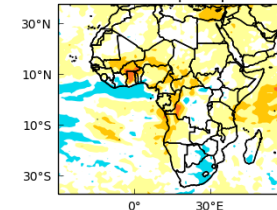


Figure PR4: Mean OND precipitation, with (a), (b) and (c) showing the ROC scores for the tercile categories; above, near and below normal, respectively. The probability forecasts for the tercile categories are (d) above normal, (e) near normal and (f) below normal.

<http://www.metoffice.gov.uk/research/climate/seasonal-to-decadal/gpc-outlooks/glob-seas-prob-skill>

<http://www.metoffice.gov.uk/research/climate/seasonal-to-decadal/gpc-outlooks/glob-seas-prob>



PRECIPITATION FORECAST FROM IRI MULTI- MODEL AND WMO LEAD CENTRE FOR OND 2021

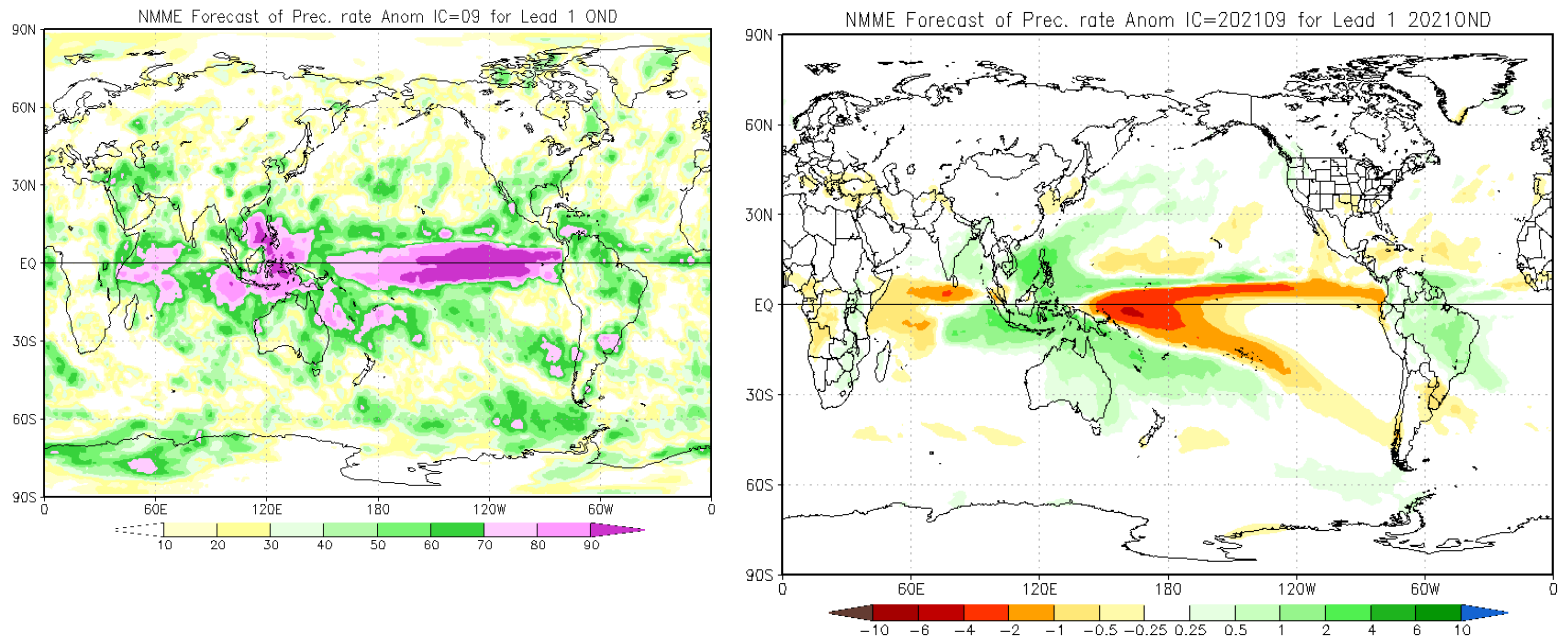


Figure PR5: Mean OND precipitation rate (a) NMME forecast skill (b) NMME anomaly forecast

http://www.cpc.ncep.noaa.gov/products/NMME/current/images/NMME_ensemble_prate_season1.png

http://www.cpc.ncep.noaa.gov/products/NMME/current/images/NMME_ensemble_prate_season1.png

C3S: ECCC contribution

Mean precipitation anomaly

Nominal forecast start: 01/09/21

Variance-standardized mean

OND 2021

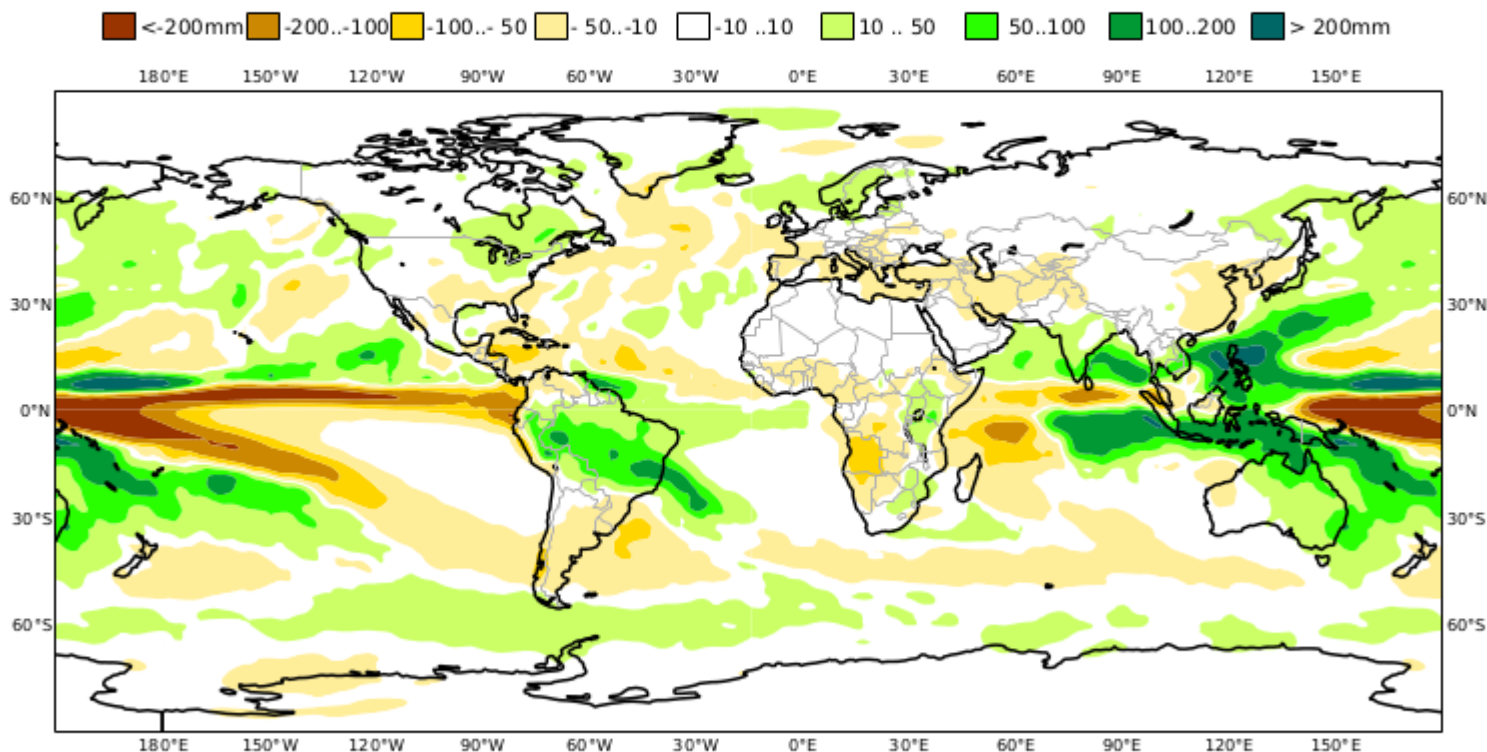
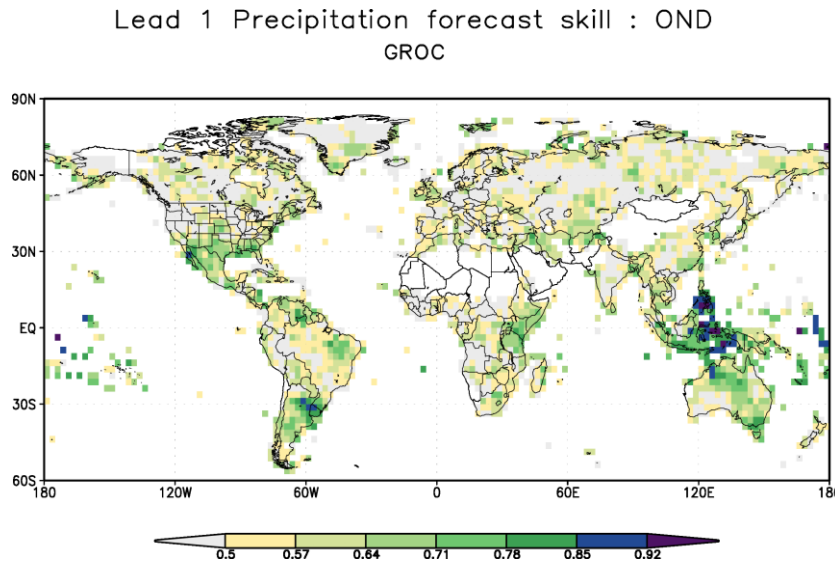


Figure PR7: OND 2021 precipitation forecast by EUROSIP Multi-Model

IRI MULTI-MODEL

Generalized ROC (GROC) Precipitation Forecast Skill

(a)



(b)

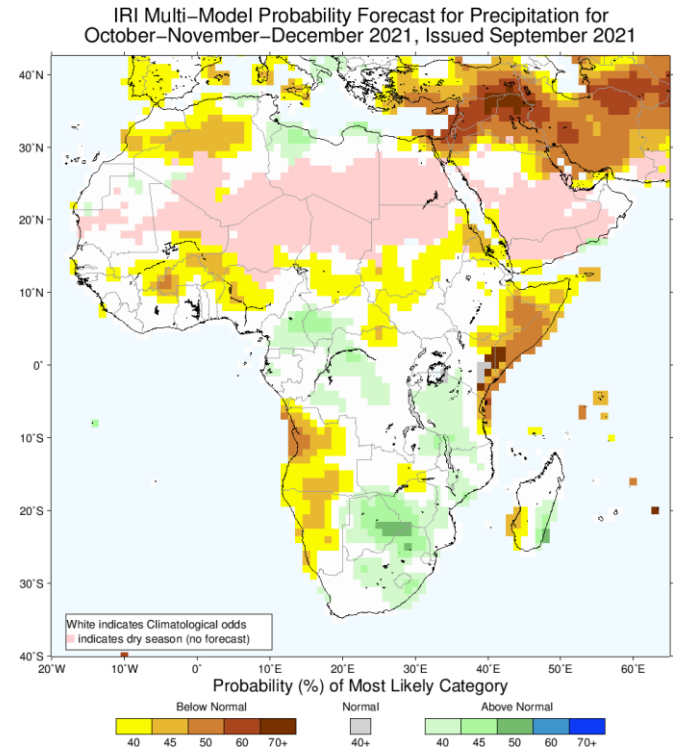


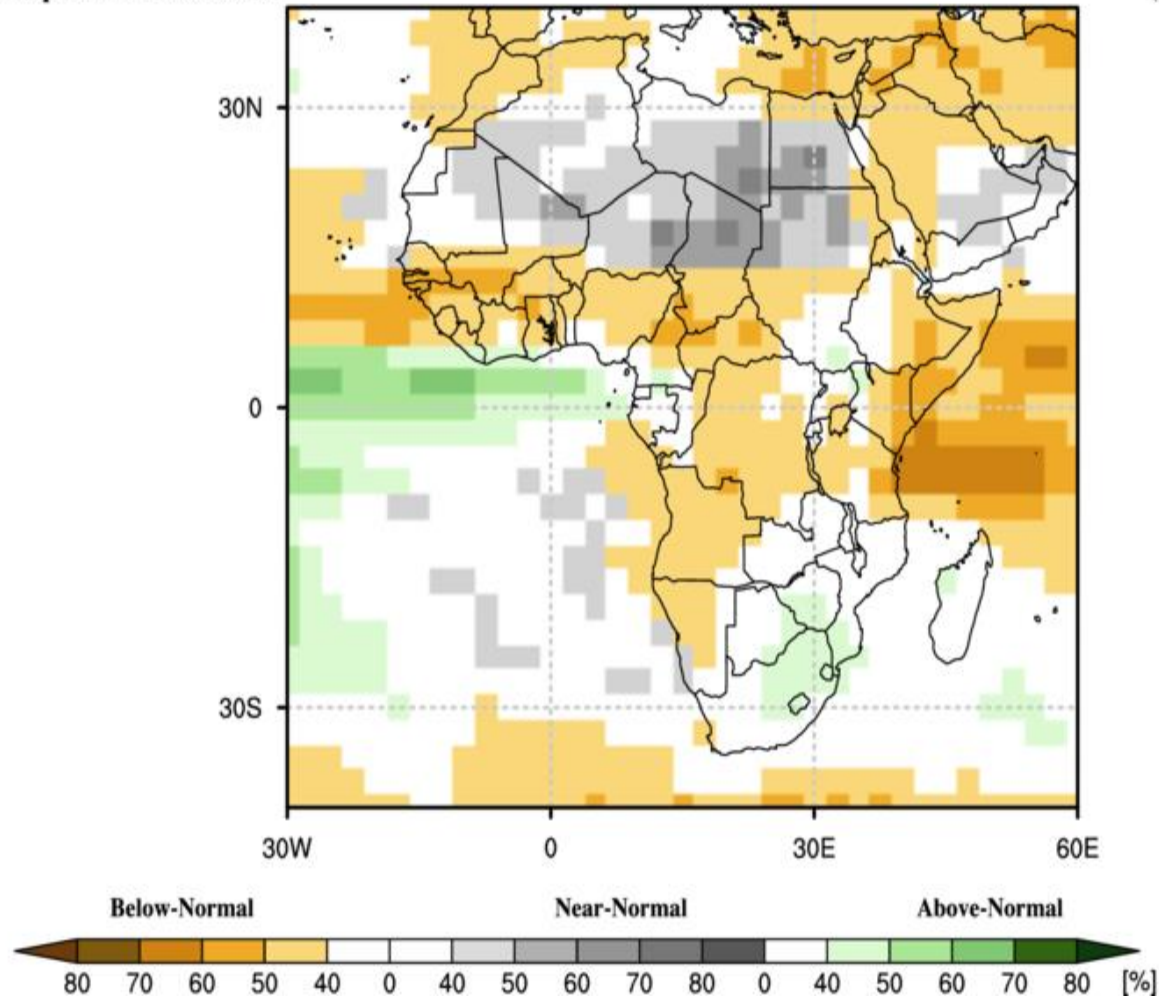
Figure PR6: skill (a) IRI Multi-Model probability forecast. OND 2021 precipitation (b) IRI Multi-Model forecast

Probabilistic Multi-Model Ensemble Forecast

Beijing, Bologna, CPTEC, ECMWF, Exeter, Melbourne, Montreal, Moscow, Offenbach, Seoul, Tokyo, Toulouse, Washington

Precipitation : OND2021

(issued on Sep2021)



**November-December-January (NDJ)
Precipitation Skill Forecast (a) and Anomaly
Forecast (b) from CFSv2, CMC2 and NMME Multi-
Model Centers**

ECMWF MODEL

ECMWF Seasonal Forecast

Mean precipitation anomaly

Forecast start is 01/09/21, climate period is 1993-2016

Ensemble size = 51, climate size = 600

System 5

NDJ 2021/22

Shaded areas significant at 10% level

Solid contour at 1% level

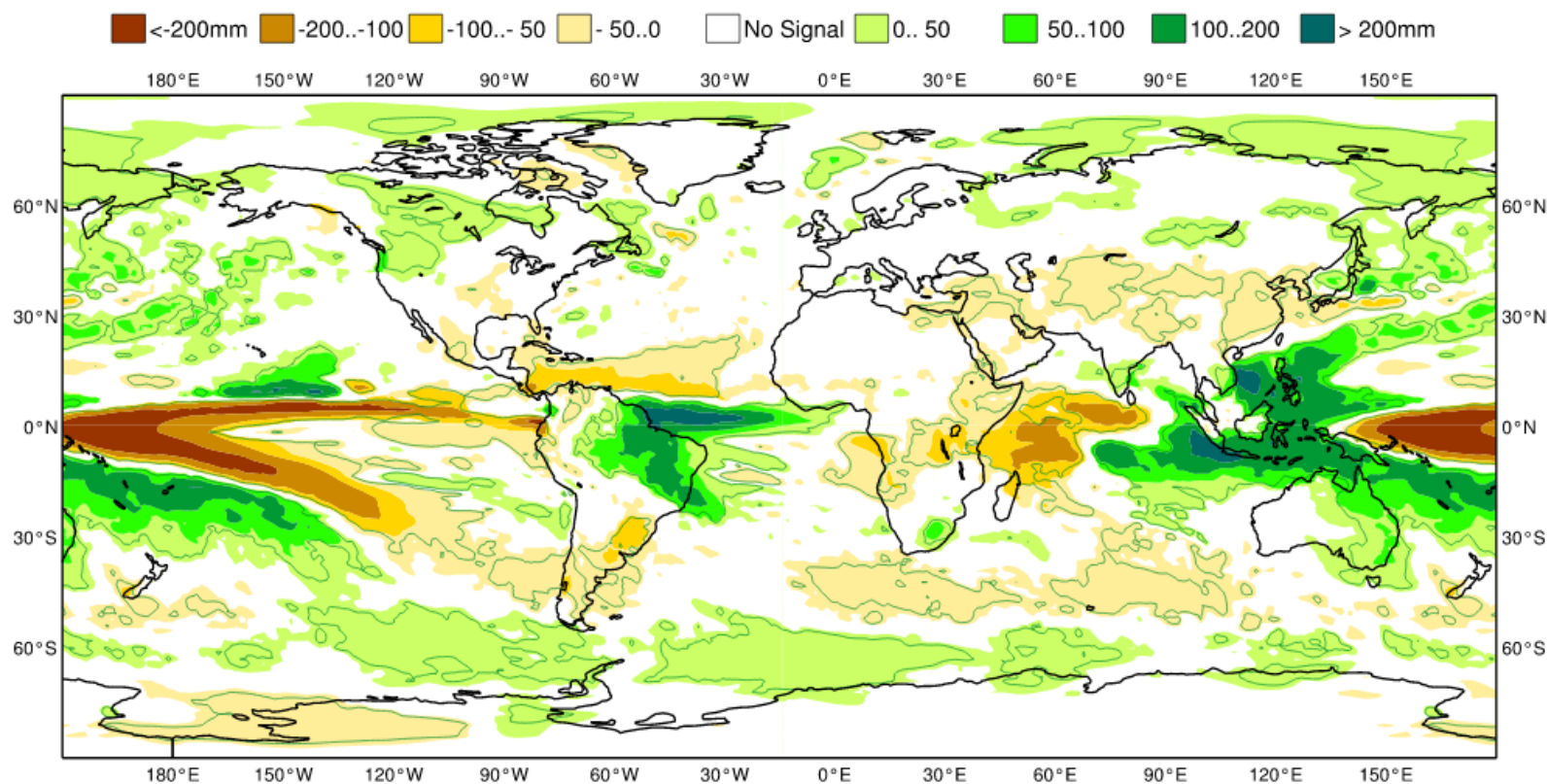


Figure PR1: skill (a) ECMWF Model anomaly forecast for NDJ precipitation

http://www.ecmwf.int/en/forecasts/charts/seasonal/rain-long-range-forecast?time=2016020100,2880,2016053100&area=Global&forecast_type_and_skill_measures=tercile%20summary
http://www.ecmwf.int/en/forecasts/charts/seasonal/rain-long-range-forecast?time=2016020100,2880,2016053100&area=Global&forecast_type_and_skill_measures=anomaly%20correlation

CFSv2 MODEL

(b)

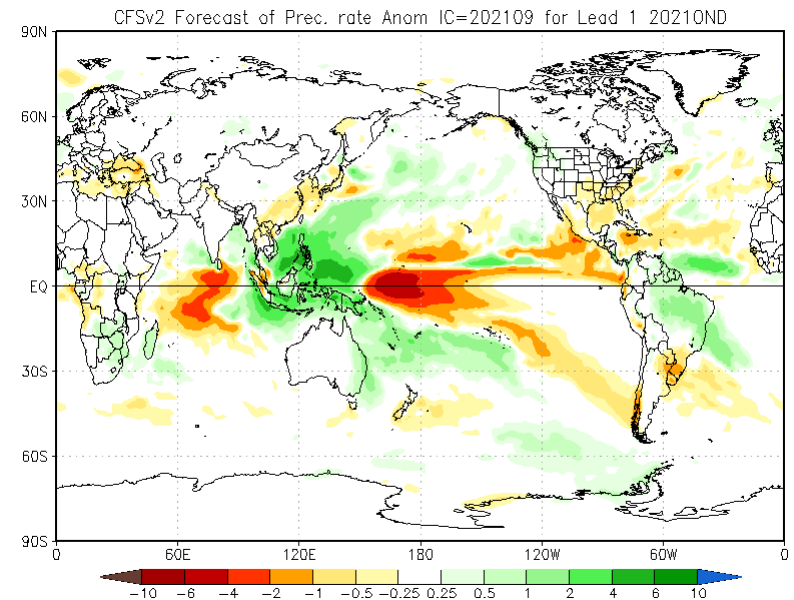
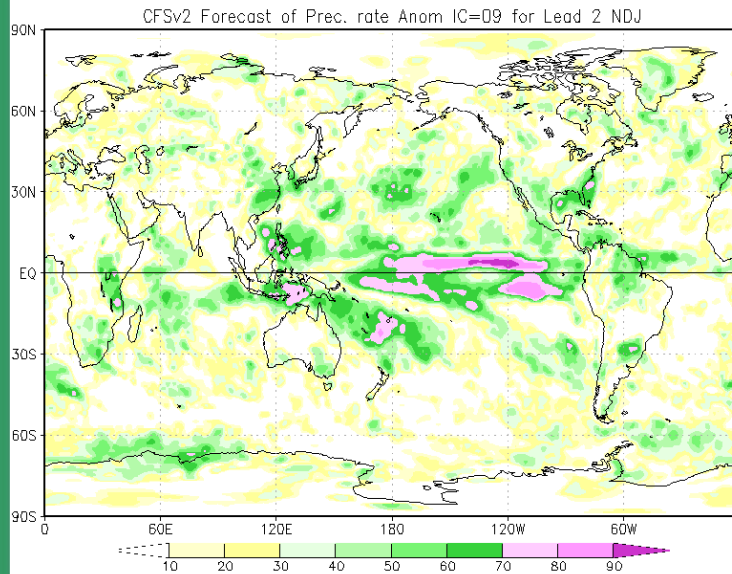


Figure PR2 : skill (a) CFSv2 Model anomaly forecast Mean NDJ precipitation rate (b) CFSv2 Model forecast

<http://www.cpc.nc>

CanCM4i MODEL

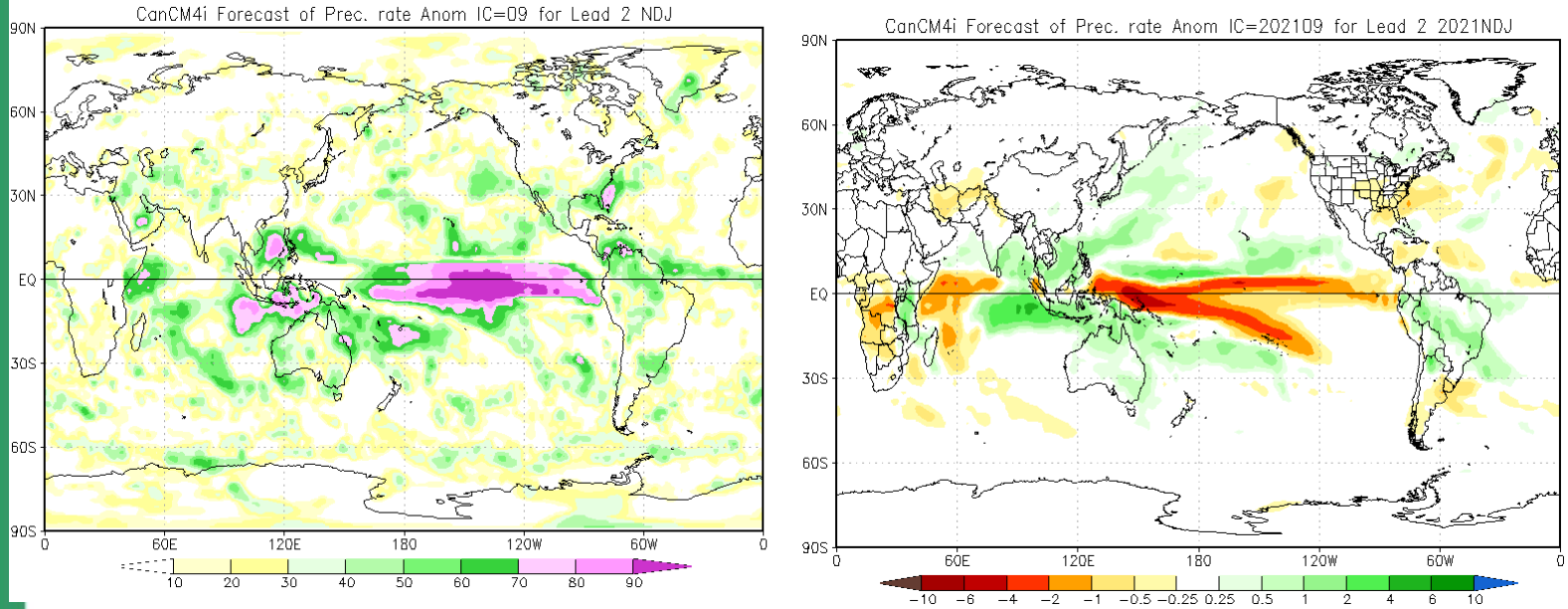
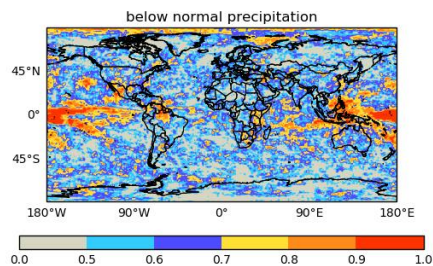
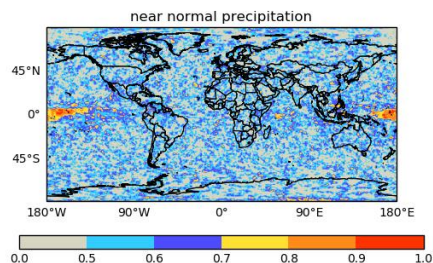
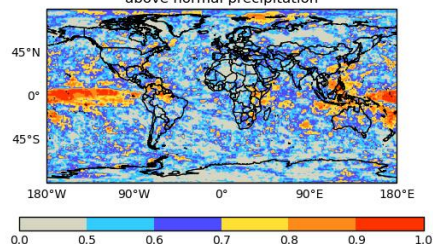


Figure PR3: skill (a) CMC2 Model anomaly forecast. Mean NDJ precipitation rate (b) CMC2 Model forecast

ROC scores for tercile categories Nov/Dec/Jan: Issued September
above normal precipitation



above normal precipitation

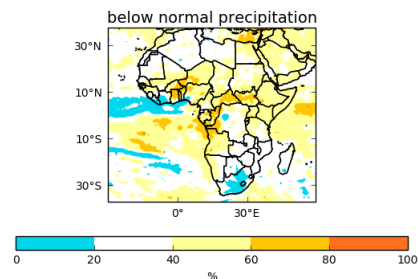
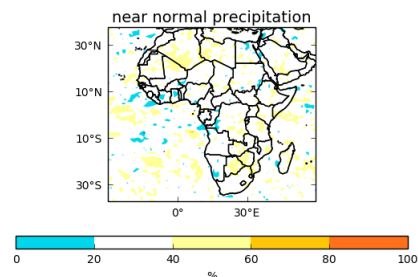
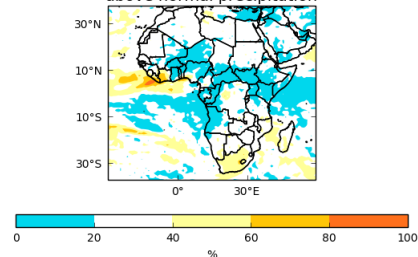


Figure PR4 : Mean NDJ precipitation, with (a), (b) and (c) showing the ROC scores for the tercile categories; above, near and below normal, respectively. The probability forecasts for the tercile categories are (d) above normal, (e) near normal and (f) below normal.

<http://www.metoffice.gov.uk/research/climate/seasonal-to-decadal/gpc-outlooks/glob-seas-prob-skill>
<http://www.metoffice.gov.uk/research/climate/seasonal-to-decadal/gpc-outlooks/glob-seas-probh>

PRECIPITATION FORECAST FROM IRI MULTI- MODEL AND WMO LEAD CENTRE FOR NDJ 2021

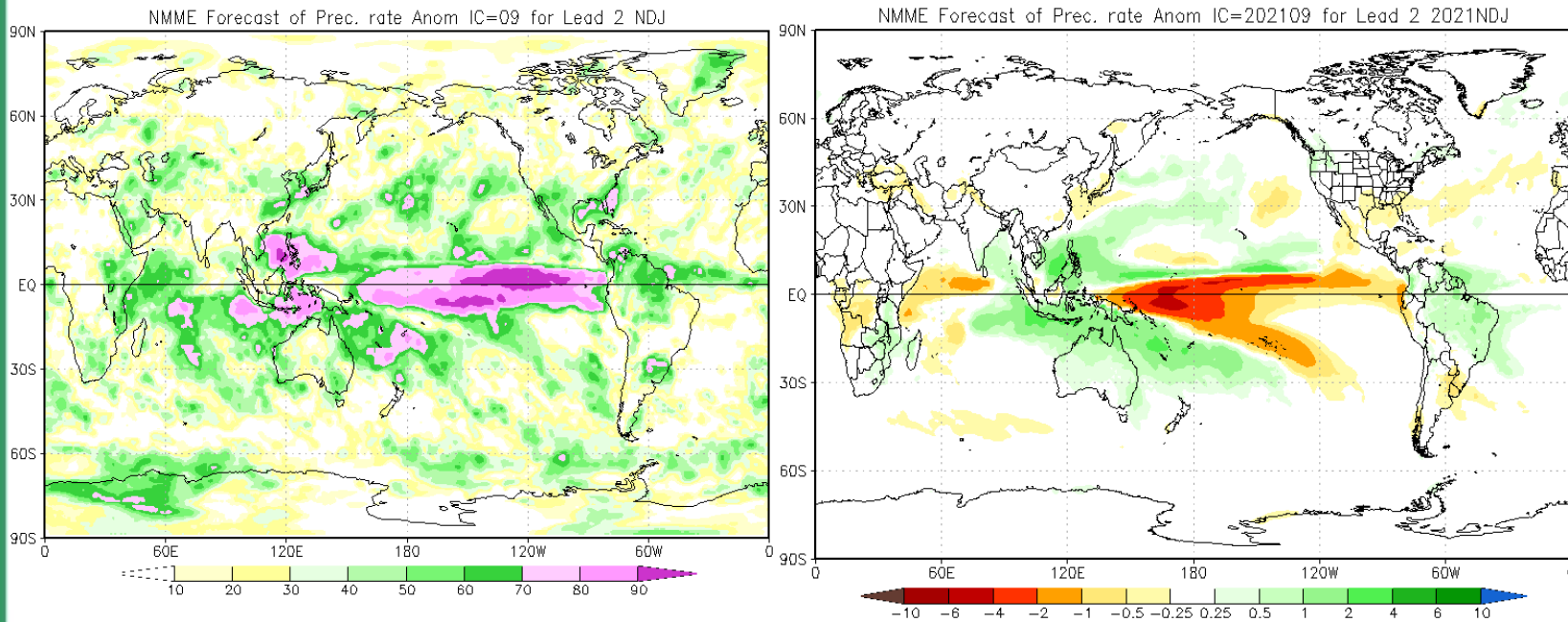


Figure PR5: Mean NDJ precipitation rate (a) NMME forecast skill (b) NMME anomaly forecast

http://www.cpc.ncep.noaa.gov/products/NMME/current/images/NMME_ensemble_prate_season2.png

http://www.cpc.ncep.noaa.gov/products/NMME/current/images/NMME_ensemble_prate_season2.png

C3S: ECCC contribution

Mean precipitation anomaly

Nominal forecast start: 01/09/21

Variance-standardized mean

NDJ 2021/22

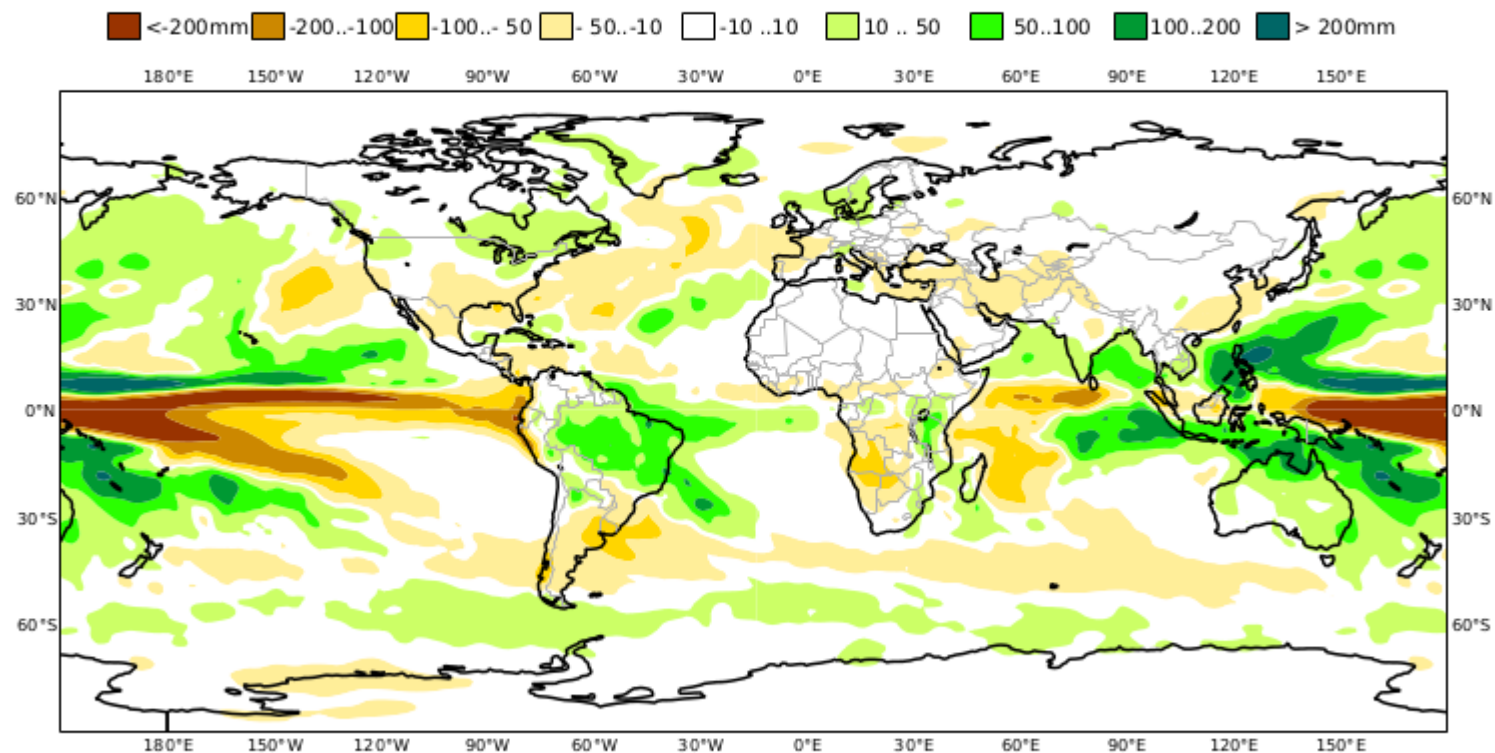


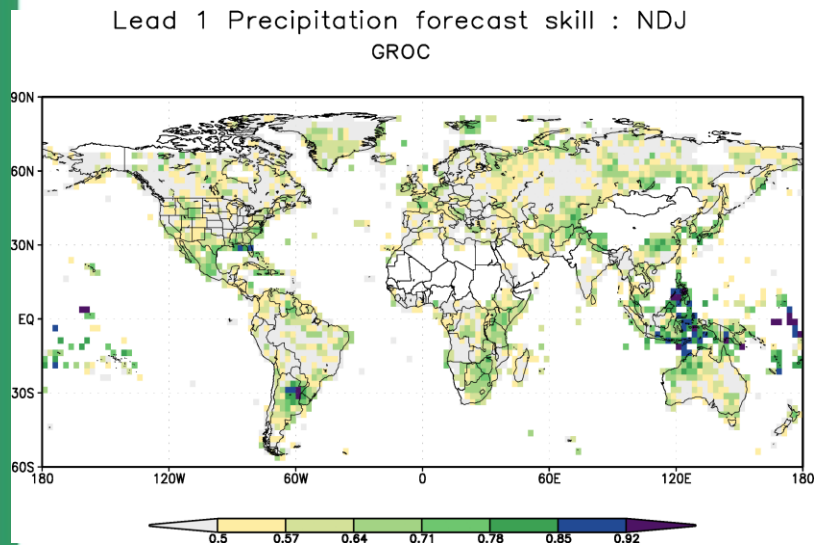
Figure PR14: OND 2021 precipitation forecast by EUROSIP Multi-Model



IRI MULTI-MODEL

Generalized ROC (GROC) Precipitation Forecast Skill

(a)



(b)

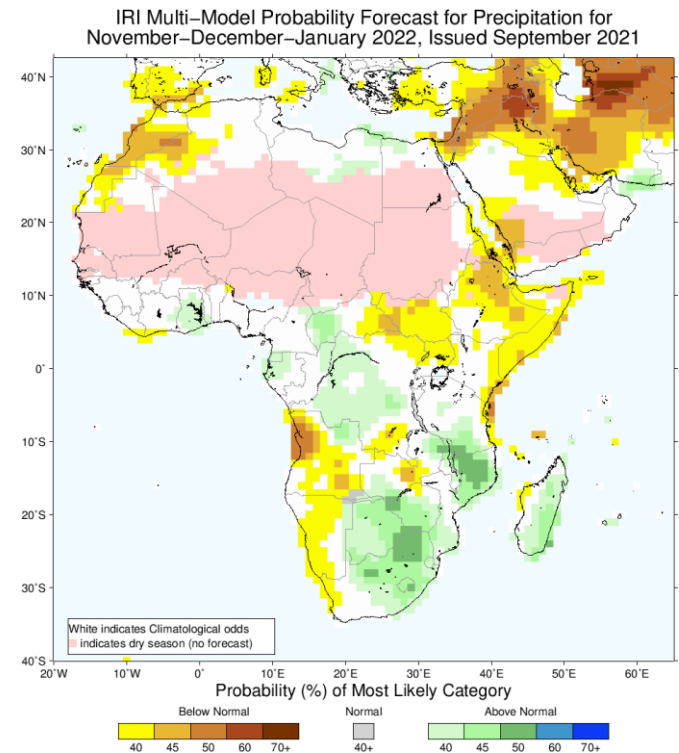


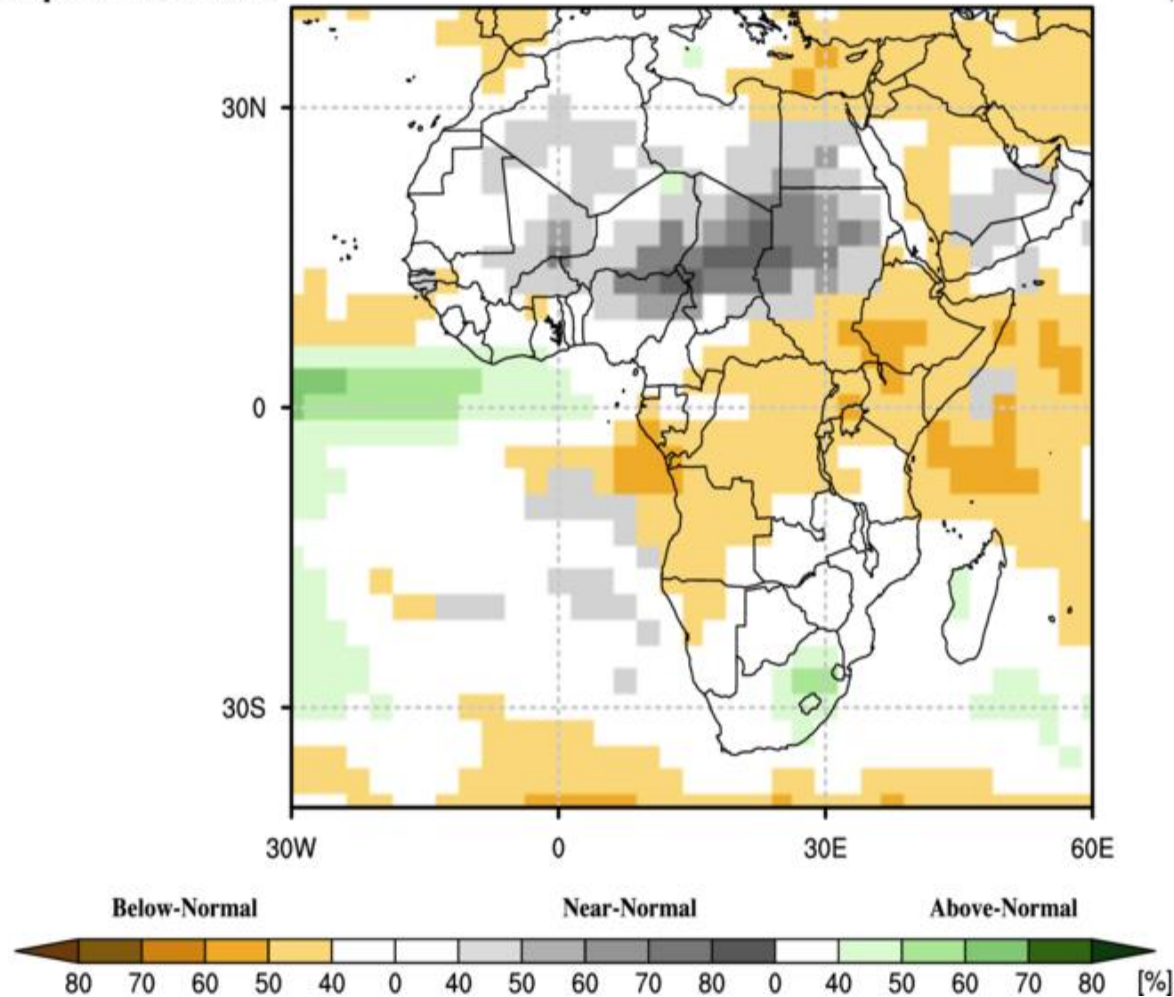
Figure PR6: skill (a) IRI Multi-Model probability forecast. NDJ 2021 precipitation (b) IRI Multi-Model forecast

Probabilistic Multi-Model Ensemble Forecast

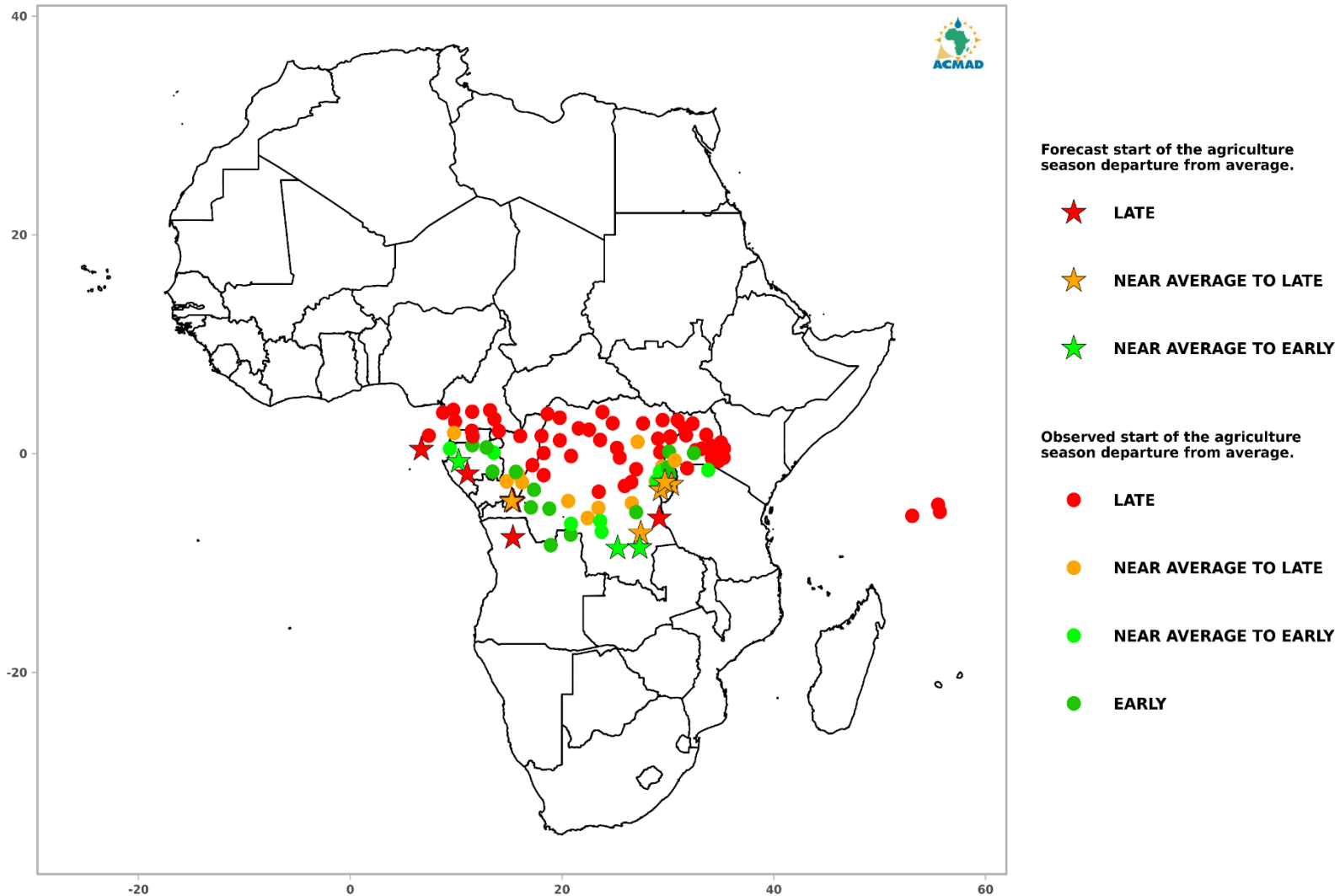
Beijing, Bologna, CPTEC, ECMWF, Exeter, Melbourne, Montreal, Offenbach, Seoul, Toulouse, Washington

Precipitation : NDJ2021

(issued on Sep2021)



MONITORING OF OBSERVED ANOMALIES ON THE START OF THE AGRICULTURE SEASON AND OUTLOOK.
MONITORING PERIOD: JULY-DECEMBER 2021.
CURRENT MONITORING WEEK: SECOND WEEK OF SEPTEMBER.
OUTLOOK VALIDITY PERIOD: SEPTEMBRE 15-29-2021.
DATE OF ISSUE: SEPTEMBRE 15-2021.



COMBINATION OF OUTPUTS FROM STEP 1 TO STEP 8 AND GENERATION OF THE CONTINENTAL SEASONAL CLIMATE FORECAST FOR SON, OND AND NDJ 2021/2022



SEASONAL PRECIPITATION OUTLOOK FOR OND 2021

During the upcoming ASO season, dryer than average precipitation is expected along the coast of Nigeria, south of Cameroon, Equatorial Guinea and most of Gabon.

Whereas, wetter than average precipitation is expected over south-eastern Mauritania, southern and central Mali, Burkina Faso, Southern tip of Ivory Coast, Ghana, Togo and Benin, parts of Niger, north west border of Nigeria, north-east of South-Sudan, east of Sudan and western Ethiopia and south-west of Eritrea. Across the remaining parts of the continent, near average precipitation is predicted.



SEASONAL PRECIPITATION OUTLOOK FOR NDJ 2021-22

During SON season, below average precipitation is very likely over most of Equatorial Guinea, southern fringe of Nigeria, Cameroon, and Gabon. During September to November 2021 normal to below precipitation is very likely over south east of Somalia, coast of Kenya and Tanzania.

Normal to above average precipitation is very likely over east of Senegal, south-east of Mauritania, the southern half of Mali, most of Burkina Faso, south of Niger, north tip of Guinea, Ivory Coast, Togo, Benin, Nigeria, Cameroon, Ghana, south of Chad, northern parts of CAR and South-west Sudan.

Above average precipitation is very likely across the eastern portion of the continent including south-west of Eritrea, Western parts of Ethiopia, east of Sudan and north-east of South Sudan.

BRIEF FOR POLICY AND DECISION MAKERS BASED ON SIGNIFICANT WEATHER AND CLIMATE EVENTS UPDATE VALID FROM AUGUST TO NOVEMBER 2021

Hazard

Mostly Near Average Precipitation is very likely and usually occurred aduers may take place.

However, speciall extrem event is not expected

POTENTIALS IMPACTS

Usually happend impact are expected

MEASURES

Identify usually occurred climate events and conduct bussiness as usual activities

HAZARDS

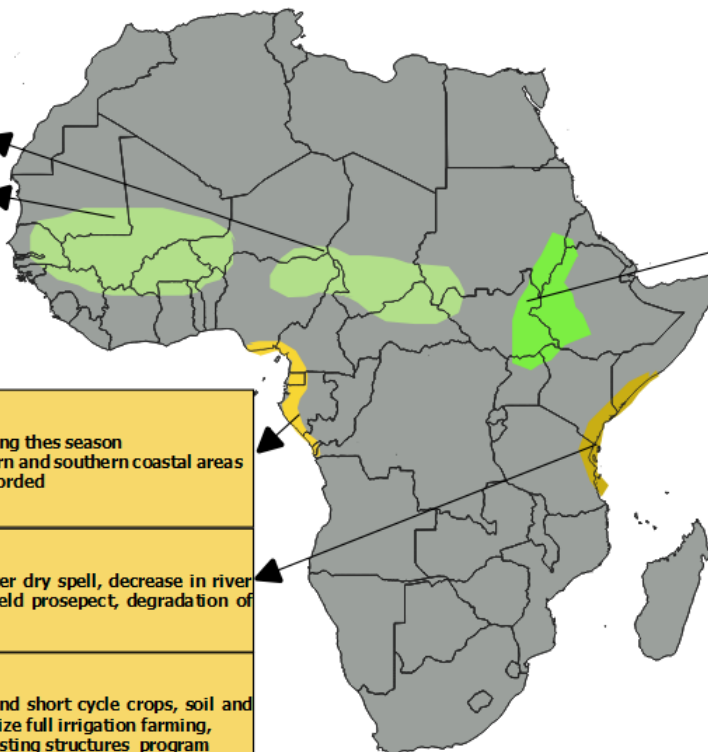
Dryer than average precipitation during thes season
Moderate drought over part of western and southern coastal areas
Mostlt near average to late onset recorded

POTENTIALS IMPACTS

Moisture stress, high chance of longer dry spell, decrease in river discharge, negative rain-fed crop yield prosepct, degradation of pasturre and rise in food prices

MEASURES

Policy to support drought tolerant and short cycle crops, soil and water conservation practice, maximaize full irrigation farming, Watershed based ex-situ water harvesting structures program
Policy in support of weather based insurance, dam mangment,



HAZARDS

Wetter than average precipitation is very likely,
High rate of rainfall events may lead to flash flood, river overflow, landslides and soil erosion.
High chance of lightning, hail formation and stormy weather

POTENTIALS IMPACTS

Waterlogging, pest and disease infestation, Outbreak of water borne diseases, damages to infrastructures (dams, reservoirs, bridges, roads...)
Displacement of people due to flood

MEASURES

Publicize the climate outlook and advisories, select excess moisture tolerant crops, wide tree planting campaign
Develop new/rehabilitate the existing drainage structure,
Update and implement flood contingency plans, better manage water in reservoirs and dams



THANK YOU