ENTRO-Flood Risk Mitigation Project

NCCR Project Supported by World Bank - CIWA

EN Flood Forecasting and Early Warning

(Daily Bulletin, July–September 2024)

23 July 2024

	Forecasted Rainfall / Flow [maximum over 10 days; 2024-07-22 06:00 - 2024-08-01 06:00]			Details of the forecast can be found in: https://entro-ffews-dev.westeurope.cloudapp.azure.com/ and the summary report below.
EN-Sub-basin (77 watersheds, 44 rivers flood forecast location)	Severe Catchment rainfall (Normal/ Alert / Danger)?	Flooding: River water level (Normal/ Alert / Danger)?	Flooding: River Discharge (Normal/ Alert / Danger)?	
Baro Akobo-Sobat (20 WSD, 19 FFL)	*Normal*	*Normal*	*Normal*	
Blue Nile (30 WSD, 6 FFL)	*Normal*	*Normal*	*Normal*	
Tekeze Atbara Setit (15 WSD, 7 FFL)	*Normal*	*Normal*	*Normal*	
Lake Tana (12 WSD, 12 FFL)	*Danger (117.2 mm/day at LakeTana_Ribb_DS on 2024-07-31 & 72.8 mm/day at LakeTana_Gumara_DS on 2024-07-28)*	*Alert*	Alert (292.2 m^3/sec at Gumara Woreta on 2024-07-30)	

1. Background Information

Eastern Nile Flood Forecast and Early Warning (EN-FFEW) service is a key component of ENTRO activities that has been continuously conducted every flood season (June/July through September) since 2010. The EN-FFEW activities strengthened regional collaboration through sharing of information, strengthening of national flood forecasting institutions and overall reduced the risks of flood devastation for 2.2 million people living in flood-prone areas in the Nile basins of Ethiopia, South Sudan, and Sudan.

The Eastern Nile Flood Forecast Early Warning System is focusing on the riverine floods, and are conducted for Lake Tana (LT), Baro-Akobo-Sobat (BAS), Blue Nile (BN), Tekeze-Setit-Atbara (TSA) flood-prone areas. The EN-FFEWS is an integrated real-time forecasting and early warning system that supports ENTRO, as well as regional and national stakeholders in flood forecasting and early warning. The EN-FFEWS has three major components: (a) meteorological forecast, (b) hydrological forecasts, and (c) flood forecasts.

Meteorological forecast: rainfall is forecasted with the Weather Research and Forecasting (WRF)[1] model. The model is a regional customization for the EN with global input from NCEP's GFS to provide initial and boundary conditions. WRF produces 3-day ahead forecasts with a spatial resolution of 6 km, and the forecasts are updated daily. The temporal resolution of the rainfall forecasts is hourly. The meteorological forecast process starts with a scheduled download of NCEP's Global Forecast System (GFS) to provide initial and boundary conditions. To ensure that the hydrological forecasts made daily, an alternatively GFS rainfall forecasts for three days lead time with one hour time step are used - incase WRF model does not forecast. The process is automated in Mike Workbench. Furthermore: the Global Precipitation Measurement (GPM) rainfall product derived from data collected by the GPM satellite constellation with 1-day lag are used to quantify biases of the rainfall forecasts.

Hydrological forecasts: In the EN-FFEWS runoffs in the catchments of the four EN-basins and flows at key locations in the river network are forecasted with the hydrological modelling tool NAM of DHI. The inputs for forecasting runoffs in the catchments and flows at key locations in the river network come from meteorological forecasts with the WRF.

Flood forecasts: In the EN-FFEWS flood water levels at key locations in the flood prone areas in the river network of the basins are forecasted with MIKEHYDRO - River. The inputs to the hydrodynamic forecasts of flood water levels are flows from hydrological forecasts.

Integrated Forecast System: The MIKE Operations platform integrates the meteorological, hydrological and flood forecast operations. Near-real-time and forecasted data are regularly imported to the central database (Postgres SQL) through scheduled data import jobs. The rainfall-runoff and hydrodynamic models have been integrated in MIKE Operations Web so that simulation runs are triggered from the platform. The input timeseries are regularly updated using the real-time and forecasted data. The NAM rainfall-runoff models and the MIKEHYDRO - River hydrodynamic models for the 4 basins of the EN run every 24 hours (after rainfall forecast is completed at 7:00 am EAT). When a model run is completed, results are displayed in real-time in MIKE Operations Web. If simulated or observed water level values exceed pre-defined threshold values (if available), warning triggers.

[1] https://www.mmm.ucar.edu/models/wrf

In the following sections, a summary of daily rainfall forecast, flood forecast, as well as detailed flood forecasts and warnings for Lake Tana, Blue Nile, BAS, and TSA flood prone areas are provided below. Also, the forecast can be accessed through:

ENTRO EN-FFEWS Forecast generated on 2024-07-23

The forecast includes 77 Catchment rainfall, 44 River flow and 44 Water levels at forecast location and report are detailed in the following order.

- Baro Akobo Sobat model
- Blue Nile model
- Tekeze Setit Atbara model
- Lake Tana model

Forecast details.

Rainfall Forecasted Catchment Rainfall (Page 3-6)

Baro Akobo Sobat

simulation: Simulation of Base Scenario at 2024-07-23 07:14:20
start of simulation: 2024-07-12 06:00
time of forecast: 2024-07-22 06:00
end of simulation: 2024-08-01 06:00

Rainfall Forecasted Catchment Rainfall (maximum over 10 days; 2024-07-22 06:00 - 2024-08-01 06:00)

Status	Location	Alert	Max. Daily Catchment Rainfall [mm/day]	Catchment Rainfall [mm/h]	Warning Threshold [mm/h]	Danger Threshold [mm/h]
	BAS_Akobo	OK	17.6 2024-07-26	2.46 2024-07-22 07:00	30	50
	BAS_Baro-US Gambela	OK	15.7 2024-07-26	1.44 2024-07-22 07:00	30	50
	BAS_Baro_Gambela-Itang	OK	28.5 2024-07-26	4.29 2024-07-26 19:00	30	50
	BAS_Baro_Itang-Pibor junction	OK	31.4 2024-07-26	3.17 2024-07-26 19:00	30	50
	BAS_Khawr Ful Lus	OK	12.2 2024-07-26	1.37 2024-07-26 13:00	30	50

	BAS_Pibor US	OK	9.7 2024-07-22	0.99 2024-07-22 13:00	30	50
	BAS_Pibor-US Akobo junction	OK	6.8 2024-07-28	0.8 2024-07-22 10:00	30	50
	BAS_Pibor_Nanaam	OK	10.7 2024-07-28	1.29 2024-07-28 04:00	30	50
	BAS_Sobat	OK	10.9 2024-07-26	1.38 2024-07-26 13:00	30	50
	WN_Abiengyai	OK	11.9 2024-07-26	1.38 2024-07-26 07:00	30	50
	WN_Al Jabalyn-Ed Doulem	OK	4.2 2024-07-26	0.54 2024-07-25 19:00	30	50
	WN_Bahr el Ghazal	OK	13.8 2024-07-26	1.57 2024-07-26 10:00	30	50
	WN_Khartoum	OK	3.9 2024-07-25	0.47 2024-07-25 10:00	30	50
	WN_MacharMarshes-KhawrYabus	OK	23.0 2024-07-26	2.06 2024-07-26 04:00	30	50
	WN_MacharMarshes-KhawrYabus_UP	OK	19.8 2024-07-26	2.23 2024-07-26 04:00	30	50
	WN_MacharMarshes-Nyablong	OK	26.1 2024-07-26	1.65 2024-07-26 04:00	30	50
	WN_MacharMarshes_KhawrAdar	OK	27.7 2024-07-26	2.52 2024-07-26 04:00	30	50
	WN_Malakal_Melut	OK	14.6 2024-07-26	1.09 2024-07-26 04:00	30	50
	WN_Melut-Al Jabalyn	OK	13.3 2024-07-25	1.99 2024-07-25 22:00	30	50

Blue Nile

simulation: Simulation of Base Scenario at 2024-07-23 07:17:52
start of simulation: 2024-07-12 06:00
time of forecast: 2024-07-22 06:00
end of simulation: 2024-08-01 06:00

Rainfall Forecasted Catchment Rainfall (maximum over 10 days; 2024-07-22 06:00 - 2024-08-01 06:00)

Status	Location	Alert	Max. Daily Catchment Rainfall [mm/day]	Catchment Rainfall [mm/h]	Warning Threshold [mm/h]	Danger Threshold [mm/h]
	BN_ANGER	OK	16.6 2024-07-25	1.6 2024-07-30 22:00	30	50
	BN_BELLES	OK	18.2 2024-07-29	2.06 2024-07-29 22:00	30	50
	BN_BESHILO	OK	26.3 2024-07-24	3.53 2024-07-24 01:00	30	50
	BN_DABUS_AbayWenz	OK	15.8 2024-07-25	1.87 2024-07-23 01:00	30	50
	BN_DABUS_near_Assosa	OK	15.9 2024-07-26	1.78 2024-07-26 07:00	30	50
	BN_DIDESA_dam_Wonbera	OK	18.3 2024-07-30	2.72 2024-07-30 22:00	30	50
	BN_DIDESSA	OK	16.0 2024-07-25	1.47 2024-07-25 16:00	30	50
	BN_DINDER_Buraysh	OK	16.9 2024-07-25	2.79 2024-07-25 19:00	30	50
	BN_DINDER_Giwasi	OK	13.0 2024-07-25	1.93 2024-07-25 10:00	30	50
	BN_DINDER_US	OK	22.2 2024-07-25	2.87 2024-07-25 19:00	30	50
	BN_El_Masudiya_Karthoum	OK	10.3 2024-07-25	2.69 2024-07-25 04:00	30	50
	BN_El_Roseries_Sennar	OK	12.9 2024-07-25	1.3 2024-07-25 22:00	30	50

	BN_Fadasi_Rufaah	OK	7.2 2024-07-25	2.17 2024-07-25 07:00	30	50
	BN_Fincha_Mendaya	OK	16.2 2024-07-30	1.81 2024-07-30 19:00	30	50
	BN_GUDER	OK	18.4 2024-07-26	1.86 2024-07-26 07:00	30	50
	BN_JEMA_DebreBirhan	OK	18.2 2024-07-29	2.4 2024-07-25 22:00	30	50
	BN_MUGER	OK	16.4 2024-07-25	2.26 2024-07-29 10:00	30	50
	BN_NORTH_GOJAM	OK	34.0 2024-07-29	2.94 2024-07-28 22:00	30	50
	BN_RAHAD_Bagasa	OK	11.7 2024-07-25	2.07 2024-07-25 07:00	30	50
	BN_RAHAD_Hawata	OK	14.7 2024-07-25	2.49 2024-07-25 13:00	30	50
	BN_RAHAD_Hodur	OK	10.2 2024-07-25	2.55 2024-07-25 07:00	30	50
	BN_RAHAD_Rashid	OK	12.3 2024-07-25	2.15 2024-07-22 06:00	30	50
	BN_RAHAD_Suki	OK	12.9 2024-07-25	3.08 2024-07-25 10:00	30	50
	BN_RAHAD_US	OK	15.2 2024-07-25	6.48 2024-07-22 06:00	30	50
	BN_SOUTH_GOJAM	OK	19.6 2024-07-25	1.34 2024-07-30 16:00	30	50
	BN_Shogali	OK	16.2 2024-07-25	1.88 2024-07-23 01:00	30	50
	BN_WELAKA	OK	18.6 2024-07-25	2.12 2024-07-27 19:00	30	50
	BN_Wad_Medani	OK	13.3 2024-07-25	3.4 2024-07-25 10:00	30	50
	Sabloka_Atbara	OK	9.2 2024-07-25	1.27 2024-07-25 01:00	30	50
	Tamanat_Sabloka	OK	2.9 2024-07-25	0.56 2024-07-31 22:00	30	50

Tekeze Setit Atabara

simulation: Simulation of Base Scenario at 2024-07-23 07:22:18
start of simulation: 2024-07-12 06:00
time of forecast: 2024-07-22 06:00
end of simulation: 2024-08-01 06:00

Rainfall Forecasted Catchment Rainfall (maximum over 10 days; 2024-07-22 06:00 - 2024-08-01 06:00)

Status	Location	Alert	Max. Daily Catchment Rainfall [mm/day]	Catchment Rainfall [mm/h]	Warning Threshold [mm/h]	Danger Threshold [mm/h]
	Atbara_Sheriek	OK	16.9 2024-07-24	3.63 2024-07-24 22:00	30	50
	Sabloka_Atbara	OK	9.2 2024-07-25	1.27 2024-07-25 01:00	30	50
	TSA_Angereb	OK	20.2 2024-07-30	2.76 2024-07-29 22:00	30	50
	TSA_Atbara DS	OK	11.8 2024-07-24	1.04 2024-07-24 22:00	30	50
	TSA_Atbara US	OK	9.2 2024-07-30	0.75 2024-07-30 01:00	30	50
	TSA_Atshan	OK	3.3 2024-07-25	0.45 2024-07-25 07:00	30	50
	TSA_Embamadre-Humera	OK	30.0 2024-07-29	4.38 2024-07-29 19:00	30	50
	TSA_KhorArab	OK	10.5 2024-07-24	0.97 2024-08-01 01:00	30	50
	TSA_Mereb DS	OK	6.7 2024-07-31	1.0 2024-07-31 22:00	30	50
	TSA_Mereb US	OK	36.1 2024-07-31	5.12 2024-07-31 01:00	30	50
	TSA_Tekeze-Bambolina	OK	21.1 2024-07-23	3.6 2024-07-23 22:00	30	50
	TSA_Tekeze-Humera	OK	24.0 2024-07-30	3.68 2024-07-30 01:00	30	50
	TSA_Tekeze_Aksum	OK	30.3 2024-07-31	3.65 2024-07-29 16:00	30	50
	TSA_Tekeze_Giba	OK	31.5 2024-07-31	4.15 2024-07-31 04:00	30	50
	TSA_Tekeze_Tirare	OK	26.7 2024-07-28	3.41 2024-07-31 04:00	30	50

Lake Tana

simulation: Simulation of Base Scenario at 2024-07-23 07:25:36
start of simulation: 2024-07-12 06:00
time of forecast: 2024-07-22 06:00
end of simulation: 2024-08-01 06:00

Rainfall Forecasted Catchment Rainfall (maximum over 10 days; 2024-07-22 06:00 - 2024-08-01 06:00)

Status	Location	Alert	Max. Daily Catchment Rainfall [mm/day]	Catchment Rainfall [mm/h]	Warning Threshold [mm/h]	Danger Threshold [mm/h]
	LakeTana_Dirma_DS	OK	45.6 2024-07-27	5.91 2024-07-28 01:00	30	50
	LakeTana_Dirma_US	OK	37.0 2024-07-30	3.92 2024-07-30 01:00	30	50
	LakeTana_Enferaz	OK	54.4 2024-07-31	6.44 2024-07-22 19:00	30	50
	LakeTana_Gumara_DS	OK	72.8 2024-07-28	19.57 2024-07-28 22:00	30	50
	LakeTana_Gumara_Mid	OK	45.7 2024-07-30	7.95 2024-07-28 22:00	30	50
	LakeTana_Gumara_US	OK	33.1 2024-07-28	3.96 2024-07-30 04:00	30	50
	LakeTana_Lower_G_Abbay	OK	59.1 2024-07-29	7.31 2024-07-29 01:00	30	50
	LakeTana_Maksegint	OK	39.3 2024-07-31	4.6 2024-07-22 19:00	30	50
	LakeTana_Megech_DS	OK	38.7 2024-07-28	3.68 2024-07-30 01:00	30	50
	LakeTana_Megech_US	OK	36.5 2024-07-30	4.26 2024-07-30 01:00	30	50
	LakeTana_Ribb_DS	OK	117.2 2024-07-31	14.47 2024-07-23 22:00	30	50
	LakeTana_Ribb_Mid	OK	71.7 2024-07-31	9.31 2024-07-23 22:00	30	50
	LakeTana_Ribb_US	OK	31.9 2024-07-31	4.8 2024-07-23 22:00	30	50
	LakeTana_Upper_G_Abbay	OK	27.2 2024-07-29	2.2 2024-07-28 16:00	30	50
	LakeTana_West	OK	41.9 2024-07-29	5.72 2024-07-24 01:00	30	50

Flood Forecasted Catchment Runoff (page 7-14)

Baro Akobo Sobat

simulation: Simulation of Base Scenario at 2024-07-23 07:14:20
start of simulation: 2024-07-12 06:00
time of forecast: 2024-07-22 06:00
end of simulation: 2024-08-01 06:00

Flood Forecasted Catchment Runoff (maximum over 10 days; 2024-07-22 06:00 - 2024-08-01 06:00)

Status	Location	Alert	Catchment Runoff [m^3/s]	Warning Threshold [m^3/s]	Danger Threshold [m^3/s]
	Maban	Undefined	133.7 2024-07-22 18:00	0	1000

Alert "Undefined" - the threshold for alerts shall be established.

Flood Forecasted Flow (maximum over 10 days; 2024-07-22 06:00 - 2024-08-01 06:00)

Status	Location	Alert	Flow [m^3/s]	Warning Threshold [m^3/s]	Danger Threshold [m^3/s]
	Gilo	Undefined	5.45 2024-07-30 16:00	0	1000
	Pochalla	Undefined	7.55 2024-07-31 18:00	0	1000
	Pibor	Undefined	2.16 2024-07-22 14:00	0	1000
	US-Akobo-Junction	Undefined	3.22 2024-07-31 10:00	0	1000
	DS-Akobo	Undefined	6.15 2024-07-30 22:00	0	1000
	DS-Bul-Akobo	Undefined	6.1 2024-08-01 06:00	0	1000
	Bonga-US-Gambela	Undefined	346.33 2024-07-29 21:00	0	1000
	Gambela	Undefined	408.93 2024-07-30 11:00	0	1000
	Itang	Undefined	339.7 2024-07-31 00:00	0	1000
	DS-Junction	Undefined	230.15 2024-08-01 06:00	0	1000

	Nasir	Undefined	78.4 2024-08-01 06:00	0	1000
	DS-Nasir	Undefined	56.46 2024-08-01 06:00	0	1000
	Adong	Undefined	18.99 2024-07-31 23:00	0	1000
	Malakal	Undefined	574.09 2024-07-31 21:00	0	1000
	Kodok	Undefined	616.81 2024-07-28 13:00	0	1000
	US-Melut-Tributary	Undefined	657.0 2024-07-30 12:00	0	1000
	Al Jabalyn	Undefined	561.29 2024-07-30 18:00	0	1000
	Ad Douiem	Undefined	536.28 2024-07-22 06:00	0	2000

Alert "Undefined" - the threshold for alerts shall be established.

Flood Forecasted Water Level (maximum over 10 days; 2024-07-22 06:00 - 2024-08-01 06:00)

Status	Location	Alert	Water Level [m]	Warning Threshold [m]	Danger Threshold [m]
	Gilo	Undefined	439.78 2024-07-28 08:00	0	1000
	Pochalla	Undefined	441.67 2024-07-31 18:00	0	1000
	Pibor	Undefined	416.68 2024-07-28 13:00	0	1000
	US-Akobo-Junction	Undefined	409.65 2024-07-31 21:00	0	1000
	DS-Akobo	Undefined	408.32 2024-08-01 06:00	0	1000
	DS-Bul-Akobo	Undefined	405.66 2024-08-01 06:00	0	1000
	Bonga-US-Gambela	Undefined	476.19 2024-07-29 21:00	0	1000
	Gambela	Undefined	439.06 2024-07-30 13:00	0	1000
	Itang	Undefined	429.9 2024-07-31 01:00	0	1000
	DS-Junction	Undefined	404.5 2024-08-01 06:00	0	1000
	Nasir	Undefined	404.34 2024-08-01 06:00	0	1000
	DS-Nasir	Undefined	402.45 2024-08-01 06:00	0	1000
	Adong	Undefined	399.98 2024-07-31 18:00	0	1000

	Malakal	Undefined	397.52 2024-07-31 16:00	0	1000
	Kodok	Undefined	394.33 2024-07-31 18:00	0	1000
	US-Melut-Tributary	Undefined	393.87 2024-08-01 06:00	0	1000
	Al Jabalyn	Undefined	385.54 2024-07-31 19:00	0	1000
	Ad Douiem	Undefined	382.39 2024-07-22 06:00	0	1000

Alert "Undefined" - the threshold for alerts shall be established.

Blue Nile

simulation: Simulation of Base Scenario at 2024-07-23 07:17:52
start of simulation: 2024-07-12 06:00
time of forecast: 2024-07-22 06:00
end of simulation: 2024-08-01 06:00

Flood Forecasted Flow (maximum over 10 days; 2024-07-22 06:00 - 2024-08-01 06:00)

Status	Location	Alert	Flow [m^3/s]	Warning Threshold [m^3/s]	Danger Threshold [m^3/s]
	Ethio-Sud-Border	OK	2098.89 2024-08-01 06:00	9513	12684
	DS-Roseires	OK	3236.79 2024-07-28 14:00	5932	7536
	Kamlin	OK	3168.7 2024-08-01 06:00	7500	8680
	Khartoum	OK	3230.33 2024-07-22 06:00	7381	8768
	W-Hadad	Undefined	4034.9 2024-07-31 18:00	0	1000
	DS-WMedani	Undefined	3236.6 2024-08-01 03:00	0	1000

Alert "Undefined" - the threshold for alerts shall be established.

Flood Forecasted Water Level (maximum over 10 days; 2024-07-22 06:00 - 2024-08-01 06:00)

Status	Location	Alert	Water Level [m]	Warning Threshold [m]	Danger Threshold [m]
	DS-Roseires	OK	447.45 2024-07-28 14:00	492	493.5

	DS-WMedani	OK	395.7 2024-08-01 03:00	401	402
	Kamlin	OK	385.84 2024-08-01 06:00	391	391.5
	Khartoum	OK	376.98 2024-08-01 06:00	378	379.2
	Ethio-Sud-Border	Undefined	495.37 2024-08-01 06:00	0	1000
	W-Hadad	Undefined	408.0 2024-07-31 19:00	0	1000

Alert "Undefined" - the threshold for alerts shall be established.

Tekeze Setit Atabara

simulation: Simulation of Base Scenario at 2024-07-23 07:22:18
start of simulation: 2024-07-12 06:00
time of forecast: 2024-07-22 06:00
end of simulation: 2024-08-01 06:00

Flood Forecasted Flow (maximum over 10 days; 2024-07-22 06:00 - 2024-08-01 06:00)

Status	Location	Alert	Flow [m^3/s]	Warning Threshold [m^3/s]	Danger Threshold [m^3/s]
	Kubur	Danger	2570.68 2024-07-22 15:00	0	1000
	Tekeze-Dima	Undefined	5454.71 2024-08-01 04:00	0	1000
	Tekeze-Humara	Undefined	6920.27 2024-07-31 19:00	0	1000
	Showak	Undefined	9852.79 2024-08-01 06:00	0	1000
	DS El Girba	Undefined	9021.29 2024-08-01 06:00	0	1000
	Al Fahada	Undefined	10041.48 2024-07-29 15:00	0	1000
	Atbara	Undefined	10231.01 2024-07-30 09:00	0	1000

Alert "Undefined" - the threshold for alerts shall be established.

Flood Forecasted Water Level (maximum over 10 days; 2024-07-22 06:00 - 2024-08-01 06:00)

Status	Location	Alert	Water Level [m]	Warning Threshold [m]	Danger Threshold [m]
	Tekeze-Humara	OK	576.27 2024-07-31 19:00	578	579
	Tekeze-Dima	Undefined	729.22 2024-08-01 05:00	0	1000
	Kubur	Undefined	516.16 2024-07-22 15:00	0	1000
	Showak	Undefined	481.08 2024-08-01 06:00	0	1000
	DS El Girba	Undefined	414.49 2024-08-01 06:00	0	1000
	Al Fahada	Undefined	364.35 2024-07-29 19:00	0	1000
	Atbara	Undefined	356.95 2024-07-30 12:00	0	1000

Alert "Undefined" - the threshold for alerts shall be established.

Lake Tana

simulation: Simulation of Base Scenario at 2024-07-23 07:25:36
start of simulation: 2024-07-12 06:00
time of forecast: 2024-07-22 06:00
end of simulation: 2024-08-01 06:00

Flood Forecasted Flow (maximum over 10 days; 2024-07-22 06:00 - 2024-08-01 06:00)

Status	Location	Alert	Flow [m^3/s]	Warning Threshold [m^3/s]	Danger Threshold [m^3/s]
	Gumara Woreta	Warning	292.17 2024-07-30 18:00	231	308
	Dirma at Kola Diba	OK	47.89 2024-07-30 08:00	95	126
	Ribb Addis Zemen	OK	36.69 2024-08-01 06:00	164	219
	DS-Dirma	Undefined	87.07 2024-07-28 15:00	0	1000
	Lower-Dirma	Undefined	118.84 2024-07-29 07:00	0	1000
	Aba Libanos	Undefined	180.96 2024-07-30 06:00	0	1000
	Middle-Megech	Undefined	184.94 2024-07-30 06:00	0	1000

	Lower-Megech	Undefined	216.19 2024-07-30 13:00	0	1000
	Upper-Ribb	Undefined	44.47 2024-08-01 06:00	0	1000
	Lower-Old_Ribb	Undefined	135.37 2024-08-01 06:00	0	1000
	Lower-Ribb	Undefined	135.31 2024-08-01 06:00	0	1000
	Lower-Gumara	Undefined	470.81 2024-07-30 21:00	0	1000

Alert "Undefined" - the threshold for alerts shall be established.

Flood Forecasted Water Level (maximum over 10 days; 2024-07-22 06:00 - 2024-08-01 06:00)

Status	Location	Alert	Water Level [m]	Warning Threshold [m]	Danger Threshold [m]
	Dirma at Kola Diba	Undefined	1813.06 2024-07-30 08:00	0	1000
	DS-Dirma	Undefined	1794.98 2024-07-28 15:00	0	1000
	Lower-Dirma	Undefined	1787.8 2024-07-29 07:00	0	1000
	Aba Libanos	Undefined	1798.17 2024-07-30 06:00	0	1000
	Middle-Megech	Undefined	1797.08 2024-07-30 07:00	0	1000
	Lower-Megech	Undefined	1789.05 2024-07-30 13:00	0	1000
	Upper-Ribb	Undefined	1851.54 2024-08-01 06:00	0	1000
	Ribb Addis Zemen	Undefined	1794.61 2024-08-01 06:00	0	1000
	Lower-Old_Ribb	Undefined	1786.98 2024-08-01 06:00	0	1000
	Lower-Ribb	Undefined	1788.79 2024-08-01 06:00	0	1000
	Gumara Woreta	Undefined	1794.22 2024-07-30 18:00	0	1000
	Lower-Gumara	Undefined	1786.98 2024-08-01 06:00	0	1000

Alert "Undefined" - the threshold for alerts shall be established.