Issued: 19 September 2022

JRC MARS Bulletin – Global outlook
Turkey, September 2022

European Commission

JRC MARS Bulletin - Global outlook

Crop monitoring European neighbourhood

Turkey

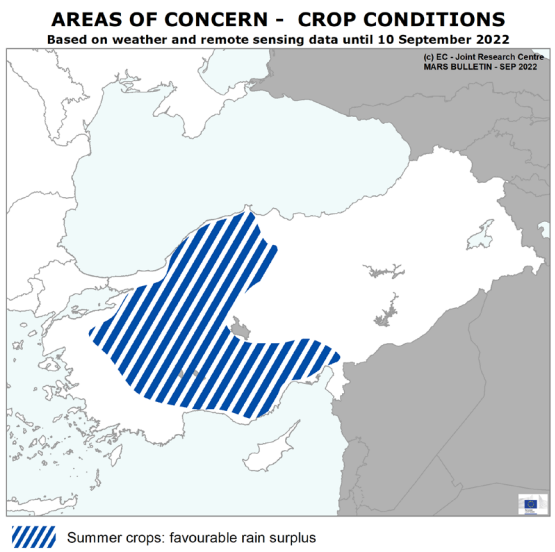
September 2022

Mild season leads to fair yields

Yield forecasts for winter cereals are in line with - or above - the 5-year average. The risk of heat stress did not materialise. Summer conditions were favourable for summer crops and yield expectations are average (sugar beet and maize) to above-average (soybean).

In Turkey, the significant delay of winter crop development accumulated over spring did not result in exposure to heat stress at flowering. The high temperatures recorded in late May and early June had marginal negative impacts on rain fed crops and none at all on irrigated crops. Below-average temperatures and unseasonal rains in late June (in *western Anatolia*) and July (in *eastern Anatolia*) were very favourable for winter crop grain filling, notably for soft wheat.

Summer crops sowings started in time with an average season (end of May to end of June) and while irrigation was needed for emergence, vegetative growth was supported by rain in June. Crop development was initially slower than usual but accelerated during July and biomass accumulation reached around average to above average levels, notably in the main maize producing region of *Hatay* and in the regions along the Black Sea coast. Expected yields for summer crops are average to above average as there has been no significant heat or water stress.

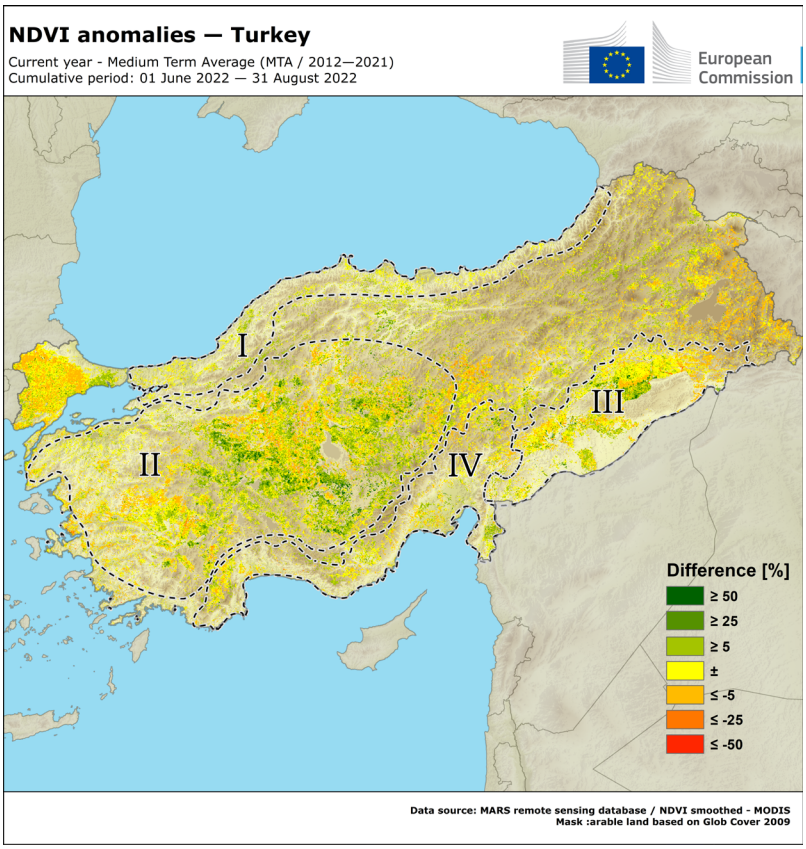


Yield forecasts for Turkey - September 2022 Bulletin

Country	Crop	Area (x 1000 ha)					Yield (t/ha)					Production (x 1000 t)				
		Avg 5yrs	2021	2022	%22/5yrs	%22/21	Avg 5yrs	2021	MARS 2022 forecasts	%22/5yrs	%22/21	Avg 5yrs	2021	2022	%22/5yrs	%22/21
Turkey	Wheat	7 064	6 623	**6 623**	- 6	+ 0	2.79	2.66	**2.90**	+ 4	+ 9	19 730	17 641	**19 233**	- 3	+ 9
	Soft wheat	5 872	5 449	**5 449**	- 7	+ 0	2.76	2.66	**2.89**	+ 5	+ 9	16 192	14 494	**15 725**	- 3	+ 9
	Durum wheat	1 192	1 174	**1 174**	- 2	+ 0	2.97	2.68	**2.99**	+ 1	+ 11	3 539	3 147	**3 508**	- 1	+ 11
	Barley	2 664	2 938	**2 938**	+ 10	+ 0	2.53	1.87	**2.56**	+ 1	+ 37	6 734	5 494	**7 510**	+ 12	+ 37
	Grain maize	663	758	**758**	+ 14	+ 0	9.30	8.90	**9.40**	+ 1	+ 6	6 169	6 746	**7 129**	+ 16	+ 6
	Sugar beet	316	302	**302**	- 4	+ 0	61.7	58.8	**62.5**	+ 1	+ 6	19 486	17 766	**18 900**	- 3	+ 6
	Soybean	36	44	**44**	+ 23	+ 0	4.29	4.15	**4.66**	+ 9	+ 12	153	182	**204**	+ 33	+ 12

Joint Research Centre

Country highlights



The delayed season of winter crops and the concurrent fair development of summer crops in Anatolian regions (region II on the map) resulted overall in fair biomass accumulation over arable land during the analysis period (green colour). Those regions mostly correspond to areas where irrigation practices fully support winter and summer crop growth. Where irrigation was not so available, winter crops growth was below average (orange colours) while usually no summer crop is grown is these areas. In south-eastern regions (III), the first crop cycle (mostly winter crops) had an average conclusion while the second cycle (mixed winter and summer crops) present average to positive biomass accumulation. Average to above-average performance was also observed in the Mediterranean regions (IV) where most maize is grown.

The NDVI anomalies map displays the differences between the Normalised Difference Vegetation Index (NDVI) cumulated from 1 June to 10 September 2022, and the medium-term average (MTA, 2012 - 2021) for the same period. Positive anomalies (shown in green) reflect above-average biomass accumulation and/or early crop development while negative anomalies (shown in red) reflect below-average biomass accumulation and/or late crop development.

Region I: Kocaeli, Zonguldag, Kastamonu, Samsun, Trabzon

Region II: Konya, Ankara, Bursa, Manisa, Aydin, Izmir, Balikesir, Tekirdag, Istanbul, Kirikkale, Kayseri

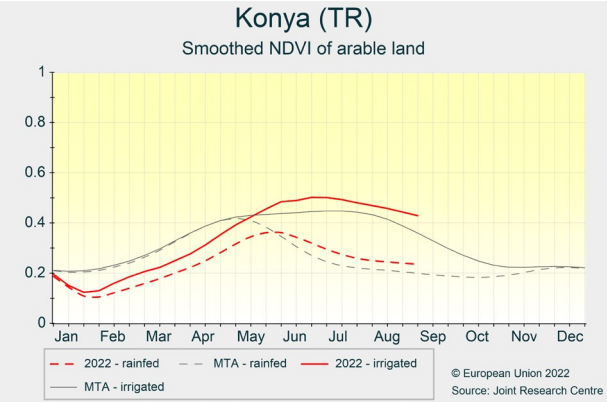
Region III: Gaziantep, Sanliurfa, Mardin

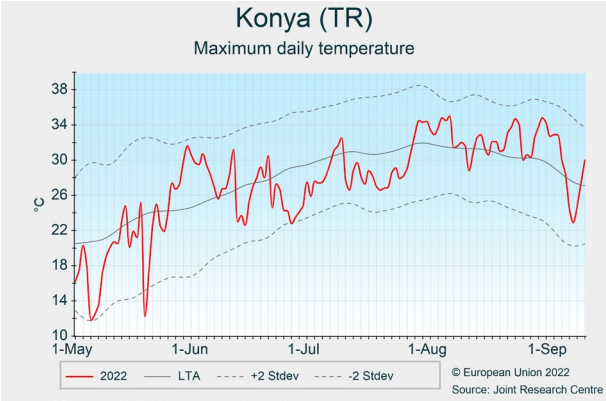
Region IV: Antalya, Adata, Hatay

Western and central Anatolian regions

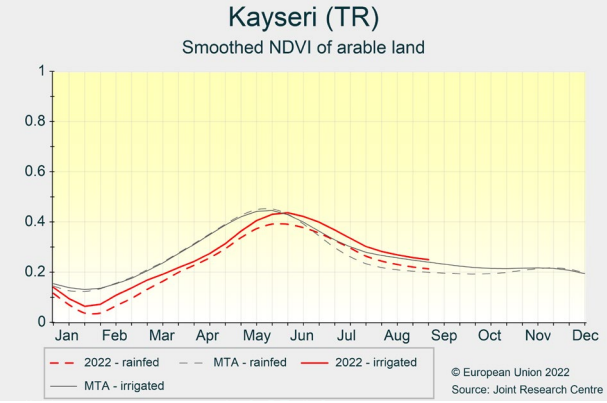
Favourable summer

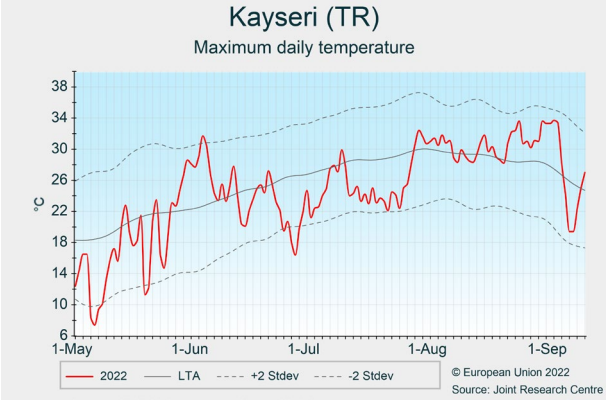
- In Anatolian regions, unfavourable conditions around sowing and a cold spring caused substantial delays to winter crops, as reported in the May edition of this Bulletin[1]. Nevertheless, crops were generally in good condition.
- Since then temperatures have slowly increased while at the beginning of June a heatwave brought temperatures well above average and above 30°C for two to five days in *Konya*, *Ankara*, *Bursa*, *Kirikkale*, and *Kayseri*.
- As a consequence, the phenological development of winter crops accelerated, shortening the period for vegetative growth.
- Winter crops flowering in *Konya* and *Ankara* regions started in June just after the temperature peak.
- Irrigation mitigated the effect of hot temperatures and irrigated cereals performed much better than those that were rain fed, which were disadvantaged by a shortening of the time available for producing and filling the grains
- Late June brought cooler–than-usual temperatures and beneficial precipitation for grain filling as well as several heavy storms, flash floods, and hail events which locally damaged crop canopies.
- The cooler–than-usual temperatures continued at the beginning of July and later between 10 and 20 July.
- The mild temperatures favoured the grain filling of winter cereals especially in western Anatolian regions (e.g. *Kayseri*) where crops are delayed compared to *Konya*.
- In *Konya,* the lower than usual temperature slowed down the biomass accumulation of summer crops.
- During July the green biomass accumulation of summer crops (*Konya*) reached slightly above-average levels despite the cool temperatures. Summer crops reached flowering in good condition toward the end of the month.
- By the end of July the harvest of winter crops was concluded. It was favoured by scarce rains.
- Hot conditions have prevailed since 1 August with a series of moderate heatwaves (Tmax <35°C) that lasted a few days each. The last of these occurred at the beginning of September.
- Summer crops yield expectations are above the 5-year average, and are particularly positive for soybean and sugar beet, which are mostly grown in Konya.





[1] https://publications.jrc.ec.europa.eu/repository/handle/JRC127971


Kayseri (TR)
Smoothed NDVI of arable land
1
0.8
0.6
0.4
0.2
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2022 - rainfed
MTA - rainfed
2022 - irrigated
MTA - irrigated
© European Union 2022
Source: Joint Research Centre


Kayseri (TR)
Maximum daily temperature
°C
38
34
30
26
22
18
14
10
6
1-May
1-Jun
1-Jul
1-Aug
1-Sep
2022
LTA
+2 Stdev
-2 Stdev
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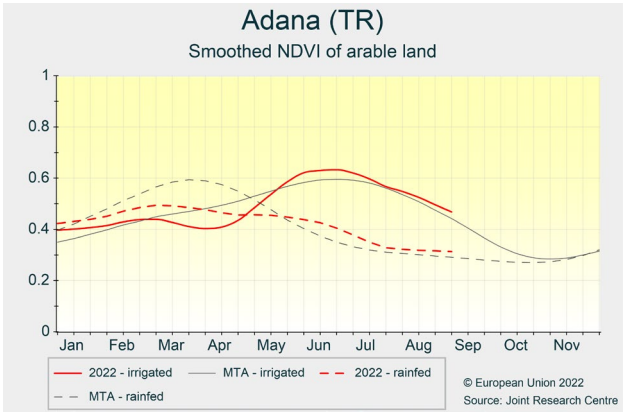
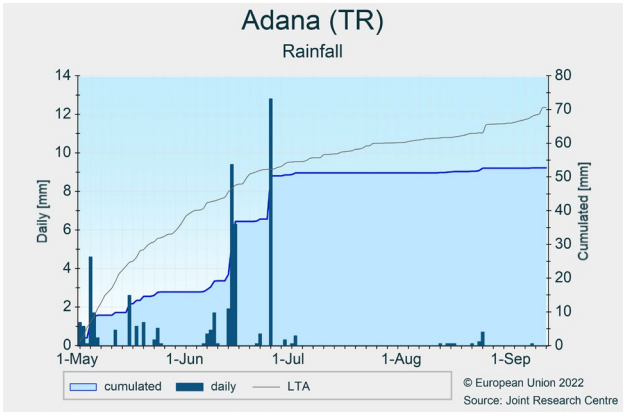
Source: Joint Research Centre

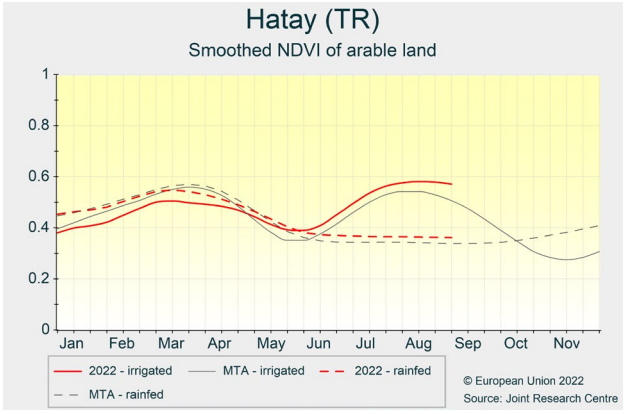
Southern regions

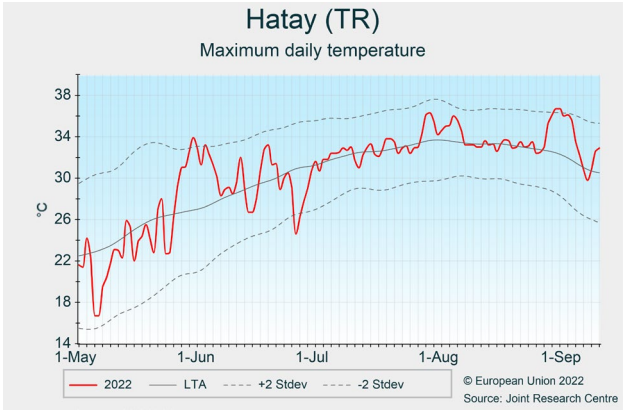
Average to positive yield expectations

- The southern regions, where most of the country's grain maize is produced, present two distinct growing strategies.
- In the *Adana* region, maize presents one season and most of the sowings are completed before May. In *Hatay* region, maize has two-seasons: the first is sown in January; the second in early June.
- This year in the region of *Adana* most of the maize was sown at the beginning of May, late compared to the usual timing. Vegetative growth was favoured by well-distributed rainfall up to flowering, which occurred around the end of June
- From July the weather turned dry as usual, with high temperatures predominant from 15 July onward. Since then maize development has accelerated, and grain formation and grain filling stages were shortened, slightly reducing the yield potential.
- During August weather conditions were average (i.e. hot and dry) and maize matured with average yield expectations.
- The first maize growing season in *Hatay* region was suboptimal due to the very cold March which hampered biomass accumulation, and led to below-average yields at harvest time in late May.
- In late May and early June the second maize season started under favourable conditions: irrigation supported emergence and first leaf development was further helped by unseasonal precipitation.
- In July, the biomass accumulation continued under favourable conditions with seasonal hot and dry weather without leading to heat or water stress.
- Maize flowered in the first 15 days of August under fair conditions. Seasonal weather lasted during the following weeks, increasing the yield forecasts for the region.
- Second season maize harvesting in this region is expected to start at the beginning of October









Crop yield forecast

Yield forecasts for Turkey - September 2022 Bulletin

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NB: Yields are forecast for crops with more than 10000 ha per country.

Sources: 2017-2021 data come from Turkish Statistical Institute (TurkStat) and Eurostat Eurobase (last update: 05.09.2022).
2022 area copied from 2021 area.

2022 yields come from MARS Crop Yield Forecasting System (output up to 10.09.2022).

The column header '%22/5yrs' stands for the 2022 change with respect to the 5-year average(%). Similarly, '%22/21' stands for the 2022 change with respect to 2021(%).

The JRC MARS Bulletin – Global outlook is a European Commission publication of the Joint Research Centre's AGRI4CAST project (JRC Food Security Unit – Directorate for Sustainable Resources)

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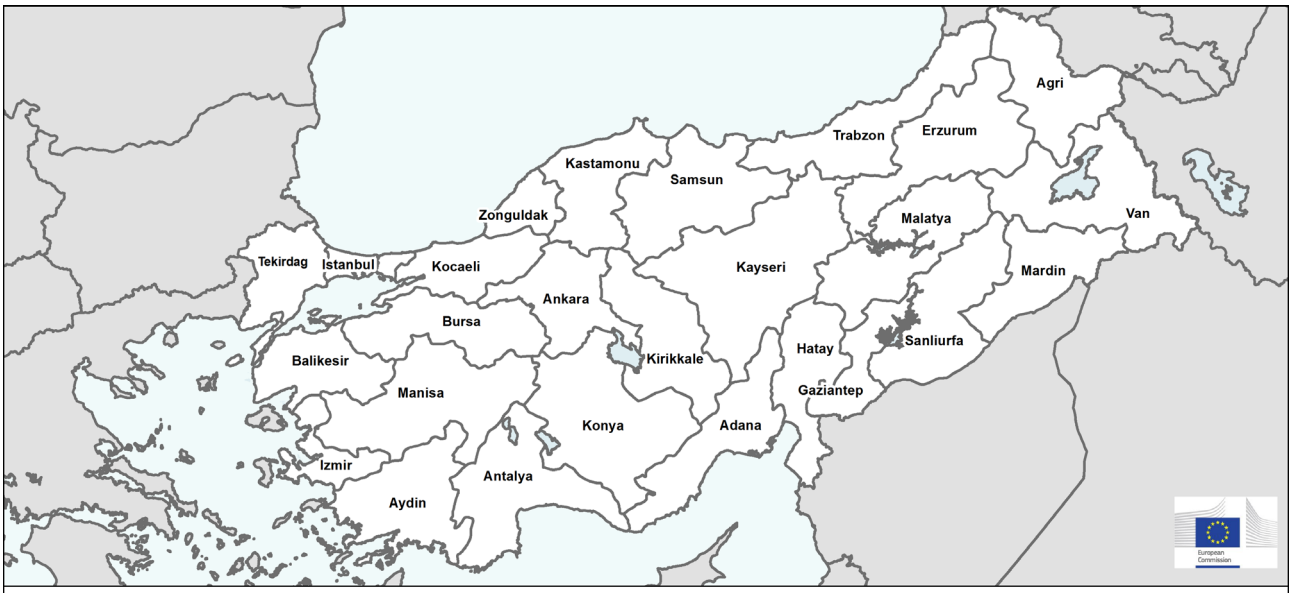
Disclaimer
The geographic borders are purely a graphical representation and are only intended to be indicative. The boundaries do not necessarily reflect the official European Commission position.

Technical note
The long-term average (LTA) used in this Bulletin as a reference is based on an archive of data covering 1992-2021. The medium-term average (MTA) used as a reference in this Bulletin is based on an archive of data covering 2012-2021.



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