



Syria Fire Incidents

Analysis of Fires Outbreak Across Syria

September – October 2020

Highlights

- As of 18th October 2020, a grand total of **approximately 30,000 hectares** of agricultural and forested land across NW Syria is estimated to have been burned during the wildfire incidents **in the period September 1st to October 15th, 2020.**

Governorate	Total Area in Hectares (ha) Cumulative data for <u>September and October</u>
Hama	5075
Homs	1379
Idleb	508
Lattakia	18848
Tartous	4053
Total	29863

- Satellite imagery clearly depicts a pattern to these fires, and it seems evident that many fires were clustered in few specific areas; some of these areas were very extensive especially in Lattakia governorate.

Background Information

It has been reported in the past few years that some areas in the North-West part of Syria have been affected by fire events.

The portion of territory affected encompasses Lattakia, Tartous and part of Hama; this is an area relatively less affected by the conflict and where several natural types of land cover can be found.

In the past years and especially in 2019 concerns have been expressed with regards to frequent fire events during this time of the year. The causes of these frequent fires are still unknown and WFP awaits more official information from the government on this.

2020 Fire Events

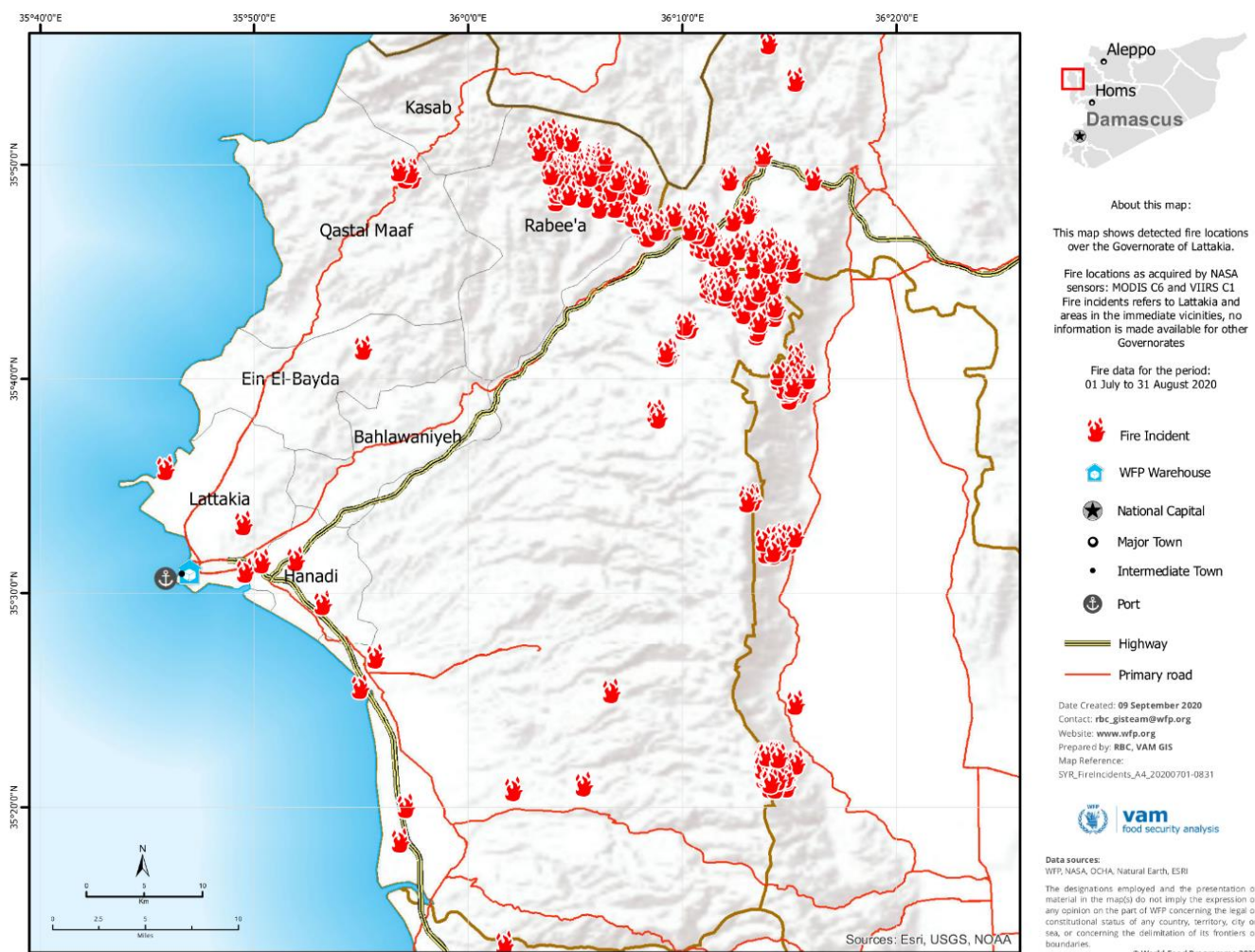
During the summer of 2020 and especially **from July to August**, a large

number of wildfire incidents have been reported in this part of the country.

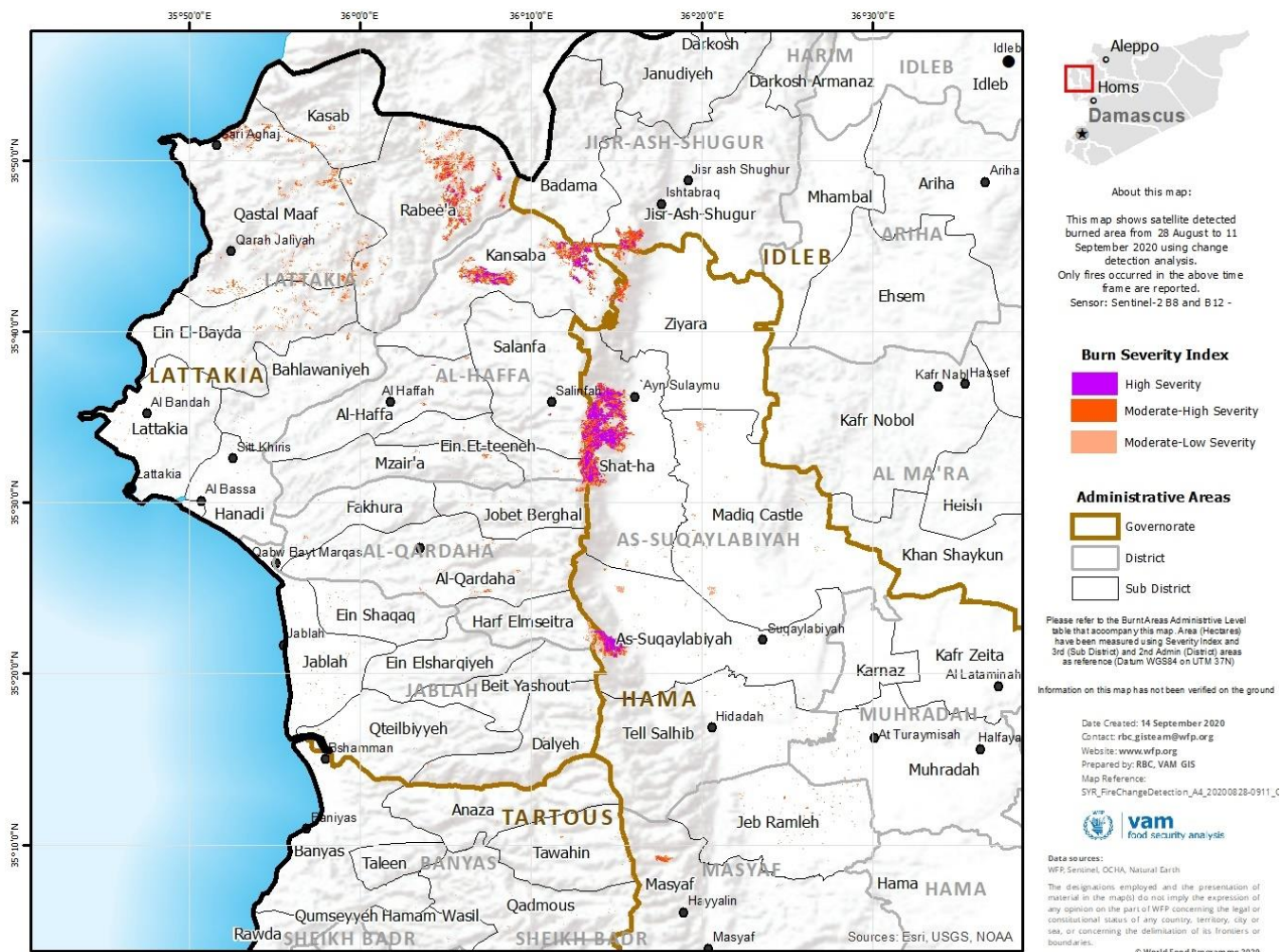
With the objective being to monitor the extension and magnitude of the events and conduct an initial assessment on the potential impact of the fires on WFP operations, RBC and SYR CO VAM Units, used satellite imagery and remote sensing tools in order to conduct an analysis and map the affected areas and created maps designed to track and monitor over time the frequency, impact and spread of these fires.

Map 1 summarizes the spread of fires over the summer of 2020 (July to August).

In addition to this and during the **early days of September** when the fires stopped, new earth observation data was used to detect the areas impacted by fires. This information



Map 1: Syria fire incidents - Lattakia | July and August 2020



Map 2: Syria fire incidents - | September 04 to September 11 2020

was used to more precisely identify the areas affected. In addition, remote sensing analysis allowed to clearly understand how separate fire events grouped together inside the woodland, generating large pockets of burnt areas.

After a quiet period, **the peak was reached from 04 to 11 September**, when the fires began again. During this time, many of the fire events went out of control, given the difficulty in reaching these areas. Furthermore, it has been reported that some fires necessitated the need for over 40 MT of water per day.

With the goal to understand the impact of the fires on the land, a change detection analysis has been performed in order to compare the situation pre and post fire events. This remote sensing analysis allows to detect the most recent event and to measure the

portion of the land that has been impacted.

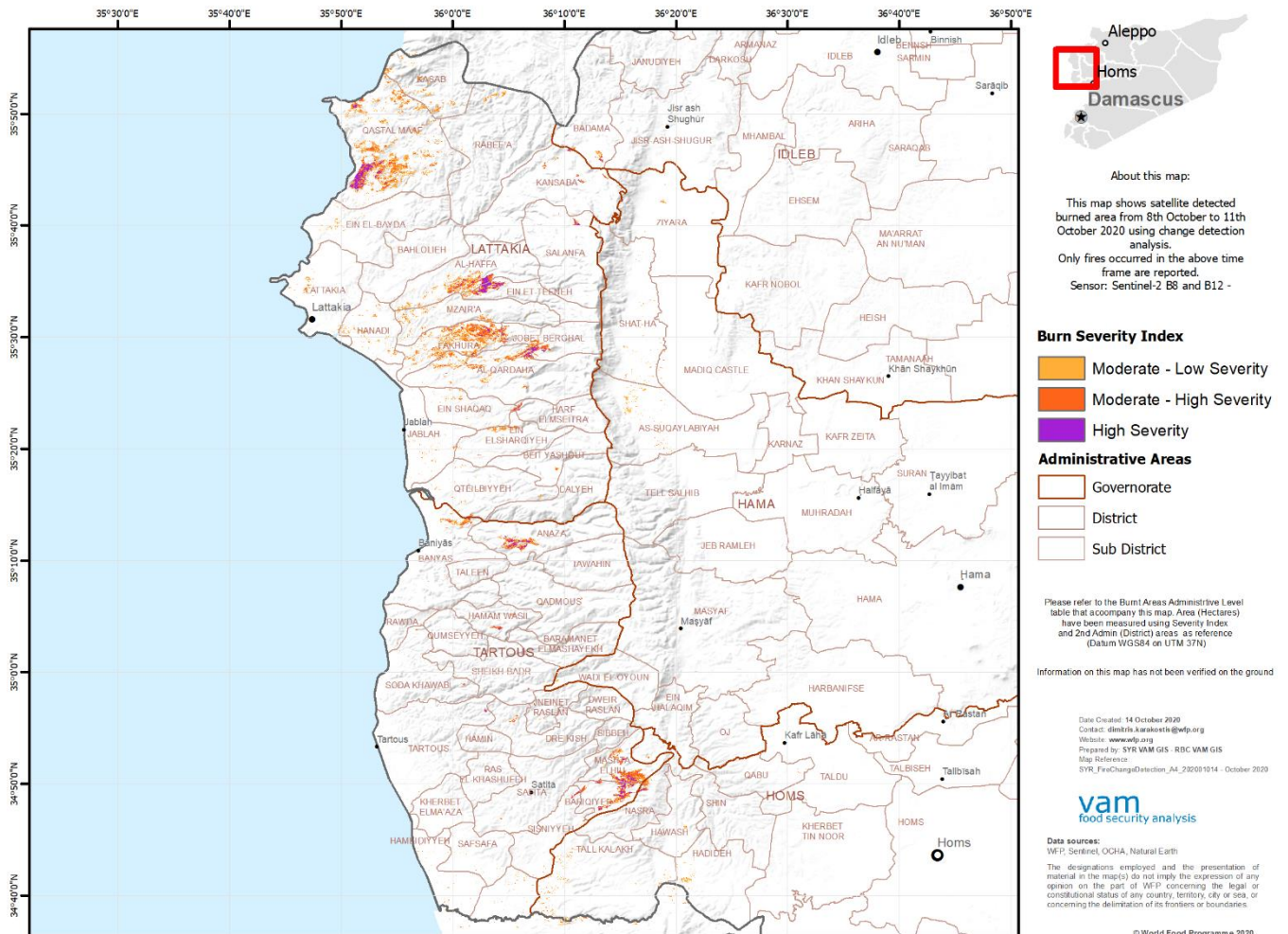
A new round of wildfires – October

In the period from **08 to 11 October**, there was a new series of wildfires in the governorates of Latakia, Tartous and NW Homs. Due to the wildfires, some communities were evacuated and **over 70 people have been hospitalized** because they suffered from breathing difficulties. Notably, during the same period fires hit other countries in the region where similar landcover is found, in particular, neighboring areas in Turkey and Lebanon. However, the hectares of land affected in Syria has been extensive.

In total, as on date almost 90 fires have been registered across Latakia and Tartous, **Satellite imagery clearly depict a pattern to these fires and it seems evident that many fires were in some way connected and clustered in few specific areas; some**

of these areas very extensive especially in Lattakia. Temperatures have been registered as extremely high during these days, and the hot air mass made even more

difficult to extinguish the fires, it has also been reported that the smoke coming from Lattakia reached to Cyprus which is 100+ Km away.



Map 3: Syria fire incidents | October 08th to October 11th 2020

Conclusions

The usage of remote sensing and GIS allows WFP to monitor the situation and estimate the impact of the ongoing fires; till such time field visits and on-ground validation is not possible. In the meantime, the RBC and CO VAM units are working together to obtain a in-depth understanding of the impact of fires on food security, agriculture and livelihood in affected areas.

The teams will continue their collaboration on the following areas:

- 1) Acquire more detailed land cover information.
- 2) Build a monitoring system using interactive mapping solutions and,
- 3) In the future, for similar events, if possible, it would be useful to conduct field assessment missions to the impacted areas to perform cross validation of the analysis.

Appendix 1: Number of Hectares affected by fires in September and October 2020

Governorate	District	Total by District (Hectares)	Total by Governorate (Hectares)
Hama	As-Suqaylabiyah	3719	5075
	Hama	1	
	Masyaf	1296	
	Muhradah	59	
Homs	Al-Qusayr	4	1379
	Homs	36	
	Tall Kalakh	1339	
Idleb	Jisr-Ash-Shugur	508	508
Lattakia	Al-Haffa	4302	18848
	Al-Qardaha	3904	
	Jablah	661	
	Lattakia	9981	
Tartous	Banyas	932	4053
	Dreikish	99	
	Safita	2007	
	Sheikh Badr	57	
	Tartous	958	
Grand Total (Hectares)			29863

Appendix 2: Number of Hectares affected by fires in September and October 2020 by burn severity index

Gov	High Severity	Med-High Severity	Med-Low Severity	Total
Homs	28	426	925	1379
Hama	1527	1771	1777	5075
Lattakia	1779	5990	11079	18848
Idleb	74	290	144	508
Tartous	466	1696	1891	4053
Total	3874	10173	15816	29863

Analysis Methodology

Analysis and maps have been generated using earth observation data and techniques. Sentinel-2 data has been extracted and classified using Normalized Burned Ratio Index (nBRI). Pre and post event imagery have been used for the September and October analysis; results are shown as cumulative hectares of burned land. nBRI takes advantage of the near infrared and short wave infrared spectral bands, which are sensitive in vegetation changes, to detect burned areas and monitor the recovery of the ecosystem.

RBC - VAM and Syria CO - VAM
Geospatial Analysis and Mapping



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food security analysis

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Photo credits:

Cover Photo: A handout picture released by the official Syrian Arab News Agency (SANA) on September 8, 2020 shows a Syrian man attempting to put off a fire on a hill in Ain Halaqim, in the western countryside of Syria's Hama governorate. (AFP)