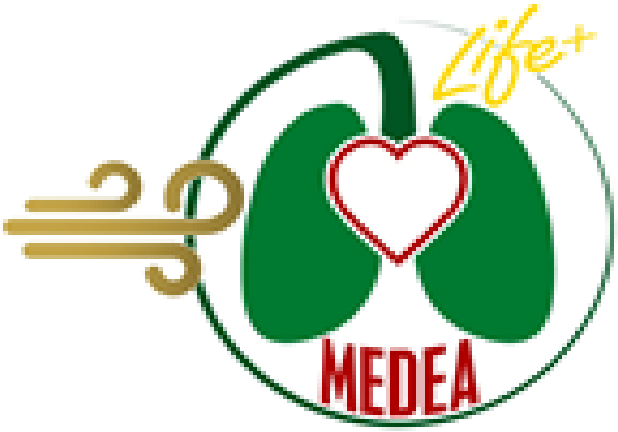

Action C.4.2

Deliverable: Report on day-to-day forecasts (with maximum 3-days in advance) for the 2 four-month study periods of all 3 locations.

Beneficiary responsible for implementation: UCY

Date: 30/09/2021

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The aim

The aim of this sub-Action is to report on the day-to-day forecasts made and alerts that were given during the study periods. The main study periods were the following:

- February 2019- June 2019
- September 2019- December 2019
- February 2020- June 2020
- September 2020- December 2020
- February 2021-June 2021

All forecasts and alerts are being uploaded on an online platform as part of the action plan to transfer information between each team in the project.

The action plan

An action plan was introduced that starts with the forecasts and ends with the alerts of the participants as detailed explained in the deliverable C1.1. At each step, a specific team of stakeholders from each country acts. At first the Atmospheric Forecasters team update the platform with a specific colour, depending on the severity of the incoming dust event. Then the Air Quality team monitors the ground measurements and if the criteria are met, the alerts are given and the platform is updated accordingly. Lastly, the Clinicians inform the participants to take the precautionary measures. Figure 1 below shows an overview of the platform. According to the colour the intensity of the forecast is noted i.e. Green = normal, Yellow= Severity 1, Orange = Severity 2, Red = Severity 3. Also, if the Air quality team confirms the event, the day is flagged as a dust day.

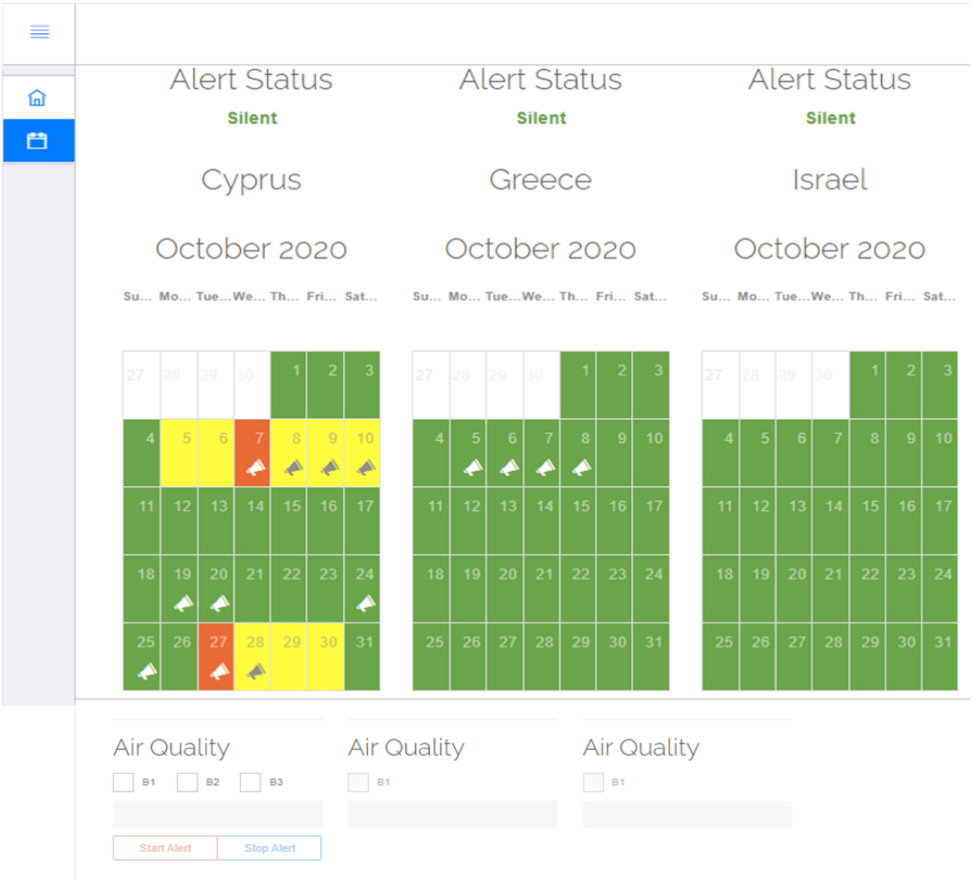

Figure 1- Online Platform for forecasts and alerts.

Day-to-day forecasts and alerts

An analysis on the day-to-day use of the platform is shown below for each of the countries.

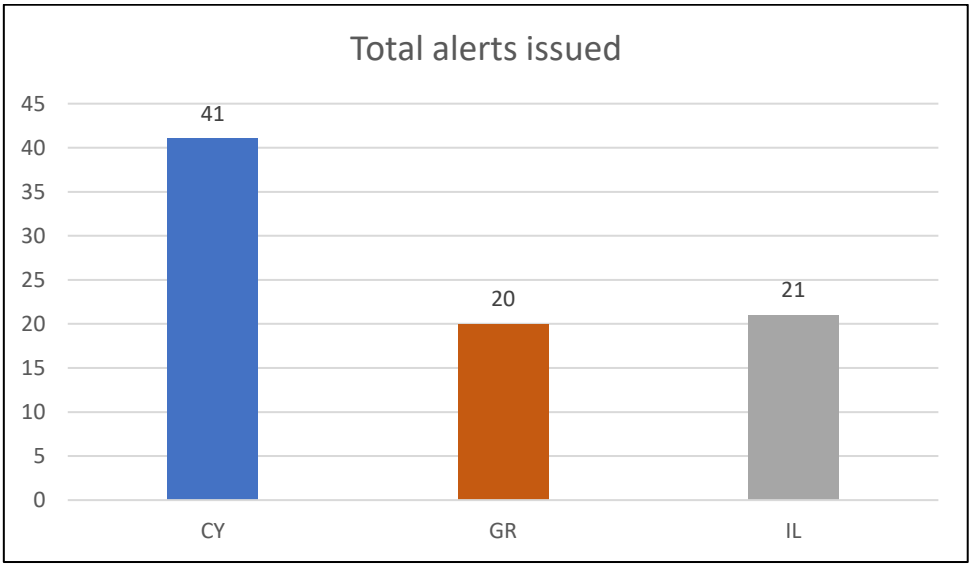

Figure 2-Total alerts issued

Figure 2 shows the total alerts issued from the start of the project. For Cyprus a total of 42 alerts were issued, for Greece 19 alerts and for Israel 21 alerts.

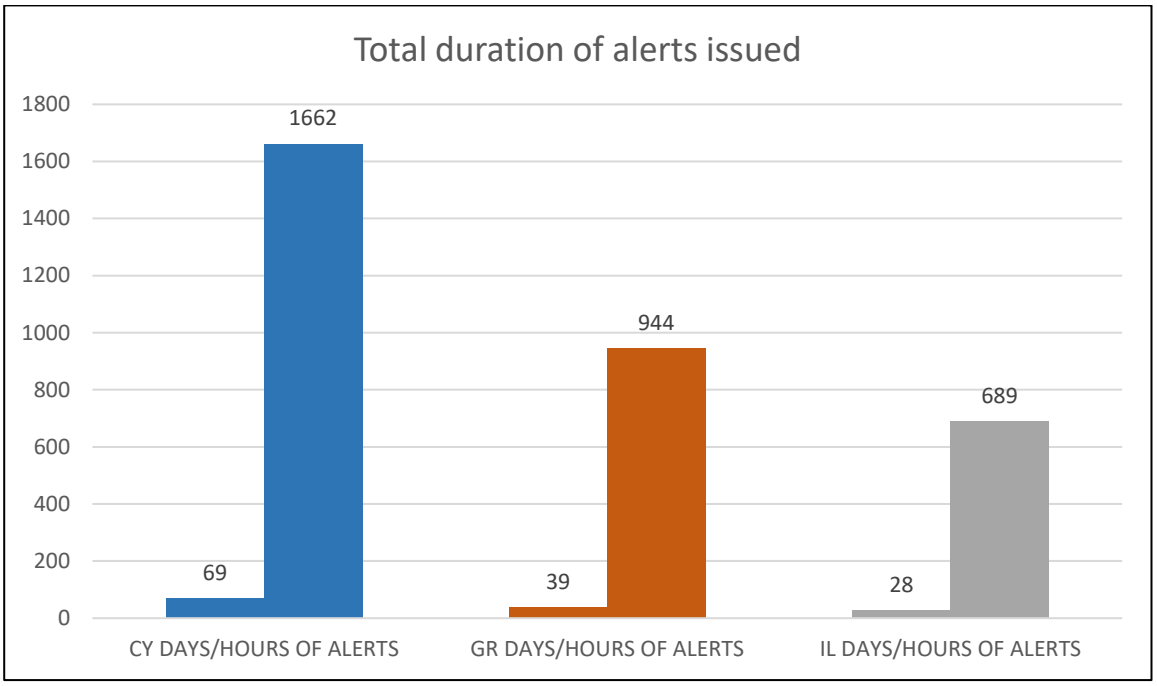

Figure 3- Total duration of alerts issued

Figure 3 shows the approximate total duration of alerts issued indicating the total period of time that the participants were taking precautionary measures. For Cyprus there were a total of 70 days or 1671 hours of alerts from the start of the of the MEDEA project. For Greece there were a total of 39 days or 944 hours of alerts. Lastly for Israel, the total duration of alerts were 28 days or 689 hours.

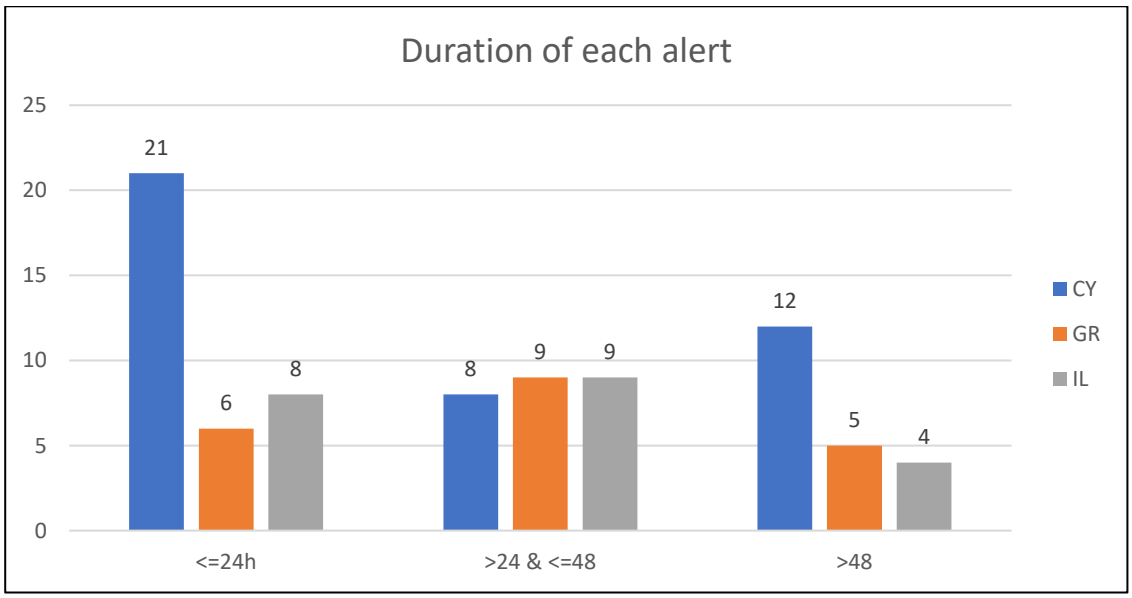

Figure 4- Duration of each alert.

Figure 4 shows the different duration of alerts that were issued from each country. For Cyprus most of the alerts issued were lower than 24 hours. For Greece and Israel, the most alerts that were issued were between 24 and 48 hours.

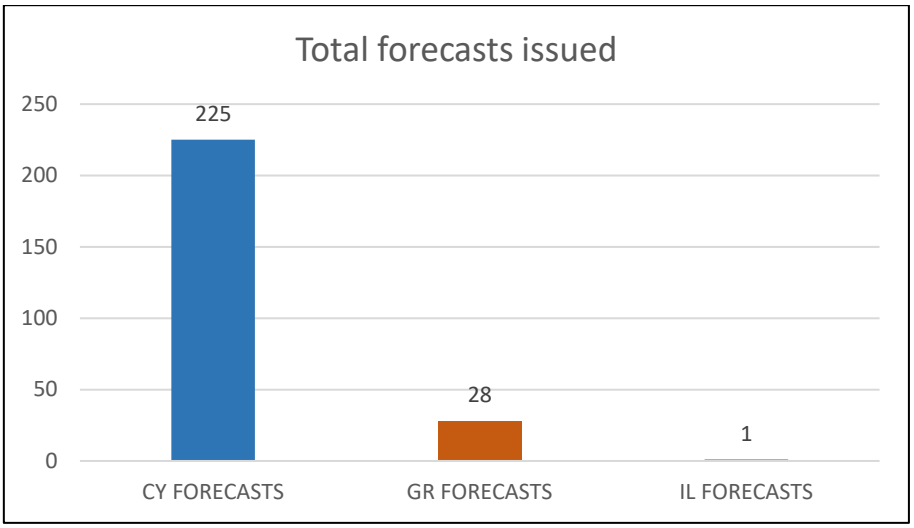

Figure 5- Total forecasts issued

Lastly figure 5 shows the total forecasts that were issued using the platform. There were a total of 225 forecasts issued for Cyprus, 28 for Greece and 1 for Israel.

Seasonal forecasts and alerts

Figures 6-10 show the seasonal variation of SDS alerts given, using the online platform for each country. Spring and Winter are the seasons with the highest number of alerts given while the Summer is the season with the least.

Most of the alerts were given for all countries during Spring and the least during the Summer.

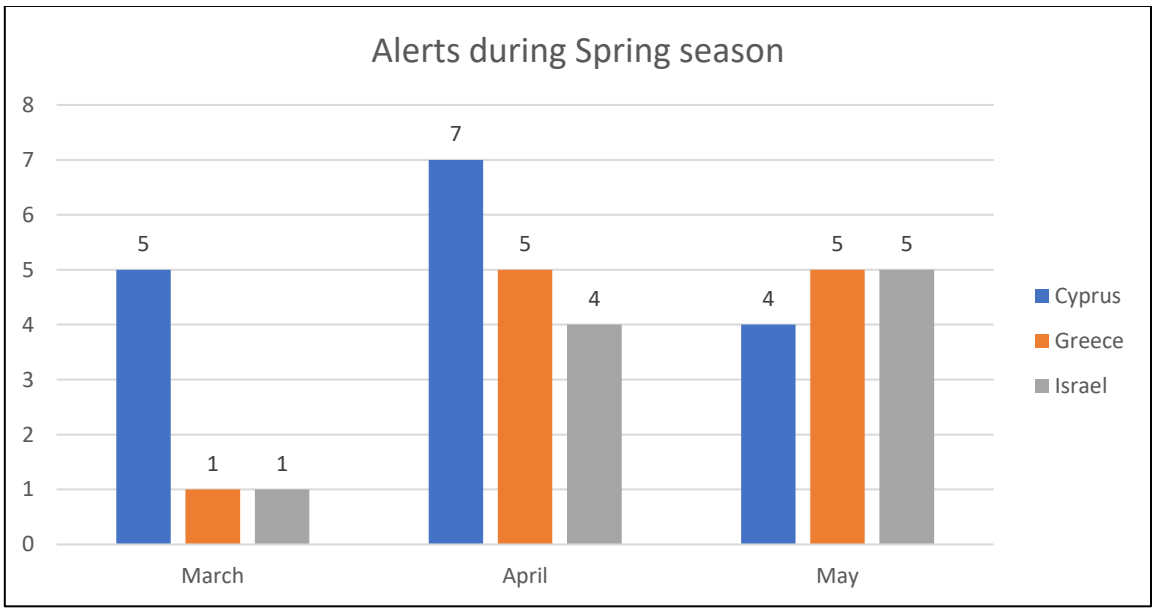

Figure 6 - Alerts given in each country during Spring season

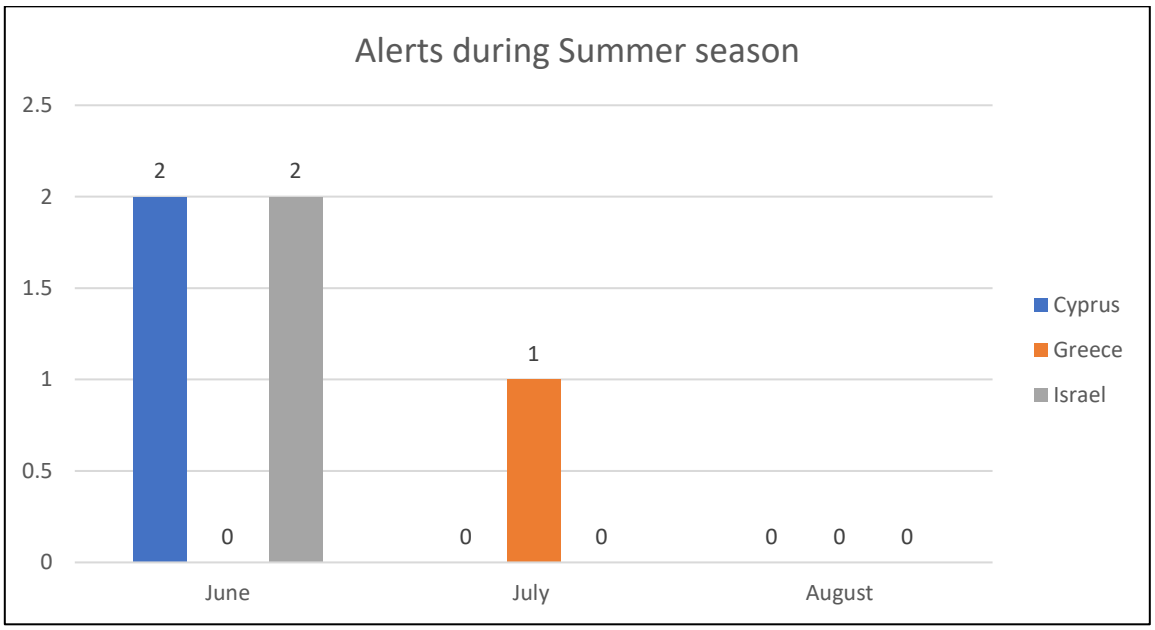

Figure 7-Alerts given in each country during Summer season

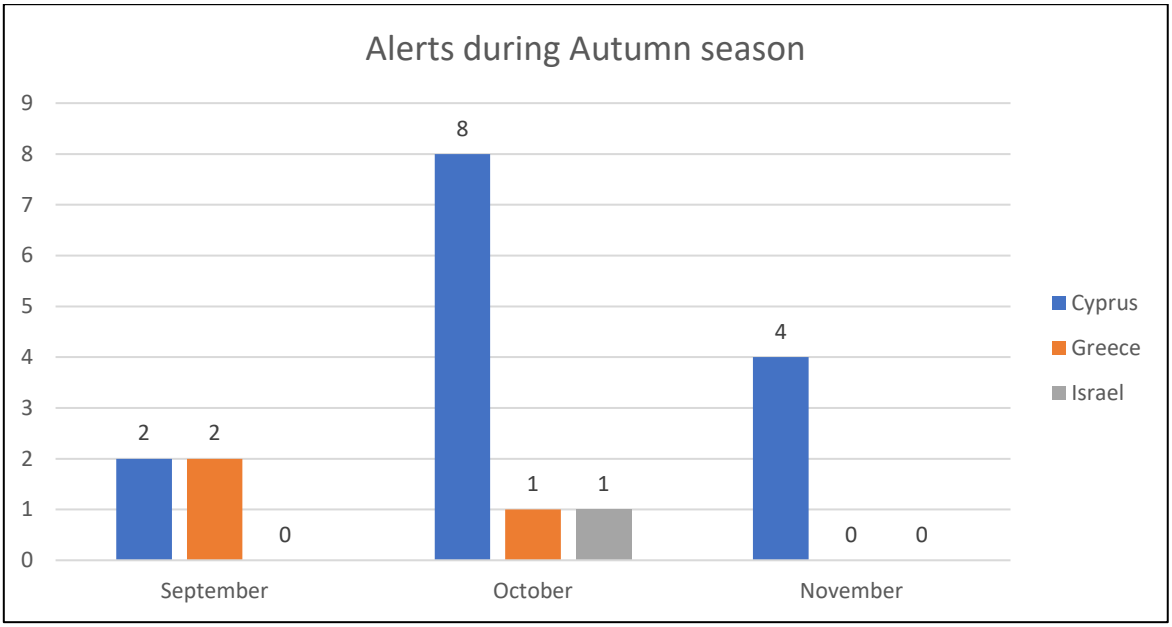

Figure 8-Alerts given in each country during Autumn season

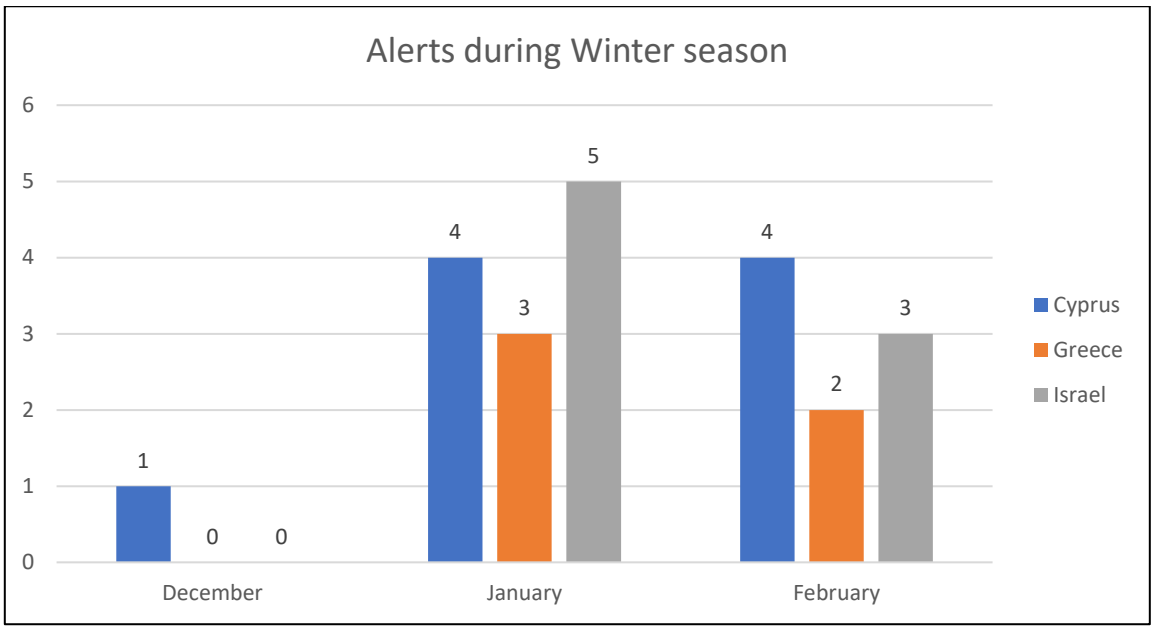

Figure 9-Alerts given in each country during Winter season

Detailed alerts per country

In this section the alerts per country are shown in a detailed format from the start to the finish of the monitoring period.

Cyprus

Country	Conditions	Intensity	Alert_start	Alert_stop
CY	b1,b2,b3	intensity4	18/10/2018 10:23	22/10/2018 7:18
CY	b1,b2,b3	intensity3	24/10/2018 11:04	25/10/2018 7:41
CY	b1,b2,b3	intensity4	3/11/2018 8:54	4/11/2018 6:53
CY	b1,b2	intensity1	14/1/2019 12:15	15/1/2019 8:25
CY	b2,b3	intensity1	24/1/2019 11:57	28/1/2019 7:00
CY	b2,b3	intensity2	26/2/2019 12:11	27/2/2019 7:21
CY	b2,b3	intensity2	9/4/2019 13:24	9/4/2019 19:15
CY	b1,b2,b3	intensity3	14/4/2019 12:33	14/4/2019 21:14
CY	b1,b3	intensity1	26/4/2019 10:35	26/4/2019 22:55
CY	b1,b2,b3	intensity2	28/4/2019 8:21	2/5/2019 11:09
CY	b2,b3	intensity1	24/5/2019 8:40	25/5/2019 8:24

CY	b1,b3	intensity2	30/5/2019 7:24	31/5/2019 8:18
CY	b1,b2	intensity2	4/6/2019 15:53	5/6/2019 7:19
CY	b2,b3	intensity2	6/10/2019 15:52	6/10/2019 19:51
CY	b1,b2	intensity1	13/10/2019 15:27	15/10/2019 19:35
CY	b2,b3	intensity2	8/11/2019 10:28	16/11/2019 18:55
CY	b1,b3	intensity2	23/11/2019 19:25	24/11/2019 19:38
CY	b2,b3	intensity3	25/11/2019 10:09	27/11/2019 7:14
CY	b1,b3	intensity1	6/2/2020 11:58	6/2/2020 16:59
CY	b1,b3	intensity1	5/3/2020 16:06	6/3/2020 14:25
CY	b1,b3	intensity1	12/3/2020 8:25	12/3/2020 14:55
CY	b1,b3	intensity2	26/3/2020 7:37	27/3/2020 7:17
CY	b1,b3	intensity1	5/4/2020 16:45	6/4/2020 19:15
CY	b1,b3	intensity1	16/5/2020 12:26	22/5/2020 14:54
CY	b2,b3	intensity1	18/9/2020 14:42	19/9/2020 7:56
CY	b1,b3	intensity1	28/9/2020 13:27	30/9/2020 20:52
CY	b1,b2,b3	intensity2	7/10/2020 9:20	10/10/2020 8:16
CY	b1,b3	intensity1	19/10/2020 13:34	20/10/2020 14:24
CY	b1,b3	intensity1	24/10/2020 16:33	25/10/2020 11:28
CY	b2,b3	intensity2	27/10/2020 9:02	28/10/2020 11:09
CY	b1,b3	intensity1	13/12/2020 8:25	15/12/2020 7:31
CY	b1,b3	intensity2	12/1/2021 7:26	12/1/2021 12:09
CY	b1,b3	intensity2	13/1/2021 10:27	14/1/2021 7:29
CY	b1,b2,b3	intensity2	3/2/2021 7:37	5/2/2021 16:37
CY	b1,b2,b3	intensity2	11/2/2021 7:41	14/2/2021 9:02

CY	b1,b2,b3	intensity2	11/3/2021 14:32	12/3/2021 7:15
CY	b1,b2,b3	intensity3	22/3/2021 8:27	24/3/2021 7:12
CY	b1,b3	intensity2	6/4/2021 13:35	8/4/2021 9:03
CY	b1,b3	intensity1	18/4/2021 9:53	20/4/2021 19:30
CY	b1,b3	intensity1	4/5/2021 9:16	6/5/2021 7:12
CY	b1,b3	intensity1	9/6/2021 11:26	9/6/2021 20:50

Greece

Country	Conditions	Intensity	Alert_start	Alert_stop
GR	b1	intensity1	23/7/2018 12:56	25/7/2018 8:56
GR	b1	intensity2	29/9/2018 10:13	30/9/2018 11:37
GR	b1	intensity2	25/1/2019 11:31	26/1/2019 16:18
GR	b1	intensity4	6/2/2019 13:03	7/2/2019 13:54
GR	b1	intensity1	24/4/2019 16:07	30/4/2019 9:54
GR	b1	intensity2	5/5/2019 19:57	6/5/2019 17:33
GR	b1	intensity1	22/5/2019 0:00	24/5/2019 11:21
GR	b1	intensity1	28/5/2019 12:16	29/5/2019 9:15
GR	b1	intensity2	4/4/2020 17:37	5/4/2020 18:33
GR	b1	intensity1	15/5/2020 22:59	21/5/2020 0:52
GR	b1	intensity1	21/5/2020 1:50	21/5/2020 14:23
GR	b1	intensity1	29/9/2020 9:10	30/9/2020 0:53
GR	b1	intensity1	5/10/2020 9:54	8/10/2020 12:54
GR	b1	intensity1	9/1/2021 13:14	11/1/2021 12:55
GR	b1	intensity1	12/1/2021 10:57	12/1/2021 18:08
GR	b1	intensity1	8/2/2021 17:03	10/2/2021 10:49

GR	b1	intensity1	21/3/2021 17:54	23/3/2021 8:24
GR	b1	intensity1	5/4/2021 0:42	5/4/2021 10:28
GR	b1	intensity1	17/4/2021 12:48	19/4/2021 10:06
GR	b1	intensity1	29/4/2021 16:48	5/5/2021 12:09

Israel

Country	Conditions	Intensity	Alert_start	Alert_stop
IL	b1	intensity2	25/10/2018 12:36	26/10/2018 10:06
IL	b1	intensity2	6/1/2019 13:45	9/1/2019 9:54
IL	b1	intensity3	13/1/2019 16:28	15/1/2019 10:52
IL	b1	intensity3	16/1/2019 13:01	17/1/2019 9:17
IL	b1	intensity2	24/1/2019 15:23	26/1/2019 7:57
IL	b1	intensity2	27/1/2019 12:23	28/1/2019 14:13
IL	b1	intensity2	5/2/2019 10:07	6/2/2019 22:40
IL	b1	intensity2	14/2/2019 15:39	16/2/2019 7:45
IL	b1	intensity2	25/2/2019 9:44	27/2/2019 9:21
IL	b1	intensity2	30/3/2019 7:39	31/3/2019 9:35
IL	b1	intensity1	7/4/2019 12:18	10/4/2019 9:23
IL	b1	intensity3	14/4/2019 9:56	14/4/2019 19:18
IL	b1	intensity1	29/4/2019 16:32	30/4/2019 0:11
IL	b1	intensity2	30/4/2019 8:54	3/5/2019 9:09
IL	b1	intensity2	6/5/2019 17:56	7/5/2019 21:12
IL	b1	intensity1	13/5/2019 9:01	13/5/2019 14:09
IL	b1	intensity1	17/5/2019 11:57	17/5/2019 15:33
IL	b1	intensity2	22/5/2019 9:31	24/5/2019 21:50

IL	b1	intensity1	31/5/2019 17:09	2/6/2019 10:33
IL	b1	intensity1	4/6/2019 12:24	5/6/2019 9:07
IL	b1	intensity2	10/6/2019 8:41	10/6/2019 11:55

Summary

The platform has been an essential part of the project as it enabled the different partners to work together in a consistent manner. The use of the platform starting with the forecast warning initiates all the steps taken in order for the participants to be informed of an SDS and take the precautionary measures. The use of the platform was done by all countries although only Cyprus kept updating it through all the periods of the project. Greece and Israel stopped updating the forecast warning from 2019 and Israel did not report any SDS alert from 2019.

The most alerts are recorded in Spring for all countries which is indeed a period of dust transport mainly from Africa.

The platform is a tool that if used can be of substantial support to the different stakeholders that take part and help patients in such initiatives.