**A Sustainable future**

As the Covid-19 has halted our daily lives and forced many countries and region into lockdown the economic effects have been devastating. With countries closing their borders traffic jams developed and supply chains were disrupted. For European agriculture closed borders are a major problem as they are heavily reliant on migrant labour for their harvest. As the lockdown continues crops remain unharvested and farmers come under pressure as does our food supply. How can we solve this crisis and make our food supply chain more sustainable.

|  |  |
| --- | --- |
| Image | Text |
| 10:00:00:00 | **TITLE: A sustainable future** |
| 10:00:10:00* Aerial: Milan, Italy during lockdown – stock footage – Videoblocks
* EXT. Empty street during lockdown, Bali, Indonesia – Stock Footage – videoblocks
* EXT. Empty galleria during lockdown, Milan, Italy – Stock Footage – Videoblocks
* Animation: Sentinel-2 360° - 2013 – ESA
* Animation: Sentinel-5P 360°- 2017 – ESA
* Satellite image Sentinel-2 Frankfurt airport during lockdown – 2020 – © contains modified Copernicus Sentinel data (2020), processed by ESA, CC BY-SA 3.0 IGO
* EXT. Closed Border crossing, Hamont, Belgium – 2020 – ESA
* Satellite image Sentinel-2 traffic jams at the border during lockdown – 2020 –© contains modified Copernicus Sentinel data (2020), processed by ESA, CC BY-SA 3.0 IGO
* EXT. Tractor plowing – Stock footage – Videoblocks
* Aerial: Busy road, the Netherlands – Stock footage – videoblocks
* INT. Industrial agricultural packing plant – stock footage - videoblocks
 | While the Covid-19 pandemic has kept people around the world confined to their houses, the impact on lives and economics are enormous. Earth observation data provided by the European Union’s Copernicus program as well as from the European Space Agency, ESA, can even see some of the effects from space. As many European countries have closed of their borders satellite data is showing how economic sectors such as agriculture and transport have been affected by the various lockdowns with great impact to our food supply chains and transportation within Europe. |
| 10:00:45:02* Interview Josef Aschbacher, ESRIN, Frascatti, Italy – April 2020 – ESA
* EXT. traffic jams – Stock Footage – videoblocks
* Satellite image Sentinel-2 traffic jams at the German border during lockdown – 2020 – © contains modified Copernicus Sentinel data (2020), processed by ESA.
* Still. Ursula von der Leyen tweet – 2020- European Commission
 | **ITW Josef Aschbacher – Director of earth observation programmes**We have recently provided some information off of traffic congestions along borders of European Union countries within Europe, not outside, but within Europe, for example, between Germany and Poland, between Austria and Italy, between the Czech Republic and Germany. //And we have monitored these traffic jams, so these queues along these borders as an indication or information on what happens in different places in Europe. Quite interesting information. In fact, we forwarded this information to the European Commission and was picked up by European Commission president, Ursula von der Leyen, who was actually in a tweet referring to this data of Copernicus, which we have produced by ESA, the European Space Agency, as one good example of how space can address the crisis in which we are right now. |
| 10:01:40:15* Satellite image Sentinel-2 traffic jams at the German border during lockdown – 2020 – © contains modified Copernicus Sentinel data (2020), processed by ESA,
* EXT. Traffic jams – stock footage – videoblocks
* Tweet + video Ursula van der Leyen – 2020 – European Commission.
* INT. Packed vegetables in supermarket – stock footage – videoblocks
* INT. vegetables in supermarket – stock footage – videoblocks
* Aerial: Strawberry field with migrant pickers – stock footage – videoblocks
* EXT. Tomato picking close up – stock footage – videoblocks (2 shots)
* Aeriel: strawberry field picking – stock footage – videoblocks
* EXT. asparagus field, Pelt, Belgium – May 2020 – ESA
* Sentinel-2 satellite image asparagus field, Pelt, Belgium – 2020 – © contains modified Copernicus Sentinel data (2019-2020), processed by ESA
 | In response to these traffic jams the European Commission installed so-called ‘green lane’ border crossings to enable swift transport within Europe. However other food supply problems arise, mostly within the agricultural industry. The agricultural industry in Europe is heavily reliant upon migrant labour. These migrants are brought in temporally to help with the harvest but with countries having closed of their borders these much needed workers cannot be used. This means farmers have no choice but not to replant or even let crops go unharvested. Once more the effects which are even visible from orbit and by comparing with satellite data from other years the impact can be estimated.  |
| 10:02:28:10* Interview Josef Aschbacher, ESRIN, Frascatti, Italy – April 2020 – ESA
 | **ITW Josef Aschbacher – Director of Earth Observation Programmes**In several countries. You are at the moment harvesting asparagus and asparagus harvest needs a lot of for our workforce, typically from eastern European countries, Romania, Bulgaria. But because the borders are closed, they cannot travel or there. So restrictions on travel and therefore some farmers have a problem in harvesting their asparagus. It may sound a bit trivial, but this is a real problem for the farming community. And what we can see from space is whether the fields are being harvested or not and what the state of harvest is. But it's later or at the same time as usual, and whether some farmers have decided simply not to, to plant or because of the current situation, in which we are. So there are many of these parameters where we can use satellites to really see what is going on and how this Covid crisis can affect daily life, daily life of people, but also of the economy.. |
| 10:03:23:19* EXT. asparagus field, Pelt, Belgium – May 2020 – ESA (3shots)
* Sentinel-2 satellite image illustrating drought – 2019 – © contains modified Copernicus Sentinel data, processed by ESA,
* EXT. cracked dry soil and corn plants – stock footage – videoblocks
* Aerial: dry corn field – stock footage – videoblocks
* EXT. Cabbage field and pickers – stock footage – videoblocks
* INT. vegetables in supermarket – stock footage – videoblocks
* Animation: Sentinel-1 orbiting the globe – unknown date – ESA
* Animation: Sentinel-2 fly by – 2013 – ESA
 | While these events could create a shortage of fresh produce or even scarcity driving up prices for consumers, the impact on agriculture and on farmers is devastating. As satellite imagery shows in past years the industry has been already ravished by droughts and now once more the harvest and planting of produce is compromised. As we further prepare for the world of tomorrow we need to look at our planet and see how we can sustain and diversify the food supply for all people on this planet. Here ESA and the earth observation programmes could once more play a pivotal role taking the pulse of our planet. |
| **10:04:05:24** | **B-ROLL** |
| 10:04:05:24* Interview Josef Aschbacher, ESRIN, Frascatti, Italy – April 2020 – ESA
 | **ITW Josef Aschbacher – Director of Earth Observation Programmes – English**But there are many other examples of how we use our satellites to monitor the crisis. In fact, what is quite interesting is that of course you can pick up from space economic activity. For example, when you are observing the number of cars in hospitals or at airports or at train stations, so are other areas where normally there's a lot of traffic, a lot of activity and you see a reduction from our satellites. Then, of course, this is a very important indicator of what's going on, what's happening to the economy and how this impacts our daily life. But also other examples are quite important for it. We have recently provided some information off of traffic congestions along borders of European Union countries within Europe, not outside, but within Europe, for example, between Germany and Poland, between Austria and Italy, between the Czech Republic and Germany. There have been traffic jams because national nations have been locking down their countries and they have not allowed countries have not allowed cars and trucks to come in and out from these countries so therefore you have huge traffic jams. And we have monitored these traffic jams, so these queues along these borders as an indication or information on what happens in different places in Europe. Quite interesting information. In fact, we forwarded this information to the European Commission and was picked up by European Commission president, Ursula von der Leyen, who was actually in a tweet referring to this data of Copernicus, which we have produced by ESA, the European Space Agency, as one good example of how space can address the crisis in which we are right now. |
| 10:06:00:24 | Another example are in agriculture, for example, in several countries. You are at the moment harvesting asparagus and asparagus harvest needs a lot of for our workforce, typically from eastern European countries. Romania, Bulgary got here, but because the borders are closed, they cannot travel or there. So restrictions on travel and therefore some farmers have a problem in harvesting their asparagus. It may sound a bit trivial, but this is a real problem for the farming community. And what we can see from space is whether the fields are being harvested or not and what the state of harvest is. But it's later or at the same time as usual, and whether some farmers have decided simply not to, to plant or because of the current situation, in which we are. So there are many of these parameters where we can use satellites to really see what is going on and how this Covid crisis can affect daily life, daily life of people, but also of the economy. And this is particularly important, especially for the economy. What is, what is very important is that when we come out of the crisis, that we also see the pickup again of the economic life and not only the rundown, which is one information that is important, but the more important information is to see, the pick up again. And obviously again, we can see this on airports and train stations and on the roads, on the borders. So, again, on agriculture, what the situation is and how this pickup is taking place and how fast and how strong this pickup is done. The economic pickup in different countries. |
| 10:07:38:23 | There's one more important part, which should not be neglected, is how the stimulus of the economy, which will happen after the corona crisis is over or is at least mitigated to a large extent. All the nations are putting a lot of money into the economy. And one important aspect is how this money is being used with regards to the environment. There are some scientists and people from the community quite concerned that after the pickup or after the crisis is over and the economic recovery is starting through the stimulus packages, that the climate will be damaged and pollution will increase a lot again. And I think there it is very important that we are using this momentum. But also the situation seeing clear skies today and hearing the birds outside our windows that we realised how important it is to preserve our planet, our nature, and therefore do the investments of the stimulus package in a way that they are sustainable and they are still in line in harmony with our planet. one way or another. |
| 10:08:50:03 | So the the covid crisis is leading to a lockdown of many parts of daily life for factories or for a traffic, aeroplanes, where everything is resting on ground. The question is, does this affect our delivery of data from our satellites? So first of all, the satellites are flying in space and they are still taking images and observations as they would do otherwise. But ESA has put in place a mechanism to ensure what we call critical tasks, that they are continued despite the lockdowns which we're having |
| 10:09:26:09 | These establishments, we're here in ESRIN in Frascatti, are mostly empty because people are teleworking. But there are few people on site. Who are needed to make sure that our data flow is guaranteed. The same applies in ESOC, for example, in Darmstadt where our operations centre is. Again there are a few key people onsite to ensure that the satellites are not colliding with each other. That instruments that may need to be switched on and off that this is all happening. So these people are doing a very critically job and they will need to be onsite. Also overall on ESA level 95 to 97 percent of all the ESA workforce is teleworking and therefore not on site. But we have this critical activity ongoing onsite as required because we have a responsibility for our people, our satellite data, the Copernicus data, but also the other Earth Explorer data, for example. They are essential to people's life because they need to know what is the state of the environment in case of crisis. You need to know how to respond. Farmers need to understand how their fields are growing and how we can, how they need to fertilize the fields. Marine transport needs to still be sure not to hit an iceberg while still bringing goods from one region of the world to another one and therefore need information based on satellites. Obviously, weather forecasting still relies on satellite data even more today than outside the crisis because some other measurements are being reduced. So satellites are essential for people's life. So therefore, I have ensured on my side that we are delivering data as if there would be no crisis at the moment. So therefore, I am quite happy to say that the flow of data it continues and has not been interrupted. |
| 10:11:22:23 | And this is good news because they are essential data for our economy, for our people, for the environment, for our planet. So we have continuously delivered this data. There has been only a very, very tiny reduction in the use of these data because we deliver nominally and all the data provided to the community as in other times, as in normal times outside the crisis. However, on the other side, people are receiving the data. I've seen a very small reduction of those volumes by about 5 percent to 7 percent, which is not drastic. But it also shows that the user community, even if there is lockdowns are still downloading our data and are still using them because they need them and because they are essential for their daily life and for their measurements. So in simple words, we deliver, we are committed to deliver. We have ensured that we are doing the necessary as ESA in order to provide this data to the community. And we can do that despite teleworking, despite everyone being at home, being connected to our system, ESA is operational, despite the crisis.  |
| 10:12:31:00* Tweet + video Ursula von der Leyen – 2020 – European Commission
 | **Ursula von der Leyen****President of the European Commission****video press releases + tweets****March 2020****European Commission** |
| 10:17:24:18* Sentinel-2 satellite images – 2020 – © contains modified Copernicus Sentinel data, processed by ESA
 | **Sentinel Satellite images + timelapse** |
| 10:19:33:17* EXT. asparagus field, Pelt, Belgium – May 2020 – ESA (13shots)
 | **GV’s asparagus field****Pelt, Belgium****May 2020****ESA** |
| 10:21:25:22* Animation. Sentinel-2 – 2013 – ESA
 | **Sentinel-2 in orbit****Animation****ESA** |
| **10:24:01:15** | **ESA OUTRO** |
| **10:24:11:05** | **END OF PROGRAMME** |