Topic 4c - Conflict zones, refugees and migration

Our ability to capture very high-resolution image data very rapidly in near real time from constellations to satellites such as this one here recorded by Planet Labs is changing the way that we're able to look at and respond and react to humanitarian disasters. So this is a very striking image of the border between Turkey and Syria showing in this part of the image cars that have been left here by refugees trying to cross the border.

And this shows in the early stages of what was going on here, the movements of people and refugees fleeing from Syria to Turkey. It shows an organised system of parking that's been going on here. But the situation obviously deteriorated very rapidly. And in a few weeks, people's abandoned cars went from being parked quite regularly to this situation. Where people just turned up at the border and left their cars. They weren't worried about coming back. And we can see that in the kind of higgledy piggledy way in which the cars are arranged.

Down here we know that there are minefields. This whole area along this border is mines. So in a way, this image captures some of the chaos that's going on on the ground in a humanitarian disaster of this kind of magnitude. And our ability to capture images in this level of detail in a kind of, as I say, near real time day by day, week by week is a very, very powerful way even though it's not quantitative, it's pretty much purely qualitative. It's a very powerful way of getting this message across to people.

Not just to the general public, to the press, to politicians, people who are negotiating and trying to solve these problems, NGOs, this shows what is happening. So these are images that are illustrating what is going on day by day. These are images that are irrefutable. They provide evidence that people can use to bolster the case for action. And that's one of the very, very important aspect that we have from again as I say qualitative elements of remote sensing. We're not trying to necessarily measure things from this.

But what we're showing is a rapidly developing situation where response is needed sooner rather than later. And so convincing people about what is going on requires the power of this kind of imagery. These kind of very high resolution satellite images that are captured in near real time on a day by day almost hourly basis, these are making us aware of situations, humanitarian situations, humanitarian disasters that can be environmental, they can be man-made, they can be the result of conflict. In this case, this is very much an example of what's happening in a conflict region.

They can bring these things home to us very quickly and very directly.

There are multiple drivers that cause people to migrate. And where there is either internal displacement within the country or externally to another country. And understanding these dynamics is extremely important. And satellite data with it's increased resolution would possibly be able to get images that are able to capture large scale movements, particularly to refugee camps. This kind of information supplemented with other ground data and information can help us to understand this issue better.

And this is extremely important in the context of the bank. Whereas a development institution, we are ultimately trying to make a difference to the livelihoods of the poor who are often disenfranchised and forced into displacement. So we think that there are very exciting opportunities out there that we

would like to work with this community to see how we can bring that information to triangulate with other sources of information.

For things like conflict situations and humanitarian support, they tend to go on for usually a lot longer. So a natural disaster activation maybe two to three weeks or something like that. Whereas Syria has been going on for years. South Sudan has been going on for years, et cetera, et cetera. And so we fall into kind of a different pattern with those.

We're usually responding to requests at a much more local level where they want us to look at like an individual refugee camp in individual camp for other displaced persons. It's a smaller analysis, but you get many more request to actually work on.

We do support the Office of the Special Envoy here in Geneva. So that's the lead UN negotiator working on Syria on behalf of the Secretary General. We also support the High Commissioner for Refugees, The Office for the Coordinator for Humanitarian Affairs, UNICEF, and then kind of some of the NGOs that come along with that.

For something like Syria we're working always kind of on multiple things in multiple areas with different partners. So we are in our fourth year of doing a Syrian damage assessment on major Syrian cities. So right now we're doing a very detailed damage assessment on Aleppo and Homs. And we've recently done damage assessments on multiple other cities.

This is a visual analysis process where an analyst looks at imagery of these cities and basically is determining the status of each individual building in that city and marketing the ones that are destroyed or damaged or moderately damaged. If we're doing things on Aleppo right now, I know we're looking at imagery from two days ago for that. And I have no doubt that another image of Alepoo will be collected probably today or tomorrow. And we can use that.

So for some of our analysis, we're using imagery basically the same day it's collected. Within a couple hours of the image getting acquired, we then have access to it and will make use of it. Something like the Aleppo analysis will take about three weeks for us to completely finish and do all the quality control and stuff like that. So by the time the analysis is done, the image might be slightly old. But we're also using that imagery to identify the overall damage trends in the city. We're not necessarily looking at it to determine what's going on there right now.

Several days ago, a humanitarian convoy outside of Aleppo was destroyed. We had an image of that event basically the same day that the event occurred. We were doing the analysis about I think eight hours after the air strike occurred. So we're able to respond to some of these things extremely quickly. How fast we can respond is a kind of a function of different factors. International interest in something means that the satellite providers will essentially acquire imagery.

If we're looking at a much more remote area, and we're the only ones may be interested in it, it can be a slower process or more expensive. But, for example, through Airbus, we can task their satellite anywhere by tomorrow morning if we need to. So that rapid response capability is definitely here now. That's what you see when you get more and more satellites in operation.

When I was doing this work 10 or 12 years ago, you know you'd be really excited if your image was less than a year old or something like that. The idea of using an image acquired on the same day was very, very rare for that actually to happen. In other situations, so for example there's displaced persons

along the border of Syria and Jordan. And we will actively purchase satellite time to acquire those at specified intervals.

And that's not a problem for us to do. It's the main constraints or something like that or simply budgetary. Because it's about $5,000 or $6,000 if you want to acquire an image you know that quickly for certain locations.

The sorts of details and issues that we're looking at for refugee and IDP, which are Internally Displaced Persons, the things that we're doing it, it'll differ depending on the situation. One of our biggest refugee camp projects over the last several years has been the Zaatari refugee camp in Jordan. We've analysed this place probably 27 times in the last 4 and 1/2 years I think.

We were originally requested by UN partners to do an analysis on Zaatari every two weeks. And this was probably three years ago. The situation at that time was when people were really fleeing southern Syria in large numbers. And about 5,000 people a day were being brought to this Zaatari refugee camp. Everyone's resources down there were basically overwhelmed. It was all they could do to receive these people, get some basic information, give them a shelter, and then put them in the camp area.

You can probably understand what a chaotic situation that was for anyone who had to be involved in it to support the refugees and also from a management perspective, the camp very quickly grew beyond what could be seen in one glance from the ground. And so in that situation, what we were doing was updating the basic base map and the shelter count for that camp. And we were doing it every two weeks because the camp was changing so much.

So in that situation, what we're doing is we're visually analysing an image, and we're essentially counting all the structures and marking all the structures that we see in the image. After I guess about six months or nine months of that, we did slow down the analysis. We didn't have to do it every two weeks. Instead, we could start doing it every three months and then every six months. And then in other situations where access is a problem, we're often looking in areas just to see if anybody's there.

So for example, in large areas of Syria, we're often scanning thousands of square kilometres to make maps of where displaced persons are within that area. Same thing with places like South Sudan. We may not always release that information publicly, we'll share it with our UN partners because a lot of those displaced persons are under severe threat to various bad things. So we don't just post our shape files and our maps of that information to our website.

We also do a fair amount of work on camp planning. So if a new camp is going to be created, we will do land cover extractions to make a land cover map of the region. We may also do elevation work and then from that, we will do hydrological modelling to figure out the flood risk of different parts of the settlement area.

All UN missions are going to have very heavy components that are all NGOs. So for example the refugee camps in Jordan, a lot of the day to day activities and the management of like water and sanitation, and housing, and stuff like that are done by NGOs under the umbrella of a UN office.

Once we get to know the community then it maybe the NGO that request things directly. We will give UN requesters a priority. But there's an awful lot of mix in who the UN is versus an NGO is in some situations. So we will be flexible about that. There's not really a heavy protocol to who can request our involvement. We do try and be open. We try and be flexible. The main thing is can we provide a

valuable humanitarian input or disaster response input. Can we actually do something useful with our imagery and our time?

There are, of course, a lot of requests that we just can't do anything about because they're just too massive or too undefined. And so it's not anything we can make an impact on. We do try and focus on emergency and crisis situations. The longer term territorial development we do do some of that work, but it's not part of our emergency portfolio. We will engage with other parts of the UN, with governments, and basically design and fund projects that achieve some goal. But that's not necessarily part of our emergency response work.