

Patrick Fine: Welcome. This is a *Deeper Look* Podcast. I'm Patrick Fine, CEO of FHI 360 and I'm happy to welcome back all of our returning listeners and any new listeners. I want to encourage everybody to subscribe to this podcast on Soundcloud, iTunes, or wherever you get your podcasts and please leave a review.

I'd really like to hear from you, I'd like to hear what topics you think we need to address on the podcast. As you know, this year, we're taking a deeper look at humanitarian crises and emergency response and in this episode, we're going to explore how technology can play a role in emergency response.

I'm delighted to speak with Hend Alhinnawi, co-founder and CEO of Humanitarian Tracker. Hend, welcome to the podcast.

Hend Alhinnawi: Thank you very much, Patrick.

Patrick Fine: Hend is co-founder of Humanitarian Tracker, a forum that connects and empowers citizens using technology to support emergency response in humanitarian crises. In 2016, Humanitarian Tracker was selected as a top global innovation for addressing the global goals — the Sustainable Development Goals — and showcased at the Solutions Summit hosted by the United Nations. Previously, Hend spent nearly five years working in the Middle East and Africa supporting the work of the World Health Organization and the World Food Program, where she led fundraising initiatives for programs relating to education, women's rights, refugees and underserved communities. Before that, Hend worked with AMIDEAST, a nonprofit designed to promote cultural understanding between the U.S. and the Middle East. And I've seen that you've also worked on education in the U.S.

In addition to her current role at Humanitarian Tracker, in 2013, Hend also co-founded Kass-Hout Consulting, a woman-owned small business providing scientific and technical consulting service.

So that's a little bit about Hend. Hend, tell us about Humanitarian Tracker. What does it do and what led you to set it up?

Hend Alhinnawi: So, early in my career, I had the pleasure of working in the field, the UN field, and seeing ordinary people doing extraordinary things. So, when I came back with the United States, and my background is international development and public diplomacy, I

started to piece together, what is the best way to empower citizens. How do you really empower them? Do you give them a cell phone? Do you give them an education? What is real empowerment? And I felt like it has to be a combination of different things.

Patrick Fine: When I was a young community development worker, I also pretty quickly came to that question because I saw a lot of the work I was doing was not empowering people. And in fact, I thought it was wasting their time.

So, I started questioning, what activities will actually empower people? And I came up with a definition. It took me a while to get to it, but my definition was: empowering people was giving them greater control over their environment.

Hend Alhinnawi: 100 percent. Over their own destiny.

Patrick Fine: Yes.

Hend Alhinnawi: So, it was the beginning of the Syria crisis and we had been doing some work in health, separate projects, like in health and in development. And I thought, "Okay, what if we brought these tools that we're using and created a larger organization that we can then use for conflict and then share it with the community. They can also use it for their own projects."

Humanitarian Tracker is unique in that it combines crowdsourced information with data mining and machine learning for humanitarian causes, and that had never been done before.

Patrick Fine: Okay. So, I'd like to unpack all three of those. Crowdsourcing, data mining, and machine learning.

Hend Alhinnawi: Okay. So, crowdsourced information. When emergencies happen on the ground where there's a conflict, when there's a disaster, the communities on the ground have the most information on what's going on, so engaging with them early on right before a crisis and through the development part of it is crucial because they know the information. So, how do you give that? How do you give them a platform to do that?

So, the first thing is when the conflict happened, no one had any idea what was happening inside the country. Official state media was saying nothing was happening. International media was not

allowed in, but you knew there was something. So, Syria Tracker then came to life, and it's the flagship project of Humanitarian Tracker. And what it did was it allowed people on the ground to report what is happening to and around them. So, with a cell phone, access to a cell phone, which is predominant in Syria –

Patrick Fine: Is it a smart phone?

Hend Alhinnawi: A regular phone would do, as long as they have connection to internet, so then to upload whatever it is that they have. So, they can submit a report through our Twitter, through the Syria Tracker website or to our email, Humanitarian Tracker email.

Patrick Fine: What about SMS?

Hend Alhinnawi: No. We do not do SMS because they're easily tracked.

And so, we actually offer a tutorial. It was a homemade kind of tutorial, but it was very efficient in teaching people how to protect themselves.

Patrick Fine: And how did you deliver that tutorial?

Hend Alhinnawi: So, we actually use networks on the ground. We had word of mouth. We told a few people about it because we wanted intentionally to stay under the radar. We didn't want people to know about us. We wanted to give a chance for it to disseminate, people to have a chance to report what's happening before we were attacked or blocked or they started searching for people that were doing it, so we used word of mouth. Actually, the first few weeks we started it, we got barely one or two reports.

Patrick Fine: And that was in 2011?

Hend Alhinnawi: It was a few weeks after the conflict broke out.

Hend Alhinnawi: Right in the Arab Spring.

Patrick Fine: That was at the point when there were demonstrations and protests but it hadn't yet got to the point of the civil war that we've witnessed over the last four years.

Hend Alhinnawi: Yes. It was at the beginning stages. We were just eager and hungry to know what was happening.

Crowdsourced usually is for a short period of time. For example, after Hurricane Sandy, after major events, they're not meant to be long term. So, when we created Syria Tracker, we weren't sure. Are we going to get any reports? Are we going to get a few reports? And the first few weeks, we actually got very few reports.

We thought, "Okay. Should we close shop and move on?" and then slowly that number increased and we're like, "Okay. We might have something here." And then we went from two reports to five reports to ten reports to 40 reports to a flood of reports of people eager to share what is happening to and around them. And as the conflict progressed, people got smarter about how to share information. Say I'm reporting about something in the city, in Damascus, they would stand where there's a monument where you could see the actual location or they would — if you wanted to know the date, they would show you today's newspaper.

They're sending photos, they're sending videos, they're sending testimonials. They're sending me their blood type. They're sending me their name and their cell phone and their Skype and an abundant information because they want to be heard. They want the world to know what's happening to and around them.

Patrick Fine: How many participants were using the platform or how many participants use it now?

Hend Alhinnawi: To date, we're about 200,000 crowdsourced reports from the ground.

Patrick Fine: Wow.

Hend Alhinnawi: Of which, we only publish about six percent. We are very, very, very careful about two things: protecting the identity of the person who is submitting a report. We want to make sure they're safe. We want to make sure they understand the risks, that your life is more important than any report you will ever submit so I want you to make sure you're protected and you're able to encrypt your identity. So, we do encourage anonymous reporting. We don't want to have this back and forth communication because they're more likely to get caught in that way.

The second thing is we don't want to inflate numbers. We don't want to duplicate things. We don't want to put something out

there that we're not 100 percent sure of. So, we only publish about 6 percent and verifying is the most difficult part of our job.

Patrick Fine: How do you do that?

Hend Alhinnawi: Well, there are a number of ways to do that. So, our platform was adopted from another field. My co-founder is Dr. Taha Kass-Hout, a pioneer in the field of epidemiology. He was able to take data from informal sources when they were tracking flu and what not and apply it and make it a viable source for people to understand what's happening in health.

Patrick Fine: Right.

Hend Alhinnawi: So, we took that and we applied it to disasters.

Patrick Fine: Right. So, using the epidemiological approach, and applying it to understanding behavior during humanitarian crisis or events in humanitarian crisis.

Hend Alhinnawi: Events and how to track them and how to detect fake news. One of the most powerful ways that we were able to verify is corroboration. So, we've corroborated with other sources, official sources that are on the ground. And, say we got one report and we didn't hear anything else. During the machine learning and the data mining and you picking up from other sources from the web, whether it's blog or Facebook or social media and we haven't heard anything. So, we know that's most likely not true.

Patrick Fine: Right.

Hend Alhinnawi: But if we got five, six, ten reports from the same or nearby areas saying similar things and somebody on the ground said, "Yes. This is really happening," then we know this is a real report.

Patrick Fine: So what kind of stories have you uncovered through your platform?

Hend Alhinnawi: So, when we started Syria Tracker, we said, "We want them to tell us what's happening." So, all the categories we have were actually dictated from the reports we got. We didn't just create a category and then say, "Okay. This goes here." So, we've covered everything from health to disease outbreak, to refugee needs, development needs, human rights violations, which tends to be our biggest category.

We also were a nonpartisan effort so we don't take sides. We're nonreligious, nonpartisan so we actually receive reports from both sides. So, we were one of the first to report on revenge rape happening from the Free Syria Army, which was clearly unpopular but a crime is a crime no matter who committed it.

Patrick Fine: Right. Right.

Hend Alhinnawi: And it's our responsibility if it's verified to say, "Hey, this is happening."

Patrick Fine: Right.

Hend Alhinnawi: So, we don't take sides in the conflict. We let the data kind of do the talking.

Patrick Fine: One of the things you've talked about is how you cross check or validate crowdsourced information against other sources including official sources. Can you say a little bit about that? For example, major sources of community-level information are household surveys. Is that the kind of official source you use?

Hend Alhinnawi: It could be one of them but it also could be organizations that are working on the ground in that specific domain. It could be UNICEF. It could be a local NGO. It could be a local NGO plus government data that has been around.

Patrick Fine: Do you find it hard to get ahold of those other sources?

Hend Alhinnawi: People in those — in the conflict zones, nine out of ten will want to share what is happening, whether it's NGOs, whether it's people. They want you to know. And in fact, there was a period of internet outage in Syria. And we were still getting reports. People had recorded and taken pictures and just saved them waiting for internet to come back so they can submit it. I know here, we kind of have the opposite problem. People don't want to share information. They want to keep it to themselves. In conflict zones or in areas where people really want to be heard, organizations want to show you what they're doing, share their methods with you, share how they've impacted lives, people are more likely to share information.

Patrick Fine: So, is it fair to say that everybody in Syria knows about Syria Tracker?

Hend Alhinnawi: We've gotten reports from every single city across men, women, elderly, young adults. So, I would say it's known. I don't know. I mean, we'd have to go to Syria and ask.

Patrick Fine: Do you ever prompt people with questions? And have people to respond to questions as opposed to you responding to their input?

Hend Alhinnawi: So, we do that with organizations that are trying to collect data to fill in gaps. We create like a one pulse —

Patrick Fine: Small survey.

Hend Alhinnawi: It's like a pulse survey. Just a one question that could help you understand whatever it is they're trying to answer. But we don't go out and try to collect on a specific topic. Whatever we get, we will verify and keep.

Patrick Fine: And what's the machine learning and data mining aspect?

Hend Alhinnawi: So, we've mined over 80 million tweets and over 2,000 social media sources. That tells you different things. The point of the crowdsource is just one piece of it. When you combine it with these other layers, the goal is to give a holistic view of the conflict. So, we don't want to just give you one side, which is the crowdsource. We want to make sure we have formal sources as well. Opinions, real things that are happening, to layer on top so that the individual has a holistic view.

Patrick Fine: How does machine learning work?

Hend Alhinnawi: So, we trained, essentially, the algorithm to detect certain keywords

Patrick Fine: And patterns.

Hend Alhinnawi: And patterns that would help us create that picture.

Patrick Fine: I see. Would you say that Humanitarian Tracker or Syria Tracker is now institutionalized within the organizations that are working in Syria? Do either UN agencies or NGOs or others, the Free Syria Army or the government of Syria, are they using your information to understand what's happening where?

Hend Alhinnawi: Yeah. So, actually we get hits from all over the world. Actually, at the beginning of the conflict, the people inside Syria were using Syria Tracker the most because they wanted to know what was happening around them.

Patrick Fine: Right.

Hend Alhinnawi: So, they wanted to know, hey, is the neighboring village being attacked? They're looking for missing loved ones. They wanted to know if somebody had been killed.

So, the people inside Syria were the biggest consumers of Syria Tracker but governments use it to understand what's going on. NGOs use it to see things they care about, whether it's health, whether it's refugee information, whether it's relief information, media. We created a dashboard to make it easier for people that are not data savvy to track information. So, putting the dates that they want to know about, where in Syria, and what does it mean.

So, no, we don't want to just count numbers because what is that? 100,000 people killed. But what does it actually mean? So, creating insights from the data. So, if you had, for example, 50 people killed in this one area, but what does that actually mean in that region?

Well, according to historical events, according to the UN, that's a massacre.

Patrick Fine: Right.

Hend Alhinnawi: We had reported on over 27 massacres that were missed by mainstream media because we were not looking just at the numbers of people being killed.

So deriving insights and that's actually something we help organizations with. We want to take these tools and take them to other organizations and to people working on the ground and say, "Listen. It's nice to collect data but it's also important to see what is it telling you? What it's trying to tell you? Is it telling you that all of you are working in this one area but two miles down, there's a dire need and no one knows about it because you're not sharing information, you're not collecting information in a way where you're filling in the gaps, and that's also very important. So, to utilize resources in the most efficient way to make sure the data you're collecting is the data you want.

Patrick Fine: And then the website that Syria Tracker has, that has dashboards and maps and other tools for visualizing not only the data but the insights that the data is revealing. Is that right?

Hend Alhinnawi: Yes. So, what does it mean? For example, there's a polio vaccine. And the organization that had carried out the polio campaign say it successfully had vaccinated everybody in this one region. And then we were working with an organization on the ground and we analyzed their data and we found a gap of like 20,000 kids that weren't vaccinated.

Patrick Fine: Was that missing villages or missing geographic areas or was it missing community groups like different subgroups within the community?

Hend Alhinnawi: It was regime-held areas versus non-regime-held areas. And so, the non-regime-held areas were missing vaccinations.

Patrick Fine: Right.

Hend Alhinnawi: And so, they actually went back and re-vaccinated those kids.

Patrick Fine: Great example of the positive outcome as a result of having up to date, accurate information that was generated on a crowdsource basis.

Hend Alhinnawi: Yes. So, I'll give you another one. Last year, Professor Steven Livingston from Harvard reached out to us and said, "I'm working with a group to try to rescue 150 people that were trapped in Eastern Aleppo. They're trying to find them an evacuation route." And so, he said, "Do you have any information?"

And they were monitoring live satellite images. But there was delay – So we went back, we looked at our data and surely, we had received a few reports from the area they were interested in and we spoke to somebody on the ground and we made the recommendation that actually the safest thing for those people to do was to stay exactly where they were because there was no safe evacuation route existent at that time.

Patrick Fine: That's what people on the ground were telling you through the tracker?

Hend Alhinnawi: They were telling us about checkpoints where if they had gone through, they would have been arrested, detained, or whatever.

Patrick Fine: How many people does it take to do the kind of analysis on a ... I guess you're doing it on a daily basis, at Humanitarian Tracker?

Hend Alhinnawi: We're actually a very small group. Small but mighty is the way that I would describe it. So, we're a volunteer-based organization and we did so by design, especially at the early stages, because we were dealing with very sensitive information and we didn't want to be seen as a mouthpiece for any one government or donor or organization. I can't tell you how many times we get the question of, "Who funds you? Are you working for the CIA?" "Actually, you know what? We're not accepting funding. We're a volunteer-based organization," and people are like, "Oh, okay." But had we initially accepted the funding from the beginning, it would have been — people wouldn't have found our data reliable or credible. It was have tainted it in some way.

Patrick Fine: Yeah. It would have hurt your legitimacy.

Hend Alhinnawi: Yeah. And because people were literally risking their life to do it, it just wasn't worth it for us.

Patrick Fine: Right.

Hend Alhinnawi: So, we are probably about 20.

Patrick Fine: 20 volunteers.

Hend Alhinnawi: 20 volunteers that are very active and we're global.

So, we have volunteers in Europe. We have volunteers in the Middle East. We have volunteers in the United States. We will work with anybody that comes to us because we feel like everybody has a specific or special skillset to offer. So, some people come to us and they want to do translation. That's what they're good at and so we find a way to work with them. Some people want to do a data analysis. We work with them. So, we try to work with everybody that has an interest in helping the global community.

Patrick Fine: So, if any of our listeners want to work with Humanitarian Tracker, now is their chance to get in touch with Hend through your website.

Hend Alhinnawi: Yes.

Patrick Fine: Is it www.humanitariantracker.org?

Hend Alhinnawi: Or just email me directly, hend@humanitariantracker.org. We're all about ordinary people doing extraordinary things and empowering citizens not just to give them a voice but to give them a voice in their own development, in their own peace and security, in their own relief, in their own future. So, their voices are at the table. How powerful is it that voices from the ground, through crowdsourced reports that were verified made it into U.S. State Department reports, into USAID reports, into UN and OCHA reports, into mainstream media reports? That's really powerful.

This is exactly what we've been set up for. Ordinary people doing extraordinary things.

Patrick Fine: Yeah. And it's a good example of technology being an enabler because the truth is that most development organizations truly do want to be responsive to the people who are affected by their programs or to the people that they see as their partners. And often, especially if we're talking about the community level, the grassroots level, no matter how much you want to understand that perspective, it can be difficult to have access to that perspective and especially in a crisis or conflict situation. So, this sounds like a good example of where technology is acting as a connector, a communication channel, for people who are affected by the events around them to communicate with larger organizations that have some role to play.

Hend Alhinnawi: And part of the innovation isn't that we created something shiny and new. Part of the innovation is that we took things that were already in existence, repackaged them, repurposed them for humanitarian causes. The second thing is, when we talk to large organizations or small organizations, most of them want to know, "Is the work that I'm doing impactful?"

Patrick Fine: Right.

Hend Alhinnawi: What are the numbers? How should we collect information? How to organize data, how to derive insights, how to share information. I think one of the things that we could do better as a global community is the sharing of information.

Patrick Fine: I couldn't agree more. We refer to it at FHI 360 as knowledge exchange.

Hend Alhinnawi: Yes.

Patrick Fine: And it has to do with taking information and translating it into knowledge that you can then use and it is devilishly difficult to do.

Hend Alhinnawi: I try to put myself in people's shoes and say, "What would be a reason why I wouldn't share data?" And you know, they're actually really quite simple. Sometimes, people just don't know the benefits or they're overworked and they don't have the time or they don't have the energy to say, "Okay. This is one more thing." Or they don't see the benefits, they say, "What is it going to do?" And actually, if you think about it, as an organization, it makes you stronger. First of all, you become a leader. Say, "This is what I'm doing and these are the people I'm helping. This is where I'm doing it. And if you have an organization that does the same, okay, now we've created a map of your work and my work and we can see, 'Oh. You're working in this area. I'm working in this area,' but there's, you know, maybe some overlap."

And these things can all be used to better allocate resources, to share information, and especially in crisis situations where something happens and you need information right now.

Patrick Fine: Right.

Hend Alhinnawi: If you don't have the mechanisms that are already in place, you kind of have to start from scratch or open up something, create something, where people on the ground can then share information. But how wonderful would it be if that information was kind of already there? You already had an infrastructure that you can build on.

So we work with organizations to help them, one, understand what they have, to identify gaps. So, we worked with an organization that wanted to know how many kids successfully went to school in Lebanon. But they didn't really have that data. They had how many kids were in the house, how many kids didn't go to school, but didn't have why didn't they go to school. So, we created a really simple questionnaire, a five-question survey that they could ask and then they uncovered all these

things about what were the implications. So, for example, bullying was a big reason why kids didn't go to school. Like, bullying wasn't something that was on their radar but it was actually a huge problem. Just getting that insight could help them better plan, better prepare or create different environment for these kids to be encouraged to attend school.

Patrick Fine: Sure.

Hend Alhinnawi: The feeling I get is that organizations are afraid. They feel naked when they share their data because then we can say, "Hey, you're kind of off."

Patrick Fine: We've done community surveys and what we've found is that the community is not happy at all with what the organization is doing.

Hend Alhinnawi: Yes.

Patrick Fine: And the organization is so well meaning and so committed. Then you present this data that is completely different than their self-images. So, it conflicts with what they believe.

Hend Alhinnawi: Yes. USAID was funding these wells. I think it was in Afghanistan.

Patrick Fine: In Afghanistan?

Hend Alhinnawi: Yes.

Patrick Fine: Yeah, I know those wells.

Hend Alhinnawi: They would fund them. They would build them and then they would come back and they would be destroyed. Turns out after, further investigation was the women were destroying the wells. Why? Because actually for them to walk and get water was a way for them to interact socially with other groups in other villages.

Patrick Fine: It's a great illustration of the importance of doing social analytics, gender and social analysis so you can understand what are the consequences of well-intentioned acts.

Hend Alhinnawi: Yeah.

Hend Alhinnawi: Understanding the information, how to collect it, deriving the insights from it, and then creating something sustainable. We're

interested in long-term, mutually beneficial relationships that help our global communities that really empower citizens to push themselves forward, because that's the only way that development works if it's a bottom-up approach.

Patrick Fine: I completely agree. My way of thinking about people empowerment and community development is to start from the community level, start where people are and then work up the policy level as —

Hend Alhinnawi: 100 percent.

Patrick Fine: Instead of starting at the policy level and trying to work down and in my view, that's not going to get you the kind of outcomes that actually empower people.

Hend Alhinnawi: Yes.

Patrick Fine: It may make policymakers feel good but it's short on empowerment.

Hend Alhinnawi: It'll hit the numbers in the short run. It won't do anything long term.

Patrick Fine: Yeah. I agree. So, you've, over a seven-year period, you've built this approach which includes a tech platform, and a network, a distributed network for gathering information, for analyzing it. You apply machine learning so that you can do data analysis as well to pull out insights that come from people on the ground that can inform practice, action and planning.

Hend Alhinnawi: 100 percent yes.

Patrick Fine: Now that you've, successfully done this, are you getting interest from other parts of the world or other organizations to either learn from what you're doing or to scale, to adapt and expand what you're doing to other areas?

Hend Alhinnawi: Yes. We get it all the time. There is some interest coming from Africa of ways that we can use this platform to track disease, health needs, across Africa.

Patrick Fine: Do you think it would work in African settings?

Hend Alhinnawi: The methods work but you would have to look at that environment and understand the challenges first. It's not a silver bullet. I'm not going to go apply the same thing I did for Syria to do something else in parts of Africa and say, "No, this is going to work." It would definitely have to be tweaked to the cultural norms, to the infrastructure, to all these other factors. But no, I do believe in the methods and in the way that we approach it. It would just have to be repackaged so that it works for that setting.

Patrick Fine: We've heard in other episodes from other guests on the podcast that the world is going through the most severe period of crisis and dislocation in human history. There are more displaced people now than ever before. So, it would seem that this kind of technology or approach that you've developed would have application across many different geographies and with many different populations.

Hend Alhinnawi: The crowdsource method until recently was unorthodox. I mean, it's not something that's common. It's not something that was welcomed. Um, when we were first presenting it, people were like, "You're getting crowdsourced information? No one uses that. That's, you know, that's garbage. No, where are your official sources?" And that was not too long ago. Maybe five years ago.

So, I feel like just the evolution of the way people are looking at informal points, information points like crowdsource, that attitude has changed. Now, they're more open to understanding how the crowdsourced piece fits into their picture. Whereas before, it was really not taken that seriously.

Patrick Fine: So, what's the future of Humanitarian Tracker?

Hend Alhinnawi: So, there's a lot of projects we're working on in relation to health, in relation to tracking refugee needs, relief and development. We have a big project we're working on with the sustainable development goals.

Patrick Fine: Mm-hmm.

Hend Alhinnawi: So, we are going to crowdsource the global goals. What are average people doing to achieve those goals. And so that is our next big project. It's called the global action mosaic. Our goal is to showcase it during the global goals week in September from now until 2030 when we're supposed to have achieved these very

ambitious goals. So, we're inviting citizens from around the world to submit what they're doing.

Patrick Fine: I know a lot of our listeners cared deeply about the global goals. So, I hope that they're going to go to your website and share what they're doing and what they're seeing. Also, I think we need to connect you with Roland Shatz who's in Geneva. He was a guest on one of our episodes last year dealing with the sustainable development goals and he runs the sustainable development goal index and he's also the head of a company called Media Tenor and they are charged with collecting the kind of information that you're aiming for —

Hend Alhinnawi: Wonderful. Yes.

Patrick Fine: Charge. So, Roland, I hope you're listening!

Patrick Fine: In our deeper look at humanitarian response, we've talked a number of times about technology and the impact of technology, how it's changing the way organizations behave and respond to complex crises. This has been a terrific deep look at technology, the use of crowdsourcing, the building of a platform that provides an opportunity to both share knowledge and to shape responses.

Patrick Fine: Hend, this has been a terrific conversation. Thank you for sharing your insights with our listeners today.

Hend Alhinnawi: Thank you so much, Patrick. It's been my pleasure.