Greenpeace International Use of WorldPop Data

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Transcript

Speaker 1: Welcome to the Deep Dive. Just before we jump in today, a quick heads up the voices you're hearing aren't actually real people speaking.

Speaker 2: That's right, they're AI derived voices using source material that WorldPop uploaded.

Speaker 1: It allows us to bring you these analysis in, well, a pretty unique way.

Speaker 2: And please rest assured, all the audio you hear has been very carefully edited, checked and fully validated by the experts at WorldPop. So, the information is sound.

Speaker 1: Good. OK. So today we're taking a really critical deep dive. It's into a brand new Greenpeace study. And what's interesting is that it uses WorldPop's new Beta release, geospatial raster data. The goal: to analyse the human impact of petrochemical pollution.

Speaker 2: A really important area.

Speaker 1: Exactly. So, our mission today is to really unpack how this study using this, you know, cutting edge data starts to reveal the hidden scale and it is quite staggering of human exposure to these plastic-linked petrochemicals. So maybe let's start with the basics to really get a grip on this. The study looked closely at what they call the midstream stage of making virgin plastic.

Speaker 2: That's the midstream stage.

Speaker 1: Yeah, maybe you can elaborate what does that actually involve?

Speaker 2: Sure, it's essentially where the raw materials like crude oil or fossil gas get transformed. They're purified, and then they go through a process called polymerization. And that creates the plastic resins. You know, the stuff that ends up in everything from water bottles to, well, car parts.

Speaker 1: Got it. So, it's that transformation process.

Speaker 2: And the crucial point here isn't just what it is, but why it matters so much for health. Because living close to these big petrochemical sites, that's a major risk factor. It's pretty well documented now.

Speaker 1: A risk factor? How?

Speaker 2: Well, there's a lot of evidence connecting the air pollution. These facilities release various pollutants. So, proximity really equals potential exposure to harmful substances.

Speaker 1: And the study puts some hard numbers on that proximity, doesn't it? They are pretty sobering.

Speaker 2: They really are.

Speaker 1: They estimate, what, over 16 million people across 11 counties are living within just five kilometres. That's their elevated risk of exposure zone.

Speaker 2: 16 million and that's the elevated risk zone.

Speaker 1: And then it jumps massively, over 51 million people when you go out to 10 kilometres. The extended risk of exposure zone.

Speaker 1: OK with numbers that big the immediate question is how. How do they figure this out so precisely? And this, I think, is where it gets really interesting with the WorldPop data.

Speaker 2: This is where the data is crucial. The study used digital mapping tools, specifically something called GIS-based geospatial proximity analysis.

Speaker 2: So, first step they pinpointed the exact locations of all these petrochemical facilities. Then they brought in WorldPop's data.

Speaker 1: Which is Open Access right?

Speaker 2: Correct. Open Access, national and global data showing how the population is distributed.

Speaker 1: And the detail level is key here, isn't it? It's not just general population counts.

Speaker 2: Not at all. WorldPop provided this data in a gridded raster format. You can sort of picture it like a very high resolution map, made-up of tiny squares, each just 100 metres by 100 metres. And the crucial part is each tiny square has an estimate of how many people live right there for the year 2024.

Speaker 1: Wow, 100 by 100 metres. That's incredibly granular.

Speaker 2: It is, and Then they drew those five kilometres and 10 kilometres, circles buffer zones around each plant. And importantly, if zones overlapped, they merged them, so nobody got counted twice.

Speaker 1: Smart. Avoids inflation.

Speaker 2: Exactly. Then, it was essentially a matter of adding up WorldPop's population numbers within those defined zones. That people per square data is what makes these big estimates possible.

Speaker 1: And using that fine grained data they found some things that were, well, maybe not immediately obvious.

Speaker 2: Definitely, since surprising results emerged.

Speaker 1: Like the Netherlands, having the highest proportion of its population living within 10 kilometres, what was it over 25%?

Speaker 2: Yeah. A quarter of everyone in the country living within that extended risk zone.

Speaker 1: But then you look at the US.

Speaker 2: Right, and that's a different kind of finding. While the Netherlands has the high proportion, the US has the largest absolute number of people potentially exposed.

Speaker 1: How many was that again?

Speaker 2: Over 13 million people within that 10 kilometre zone in the US alone.

Speaker 1: And this detailed mapping. It also reveals something else quite fundamental, didn't it - about borders?

Speaker 2: Ah yes, the transboundary aspect, this is really significant. The data clearly shows what this study calls transboundary exposure risk zones. Basically, facilities located in one country can have risk zones, those 5 or 10 kilometre buffers that actually stretch across the border into a neighbouring country.

Speaker 1: So, the pollution risk literally crosses borders.

Speaker 2: Exactly. They found examples where plants in Canada, Germany, Malaysia, the Netherlands, Switzerland and the US all had risk zones extending into neighbours.

Speaker 2: It just vividly demonstrates that air pollution, you know, it doesn't stop for customs checks. It really knows no borders.

Speaker 1: So let's bring it all together. What's the big takeaway here? What does this all mean?

Speaker 2: Well, it's important to be clear about what the study is and isn't saying. It focuses specifically on proximity based risk.

Speaker 1: Right. So, where people live relative to the plants?

Speaker 2: Exactly. It's using residential location. It's not measuring the specific emissions from each individual plant or quantifying actual individual exposure levels. That's a different kind of study. But what it does provide is an incredibly vital country level overview of the potential for exposure.

Speaker 1: So, it's a crucial first step in understanding the scope.

Speaker 2: Precisely, it's a powerful tool for raising awareness. For understanding the human dimension at a large scale, and hopefully for informing future policy and research.

Speaker 1: Yeah, this Deep Dive really underscores just the immense scale of potential human exposure tied to petrochemicals, and it's all brought into focus by this incredibly precise geospatial data from WorldPop.

Speaker 2: It really makes you think. It raises a really important question for the future, doesn't it?

Speaker 1: Which is.

Speaker 2: How might this kind of detailed, granular population data fundamentally change how we approach environmental justice, and how we think about global public health initiatives going forward?

Speaker 1: That's definitely something to ponder. If you want to explore this further, you can read the full Greenpeace report and actually view the interactive maps yourself. Just follow the link below.