Eurostat podcast: Stats in a Wrap

How do we manage waste in the EU?

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'Stats in a wrap' the new podcast series from Eurostat.

Voice from the street

I don't have any strategy to reduce any plastic
I think the deposit fee on bottles is a great idea.
I am buying my products unpacked most of the time.
Exporting waste to other countries is a very, very bad idea.

Jonathan Elliott

Eurostat, the statistical office of the European Union. With this series, we want to immerse ourselves in the world of statistics, and to pick its most delicious morsels and striking flavours to give you, our listeners insights into the unexpected, their guirky, and downright peculiar perspectives that only the numbers can reveal. I'm Jonathan Elliott, your host for this episode, and today we're going to talk about the huge, the mountainous, the monstrous subject of waste. Yes, the garbage, the trash, the stuff you throw away, chuck in the bin, the stuff you don't want. The waste we're going to talk about today is the waste that we as individual consumers generate. I'm talking about those plastic bags, that beer can, the drinking straws, the cardboard packaging, that stale pizza, the nappies, but also the broken TVs, the dead batteries. If your house is like mine, the amount of stuff I need to get rid of is unbelievable. And it's getting worse. I was in the supermarket the other day and watched the shopper put individual vegetables into individual plastic bags, one vegetable, one bag. It was not a pretty sight. And then there's the chopped fruit. Have you noticed that, people don't want to buy an apple and chop it up these days? They want it chopped up and put in a plastic bag. Seems we're recycling more and consuming more at the

Hello, and welcome to another episode of 'Stats in a Wrap', a podcast series from

At 'Stats in a Wrap', we know that only the numbers can tell us the real answer. And we're lucky enough to have a couple of people here who are excellently placed to tell us: Oscar Gomez is a former oceanographer who has spent a lifetime working on environmental issues, and now leads the circular economy and waste statistics team at Eurostat, and Ioannis Bakas, an expert from the European Environment Agency. Hopefully, between the two of them, I can find out what's really going on when it comes to recycling our waste. Gentlemen, thank you very much for joining us. It's lovely to have you here.

same time. So what really is going on? Are we saving the planet with our recycling or ruining it with more packaging and consumption? Is there less pollution, or more? Or

Oscar Gomez

I'm very happy to be here.

are we just slowing it down?

Ioannis Bakas

Good to be here to Jonathan, thanks for the invitation.

Voice from the street

I have some strategies to reduce waste. Currently, we save all of our glass jars that we get from supermarkets and we wash them and I will sometimes fill them with things from like a zero-waste shop.

Jonathan Elliott

Oscar, my first question is really about your own approaches to recycling. You know the detail of where our waste goes. Do you have any expert tips on reducing waste?

Oscar Gomez

Well, I try to some extent I tried to reduce the waste I produce by buying in bulk loads, in bulks and then I also like to go to a farm. You know, where they sell their own produce. And then like this, I get all the produce without packaging for example.

Jonathan Elliott

Fantastic, loannis, what about you? Are you a keen recycler and do you have any top tips from your expertise?

Ioannis Bakas

I do, I do try to recycle as much as I can. I do try to explore all the options for recycling offered to me by the authorities in the place I live. But as Oscar said, recycling is one thing and the better thing is to try to consume less stuff so that you have less waste to deal with.

Jonathan Elliott

Yeah, I was going to ask about that. I mean, do you when you go to a shop and look at sort of the shelves? Are there certain products that you go 'Oh ohhh', that packaging is really bad. There's far too much of it, I'm not going to buy that product, I'm going to buy the other product because it's better packaged.

Oscar Gomez

Well indeed, sometimes, if I can avoid packaging at all or bring my own jars for example, or go to specialized shops that they sell the items that you need to bring your own, especially glass jars. This, this is something I try to do.

Jonathan Elliott

Now today's topic is waste. But that covers a huge number of types and categories. Oscar, can you set out for us what they are?

Oscar Gomez

As statisticians, we always look into definitions. So this is the key point that we start with. So we can make the data comparable because we're measuring the same thing. In that sense waste is defined as any substance, any items that that the user wants to get rid of, wants to discard. If we look then in the definition of municipal waste, it means that if there is mixed waste that is collected from households including paper, cardboard, glass, metals, plastics, bio waste, wood, textiles, packaging waste and electric, electrical and electronic equipment, batteries, bulky waste, mattresses, furniture, and it also includes the mixed waste separately collected from other sources that are not households, but they are similar in composition. So, for example, if you live in a municipality, and then you go to a restaurant, the restaurant will create some waste because of the products that you are consuming there. If we only look at the

amount of waste that we produce as municipal waste, then we are on an average of 505 kilos of generated waste per inhabitant. If we also look into the complete picture like waste produced by economic activities, then we are at more than five tons of waste generated by individual. Around 8% of the total waste that is generated is household waste.

Jonathan Elliott

I think it might be useful to say something here about why recycling is important compared to, well, the alternatives which we know which are incineration and landfill. Can we just sort of set out why exactly recycling is so much better.

Oscar Gomez

So, for example, I think when you look think about recycling, you need to think you need to look backwards and there is so much that has been achieved. So, if you look from 1995 to 2020, you will see that the amount of recycling has increased from 19% to 48%. If you take into account also composting also this, this has led into a drop in landfill because of European policies like for example, the directive on packaging and packaging waste. However, still there is a big amount that is not recycled or recovered and is unnecessary landfill.

Ioannis Bakas

The EU policy around waste includes the waste hierarchy, the so called waste hierarchy. And that is a ranking of options that you can do with your waste starting from waste prevention - not to have waste at all - and followed by recycling and then, broadly speaking, incineration, burning the waste, and disposal of, final disposal, which is landfilling. And this is a ranking based on environmental considerations. So, as a rule of thumb, recycling is better than incineration, which is better than landfilling. And there's good reasons for that. Think about recycling, for example, that's the only option out of the three you mentioned, Jonathan, that makes use of the material itself, the other two burning or burying are destroying the materials, so we cannot use them anymore. Recycling is the only one that gives a second life to our products and the materials we use. And also, there's even more far reaching consequences when you recycle. Because if we are to cover our demand for products and materials, we could select to do that through virgin resources or recycled resources. And if you're if you recycle a lot, that means you have a lot of availability for recycled material. And thus you avoid extracting things from the ground. And this extraction of things from the ground comes always with high environmental costs.

Voice from the street

I realized when I started living alone, how much every person actually produced as a waste in a week. So I realized that like we are four people living together, and we normally produce around, I would say nearly three bags of waste per week.

Jonathan Elliott

If we're looking at a trend. Is it true to say that we should be looking not only at what we're recycling, but well, I mean, how much recycling a growing economy is producing?

Ioannis Bakas

The waste hierarchy starts with waste prevention, the best you can do with waste is not to have waste at all. And then you avoid all the environmental issues related to

waste management. And it is indeed a fact that waste generation is linked to economic development because, as you said, the more money we have available, the more disposable income we have, the more things we buy, products, goods, services, and the more therefore waste we generate. Decoupling waste generation from economic growth has been a long, long standing policy objective for the EU and we have put in place a lot of policies to support that.

Oscar Gomez

If we look at the total waste generation from both, economic sectors and households, then the amount generated has grown 6% over the past 10 years, at a more or less constant pace, this is four times faster than population growth and about 1/3 slower than economic growth. If instead we look at municipal waste, then municipal waste has remained stable around 505 kilos over the last 15 years. Now the thing is there are big differences between countries. So there are countries with lower wealth that produce less than in wealthier countries that are generating more waste. So for example, Romania has a per capita generation of 280 kilos a year, Denmark produces, generates 845 kilos a year. This reflects differences not only in consumption patterns, but also in economic wealth, and depends on how municipal waste is collected and managed.

Jonathan Elliott

The trend is upward in recycling, but is it growing faster than packaging production? loannis, does that make you a bit discouraged as an environmentalist that although we're busily recycling more and more, our production of packaging seems to be outstripping our ability to recycle it?

Ioannis Bakas

The European Union legislation around waste is quite successful. We have a long history of EU legislation regulating what we do with our waste - and this has been happening for more than 30 years. And the results, we've seen in the figures that Oscar just cited, recycling is going up in many waste streams. Packaging waste recycling is higher than a lot of the other waste streams. But unfortunately, we haven't been very good when it comes to curbing the waste generation in total and this is a policy area called waste prevention. The problem with increasing waste generation is not only the management of the waste that is generated, but also what has happened before products become waste. So more waste implies more, that we consume more products. And in order to create these products, manufacture them, extract the raw materials to make them, we emit emissions to the environment, and we cause environmental harms. So waste prevention has the dual role of avoiding the environmental impacts associated with managing our waste and the hazards thereafter, but also in mitigating the impacts upstream in the supply chains. Because we produce less material, less products for our consumption. It is indeed the fact that waste generation, when it comes to packaging is increasing fast and if I am to speak more specifically about, for example, plastic packaging, plastics comes from oil, everybody knows that, and extracting oil, refining that to produce the plastic packaging that we then use comes with a lot of environmental impacts, such as greenhouse gas emissions, of course, plastics and microplastics leaching into the environment, which is a big problem that we have only recently realized, and many others.

Voice from the street

We just produce too much waste and I think that's a really big issue. And as an individual, you can only do so much. And I think there should be more incentives, I guess for businesses to do a lot more.

Jonathan Elliott

I'm just wondering what our most effective weapon is against waste packaging? Is it things like making it more biodegradable, so biodegradable plastic bags? Or do we need legislation, just simple laws or taxation?

Ioannis Bakas

Well, in the EU, we have realized that some materials are better than others and this has been reflected on the adoption of the so called single use plastics directive, which tries to regulate the use by citizens of these single use plastics like straws, coffee cups and things like that. Some of that is packaging and I would like to highlight two major tools in that single use plastics directive, one of them is outright ban. So for plastic products that are for single use, that there is already an alternative in the market that works pretty well. We are going, we have plans for banning these single use plastics. Another tool is to implement the so called 'extended producer responsibility schemes' that puts the responsibility for waste management to the entities producing the material in the first place. And the reason for doing that is that the producers of the materials are best placed to decide what they do with the waste produced because they know their products better than anyone else. So we have high hopes that these tools will shift a little bit the production into better alternatives than plastics.

Voice from the street

We reduce the amount of plastic bags we use and try to encourage people to bring their own bags.

Jonathan Elliott

We've been talking quite a lot about plastics. But there's also single use plastics, especially plastic bags. Oscar, you've got some pretty startling statistics.

Oscar Gomez

About 93 plastic bags per person a year are consumed. It doesn't look a lot - 93 bags, but if you extrapolate this to the whole EU population, this makes 41.5 billion bags a year in the EU. That is quite a lot. You also need to take into consideration that plastic is made thinner and thinner each year, so the total amount of packaging has in numbers, increased.

Ioannis Bakas

Yeah, I just wanted to bring a small piece of good news regarding the lightweight plastic carrier bags. This is the only example where a single measure - placing a fee on these plastic carrier bags when you buy them - had quite impressive results in the consumption of these bags. And it is the only case where we have, we can make the correlation between a single waste prevention measure, the fee, and its effect, the amount of waste generated from or the amount of this type of bags consumed. And I think all countries have been reporting quite impressive reductions in the consumption of plastic carrier bags. We still consume a lot. I totally agree with Oscar. But we've come already quite a long way in bringing the consumption of these bags down.

Jonathan Elliott

Oscar I mean, this does seem to make sense, right? It's the polluter who pays. So if you're polluting, you have to pay. So if you can do it for shoppers by making them pay for plastic bags, why not do it, well, you know, for everyone, I mean, even whole countries. So this does bring us then to this term own resource, sometimes wrongly called, as I understand it, a plastic tax. But it's where countries are obliged to contribute to a common budget if they don't recycle enough. Can you tell us a bit more about how own resource works?

Oscar Gomez

The way, it works. So each country, starting in 2021, each country has to pay an amount of 80 euro cents per kilo of non-recycled plastic packaging waste.

Jonathan Elliott

So if a financial penalty for consuming single use plastic is shown to be effective, I wonder what about a financial reward for more effective recycling? Could that be could that be useful.

Oscar Gomez

So linked to the work that we are doing on the plastic own resource, we are starting to visit countries to learn how they do the data collections, how the data is produced, how the quality is ensured, and at the same time, we see that some countries have deposit refund systems. And these deposit refund systems is basically a system where you pay a deposit for a bottle that you take with the product and, and then you give it back and you get your money back. The systems are working pretty well. So this is targeted at a specific polymers materials that are very, very good for recycling. And in those cases, you get recycling rates of 90%, which are really out of this world.

Voice from the street

We export our plastic waste to countries that may not have an infrastructure or not a plan to recycle the plastic and I think it should be forbidden to export plastic waste into other countries.

Jonathan Elliott

So, there is one waste disposal option we have not yet discussed and that's export. To me that immediately conjures just up images of our household waste going in gigantic ships to developing countries. But it's not quite that, is it?

Ioannis Bakas

I think that's a very different ballgame when we're talking about waste exported within the European Union - from one member state to another - and the exports exported from the European Union to the rest of the world. The latter is much more regulated. For example, it is not allowed to export waste for landfilling outside the EU to non-OECD countries. And the same goes for hazardous waste. So this is based on the principle that we should be responsible for dealing with our own waste, meaning that we shouldn't export pollution associated with our own waste management to third countries. We have a very interesting case when it comes to export of plastic waste. This is mainly recyclable plastic waste source separated from EU countries exported to the rest of the world. And there has been a famous ban from the country that was receiving the most of this plastic waste, China, a couple of years back. And that has led to a very big diversification of the receiving countries of our plastic waste, but also

on a sharp reduction of the plastic waste exports from the EU. In a way, this has disrupted the trade of waste globally. But on the other hand, it presents an opportunity for the EU, that they have more secondary resources and maybe they can do better things with a separately collected plastic waste that we have here, for example, produce a lot more plastic from recycled material here in the EU, and implement more of the circular economy.

Oscar Gomez

If I can add to complement that from the point of view of what is the total waste that is being exported and imported, and if I consider the intra EU, it would look like a surprise, the biggest amount of waste that is traded are soil and stones, then it comes to other waste, this which is mixed waste, then we have wood and then compostable waste. These are the main that are traded within the EU.

Jonathan Elliott

Rocks, which I mean, I'm sure they do have some environmental impact, but I can't think what they do, compared to batteries, plastic bags, which are genuinely dangerous stuff to put out there. Am I making a naive point here?

Oscar Gomez

You're not in a sense there is the classification by hazardousness. But this is a very, very hard classification between substances that are hazardous in the environment and those that are not, and then the list of hazardous waste is very limited. And if you look into our statistics on our website, you will see that the amount of hazardous waste is around 3% and it's very, very stable over time.

Voice from the street

Wasting of resources to actually ship that waste elsewhere, so I think we should find other solutions or politics, businesses should find other better solution.

Jonathan Elliott

If you're exporting waste, obviously you have to transport it. And if you're transporting waste that has its own carbon impact, so you might be in danger of trying to save the environment and then damaging it through transporting the waste. Is that a possibility?

Ioannis Bakas

Of course transport, like pretty much all other activities comes with environmental issues, like when you burn fossil fuels, to move the ship or a truck or any other mode of transport then you would emit greenhouse gases and contribute to the climate change. So transport, avoiding transporting waste, is important because you avoid the emissions to the environment, from that. However, there is a potential trade off if the destination for the waste offers a better, more optimized technology for recycling that will make more use of the material you have collected for recycling, perhaps, probably the emissions or the impacts from the transport to that place can be offset. When you produce aluminium from aluminium scrap you consume 5% of the energy compared to producing aluminium from virgin aluminium from bauxite. Therefore, it is quite easy to transport aluminium far away without offsetting this huge benefit in energy that you have from recycling aluminium.

Oscar Gomez

When we look at the data aluminium for example is mixed together with copper and nickel and it represents only 1% of the total of the exports of recyclable raw materials. But in the case of iron and steel, it goes up to more than 45% of the total exports of the EU.

Voice from the street

In the past three years the situation changed because people are way more informed on what they're going to do with the waste, how they're going to be recycled and things like that. Back home in Italy, we know way less how they manage our waste and probably that's the biggest concern.

Jonathan Elliott

Is there any way of knowing for sure that we are on our way to winning this war on waste? I'm just wondering if there's a single statistical measure that we can rely on, say, like, net zero for climate. And we can say, yep, we're getting closer. We're definitely winning the battle against waste.

Oscar Gomez

So if you look at municipal waste there, at the moment, we are producing 505 kilos of municipal waste per inhabitant every year, and this is remaining stable since the last 15 years. The moment we see this figure like it was, for example, back in the 90s, around 400/420 kilos per inhabitant, and the economy keeps growing, then we would be in a much better position.

Ioannis Bakas

Yeah, I I'd like to pick up on this idea of Oscar of a sustained trend, it's important to note that, because if you remember, we had a financial crisis 10, 15 years ago, and at that point in time, we saw all waste generation, all kinds of waste generation, going down. But it was only a temporary effect, triggered by the financial crisis, it wasn't a structural change in the way that we consume and produce waste. Therefore, it could not be sustained. As soon, as soon as the financial crisis finished, we saw again, waste generation going up in a lot of waste streams. That's, I think, what Oscar was referring to as a sustained trend and I should just repeat here that the overall objective of, one of the major objectives of waste policy in Europe is to absolutely decouple waste generation from economic growth, that means that we would have a reducing waste generation in a growing economy. And the data tells us that we're not there yet. But we have strong policies in place, we have a lot of activity at country level. And perhaps we can have a little bit of optimism in the future, especially since, we have been halfway there. Because what we have already done is to achieve this relative decoupling, meaning that the waste is increasing, but at a slower pace than the economy.

Jonathan Elliott

So if we're recycling more and more than there are more and more people handling our recycling, and that has to mean jobs. I'm just wondering if there's some good news out there about a growing industry? Are we seeing the birth of a new source of employment?

Ioannis Bakas

As far as I'm aware, we don't have data that compare employment per ton of waste managed in recycling versus landfill, or incineration. The only thing I have seen in some one-off studies that try to prove that this is the case. So we have some evidence that recycling creates more employment than its worse alternatives. So it's good both for the environment, and also for employment. But we don't have data that we can use to prove this at EU level.

Oscar Gomez

We also collect statistics on the employment in the environmental goods and services sector and there we have seen that between 2009 and 2019, there is an increase of 20% in the number of full-time employments in the waste management related sector. So that is ... our estimate is that there are around 1,200,000 people, full time equivalents.

Jonathan Elliott

But we've just had a pandemic and enormous shock to the economy, a lot of people changing their consumption habits. I wonder if we could expect that to show up in the waste statistics, whether we're going to see either a massive reduction in waste or a change in the types of waste that are being observed.

Oscar Gomez

We have 2020 data on municipal waste that has been published recently in our database and there you can see that there is no change in total waste generation which comes as a bit of a surprise but not really. After that, you should expect that there are changes in what is in the composition. But this information we don't know yet.

Jonathan Elliott

Guys, you've been fantastic. You've really opened my eyes to a lot of things. You've given me a little bit of hope, quite a lot of fear, but that's okay, that's what the numbers do for us, they get us talking, they get us thinking. Thank you very much for joining us.

Oscar Gomez

Thank you very much Jonathan and it has been a pleasure.

Ioannis Bakas

I really enjoyed the discussion. Thank you.

Jonathan Elliott

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