## South African People's Tribunal on Agrotoxins, 22-23 March 2025

## Expert testimony of Prof Leslie London

So I've been working in the area of pesticides for quite some time and have studied the health effects of pesticides and the policy implications and the policy impacts. It's a field that is not well supported. But it's quite clear that there are major environmental and human health problems associated with pesticide use. A high input agriculture meaning high use of agrochemicals. Fertilizers has many adverse environmental impacts. But I'll talk a little bit around the health impacts. And I think it's important that the public realize that pesticides are were created in order to be toxic to unwanted biological systems. So weeds, animal pests, insect pests. So it's not surprising that they can have harmful effects on humans. And the problem is, our science takes some time to catch up with the production of new chemicals. So in the past, we thought Ddt was a fantastically effective pesticide and low, acute toxicity. And then we discovered, in fact, that it's highly persistent in the environment. And it's very toxic in different ways to different species, and particularly as an endocrine disruptor associated with other adverse health effects in humans.

So I think when we understand the landscape of pesticides, we have to understand the historical trajectory, and that simply because something is new and we don't have evidence of its toxic effects doesn't mean that it's safe as a colleague. Once put it to me, absence of evidence does not mean the evidence of absence, meaning that while the science is still evolving, there are still key questions asked about pesticides. But we do know a lot about the health hazards of many pesticides, and they're often specific to each different type of chemical, depending on the chemical structure.

So some pesticides will be recognized as carcinogenic causing cancer or causing DNA damage at the cellular level, which gives rise to an increased risk, for they affect the endocrine systems of the human body. And that's well documented for a certain set of pesticides. Some pesticides are genotoxic meaning. They affect the genetic makeup of the cell at cellular level and give rise to the changes in the cell which will give rise to cancer or promote cancer, and some pesticides are what are called endocrine disruptors, meaning they affect the human endocrine system. The system that releases hormones often because they mimic the natural hormones of the body. So they disrupt what's going on. And our hormonal system in humans is exquisitely balanced. We have many organs which are dependent on other organs. And there's an exquisite neurotransmitter and hormonal system in place. And if you have these exogenous meaning, external chemicals coming into the body, it disrupts that with various kinds of health effects, neurodevelopmental effects on children, infertility in adults, other kinds of metabolic diseases that are related to hormones, so diabetes, other forms of dementia, for example, and many pesticides are acutely toxic, and that's because they are designed as insecticides to kill insects. And that's the group of pesticides such as organophosphates and carbamates that are most toxic. And we know that and the who the World Health Organization has a classification system for pesticides based on their acute toxicity and a class 1 pesticide is clearly the most toxic. You get class and other, and these class, one pesticides are usually organophosphates and carbamates, and that is really where the regulatory action should focus. And when we see a highly hazardous pesticides being discussed, many of those highly hazardous pesticides are Class 1A or 1B or pesticide who classification pesticides.

I do want to point out that our constitution has a precautionary approach to risk. It's framed in our constitution in a way that we have to think about the future of the environment and protecting the health of people in the environment for future generations, but it recognizes we have to take a cautionary approach when there is scientific uncertainty.

Science doesn't advance in a dichotomous way. Yes, no. It advances through a series of studies and evidence is generated and it's shared. And there's counter evidence. And eventually we get to understand that this kind of chemical in this context has this kind of risk and so what it means is that we have to err on the side of caution when it comes to the problem of risks for human health. We can't simply wait till it's absolutely proven that something is a carcinogen.

and if we do, we are going to expose people unnecessarily to chemical hazards that they should not be exposed to, and really in contravention of our constitution and international environmental law as well. So we need a system in South Africa that actually allows us to implement the precautionary principle. What we have in South Africa at the moment is a regulatory system that that really is a sort of compliance exercise. It allows companies to register pesticides as long as they meet certain criteria. But there's no flexibility in the system to look at risk potential risk future risk. Basically, the default is the pesticide will be registered. And in order for it not to be registered, there's a very high bar set, and that is not what our Constitution says. There should be. Our constitution says that you have to take account of caution in this context. So we see pesticides that are registered in South Africa that are not registered in other countries for use, because other countries are saying these pesticides are dangerous for the environment, dangerous for people. But here we get pesticide registered simply because they follow the letter of the law and there's no room for the relevant decision-making official to refuse a pesticide registration when there is a risk that's uncertain. So he or she can't apply that principle. So that is a big problem. And that's why, we're out of step with international law.

So the second issue I want to speak about is the question of the externalization of costs. So if you are purchasing a vehicle or you buying petrol. you are paying a tax on your petrol, which goes into a fund which basically is used for road safety, safety of roads, or some portion put into road accident fund. So you are basically paying a levy for the externalized costs of your transport, whether it's an accurate amount or not, and whether it's a corruption free, or whether it's appropriately used is not a matter. But the principle is you you're paying in, based upon the externalized cost of your product, the product you want with pesticides. You don't have that. So you have a price set essentially by the producers, and they pay a nominal fee to government to register pesticide. But all the consequences of pesticide use that require

quite considerable investments are not funded out of the cost of the registration. They are funded out of the taxpayers our tax. So, for instance, the clean-up of soils, the clean-up of waste the health consequences of exposure to pesticides, the ability to monitor pesticides.

As we know recently there were cases of children who were poisoned in Soweto. The ability to know that it was Terbufos that poisoned them is contingent on having the laboratory availability to do the testing. And because this was a high-profile police case there was testing done. But in most cases there's very little testing done about what causes illness and also what is contaminating our food. And that is because government has limited resources, and we don't have a dedicated fund or ability to drive that, and, in my view, that is actually part of the cost should be the cost of. If you want to use a pesticide, you have to pay for the science, to know how to monitor exposure in workers, capacity for the State, an independent agency to detect the pesticide or the ability to monitor usage exports all of that.

Who's paying for the inspector to enforce the Rotterdam Convention? It's our taxpayers money. It's not the company that is importing the pesticide that is causing the risk that is bearing that cost. So we need a system that internalizes those costs, and it could be done through registration. It could be done through tax, it could be done through some other way. But the point is, the real cost of pesticides are not borne by the producers. They are somewhat borne by the farmers because they pay a price, and they also get ill.

But it's really borne by all of us. It's born by society because we have to pay for the clean-up, the cost, the surveillance, the treatment of the victims.

And where does that money come from? It comes from the general tax pot. And that is not a rational way. And it's also not consistent with the National Environmental Management Act, where companies are supposed to take responsibility for the full life cycle of a product. So just because you've sold it and somebody else uses it in a way that might be illegal or is not intended. You are still responsible to make sure that the usage is not a risk to the environment.

So the point about a lifecycle responsibility means that even if you sell a product and it's being used in a way that wasn't intended. By the way, in the way you sold it on, you still have some responsibility to make sure that it is used correctly in the way you sold it. It's not that you can wash your hands of any responsibility. And it's like, if you manufacture a car that has a flaw in it – okay, somebody buys the car, and then they drive too fast and they crash the car. Well, you know, maybe they drove too fast. But the flaw was inherent in the car, and you are still responsible to make sure that vulnerable populations in the community should not be.

That is hazardous. So I think we don't have application of the principles of NEMA in this context and the application of the precautionary principle and of lifecycle stewardship.

So from the point of view of preventing pesticide poisoning and harms from pesticides. Surveillance is a key function. So we talk about surveillance of people at work. And we also talk about environmental health, public health surveillance. So for the workplace we have a system of law that is actually quite well developed for big industry like smelters, coal mines. It's not perfect, but it's quite developed. And it fits with that model. But when it comes to agriculture. We have the same kinds of regulations being applied in a context where there's a handful of workers, they are not unionized. They're highly dependent on the employer. There's a huge knowledge imbalance the materials are not in the language that workers can understand.

And one of the issues there is that you have to do a risk assessment at the workplace to see if there's a risk from pesticides, and if it's indicated by the risk assessment you need to medically monitor.

And for most pesticides there are very few blood tests or other kinds of surveillance tests available, because industry has not generated the research which tells you, oh, for this pesticide, this is what you can monitor. And even if they do, it's not commercially available.

because essentially for laboratory to provide that service. They have to more or less dedicate a piece of equipment of a piece of expensive equipment to doing that test on a routine basis. Otherwise it's not cost effective for them. So we end up with no monitoring for most pesticides at the workplace. It's only for organophosphates, carbamates, and others which can be measured through a blood enzyme and a few other pesticides. We can sometimes get these biological markers. And then, of course, the point is, you need to track exposure within workers during a period of time to see whether the marker has gone up, come down, change, and then take a preventive action based on that. When it comes to you and I in the community, our exposures are either through food or water or through the environment, through air. In most places is not an issue unless you live in a rural area, and you live in a rural town which is near a farm that's being sprayed, and there's drift and drift happens all the time. It's absolutely impossible to expect there will be no drift. There are ways of trying to limit the impact of drift through buffer zones or to having buffer trees lining the area. There's no regulations on that at the moment. So many people in rural towns think they're buying a house in a very pristine, idyllic, rustic farm environment. And then they suddenly discover whoops. They've been sprayed times a week, and they're getting asthma. And their kids are not well. And they realize actually, this is a problem because the environment is being polluted when it comes to food and water. We have very little monitoring going on for the same reason.

It's the responsibility of the local government to do the monitoring, but it's very expensive. There aren't laboratories that do it routinely, and only looking for bacterial contamination, testing for cholera, e coli, things that are relatively simple to measure and cheap because for them. It's more cost effective than spending. You know, the entire monitoring budget just looking at one pesticide. And that's the problem we face. And that's why we have a situation where you there's no surveillance, so we don't know the extent of the problem.

A case in point. The children who died of Terbufos poisoning in Soweto. It was big news, because it was so high profile. But in fact, previous research had shown that Terbufos was responsible for child death over, I think, a year period. and this information was available, but it was only available because it was done as a specialized research study, and it was only because somebody had the money funding to do those tests. Otherwise we wouldn't have known. So that's a good illustration we should have been testing we should have known. And those children, children from Soweto would still be alive, because we would have known it's Terbufos. It's not Aldicarb. It's Terbufos, which is a legal pesticide registered in South Africa,

So we live in a country that has a piece of legislation governing pesticides that is actually older than apartheid. It predates apartheid by one year it was from . So this is an Act which basically sets up the system where companies can register pesticide or stock remedy. And the default is the pesticide gets registered unless there's something absolutely egregious about the registration. and there's no real obstacles. It's tightened up a little bit over the last while. But essentially that's the model. and the enforcement relies essentially on the South African police, because the when the pesticide is registered, a label is submitted, and that label then becomes the law. So if you violate the conditions of the label. You violate the law, but then it's a saps matter, and you can imagine in South Africa a saps officer dealing with crime, gender-based violence, murder, theft, all kinds of things. They are now charged with going to arrest somebody who's violating the law because they're not applying the pesticide in the way they should. I've never heard of a single prosecution by seps of somebody who's violated. The Law Department of Agriculture does have some inspectors, but they're hopelessly understaffed. I heard a figure. I don't know if it's correct of inspector in the Western Cape, you know, to cover the whole of the Western Cape for certain of the regulations.

And what happens is that regulations get passed under this Act , and they sort of patch a gap here, and the but they don't actually change the fundamentals of the act, which is that you need an evidence-based system. You need to have proper data. The Department of Agriculture is registering pesticides, but it has no information on the harms caused by pesticides, because it has no link to the Department of health for mortality from pesticides or the number of pesticide poisonings reported. So it's as if they're operating completely, independently. And the ethos of the act is essentially about giving the department tools to maintain free protection.

And I mean, I would say it's food production at any cost, because it's saying we will use fertilizers. We will use pesticides in order to push up food production as opposed to thinking about, how do we balance food production and protection of environment, protection of human health protection of our future. And unfortunately, the Department of Agriculture has tended to err on the side of food, and the argument is that that's important for food security.

But that's a fallacious argument, because the reason why there's food security insecurity in South Africa has much more to do with the distribution of food, inability of people to buy food or access food. It's not to do with the absolute amounts of production. We are exporters of food. We are exporters of crops that earn us. Revenue dollars pounds. The tech system, you know. pesticides, I think, are Vat free because it's basically conceived of as an additive product added in the agricultural value chain, because it's going for

export and because it's going for export that is not deducted. So the entire system is not geared towards food security of South Africans. It's geared towards maximizing food production, and probably, you know, with a view to revenue generation, you know, and the State will benefit from tax. But it's actually people benefiting, you know, from income. And I think that's a trade-off. But it's a trade-off that's hidden from the public site because it's happening under this idea. Oh, we have to have pesticides for food security and we need a lot of careful dissection of that argument, because I don't think it's actually valid in the current context where many people are starving, not because there isn't enough food, but they just can't get it, and they can't afford it, even if they can get it.

South Africa has to tackle the question of conflict, of interest in policy. So we see a lot of influence, of industry in different sectors. We see it in the, in the alcohol sector and tobacco.

But we see it most of all in the food and food Technology Sector. And it's really because the Department of Agriculture sees its mandate as producing food so it leans on the on industry, the food industry and the Inputs fertilizer pesticide industry as partners. But they have a direct vested interest in a certain system which is a high input agricultural system and so they will influence government in one particular direction. For instance, when, when small farmers

getting support from government, they used to, as part of the program, get a sort of starter pack, and the starter pack included the pesticide. And you think, why are we starting people on a pesticide treadmill when we want to try to develop, you know, rural economy.

And then, of course, if you're a starter farmer, you get pushed to become a commercial farmer. and the only way you can become a commercial farmer is to outcompete the commercial farmers who are using pesticides and fertilizers. So you but you get on this treadmill and

the State should be doing is, say, hang on, we can break this, we can have a different development model. If you need to use pesticides, there are different ways of using pesticides that are not so hazardous, or don't use so much. So, for instance, there's something called integrated pest management. You would use mechanical controls. You would use something called scouting where you actually go into the field, and you have a threshold, for when the concentrations are high, then you use a chemical, but otherwise you just live with it. You use natural predators. So I remember visiting a farm where they had a greenhouse, and they grew green beans in the greenhouse, and they put in the ladybirds, and they put in the pest insects, and they let them develop an ecosystem together. So the ladybirds kept the pest under control, and then they harvested all the beans, and they basically put them in the orchard. And so they transplanted this ecosystem into the orchard. And what it means is that you accept a certain amount of damage to your crop. But there's a natural way of controlling the pesticide, and even then, if it rises above a certain threshold. Then you spray. What we have at the moment is standard spray. We have people who spray prophylactically, you know they there's no problem yet, but they will spray because they know it's coming, or they think it's coming. And that means we have huge amounts of pesticide usage and resistance. And so they spray more, and then they take shortcuts, etc.

So we need to have a different system that actually incentivizes pesticide reduction in many countries around the world have a pesticide reduction policy or something like that. And, in fact, the Department of Agriculture in its policy paper, I think, was years ago actually states that they want to move away but now we are more than a decade later, and we see these terrible deaths from Terbufos because we haven't had any progress on that matter. We also see the failure to implement international conventions. So South Africa ratified the Rotterdam Convention many years ago. It is one of the earliest conventions. Rotterdam Convention deals with what's called prior informed consent. It doesn't ban pesticides. What it says is, if a country has regulated pesticide, restricted it or banned it, then, if they export it, they have to tell the importing country what they've done in their country, and why? So that the importing country can say, Okay, I know this is a risk, but I'm going to take that risk, or I realize this is a risk I'm not going to import. This. South Africa is still struggling to domesticate that convention years later.

I'll tell you about the case of the Cornubia fire It was a big pesticide warehouse, a multinational Indian company. It was set alight during the protests after former President Zuma's incarceration. So there was mayhem. People set this storehouse alight, and in the storehouse was Terbufos. There were a couple of other very nasty pesticides, and those were pesticides scheduled, listed under Rotterdam Convention. So they were there without South Africa actually having a say in the matter, and that was because there were no regulations. So we have many loopholes. We have an act from 1947, we have these international conventions we are not domesticating. So it's no wonder we have all these problems.

So one of the other problems in the entire system is information. So in the old days, and I'm talking 1990s, early 2000s. You could go into the Department of Agriculture website, and you could actually find a list of chemicals that were registered for use in South Africa, a basic list.

You could look up the trade name and see what the active ingredient was, or vice versa. It was a basic spreadsheet. It was publicly available. You fast forward years, and you actually can't find this on the department's website. And the place you get sent to is actually an industry website run by industry and gatekept by industry. You have to basically ask if you can get certain information. And I once did that, and I was given the information partly because the Department of Agriculture official was pushing. But I know other people who are ordinary citizens who've done that, and they haven't been given information.

So if the department is a regulator and it makes decisions on what pesticides are registered or not, you would think that it would maintain its own database and it would maintain its own database and make this publicly available. But seemingly it is not capable of doing that.

There's some problem, and it's absolutely appalling to me that, you know that the right of access to information is denied to South Africans. The right of access to information is a right in and of itself. But it's also instrumental to so many other rights. So you need that right in order to have a environment that's not harmful to health or access to healthcare or many other things. So it's actually not constitutionally plausible that the Department can't ensure. There is a publicly available database on pesticides registered and pesticides banned or restricted in South Africa. That to me is you know, basic function of a regulatory body. So what should be done about this. Well, I think the Department's Own Policy paper, the policy paper on Pest management is a good start. It's not perfect, but it basically promotes a lot of the things we've been talking about. It promotes access to information. It promotes a transparent regulatory system. It promotes a regulatory system with teeth. It promotes pesticide reduction. And all of those things, you know, even if we implemented some percentage of them, we'd be making a huge stride compared to what we have now, which is basically advanced with a few, you know, regulatory patches. and essentially industry is still in the driving seat. You know, agriculture and the pesticide industry still make the most decisions.

A most recent example – South Africa is trying to comply with international moves to ban or restrict highly hazardous pesticides, the worst pesticides. The regulations that came out permitted what are called derogations, so it allowed industry to apply for derogations meaning an exception. But the regulation is quite clear that the derogation must be something exceptional can't be like the normal. And then you apply. You have to show why it's absolutely exceptional that you should not have this chemical phased out. I've seen all those derogations. There's nothing in those derogations where industry actually provides any kind of rationale, for why, it's exceptionally important that it keep this pesticide, and I don't know how many have been put forward. I think it's, you know, more than a dozen, maybe up to .

So it seems to me there's a disjunct. On the one hand, the department is saying, yes, we want to keep up with the rest of the world with science. On the other hand, there's a system which just keeps going in the same way that industry can do what it likes and thinks it can get away with what it likes. So I think this tribunal is very important to send a message. Actually, we've got to change the way things work. It's not business. As usual, it has to be a different system in place.