



Dr Ron Ehrlich: Hello and welcome to Unstress, I'm Dr Ron Ehrlich. Now, if you are a regular listener of this podcast, you will know that the mission of this podcast is to explore what the words holistic and stress mean in our modern world. You will also know that we are all connected, so we're all affected. Out of what that means is that food from soil to plate, how the way we grow our food not only affects our health as individuals but also the health of the planet. The two are inseparable. Invariably, what makes what is good for the soil is good for plants and what's good for that is good for animals. It's also good for our own health. And when soils, plants, animals, food and health are all doing well, then farmers hopefully will enjoy a healthier and more profitable life too. And what is good for all of that is also good for the planet. Now that is holistic.

Now wouldn't it be great if there was an organization that was totally independent of the chemical food and pharmaceutical industry? Free to focus on big issues? How we can improve our food system that was holistic in its thinking. Looking at issues like hunger, obesity, environmental degradation, biodiversity. The pressures on small farm holders livelihoods, cultural erosion, workforce exploitations, and other problems in the food system that are deeply interconnected.

Or what about if we had an organization that was sensitive to how power, political and economic power is used to influence decision making and to set the terms of debate for reform? What about, while we're thinking holistically if we bring together a whole range of people with expertise in a whole range of areas across many disciplines? Not just farmers, food industry workers, consumers, entrepreneurs and other social movements. But also included people who were well informed about public health, the environment, and while we're at it, rural development. What if it's work focused on benefiting the broad range or the broadest range of people across the planet. Let's say the worlds seven points something billion people, rather than just benefiting a few individuals or companies?

Well, our program today explores such an organization. It's called iPES Food, and it stands for the International Panel of Experts on Sustainable Food Systems. iPES Foods. It's a new, and I think an exciting and inspiring initiative, aimed at informing the debate on how to reform food systems. And I had the opportunity to talk with Nick Jacobs who is based in Brussels and is the coordinator of iPES Foods. I hope you enjoy this conversation I had with Nick Jacobs.

Welcome to the show, Nick.

Nick Jacobs: Thanks very much for having me.

Dr Ron Ehrlich: Nick, iPES Foods, it's such a fascinating organization. What has prompted it? What has prompted this organization? [crosstalk 00:03:28].

Nick Jacobs: Absolutely. So first of all, iPES Foods stands for the International Panel of Experts on Sustainable Food Systems. And the first thing to say is that it's not the only organization in this field. There are plenty of expert panels and scientific groups out there bringing their conclusions on what needs to be done in food systems to the attention of policymakers and other people. But iPES Food was put in place, with a view to kind of

plugging some of the gaps we see in those debates. You see lots of groups talking about food security, and you see people talking about nutrition. And what we're trying to do is to bring together kind of people from all of the relevant disciplines and food systems, to take a holistic view. Given that food systems are really so complex, we're talking about interactions from the farm through to fork, a range of different actives and drivers.

So, within the iPES Food panel, you have agronomists, nutritionists, environmental scientists, ecologists, development economists. And maybe the most unique element is that we don't only have experts from a scientific background, but we also have very experienced practitioners from NGO's and social movements. So, representing a different kind of [inaudible 00:04:55] knowledge. A knowledge that they have accrued through their experience of working with peasant groups and really fighting into governmental organizations and processes to get issues of sustainable food systems onto the agenda. So that's a really useful lived experience that we have embodied within the panel, alongside all of the scientific expertise.

And you know, iPES Food was created to plug that gap, to be able to take this holistic perspective. And also, it was created to be political. Because let's face it, I think there are lots of organizations out there, who by virtue of their funding, and by virtue of the mandate they've been given at their creation, are not able to tackle some of the most thorny and complex problems out there. And iPES had an explicit mandate from the start to look at the political economy of food systems.

So when we're thinking about what needs to change in food systems, we're also asking, how can we do that? In a context of major power imbalances. How can we do that in a context where the food industry is able to set the agenda, is able to lobby governments. And where governments sometimes have good intentions but often find themselves stuck with the realities of the systems we have. And stuck within kind of the short term thinking of the electoral cycles they work in.

So, I'd say our approach is very much grounded in this reality, the political reality of our food systems. So that was really why iPES was created, to kind of occupy that niche between the worlds of research and advocacy and policy. And to bring policy-oriented research onto the top of the agenda to the attention of policymakers.

Dr Ron Ehrlich: Well you know, the green revolution which kicked off I think in around the 70s. 'Cause at that stage in our history, we had about I think five billion people, or maybe a little less. And it was always thought that we wouldn't have enough food to feed the world. And I don't think it was ever foreseen that we would have this huge problem of obesity. So, something has happened in the industrialized or commercialized or politicized world of food, hasn't it?

Nick Jacobs: It has. And I think we're stuck with the problem framings that we had from that period. And if you look at the green revolution period in the post-war, arguably there was a very successful mobilization around the question of food security. Resources were deployed in order to invest in much higher productivity through crop breeding programs, to increase the productivity of rice and wheat and maize and other staple crops.

And also to really develop kind of universal applications of those crops, where they would be highly responsive to chemical inputs. And at the time, the full impacts of industrial, chemical-intensive agriculture were not really known.

So you know, those were the systems that made sense at the time. To respond to major issues of global hunger. And they did allow productivity to be increased in some ways. But that's no longer the key question. And I think hunger still exists in the world. And it exists in spite of the kind of mass production systems we created. So the real questions we need to be asking now, and the questions we try to ask at iPES are really about the distribution of food. It's who's producing that food? How sustainable are those systems? Who's benefiting? And are we addressing poverty and inequality at the same time? Because these are really root causes of hunger as well. And you know, we see that 50% of the people who are hungry in the world are small scale farmers. So, that really suggests that there's much more than a production problem here. It's about equity and distribution and who has the purchasing power to buy food.

So, I think yeah, the green revolution lives on in- it's still framing the questions we're asking. And too often, in these global debates about food, we're still hearing this question, how are we gonna feed the world? How are we gonna produce 50, 60% more food by 2050? Where I think that's just one part of the question, and we need to be asking this question in a lot more nuanced way.

Dr Ron Ehrlich: Well, of course, one could argue that food and health are intimately related. And of course, that's stating the obvious. But health trends over this period of the green revolution haven't exactly been all positive, have they?

Nick Jacobs: They haven't. And this was one of the major projects ISP Food took on soon after its creation in 2015. We took on a report, that was looking to kind of bring together all of the impacts of food and farming systems on human health. And we started out thinking, we'll have a small selection of impacts and we'll think about how they're connected. But when we got started, we realized that there's really a vast number of ways in which food systems impact human health. I think the quality of diets is maybe the most obvious one. And it's pretty well known at this point that the food that's available to people is not paving the way for food security, and certainly not for healthy diets for all. We still have 820 million people who suffer from hunger in the world, about two billion with micronutrient deficiencies.

And then as you mentioned Ron, there's the other side of the coin. This huge explosion of obesity and NCD's, non-communicable diseases, which is a problem in rich and poor countries now. And again, reflects some fundamental problems in the food supply, and in the relative prices of these foods. Because clearly, there are incentives out there for people to consume too much of the wrong things.

But those are maybe the more obvious links between food and health. But the more we looked into it, the more we realized, there are a variety of other channels. And environmental contamination caused by kind of industrial agriculture is a huge problem, and it leads to so many different health impacts. And a lot of these are not so well known. I was personally

surprised to find that agriculture is actually the largest contributor to air pollution in various regions of the world. So that's Europe, Russia, Turkey, Korea, Japan and the Eastern seaboard of the United States. So the ammonia emissions mostly from the livestock sector are a huge contributor to air pollution, which we might see has an urban problem, maybe linked to transport emissions. But I mean, agriculture's a huge part of that.

And then looking across the spectrum at these environment contamination issues. You have exposure to endocrine disrupting chemicals. And that's through pesticides, it's also through food packaging. And this is a huge problem that I think people are only just starting to get their head around now. In the European Union, recently the European Commission has announced it's going to be looking in detail at this question and coming up with an action plan on EDC's. Because there's a grand realization that exposure to these chemicals in various different configurations is causing huge hormonal problems, developmental problems.

Anti-microbial resistance. Again, this is a problem maybe that people associate more with human antibiotic use in the medical health sector. But actually, it's really very closely linked to livestock. And some of the recent data suggests, at least in Europe, the livestock sector consumes more antibiotics than the human medical sector. And they're often used in systematic ways, so not just when the animals are sick. But really just as a general livestock management strategy. And so that's a lot of antibiotics kind of leeching into the environment. And there's now again, a grand realization that the human health implications are huge because antibiotics is such a crucial part of the toolkit we have to deal with the threat of diseases.

So those are some of the impacts linked to environmental contamination. In our report, we also looked- I mean, we cast the net even wider. We looked to occupational hazards, and dangerous work conditions as well. Mostly because this is a literature and a debate which is mostly kind of taking place in isolation from the debate on unhealthy diets, or on environmental contamination from industrial agriculture. But we wanted to really bring all of these impacts together under one roof, to kind of get a full picture of the total burden of our food systems on human health. And if you bring the working conditions into the picture, it's even more problematic. And you see that agriculture remains one of the most dangerous sectors to work in. And for those of us living in wealthy countries, some of these impacts are less visible. Our food is increasingly sourced from very global supply chains. So in Europe, 70% of the protein-rich feed used for livestock is imported, and a lot of that comes from South America. And that's coming from very intensive mono-cropping, very chemically intensive and a lot of problems, health problems have been associated with that for workers through chronic exposure to pesticides. Also, the risk of accidents is high.

And one of the working conditions, one of the problems associated with working conditions, which is maybe less well known, is the kind of mental health and stress impacts of working in these increasingly volatile global food systems, where farmers have less and less control over the prices they'll receive, and the conditions they have to produce under. And farmer suicides is one aspect of that, and it's being kind of highlighted in India and some other countries. But there are also many other mental health impacts which are less documented, and consider the livelihood stresses that many farmers and farm workers and food workers are living with.

And part of what we tried to achieve in this report is to bring these things to light and to say this is part of the burden of food systems. This is part of the price to pay for the food we have on our plates.

Dr Ron Ehrlich: Well Nick I am just sitting here thinking about all the things you've just said to me. And gosh, this is a subject that we've dealt with on my program around the edges. But to find an organization like this that is actually bringing this all together is fantastic. I mean, the whole issue of the environmental contamination alone, and because of the globalization of this food system, of this green revolution, which now is dominated, I guess globally. The difference between corporate controlled farming and family farming. How does that split up occur globally, or in Europe? What's your view of that? 'Cause I think that's part of the issue, isn't it? It's the loss of control of the farmer. It's the farmer's dependency on the markets. It's the fact that they have to travel a long way and they need the chemicals because they buy the chemicals they're in debt and da da da da, it goes on. How does this split between corporate controlled farming and family farming look globally?

Nick Jacobs: Yeah, it's a very interesting question. I think it is really important, as you say, to clarify that there are different systems out there. There are still different models, even if a kind of industrial, corporate-driven food and farming model is becoming very dominant, it's already dominant I think in the global north and increasingly in a number of emerging and developing countries. But family farming does coexist with that model to an extent. It's a difficult coexistence. I think that's interesting as well is that the data shows that actually, only about I think 15 or 20% of the food that arrives on our plate has actually been traded across international borders.

So, in many cases, people are still being fed by local or regional food systems. And there's some great data that was gathered, I think by the ETC group in Canada, suggesting that 60 or even 70% of the food produced around the world is still produced by small scale farmers. So even though a lot of investment and support and subsidies are going into these big, more industrial farms, small scale farms are still highly productive and are still a crucial part of food systems around the world. And really, need to be supported to ensure they continue playing that role.

Yeah but, it's interesting that even though such a small percentage of food is traded across borders, the policies that really shape our food systems have been designed to support that globalization based and trade based model. So, countries that have a very strong export sector are likely to liberalizing their markets and putting their conditions in place for those exports to continue. 'Cause that's an important source of revenue for the country, and it's certainly making some people and one section of the farming industry quite wealthy. But both policies can be really to the detriment of the many small scale farmers who are trying to serve local markets and feed their communities.

So these policies can be kind of water extraction policies that allow the big farms to keep extracting water at unsustainable rates. And with detrimental impacts on other farmers. It can trade policies, like I said, setting [inaudible 00:19:43] very low. Because if you want to export a lot, there tends to be a quick pro quo. And you need to open your market to imports as well, to secure those trade deals. So farmers in other sectors may be suffering the fallout

from that if they would need to have the more protected market in their sectors, but they're finding themselves kind of competing with produce that's been dumped on their markets.

iPES food looked at this question recently in again the European context, and even though the European Union has removed a lot of its most trade-distorting policies, and it's not directly exporting exports to the extent it used to, it's still pumping a lot of money into sectors like meat and dairy. Where the EU has major surpluses. And these products end up on the West African market and on the South African market. And the farmers in those countries are struggling to compete. Dairy farmers in West Africa are struggling to compete with very cheap milk powder that's coming in from Europe and very cheap cuts of poultry. And these are sectors that are getting subsidized directly or indirectly. And those countries in Africa have opted to liberalize their markets, often being aware that use of caution just because, there often isn't very much leeway within the international trade regime, and they've been required to give up some of the preferences they had in the past under the WTO rules.

Dr Ron Ehrlich:            Yeah, is this a side effect of these free trade agreements?

Nick Jacobs:            Yes, I think it is. I don't think it's the main driver. I mean, if you look at what needs to be done to protect small scale farmers and local food systems in different parts of the world, what these farmers mostly need is support from their governments. They need regulatory frameworks that support them. They need to have the ability to recycle seeds. They need access to resources, they need secure land tenure, they need many, many things. And often, governments are not providing those things. And I think it would be unfair to lay all of the blame at the door of trade liberalization. I think it's just one factor, but it's an important factor. Because trade agreements have tended to tie the hands of governments. They lock governments into a certain development pathway for their agricultural sector. And they, most importantly, lead to reduced [inaudible 00:22:13] and regulatory alignment with other countries in the world. And this has tended not to benefit farmers in very poor countries.

Dr Ron Ehrlich:            It's interesting, isn't it. Because we're hearing a lot about inequality, certainly in the west about wages in the west having stagnated over the last 30 or 40 years since this globalization. And that's just people working in service industries in western countries. But here we have the farmers also suffering. Their lack of control, their mental health issues, the stresses they're placed under as the markets that previously were local and protected are now open to the world.

Nick Jacobs:            That's right. And I think the stats tell a very troubling story. And again, apologies for having a disproportionate amount of data on Europe, that's something I've been working on recently, but I think these trends apply across the board. In Europe, farmers about 10, 20 years ago were getting something like 35% of the food chain value. And now it's shrunk to about 20%, and that means the value is disappearing up the chain. Food prices are stagnating, and big food companies are in an increasingly dominant position. They're able to source food from different parts of the world. They're able to dictate the terms, dictate the prices. And farmers are really struggling to stay in business, and in many parts of the world, certainly in Europe, very dependent on government subsidies just to break even.

And you know, it's not just farmers, it's endemic across the food sector. There was an interesting study from the U.S. recently that showed that looking at which jobs were the lowest paid across all sectors in the United States. And food service workers came out number one in that list. Dishwashers, number two, and farm work is number seven. So three of the seven lowest paid jobs are in the food system. And that really suggests there's a systematic problem. The price that we're paying for our food is not sufficient to reward the workers in that system for the jobs they're doing. And it's something we draw attention to in our recent report on the health impacts of food systems was an auspicious cycle of what something we've referred to as the food health poverty nexus.

Food systems are driving poverty. They're paying poverty wages, and they're leaving people in highly precarious employment without health coverage, without the ability to seek recourse when their working conditions are dangerous and certainly that's the case for migrant farm workers. Many people in food supply chains and production lines. And you know, by exacerbating poverty, food systems are really than creating the conditions in which people have poor diets, and have poor health. So those living in poverty generally can't afford a better diet, and they're more vulnerable to food insecurity.

So, food systems are aiming essentially to feed people and to keep them healthy. And yet, the way those food systems are structured are undermining the basis for health and prosperity.

Dr Ron Ehrlich: So we've got on the one hand this food health poverty nexus amongst workers in the industry producing and packaging and all of that. But we've often, we've actually on this program, I've made reference to the fact that part of our problem from a health perspective is this overabundance of seemingly cheap food. And I say seeming because when you factor in the health costs on one end and the environmental costs of the other end, it's not cheap at all.

Nick Jacobs: That's right. And the statistics are really staggering on this front. The costs of so many of those impacts I mentioned before are really staggering. And some of those are known already, and some of them are less known. If you look at these emerge ring problems like exposure to endocrine disrupting chemicals, anti-microbial resistance, the estimated costs of the magnitude of a percentage point of GDP or even more. This is really huge, and you think that we would have crossed the threshold for political action at this point.

Dr Ron Ehrlich: Not to mention, [inaudible 00:27:01] as well.

Nick Jacobs: That's right, I mean that's an area where there are more and more data as well. We're seeing really huge costs there.

Dr Ron Ehrlich: Yep.

Nick Jacobs: But I think you touched on an interesting point there, Ron. When you look at the health costs and the environmental costs together, and you see that they really are interconnected and trace back to the same, underlying practices in industrial agriculture, that's where it's really staggering, and you wonder why we're not seeing a major shift in our production systems.

I mentioned a moment ago the food health poverty nexus, another kind of nexus or cycle we identified in this report is the food health climate nexus. And there's a very important cycle in play here. Because food systems, as they currently operate, very reliant on chemical inputs, very, very much degrading land and soil around the world. These food systems have been estimated to drive up to 30% of global greenhouse gas emissions. So they're a major contributor to climate change.

And then if you look at the impacts of climate change as it rebounds back onto food systems, in so many categories, it's really exacerbating the health problems that food systems are creating. So climate change is eroding habitats, and it's forcing wild animals into different regions, and in doing so, it's increasing the risk of zoonotic or animal-based diseases spreading. If you look at the nutritional side, climate change is a major threat to crops, to crop yields in the future. And even just higher atmospheric concentrations of carbon dioxide have now been linked to a reduction of the nutritional value of crops.

So again, food systems are driving climate change, and climate change are undermining the basis for delivering healthy food systems. It's undermining the quantity and the quality of food that people will have. It's exacerbating health risks, I mean so many more. The mercury concentrations in seawater are likely to be higher with the change in sea temperatures. So, there's a huge vicious cycle going on here where health impacts and environmental impacts in food systems are kinds of reinforcing one another and locking in these really big problems.

Dr Ron Ehrlich: So Nick, maybe the answer to this is so obvious, but we have a problem with the quality of the food, we have a problem with the people at the farm level, the stress level. We have a problem with the workers, we have a problem with the people consuming it, we have a problem with the environment. Who's the winner in all of this?

Nick Jacobs: Well, the main winner I think is the agribusiness industry. There're very powerful companies who are profiting from selling pesticides and fertilizers. And behind them, there's a fossil fuel industry that is profiting greatly from the reliance of the agricultural sector on chemical-intensive inputs and on high energy production systems. So there are huge lobbies who are benefiting from this. I think if you look at the other end of the food chain, the retailers and processes do benefit to an extent from having kind of a cheap supply of agricultural commodities. And as I mentioned before, and as you mentioned as well, a cheap food system is actually very costly. And someone somewhere is paying the price for that cheap food because they are facing very poor conditions, very volatile conditions, poor wages and sometimes very dangerous workplaces.

So, the food industry, on the basis of those very cheap ingredients, is able to produce a wide range of foods, often highly processed. And particularly, supermarkets and mass retailers are really able to benefit from that and to offer people foods that they want to buy at a very cheap price. And those companies remain highly profitable and they're getting bigger all the time.

Another report iPES Food produced in 2017, it's actually looking at the concentration that's going on in the food sector. And I found that there's kind of unprecedented levels of industry consolidation going on and retail processing, grain trade, kind of all the way through the system. As some of the biggest companies take control of different sectors and continue to

kind of drive down the prices and really take up a monopolistic position. So those companies are benefiting, but it's really a handful of actors, and there are many more who are not benefiting. And you know, even within the food industry, it would be unfair to imply that everyone wants the cheap food model. There are companies who are trying to offer something different. There are even within single brands, they will have differentiation, they'll have products or product lines which try to provide better gauntness for sustainability and health. And they're doing so at higher prices. And in some cases, they're finding strong consumer markets for those kinds of higher premium products.

But for now, I think overall these big industry players are profiting a lot from this system.

Dr Ron Ehrlich: Now, so we've painted a picture which you know, I have to say is not the most positive of problems. But here it probably segues nicely into iPES, and I know there are guiding principals. I wonder if you might share a couple of those with us.

Nick Jacobs: Sure. iPES Food is first and foremost an independent panel. And you know, this is a word that is thrown around a lot. What we mean by that is very specific, we don't accept from private corporations, and we don't accept funding from governments. So all of the funding that has allowed iPES to take up its work has come from private foundations, philanthropic foundations. And we're very explicit in those cases that we don't have any strings attached to the work, and if you look at the kind of topics that iPES Food has taken on and the critique we've been able to provide of some of the current practices and food systems, I think it's pretty clear that there are really no ties to industry and what we're producing is fully independent, and really taking stock of all the information that's out there. And you know, not pulling punches

And like I said, there are lots of different groups out there producing an analysis of food systems. And you know, power relations and lobbying and the political blockages are generally discussed, but we don't think they're discussed to the extent they should be. These questions are often a footnote. We'll have a report saying we need to promote climate-smart agriculture, and we need certain technologies to be spread to all farmers. And then as a footnote, we'll see, and we need to make sure all farmers have access to these technologies. But for us, that's really the core of the problem. The reality we live in is that farmers don't have that [inaudible 00:34:41] access to these technologies, and when they do, they become reliant an agribusinesses and that comes with a whole range of problems, and with pressures to scale up and to adopt a certain model of production which has very negative impacts for sustainability.

So, all of that is a roundabout way of saying that we are very much an independent panel, and we guard that independence very fiercely. Another key principal as I mentioned, in the beginning, is this holistic approach to food systems. So, we really refuse to single out different parts of the food system and look at them in isolation. Of course, there's a time and a place for different types of analysis, and it's very important to look in detail. You zoom in on questions like how can insurance tools help to improve farmer's incomes or to look on the nutritional side and think about the impacts of bio-fortifying crops, for example.

But when we look at those questions, whatever the entry point is, we try to keep a focus on the whole food system, and to think about, if a certain solution is brought forward, what are the implications? How is this going to echo out across the food system, and who is it going to benefit? And is it going to take us towards the kind of paradigm shift towards a really sustainable food system, or is it gonna lock us even further into the system that exists now? Which, as I described before is really full of these vicious cycles. It keeps generating negative impacts.

So that's a really crucial element. And the holistic part, it's also about just having those different disciplines just represented in the panel. And the iPES Food panel is itself such a useful sounding board because we might have somebody leading on a report who comes from the more agronomic background. But they'll be testing their ideas every stage with people who have a very different world view and a different set of assumptions, who'll be coming from an anthropological point of a view, a sociological point of view. And so we'll be putting the questions in a different way. And that's a diversity of perspectives that we have within the panel, and it's also reflected in the way that we work.

And maybe another innovative aspect of iPES is the commitment to work very closely with social movements and with various different actors in food systems. Not just at the stage of discriminating our work, but even at the idea stage, when we're kind of framing the questions that we're going to be answering. Because that's so crucial to the type of analysis that will then ensue. And the best example of this is actually a process that we undertook in the EU from 2016 to 2019, and it just culminated in a major report we released in February of this year called 'Towards a common food policy for the EU.' And this is a report that's taking stock of all the policies in the European Union that affect food systems. And making the case for a more integrated approach, a common food policy where we set objectives for the food system at the EU level. And instead of having an agricultural policy that is primarily about supporting farmers incomes, that policy is part of a bigger policy mix, and we try to avoid trade-offs between agricultural policy, environmental and health policies from the outset, and really bring these policies together.

And rather than just sitting in a room with our experts and producing this report, we decided to kind of co-develop it and really shape the ideas with lots of different people. And we hosted five different round table meetings in Brussels with scientists, NGO's, social movements, farmers groups, and policymakers themselves to kind of get them to own the process and become familiar with the ideas along the way. And it was really kind of a way of crowdsourcing ideas in a way, and really having an extra filter to make sure that the ideas and the reform proposals that came out of this would be road tested along the way. And it was really interesting to be able to have these debates with all these different people and to help us to really frame the questions in a way that can [inaudible 00:39:25] the greatest consensus.

And we hope, it's still early days, this is a report we launched only last month. But by virtue of having had a very democratic process and drawing from the collective intelligence of all these people, we think it gives the proposal greater legitimacy at the end of the day. Because after all, one report produced by a scientific group just goes on the desk of a policymaker, probably on the top of a big pile with lots of other reports. But we thought it would be useful to be able to say in good faith, this is a report that has been shaped by 400 different people

through a series of meetings. And not just consulting them in a traditional way, but really designing collective intelligence exercises so that people could participate from a variety of different backgrounds. Not just people who were already working in a policy bubble.

So that is a crucial aspect of how iPES works, and it's something I think we were able to achieve through this process we conducted in the EU, and something we're hoping to do in other regions of the world as well.

Dr Ron Ehrlich:            Fantastic. I noticed another one is sustainability. That's another keyword.

Nick Jacobs:              That's right. And again, I think sustainability is a word that we hear so much in so many different contexts. What we try to keep in mind at all points is the multi-dimensional nature of sustainability. So, we're always talking about economic, social and environmental sustainability. And again, this only becomes meaningful when you look at specific examples, specific solutions that are being put forward to solve the problems in food systems. And it provides a good benchmark, I think, against which we should be holding up these solutions.

So for example, you might hear people promoting very industrial animal systems, indoor animal systems, because these systems have a higher capacity to capture methane and other greenhouse gases that can be very high tech. And so, if you're analyzing that just against one sustainability criterion, just a kind of climate mitigation approach, then that might look like a positive solution. But, if you're bringing all of the different aspects of sustainability onto the table, then you've got to ask, are these technologies going to be really affordable in the long term? How does this get us towards a livestock system that doesn't generate all the other negative impacts? We've talked about like the ammonia emissions, the groundwater contamination. Not to mention the animal welfare problems associated with these [inaudible 00:42:21] or very intensive industrial feedlots. And of course, the working conditions which remain very problematic.

So having this kind of triple bottom line, or the multi-dimensional approach to sustainability always in mind, I think provides this benchmark that we should always use, to make sure that the solutions we're putting forward are really taking us in the right direction. And they're not just solving one problem at the expense of another.

Dr Ron Ehrlich:            It's interesting, isn't it? 'Cause animals are often identified as a problem, and you mentioned that 70% of Europe's protein-rich food for animals comes from South American, presumably, forests are being cleared in South America to grow those 70% protein things. And then they're fed to animals which are in feedlots that require those huge amounts of anti-microbial that you mentioned as well as part of the environmental contamination. And then they're put into feedlots and the methanol ammonia becomes a global health issue. And the whole thing points to this problem with animals. And in some areas of regenerative agricultural, and because animals are actually part of the- an important part of the solution, if they graze and trample and urinate and defecate, they enrich the soil, making the whole process carbon neutral. They're out in the open. It's the way it's managed,

isn't it? I mean there's a holistic, we've had on this program the concept of a holistic context. The animals aren't necessarily the problem, it's the way they're managed that's the problem.

Nick Jacobs: Yeah, that's right. I would agree with that statement. First of all, I'd say that iPES Food will be producing a report on meat and protein in the next couple of years. I won't say too much about this topic today because I don't want to kind of preempt the conclusion for that report-

Dr Ron Ehrlich: [crosstalk 00:44:23].

Nick Jacobs: I'll be happy to. We are taking it on 'cause it's such a crucial topic and such a divisive debate. You're right. I think the main issue is how animals are managed. And if we look at the reality of food systems now, the type of systems you described were generative systems, grazing, pasture-based systems. Where animals are just one part of a healthy ecosystem, that they're helping to fertilize the land and providing those kinds of ecosystem services. I think those, unfortunately, are the minority at present. And of course, these agro-ecological regenerative systems do require fertility. If we're not going to be so reliant on nitrogen-based fertilizers, we need other sources of fertility. And the manure produced by animals, it's a crucial part of that.

And of course, we shouldn't ignore the livelihood side of this. In many parts of the world, in many farming systems, many landscapes, livestock and grazing livestock are really one of the only livelihood options people have. Particularly in more mountainous areas. So, it would be foolish to suggest that all of these systems are equally bad and equally problematic. There are big tradeoffs there. I think where iPES Food has been very clear is that the industrial feedlots have no place in the sustainable food systems of the future. We have to move towards more integrated, more diversified production systems. And that can often involve animals. I think we need to see more diversity at every level. Diversity of crops, species, more [inaudible 00:46:12] diversity to increase pollination and other ecosystem services. And in some cases, mixed crop and livestock systems can be viable and can really work well and have very positive implications for resource efficiency and sustainability.

Dr Ron Ehrlich: Well you've mentioned the word 'holistic' several times, and that's music to our ears on this program. And so is the word diversity, that seems to be something that keeps cropping up. You know, we've done programs on the microbiome in the gaps and the microbiomes in the soils and the mouth. We've done programs on vegetation biodiversity. And the more diverse all of those environments are, the more resilient they are, which kind of feeds back to this monocropping model that seems to be pervasive in so much of agribusiness, isn't it?

Nick Jacobs: That's right. And if there's one solution that iPES Food has pointed to through all of this analysis, it's the need for a major paradigm shift towards diversified agro-ecological systems. And when we're really using that as an umbrella term, it's very much aligned with the original concept of organic agriculture. Although, often the way that certified organic is practised is not completely in line with that, it's a term that covers a lot of what is meant by regenerative agriculture, bio-dynamic systems, permaculture as well in certain regions has more resonance. Very much reflecting the same principals.

I mean the key thing when we're describing these systems is that we need to be moving as far away as possible from chemical-intensive monocultures. The agro-ecological systems we're talking about are really at the other end of that spectrum, and there are different points along that spectrum, and farmers can move in that direction from a variety of different starting points and at different speeds. But we've been very clear that that should be the direction of travel. And you know, these diversified systems should be nurturing diversity at every level. Different crops, different species, as much [inaudible 00:48:25] diversity as possible on the farm to increase pollination and so on.

Ideally, replacing chemical inputs with biological inputs. And maybe the common thread in all of this kind of alternative, sustainable systems are having some aspect of kind of redesign. So, not just replacing one product with another, but really designing the farming system in order to nurture these synergies. And in order to have a system that will really produce stable outputs over the longer term, on the basis of creating resilient, healthy ecosystems. Rather than creating an artificial environment, where just one thing is growing, and it needs a lot of chemicals to be sustained.

And you know, agro-ecology maybe has more immediate kind of environmental connotations, but it's really become more prominent recently on the basis of people appreciating that it's a holistic approach, and it has benefits for farmers incomes, and their livelihoods as well. Because if you're diversifying your crops, if you're less reliant on chemical inputs, you have more autonomy, and the implication for farmers income can be very positive.

Dr Ron Ehrlich: We're coming to the end of our time here and it's just been fantastic to hear about iPES and all of the things that it's involved in, and I'd love to follow up with some discussion on some of those reports. Just finally, and taking a step back here from your role in the organization, because we're all on a health journey together in our modern world. And I wondered if you might just share an idea. What do you think the biggest challenge is for us, people, on their health journey through life in our modern world? What do you think that might be?

Nick Jacobs: Wow, that's the most difficult question of them all. I think it's probably just being able to handle all of the information that's thrown at us and to make sense of it, and it keeps the big picture in focus. Because we're bombarded all the time with new stories about a particular food, or a particular nutrient that is absolutely crucial. And one day we'll see an article saying that eating a specific fruit will save your life, the next day you'll see the same fruit associated with some kind of carcinogenic risks. And there's a lot of information out there, and I think the way that it's covered in the media is sometimes problematic.

I've heard it described as single study syndrome. Where you'll have a single scientific study will produce some findings, and then that will be covered in a news article as if no other studies had been produced ever on this topic in the world. So, there's always a risk of losing the context. And you know, when we see this conflicting information, there's a tendency to just throw our hands up in the air and say, "Well, we can trust scientists." And then we ignore maybe some of the very sound advice, and the very obvious things that we should be doing.



Things like eating more fruits and vegetables, exercising more and making sure that we have a very balanced and diverse diet. And these are things that have been proven really, beyond doubt, the benefits are there in the data, the benefits are there in the people around us who do these things.

So, yeah. I think the challenge is just to kind of keep that big picture in perspective, and not be distracted by all the noise.

Dr Ron Ehrlich: Well, thanks. I'm really pleased to know that iPES is out there helping us make sense of some of this, and lobbying governments-

Nick Jacobs: We're trying.

Dr Ron Ehrlich: Well, good on you, and more power to you. So thank you so much for joining us today, Nick, and sharing the work of iPES. I look forward to maybe talking again and following up some of those reports.

Nick Jacobs: Thanks very much Ron, it was great to be with you today.

Dr Ron Ehrlich: The issues we touched on today are so fundamental to a sustainable future. It's interesting, the word sustainable, actually. Given how clearly degraded the soils are, how poor the lives of farmworkers and farmers health is, how animals in industrial meat production are, how all of that is reflected in the epidemic of chronic degenerative diseases, physical, mental health issues that are largely preventable. And given the degraded state of the environment and the land and sea, and the air for that matter, do we really want to sustain that, or do we want to improve it through regeneration? Perhaps that's semantics, but all those things need to be improved, not just sustained. Look, we'll have links to this iPES site and we'll follow up their work in the future. Don't forget to download the Unstress app, have a listen to the free webinars, try the breathing exercises, [inaudible 00:53:35] so much.

And so, until next time, this is Dr Ron Ehrlich, be well. This podcast provides general information and discussion about medicine, health and related subjects. The content is not intended and should not be construed as medical advice, or as a substitute for care by a qualified medical practitioner. If you or any other person has a medical concern, he or she should consult with an appropriately qualified medical practitioner. Guests who speak in this podcast express their own opinions, experiences, and conclusions.