

Text - 'THE BIG DEBATE'

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At the NJPN Annual Conference 'Our Daily Bread – Food Security, People and Planet'

Participants:

*John Vidal, Vandana Shiva, Alison Austin, David Howlett, Patrick Mulvany
(Welcomed and thanked by Ellen Teague, NJPN)*

TEAGUE: Good evening, and welcome to our big debate. And it gives us enormous pleasure, as NJPN, to welcome all five of you to our conference. It's a great honour, and thank you so much. I'm only going to introduce John Vidal, who is our Chair, and to say that John has been a great – not quite a colleague – but a like-minded, kindred spirit, in terms of some of the issues that many of us in NJPN are concerned about, in his job as Environment Editor at *The Guardian*. John, your articles on Mining, on GM food, and so on, are read with enormous interest.

When we asked John to come to the debate, we didn't realise it was going to be such an enormous sacrifice, as it has been for many of our panellists to come. He actually came back early from a trip to Afghanistan to be with us.

But, as I say, all our panellists have given up their precious time, and we absolutely appreciate you being here with us, and I'm now going to hand over to John Vidal.

VIDAL: Well, welcome to all of you, and I have to say, thank you very much, Ellen. Coming back from Afghanistan wasn't that much of a struggle – it was quite good to get on the airplane, I have to say. And, it's wonderful, it's really – seriously – it's wonderful to be here, and to be part of this conference. I hadn't realised the scale of it, I hadn't realised how many people were here, and how many different areas you represent, and how many groups, and where you're all coming from. So, it's quite inspiring to see the great turnout.

Now, I do appreciate that – we'll keep going for as long as you like – but there are other things tonight, as well, so there's a bar, and there's a dance, and there's films, and there's all manner of other stuff, as well. So, by all means, if it gets fantastically boring, just walk out, and start dancing.

But, we'll keep going. My colleagues here, honestly, seriously, will – if you give them half a chance – they will keep going all night.

I'm going to very, very briefly introduce them to you. Some of them, you probably know pretty well anyway by their works, or by their faces. And then we'll explain a little bit about the format. So, starting on the right, Patrick Mulvany from Practical Action, and, basically, the Mr, what I would call, Mr Food in Britain – huge history in the NGO movement, and really keeping on the toes of government, and just absolutely on the case about what is going to, basically, get food for the world. Tremendous respect, Patrick, it's marvellous to see you here.

Alison Austin has worked in the corporate sector for quite a while – I'm sure she'll explain to you – worked for Sainsbury's, with Sainsbury's, probably against Sainsbury's as well, trying to pummel the supermarkets and others into a more sustainable way of thinking about food. And I have to say, from my own experience, they have been through a revolution. There's a long way to go, but it's partly because of Alison's work that she's been doing behind the scenes, and wherever, so fantastic, thank you very much for coming.

David Howlett has several different hats on, because, in theory, at the moment, he's an academic at Leeds University – an agronomist, a man who has definitely got his hands dirty, and made us make things grow. But he has a hinterland in the DFID, the Department for International Development, which occupies itself enormously with food issues. So, his background of seeing how government has been working, and where it's coming from, will be really, really interesting.

And then Vandana Shiva, who I've known for years. Goodness, I think we've been arrested in many countries. Tear gas – I have smelt tear gas with this woman in at least three continents. I think the American tear gas is some of the best. It's very different from the Italian. Anyway, she goes back a long way. She is a riot in herself, as they say, and if she's not arrested by the end of the evening, probably something's wrong.

So, anyway, you know why we're here. Basically, it's a perfect storm out there, of events, and a combination of climate change, population explosions, politics – all manner of

different things have conspired to produce a monster, monster food crisis, of more than one billion people who are, in theory, hungry every night, and tens of millions more who are eating absolutely rubbish food.

And, if you look ahead, we have got climate change roving in. I saw, today, the figures from America. It's absolutely on par, to be the hottest year ever. Great food crisis emerging in Russia, even now, and elsewhere – Germany. And, we've got three billion more people expected within the next thirty, forty years, and we can only just, just, just keep up with it.

You've got half the world which is obese – and I'm sorry, I have to say, I'm on that sort of side of it – and then we've got half the world who are facing a real, real problem. So, the question is, How did we get here and how do we get out of it? And so, the idea is that we ask each of the four people sitting round me, just to give their take – maybe only talk about five, six minutes each – and just to provoke ideas.

Then we have a little chat amongst ourselves, and then it's basically over to you, because you can ask the questions – the ones which you want. I should think we'll range across things like organic food, technology, supermarkets, governance – we can go in any direction. The trouble with food debating is it's absolutely vast. So, anyway, I'm going to start, first of all, with Patrick, because your take is very particular – it's international, but at the same time, it's pretty local. Patrick, please.

MULVANY: John, thank you very much indeed, and thank you to the organisers for inviting me to this event – very important, very timely, and, the scourge of hunger, as John describes, is obscene. I mean, it's a world that has enough food. There's no difficulty in producing enough food for the world at this time – the difficulty is in distributing it, in that there are too many poor people. The obscenity of 1.7 billion obese people, type 2 diabetes being one of the fastest growing pandemics in the world, a food system which is dysfunctional – it's in crisis.

But, the good news is that 70 percent of the world's people are fed locally. The normal pattern for most people is to get their food within 50 to 100 miles of where they live. Most food is not traded, most food is grown on a smaller scale, much of that ecologically, without many inputs. That is the dominant food system in the world. The food system of the corporates, like your Walmarts, and your Monsanto's, is an aberration. It may be what dominates here; it certainly – as those of you who've seen Food Inc know – dominates across the pond. But, it's not the food system of the majority. Most people are fed locally. And our job is, surely, to see how that can be defended, how those local food systems can be improved, and the resilience of those local food systems can be made available to secure future food for nine billion people.

The second piece of good news is that, whilst, indeed, global population will top, say, nine billion or so in 2050, the annual rate of increase of population has been going down, year on year, since the mid-1980s. So, whilst the challenge of producing enough food in the last forty years has been tremendous, and has been met – although the distribution has been poor – the challenge for the next forty years is, actually, not quite as great.

If one looks at the variability of production, year on year – sometimes good, fat years, and lean years. If one could smooth that out, if one could be more focussed on the importance of food, and food production, food availability for everybody, and stop all this nonsense of using land for growing fuel for motor cars, and really focus on whatever land and water exists, and making it available for food production. The actual annual increment required is less than one percent, on average – less than one percent per year – easily met ecologically, using every kind of mechanism and biological mechanism, in order to be able to improve the ecosystem functions, to improve diversity – perfectly possible to achieve.

This ecological food provision is clearly the way forward. Not dependent on corporate control, but seeds of input. Not dependent on this minority food system – the thirty percent that is trying to take over the rest of the world, to capture and destroy markets, to capture and destroy ecosystems, building up that resilient, local food system that will feed people now, and into the future.

And there's a framework within which all of this can be placed, and that's what we call the Food Sovereignty framework, which puts food at the centre of policy, and makes sure that food, and the way it's produced, is ecological, is resilient, can adapt to climate change, it's carbon neutral. It may need a little bit more labour but, hey, there's going to be a few more people around. So, that's the system for the future.

VIDAL: Thank you very much, Patrick. That was challenging ... [applause]. I like the way he makes it sound so easy. It's not, I know. David has actually tried to work on the policy side of it, and there aren't that many disagreements. We may all come at it slightly differently, but I don't think there are that many disagreements here. You would advocate, very much, an ecological approach as well, I presume, would you David?

HOWLETT: Yes, but there is a big but, but first, to thank the organisers for having me. I think the big but is that the evidence is that organic agriculture won't feed the world. If we were to convert all of UK agriculture, and European agriculture, the yields we would get would not be sufficient, so we do need to think about that. But, if we look at the, so called, Green Revolution, it did increase food production, it did reduce hunger, it did stop famine, but not all benefitted from the Green Revolution. It also relied upon inputs, such as fertilizers, so that system is not sustainable.

We are looking at the challenge of food security, and I think we need to be clear that food production is just one issue of food security. Patrick highlighted that we do have enough food in the world today to feed everybody, but we have one billion people going to bed hungry tonight. So, it's not just about food production, it's about trade policies, land policies. It's also about poverty. If you're poor, you're much more likely to be food insecure. So, we need to focus on poverty reduction, and growth, and getting people out of poverty, as well as allowing them to grow food, and also to grow themselves out of poverty through agriculture. So, don't forget about the other aspects of food security, because if we just produce enough food, that does not mean we're not going to have hungry people.

I want to just, also, focus a bit on the size of the climate change challenge. It takes around about 500 to 2,000 litres of water for a kilogram of grain, up to 15,000 litres of water for a kilogram of meat. We're going to go into a world which is going to be warmer, perhaps less rainfall – some places more rainfall – but more extremes of climate. So, we're going to have real issues around water.

And if you do the maths, you work out you need about three thousand to six thousand cubic kilometres more water to feed the three billion extra people. That doesn't mean much to me, but Loch Ness has about 7.4 kilometres cubed of water, so a lot of Loch Nesses we need of fresh water. So, water is so crucial.

Again, land, we're not making land any more – we're actually putting some land out of production through salinity and soil erosion. We could convert the rainforests to land, to produce food, but that has an impact, because that would increase carbon emissions – about seventeen percent global emissions come from deforestation. Agriculture is a major cause of that. Direct emissions from agriculture is around about fourteen percent – it's about six percent in this country. That doesn't include the energy for your fuel, your transport, your packaging, and your processing. So, agriculture is a cause of climate change, as well as a solution. We can sequester – store more carbon into soils – so we need better practice to do that.

So, coming back to the 'but', we need ecological approaches, where you place more organic matter in soils. But, also, I think we need to maximise the use of modern science, whether it's traditional science, or biotechnology. Even the GM aspects, we need to look at.

So, I think it's business unusual, not just in ecological agriculture; it's also looking at using modern science to meet the needs of smallholder farmers. I take the point, and Vandana's probably going to come at the issue of the corporate sector, we don't want three or four companies running the whole of the food chain. But, we do need a private sector – a vibrant private sector – small seed companies in Africa, Asia, delivering seeds to farmers, which meet their needs.

So, I think it's business unusual, and I think we can try and explore what we need to do this evening. But, a big challenge, and it's not going to be as easy as we think. And, also, John, you've just come back from Afghanistan, so conflict, bad governance is also going to make more hungry people in the world. Thank you.

VIDAL: Well said [applause]. I can see a sort of red rag coming up here, because Vandana, I can't believe is going to let much of that go without notice. Are you saying, would you agree that we need a more high-tech approach to this? Can organic farming do it? What do you think, Vandana?

SHIVA: Because I'm a scientist, I measure tech as a tool – technology's a mere tool. And if you put the wrong tool for the wrong thing, high-tech can be crude tech. And I think that's what's happened with chemical farming. We applied high-tech tools of war to produce our food. The pesticides are killing 220,000 people every year on the planet. They killed 3,000 in one night, on 2nd December 1984, in Bhopal. Twenty-five thousand have died since then. That's high-tech of the wrong kind.

Unfortunately, genetic engineering is similar high-tech of the wrong kind. The science of managing pests, for example, tells us that the best way to control pests is to create resilient crops, for which we need good, healthy, fertile soils. It's to create best predator balance, for which you need biodiversity. Putting pesticides into plants – which is what genetically engineered BT crops do – is even cruder than the pesticides. Pesticides can go wrong – like DDT did – and after Rachel Carson's wake-up call DDT was banned.

But, once you've released BT into the environment, there's no call back. Once you've killed the pollinators with the BT toxin, and the spraying of pesticides, there's no recall. One of the – I think two phrases that were used by David – one, that the Green Revolution led us out of food scarcity.

My history, before 1984, before Bhopal, and Punjab, was as an ecologist and a physicist. I started to look at agriculture because of the violence of 1984 in Bhopal, and in Punjab. And I did a United Nations study on the Green Revolution. The Green Revolution got a Nobel Peace Prize. Today, the people are killing each other in Punjab - where's the peace? What went wrong? And I realised that so many of the figures were being cooked up then, and are being cooked up now.

The first figure that's being cooked up is there was more food. Now, there was more rice and wheat, but there was less pulses, there was less greens, there was less oil seed. Overall, the food basket shrunk. And we've done calculations which show that they increased rice and wheat because we put more land under rice, and more land under wheat, and we gave more irrigation to it. With that kind of available land and water, with organic, we'd have produced the same amount of increased rice and wheat. It was not because of chemicals, and it was not because of miracle seeds. There was nothing miraculous about breeding seeds that responded to chemicals, and actually give you less biomass. They starve your soil, starve your cattle, because the dwarf varieties actually shrink the biomass availability, which means they shrink your ecosystem availability to produce more biological matter.

"Organic won't feed the world" has been repeated very often. The point is, when you measure organic, in its full production, of all the outputs, organic farms produce more food. And when we say food, we mean food in terms of all the nutrition. The fact that we've reduced food to eight commodities, and we're turning the human diet into a cereal diet, is part of the reason even those who are getting food, are getting diabetes. It's because it's a diet rich in carbohydrates. We don't have the balancing nutrients.

And by declining other aspects of your nutrient system, while increasing monocultures, you can increase commodities, it's not increasing nutrition. Nutrition, per acre, is higher in ecological systems.

Genetic engineering is not based on science. The science tells us that, at an agricultural level, it's agro-ecology that is the basis of science. Genetic engineering is based on a totally false paradigm, that science has shown doesn't work, of genes being like fixed, immutable atoms, with our gene having a property. It doesn't work that way, which is why, after all this time, we've got only two crude applications – one to make crops more resilient, more resistant to herbicides, but that means 5.4 million acres in the United States are now overtaken by super weeds that can't be controlled.

BT cotton was introduced in India, with the claim of producing 1,500 kilograms. It produced just 400 to 500 kilograms. But, if you measure the actual farming with cotton, with food crops, which is how we use the farm cotton, actually, the overall crop production is lower. And the costs are so high – cotton seed used to cost seven rupees. When Monsanto bought in the GM cotton, it jumped to 1,800 rupees, of which 1,200 rupees was merely the royalty payment.

In the last few years, Monsanto's taken out \$250 million from poor peasants. They're already impoverished, and you've taken that seed, on the basis of credit, and the crop is failing to control the bollworm; it's also leading to the creation of new pests. What you basically have, is indebted peasants. And the debt has risen so fast, and so high, that 200,000 farmers in India have committed suicide. The majority of these suicides are in the

cotton area – 95% of cotton today in India is BT cotton, owned by Monsanto, including licensing arrangements.

But half of a billion people in the world today, who are hungry, are producers of food. And they're hungry, either because their land has been taken away, because of a massive land grab, or because the costs of production are so high, but they're selling whatever they grow, just to pay back the debt. And they go hungry themselves.

And, because I keep track of this, at this point in India, a farmer is selling his or her rice at three rupees a kilo, and buying it back with another loan, and another debt, at 22 rupees a kilo. When poverty is measured through growth, India, as you know, is shining. India and China have the high growth rates today, but we have the largest number of hungry people in the world. In the last decade, hunger has exploded in India, because the very mechanisms that are creating growth, as measured in the GDP, are leading to dispossession of the peasantry.

The final thing I'd like to say about the future of food, is that two things are given: One, volatile markets; Two, unstable climate. The only way to deal with them is through decentralisation and diversity. Our agricultural systems will have to build on that tradition – not the tradition of monocultures, not the tradition of monopolies [applause].

VIDAL: Well, there you go. Alison, that's the gauntlet been thrown down there [laughter]. Here we are, you're going to bring it down to Britain, and the poor, impoverished people of Britain, us as consumers. Do supermarkets understand that kind of debate?

AUSTIN: I was privileged enough to be here last night, and throughout today, so I heard the inspirational talk from Alistair McIntosh last night, and his extraordinary insights into the whole concept of resilience, and that resonates with everything we've just heard.

However, I was employed by a supermarket for 25 years. I was head of Sainsbury's environment work for 18, and head of a policy team that created policies for all of its own brands – everything from animal welfare, agriculture, pesticides, health. Whatever the conditions in the supply chain – you name it, we set it for our own brand.

I don't work for them anymore. I've got no axe to grind where you shop, I don't mind if you grow all of your own food, if you use farmers markets, whatever. All I want you to be, please, is 'change merchants', and 'conscious consumers'. I want you to challenge everything you hear, read, and see – and that includes from your own organisations.

So, I've worked in the food industry for quite a long time, on the corporate side. I've seen huge changes. I started off my career in the environment, worrying about bits of packaging, and those rectangular receptacles that you take with you to go shopping, to put things in, which I won't give their proper name, because I have to give you enormous credit here, for running a fantastic sustainability event, without mentioning those receptacles that you put things in and reuse when you go shopping. And don't mention them this evening.

So, you are a really sophisticated, grown-up audience. Some of the issues that you've been dealing with and discussing today are, frankly, awesome, compared to other conferences I've been to, and participated in, so you have my sincere respect. And that is serious.

Many organisations in the food sector are all competing these days about value – because we have a recession – and they're also competing on values, and you heard Elizabeth Dowler talk about that this morning. And that's really serious. Those chief executives all know each other within the food industry, whether they're in the retailing side, or in the manufacturing side, or in the distribution side, or the agricultural side. It's a very, very small community.

They are very competitive. If one of their friends – who's a chief executive of another company – gets a first, there's all hell to let loose within the rest of their organisation. And the NGO world uses that to great advantage, in terms of league tables, in terms of having media partners to run those league tables, and so on. It is really effective, because corporate reputation is worth a great deal.

What I've seen, and I'm a little bit troubled about within the corporate world, is that often boards and managers will respond to current issues – to things that are currently in the newspapers. A successful organisation, though, is one that's going to be looking far out into the horizon, and dealing with really difficult, complex issues, for which it has an evolving agenda – there isn't any clear-cut answer. Quite often, there's going to be experimentation, and a few wrong turns.

A lot of people were very enthusiastic about biofuels, about five, seven, eight years ago. I stopped my business, when I was employed by them, from doing anything on that front, because I'd been doing work on palm oil, and it all comes back to land use.

So, some of the issues that the big corporations have got to deal with are ones that customers, sometimes, aren't interested in, and aren't asking about, and aren't demanding things for. And that's why you, here, as an audience, are really important, because you are dealing with some horrendous issues that not many other groups are. You're looking at fair food, justice, both from a consumer's point of view, and access to food, and to healthy food, in institutions, as well as in the domestic home, up the supply chain. So, some of the issues that National Justice and Peace Network is dealing with are critical.

Moving on. Where you shop, I don't mind, where you get your food, I don't mind. I would just like you to be a conscious consumer, as opposed to an unconscious consumer, I'd like you to be curious – there's lots of Bs and Cs here – be curious, be challenging, and don't believe everything you're told, but look for corroboration. Be a communicator, so when you do find good practices within the corporate world, of any shape or form – small or big – communicate those out, and be change merchants, both in your own life, but in others. So, you're an advocate.

And I would just put one big issue on the table, which I would follow on from David, which is land and water use and rights. I think those are two big issues that the corporate world is, probably, not that able to deal with at the moment. I don't think the infrastructure is there, I don't think the thinking is there, I don't think the language is there yet. But that's something that all of us are going to have to grapple with, so that is land use and rights, and water use and rights.

VIDAL: Well, thank you very much indeed [applause]. Let's break it all down, and let's just carry on from where Alison left it. So, if it is about land and water – which I suppose it has to be – because these are the definitives which we can't change that much. Is it a question, then, that we have to change what we grow, or how we grow it?

And, I suppose, one of the questions which comes up all the time, or increasingly – especially with climate change – is this thing of meat. Should we really, if we're going to feed another three billion people over the next 30, 40 years, are we really going to have to change our diets? Do you think that's necessary? Meat takes a phenomenal amount of water to grow. Is it a question that we are going to have to change what we eat? Or is the question that the farmers are going to have to change what they grow for us?

HOWLETT: Well, if you look, maybe it's an issue of convergence, because who are we to say that people in Africa who get more income shouldn't eat more meat, or have more dairy products, or whether it's in India or in China? The question is, if you start to use in relation to price, if we factor in the cost of that meat, as I gave that figure – up to 15,000 litres for a kilogram of meat, compared to around 500 litres for a kilogram of grain – let alone the emissions side. So, I think we probably do have to look at reducing our meat consumption.

But it's one size fits all, because some areas, meat production may be the most sustainable agricultural use. I live in North Yorkshire – in the Yorkshire Dales – where, perhaps, growing sheep is the best thing to do. If you have the right to breed sheep, and if you manage your land well, then perhaps that can be reasonably carbon neutral.

Or, if you look at pastoralists in Africa, they survive on their cattle, so I think, saying no, we should all become vegetarians, or vegans, tomorrow, is not the solution, but I think a diet high in meat and dairy products is probably something which we can't afford.

VIDAL: One of the things which is occurring, obviously, is that China and India are rapidly growing economically, and there's a huge shift now to meat eating. Surely this is putting even more pressure on the land, because the cattle or the, whatever it is, they need more space. Is that encouraging land grabs and things? Is the meat-eating diet sustainable?

SHIVA: One thing, when prices shot up in 2008, even though it was because of speculation and diversion of soya and corn to biofuel, President Bush targeted India, and said, the Indians are causing this price rise. Increase in grain consumption for India that year was two percent in grain consumption, in the United States was twelve percent, largely for cattle feed and biofuel.

The Chinese have been largely meat eaters – they sprinkled a little meat with a lot of vegetables. Their diet has been pushed to the US kind of diet. But a rich Jain, for example, will continue to be a vegetarian, no matter how rich they get. So, this false association of wealth with meat forgets that eating is cultural.

And, if you're a vegetarian, because of your faith, and your belief, and your cultural norms you will stay vegetarian, and India hasn't become a meat-eating country. Some children will sneak into a McDonald off and on, but even McDonald has had to become a vegetarian, and sell tikis. Their most popular dish is a tiki, a potato cutlet, not the meat cutlet. And they can't serve beef, because of the Hindus, and they can't serve pork, because of the Muslims [laughter]. So, that saves us from two styles of factory farming – pigs and cows will never get imprisoned in India [laughter]. The chickens – poor things – are, and we're having a big problem with that.

The point is, when you compare meat with grain, you have to talk about grain itself, just like pastoralist meat production is different from factory farming. Industrial grain production is different from ecological grain production. Ten times more water is used in chemical agriculture, without increasing production of grain. I call it, dissolving the chemicals, which is why you have large dams in places like Punjab. But, now the water's been used up – a hundred cubic kilometres of water has disappeared in the ground water in Punjab since 2002.

And we are going to run into a very severe surface and ground water famine in the Green Revolution area. So, what we promote in Navdanya, the movement I've started, is first promote forgotten foods. These were the foods that are more nutritious, and consume only 250 millimetres of water. They're the millets, they're the pseudo cereals. They were rubbished, because of the superiority of the white, polished grain. They make brown bread. And brown and black was always treated as inferior, but I think it's time to celebrate brown bread in general [laughter] [applause].

I think the second thing – and you mentioned this – even while you tried to put down organic, you had to admit that it's organic that helps us sequester your carbon. But carbon returned to the soil is not just good for mitigating climate change, it's our only buffer for moisture conservation. Most people don't realise the biggest dam in the world is humus-enriched soil.

We've reduced water use on our farm by seventy percent, just by increasing the organic matter content. You don't have to irrigate that frequently, because the soil is holding the moisture. When you fertilise your soil with chemical fertiliser, on the one hand, you're emitting nitrogen oxides which are three hundred times more lethal than carbon dioxide. But, you're also impoverishing your soil to hold water, so the soil is totally sandy, and it has no aggregates, as a result of which, there's no moisture conservation. And that abuse of water can only restock chemicals and go organic.

VIDAL: Hm, hm, right.

AUSTIN: I'm going to pitch in on that, because I think human psychology says, if you tell me I can't have something, or I mustn't eat meat, they're going to reject that sort of approach. I think, Martin Luther King didn't say I've got a nightmare, he said, I've got a dream. Take it positively, say that vegetables are really good for you. If you want to get to your five a day, we actually ought to eat more fibre and less sugary-containing vegetables, for our health. And, if you eat more vegetables, you will, by default, tend to eat less meat. So meat reducing, Provencal, peasant cuisine – all good stuff – really tasty and yummy, but don't tell people they can't have something, if you want to create change.

VIDAL: Patrick, you've travelled the world, and you've seen ecological farming on quite a large scale. Do you honestly think it can raise production to produce enough food for large, growing populations? Is there any evidence that it can?

MULVANY: There's all the evidence in the world, in all of the farms in the world where this is practiced. And, as Vandana was saying earlier, if you look at the whole product in the farm, the yields are significant, using every possible area, every little ecological niche, as efficiently as you possibly can. Conserving water, using the biodiversity, using all the different products, the yields can increase. It is more labour-intensive. It has to be a bit more labour intensive, but it will; it will be able to achieve that.

The assertion that if we dumped all agrochemicals today, and went ecological, production would collapse, and so forth, is probably temporarily true in some industrial systems. But, if you look at the majority of food provision, the yield potential from these incremental increases I was talking about – less than one percent per year – can easily be achieved, absolutely can easily be achieved.

Just going back to this question of water, a member of ours in the UK Food Group, has been looking at waterproofing farms, as a way of being able to ensure that you can sustain production. You can invest billions in some genetic modification of a crop to make it be able to cope with less water – a single gene approach. Alternatively, you can put a very modest amount into waterproofing the farms, and all of that water is retained in the farm, retained in the soil, and the production can increase.

So, evidence that these production systems can work, do work, exists. The challenge is, how would you make the shift in science and technology towards being able to further improve these ecological systems, how to get industrial agriculture off its chemical treadmill, and be able to move forward?

And I would just simply say, to be provocative, maybe, that it is not in the interests for the capital, it is not in the interests of the corporates, to do that, because you can do it [laughs]. No, it's not interesting to them, because going down that ecological route does not pay rent to the corporates.

VIDAL: Well, keep off the politics just for the moment. Give us some idea how much you can increase yields on a patch of land in India, or Africa, or whatever, using this agro-ecological approach.

MULVANY: I will defer to Vandana for more precise stuff in India, but the evidence is that – particularly in the smaller scale production systems – by being able to build upon those, that resilience, by being able to maximise within ecological niches, yield increases of one hundred and two hundred percent are easily achieved. The one percent, or two percent I'm talking about globally, is like falling off the step.

VIDAL: Okay.

SHIVA: On our farms, remember, we have a network of 500,000 farmers. Farmers can secure up to five times more production by intensifying biodiversity. We've been told intensive farming produces more food, but what is being intensified is toxic chemicals. Toxic chemicals intensify toxic production, not nutrition production. But biodiversity produces nutrition, and biodiversity-intensive farms can have, at least in our experience, up to five times more production per unit acre, and the two hundred percent – five times is five hundred percent – is so achievable.

On the seed side, we're constantly told you need businesses to do that. All of history, farmers have done it, women farmers have done it. We set up community seed banks. When farmers do their own breeding, which is largely through selection, and sometimes they can do crossing through participatory breeding, they're getting ten to twenty percent higher yield, on the same crop, and the same genetic material.

VIDAL: Vandana, stop there, because I'm going to go straight to David, because, frankly, you've seen these farms presumably? You don't deny these figures? Why isn't the UK government investing madly in this area instead of GM, or whatever?

HOWLETT: They're not.

VIDAL: They're not?

HOWLETT: No, they're not.

VIDAL: Do you think they should be? I mean, should we be looking down this area much more?

HOWLETT: No, no. Well, I think we should be looking at investing in both areas. I agree with both Patrick and Vandana that high energy inputs into agriculture makes no sense whatsoever. It's just unsustainable, so we need to look at using the best approaches.

VIDAL: But, haven't we got the approaches here already?

HOWLETT: Well, no.

VIDAL: You've seen, there's plenty of evidence of it.

HOWLETT: There's been examples of, in Africa, new rice coming out of Africa, we've developed by the international research system. They can double or triple yields with the same amount of imports of existing rice, without having to rely upon fertilizers like the rice that's from the Green Revolution. So, there are examples of this happening. The issue is to make sure that it's supporting the farmers.

Patrick's completely correct – maximize organic matter ... And actually, I first met Patrick when he gave me £150 about thirty years ago to do my masters in water harvesting in Tocana, Northern Kenya. He may be regretting now, I'm not sure [laughter]. But that is about how to keep water in the soil, how to keep organic matter in the soil.

But if we have soils in Africa – acid soils which are short of phosphorous, and other nutrients – maybe there is a role for inorganic fertilizers. And so there has to be trade-offs. I think Patrick's right, we can increase yields with ecological approaches, but I think we can also maximise that with the best of science.

VIDAL: But, would you agree that most international research money is not going into the agro-ecological approaches, as going in down the old chemical route, and the high-yielding seeds?

HOWLETT: I can only talk on public financing, and the international research system. The majority of that funding – I'm not sure what it would be – but ninety percent, ninety-five percent is going on non-biotechnology approaches.

VIDAL: Why is it, this fixation by governments – not just UK or whatever – in this particular area, when it's clearly not working, and when there are clearly new solutions?

HOWLETT: Let me give you a practical example. The international eco-forestry centre, based in Nairobi, has been doing research on how you can bring in evergreen agriculture. A tree drops its leaves in the wet season, and you grow, and that has nitrogen in it, and it's a perfectly natural system.

But, by doing the research on those trees, you're able to bring that to farmers. And it's being able to breed the trees – forest farmers had to wait for the trees to grow up. Now, you can get seedlings, and you can plant them where you need them. So, that research does work. I don't think it's either, or. There are some issues where, on the corporate side, we can, perhaps, be of concern. But, I think we can do the best.

For example, colleagues are looking at bananas. Bananas are very difficult to breed, because they're cloned, or they don't seed. They suffer a range of diseases – nematodes, worms in soil, reduce yields up to seventy percent. Working with public funding in Uganda, developing bananas, which may be resistant to nematodes, which would go out to farmers at no extra cost, and that's going to benefit them.

And you can then compost, and use organic practices, as well as technology. What is wrong with that?

VIDAL: Hm. Vandana, what do you think of this approach? Is it either, or? Or is it just that we have to radically rethink the whole way we're doing things?

SHIVA: Well, there's certain things in which it does become either, or, because of the nature of the technology. For example, if there's genetically engineered crops, they contaminate, and they rob an organic farmer of their organic status, and co-existence has been proven to be false. So, it does become either, or – either you will be organic, or you will be GM, taking cross-pollination, and genetic contamination seriously.

I think it's also either, or, because when you say you'll have integrated fertilizer management, and you put urea into the soil, and the urea is killing the soil organisms that your poor compost is trying to build up, I think the point is, from the outside, certain things seem to be able to hang together, but in the ecosystem, they don't.

And I think our test has to be the ecosystem. Do they hang together ecologically in the ecosystem? And where you talked – we had these examples of banana and all – but if you take the percentage, why is all research in agriculture is turning to biotech? Why is the US saying, US Aid will only promote GM seed distribution worldwide? That's happening because the corporations are pushing that agenda, and, sadly, our decision makers have been hijacked and the public policy is no more public – it's corporate policy. And I think that's the biggest threat to food security on the planet [applause].

VIDAL: Can I come back. David, you were at DFID for a while. Did you feel under threat by the corporates? Do they come and knock on your door and twist your arm?

HOWLETT: No, it was Patrick who used to come and knock on my door, and twist my arm [laughter].

VIDAL: So the British government is not remotely open to offers from Monsanto, or whoever?

HOWLETT: I can't speak on behalf of the government.

VIDAL: Patrick, what about you?

MULVANY: I do think we do need to expose this a little bit. The International Agriculture Research centres, CGIAR, have just produced some new mega plans for how to deal with big things like climate change, and so forth. That agenda, which is going to now be funded by a doubling of their grants from four hundred million, to eight hundred million US dollars, has been hijacked by high-tech seed centres and research institutes, and the maize and wheat set-up in Mexico.

And the one programme which might have made a difference, which is the one on how to improve biodiversity – agriculture by diversity – has been scrapped. Now, why's that? Because it's not in their interests – you cannot get rent from it. It's not in the interest of the corporates to have that, so they've scrapped that one.

In your department – which you've now left, you say – we had discussions, you may recall, about three or four years ago, particularly around GM policy, and we were informed that that was policy set elsewhere in government, that DFID had to deliver. DFID had to deliver a broad canvas, as they would say, of inclusion of all technologies.

But, in practice, what it meant, was supporting the bio-tech agenda. As Vandana was saying, all research is primarily around that. And the problem is, the transformation of that research agenda is really difficult at the moment, because most young people are getting sucked into genetic level, rather than the species level, and the whole ecosystem level.

Just take one example. If you look at the ways in which rice production can be improved, integrated pest management – where you maximise the population of predators, so they eat the bugs that eat the leaves of the rice – you maximise the organisms in the soil, so they can deal with the fertility necessary for the rice field. You look at the way in which the ecosystem of rice is organised. You can reduce dramatically the pesticide, to ten percent or less, and increase yield at the same time. These things can be done.

In Japan, a project to look at rice paddies which will be showcased at the Convention on Biological Diversity in October, in Nagoya, counted the number of species in a rice ecosystem. And what was the number? 5,668 different species in the rice ecosystem. That's what you've got to protect, that biodiversity. That's the most important thing, and that's what the research should be about, not about industrial agriculture, not about GM, not about chemical farming [applause].

AUSTIN: I've just got two small examples to contribute to that. I was employed by a small supermarket – wasn't in Cargill and Monsanto and the ADM-type world. Two things: Apples grown in Kent. We had an apple grower, who used to be an architect. And he decided that apple trees were all about harvesting light, and why didn't he prune his apple trees to architecturally capture more light.

So, he designed a pruning system which created tables of boughs and leaves. His apple yields went up by fifteen percent for the same land. God's not making any more land, and certainly not any more land that's suitable for growing apples in the UK, which is on the top edge of viability for apples. That's a concept that we've had tested, and is now rolling out, right the way through Sainsbury's UK apple growers. And they sell more UK apples than any other retailer. Yes [laughter].

VIDAL: 5,668 in total.

AUSTIN: No, no, no. Come on, we brought the Braeburn over from New Zealand, and we grow it better than they do. Okay, second example – and this is really important – last autumn Sainsbury's took over 120 of their growers – not the growers, but the growers of vegetables from the UK – and they took them down to Laverstoke Park, which is the bio-dynamic organic farm that's run by Jody Scheckter, down in Hampshire. Some of you down in that area may know of it.

VIDAL: Hang on, he's a racing driver who lives in Monaco because of tax reasons, but he's doing very well [laughter] – very good farm, I know.

AUSTIN: But, okay, now the point is that it's a bio-dynamic farm, and they're really interested in the soil ecology, and are absolutely obsessed by something called compost tea. And the number of vegetable growers around the UK who were there, who got completely excited by soil ecology – and it goes back to Alistair McIntosh talking about soil – absolutely breathtaking.

The number of them that are now going out and trialling compost teas is quite interesting. It's a bit of an emerging art, rather than a science, and it needs a bit more science money allocated to soil ecology, and compost tea, so I'm with you on that one.

But it's happening. You do need science to verify whether certain things work or not, and if they do then people are more likely to pick them up on a rational argument, so I have a foot in both camps, because you've got to have science to verify stuff that's done at a trial or error level.

SHIVA: I don't think we are saying no to science, we are saying yes to more sophisticated science, and no to science which uses crude tools, and just because they're violent, you say they're superior. Violence is not superiority [applause].

VIDAL: David, David, come on, you must respond.

HOWLETT: It's ... I'll go back to Patrick. I was Head of the Agricultural Research Team at DFID, and I, we had to write ... You perhaps wrote letters to us, asking how much money we spent on this and that, and that's great, because we need to be held accountable. We were asked how much do we spend on biotechnology and GM. I think it was around five to ten percent, and it's not increasing. There was not an exclusive focus on biotech. This is not a world I recognise. I think it's also very dangerous that we get into this argument about GM or non-GM, when the actual issue is around the hungry people in the world.

We need to produce the food, but also, we need to tackle the other issues. And, I think, we do need science. I'm a scientist, Vandana's a scientist, and Patrick's a scientist. We all want to see how we can apply our science to benefit people. And I get very concerned if we sweep away vast tranches of science by linking it to Monsanto or whatever, when it's not. We could look at integrated pest management – DFID has funded this in the past.

Another issue – very important – is post-harvest losses. It can be up to eighty-five percent in Africa. A lot of research about how to do that. Research about aflatoxins, which you get on grains, which can cause cancer, can kill people. A lot of research on that – applying the best of science to it. I think we need to really challenge ourselves. Am I just promoting GM? No, I'm not, because GM is not the answer to hunger in the world.

Potentially, application of science and bio-technology can help, so I do go back to say it's both – we need the best science on ecological approaches, traditional approaches, and we do need to develop better seeds and other things.

VIDAL: Can I ask all of you? One of the phenomena which is taking place, I think, around the world, are these vast, great farmers movements, which we're seeing in Latin America,

India, elsewhere. How important are they? Patrick, you've got people like Via Campesina, you've seen large peasant groups of people. How important are they for changing methods of farming, and perceptions of how farming can be done? Is that part of the new agenda?

MULVANY: I think the growth of Via Campesina, and other farmers' movements, over the last fifteen years has been dramatic, significant, and is probably the greatest beacon of hope for the future.

VIDAL: Can you just explain to people what these movements are doing?

MULVANY: Yeah, Via Campesina is the global farmers' movement – small-scale farmer, peasant farmer, movement – that has members in about seventy countries around the world. And it is the movement that brought us the ideas around food sovereignty, around the different forms of government for food and agriculture. It is the one that stood up most powerfully against the World Trade Organisation, and the way it dealt with agriculture trade, the one that is promoting the ideas around more resilient peasant farming, that will be the solution to the climate crisis.

'Small-scale farmers cool down the planet' is their slogan. They are the ones who have been stimulating the movements of fisher folk, of pastoralists, of indigenous peoples to join in a global movement. That is the one that is asserting, and will assert even more powerfully that their food system is the food system that feeds most people in the world now, and should do in the future. It is very clearly anti-corporate, and it is very clearly against all the things that we've been talking about just now, which damage food, food provision, and damage the environment.

And, so they are hugely significant, and I would expect in the near future, for those movements to become the real sting in the tail of government, and international governance.

VIDAL: And, Vandana, are you finding the same in India? You've got your seed movements, and your village movements. Are these now playing a major role on government policy? Are they taking on government, or are they changing ideas?

SHIVA: Very much. We organise a half a million rally, or, to stop India from signing GATT – which became the WTO – but the fact that the Indian government has been one of the strongest in not letting an expansion of trade liberalisation in agriculture, is because of the pressure from the base. The fact that, after introducing BT cotton, Monsanto was not able to push through its BT plan so far, and that there's a moratorium, is because of the mobilisation of scientists, and grass-roots farmers. And when I go back, one of the first things I'll be doing is going to be how to address two rallies of five hundred farmers each, who want to convert to organic agriculture as a way of surviving in this period.

Because, one thing that's never mentioned ... Yield is talked about, but the high cost of industrial agriculture, for a small peasant economy, and the debt it pushes farmers into, is never talked about. The cost of cultivation is never talked about, and I think that is at the heart of the issue.

And ecological farmers – because it works with internal inputs, and ecological processes, like the apple tree, working with harvesting more sunlight – those are the processes that are working for farmers, so zero external costs, and strengthening nature's processes, and working more productively with nature's processes.

Farmers are seeing that as a political issue, and I think we're going to see ... Farmers movements started with remunerative prices – getting a fair price on the market. But, now they realise it's not just about price, it's also about cost of cultivation, so it is shifting.

VIDAL: And, Alison, come in here, because have we not got here at this conference a sort of nascent peasant movement, in the best possible way? And these are the people who are putting the pressure on your clients to get their act together in a different way?

MULVANY: Are you saying that these are the peasants of Britain [laughter]?

AUSTIN: I was going to follow on from Vandana, because I think that it's absolutely crucial, going forward over the next five, ten years, that small, community farmers, can find a way to work together and have a voice, because when organisations – be they government, or private sector – start to deal with watershed management issues, and they've got to work with others.

The whole issue's about: if you've got a Coca Cola factory making soft drinks, they say, "we take less water in, and it's cleaner when it leaves the factory". The issue is, they've got to think about the whole watershed – everybody's use of water. So, for small farmers to be able to have a voice in that process is really critical for going forward.

In terms of here, you need to write to organisations, you need to challenge organisations about what they are doing up their supply chains, in terms of food sourcing, food procurement, what's their view on technology, what's their view on alternative technology, what's their view on actual science, rather than hype. There is a lot that you can do. You need to share that, because it's quite burdensome to write to people. But don't send cards, send letters.

VIDAL: Great stuff. Okay, look, I do realise the time is flying. It is time that you asked some questions. Let's start on this left hand side. Keep your questions quite short, and be pointed, as they say.

PAR1: My name is Richard Solly, and one of my friends is an apple farmer in East Sussex. He's also a local vicar. And he says that all of the supermarkets, including Sainsbury's, before they buy his apples, they insist on sending an accountant down to look through their books. And the person will offer a price for the apples that is just enough to stop the farmer going bankrupt. And, if the supermarket wishes to do a special promotion, like price, the farmer has to take that cut in price, not the supermarket.

VIDAL: So, what's the question?

PAR1: So, is that true, and can you comment upon it?

VIDAL: Okay, one for you.

AUSTIN: I know that two of the supermarkets operate an open-book costing system, which is that all the costs are shared, right up and down the supply chain, and yes, an allowance is made for each party. It's a hard commercial market. I did not know, and don't believe, that Sainsbury's do that, or M&S, or Waitrose, because they all vie to have as much of the UK crop as they can. But we are at the top of the margins of apple growing, much as we would like to have more in the UK. I can't comment beyond that. My area was policy, not purchasing.

VIDAL: Richard, can you say which supermarket this was?

PAR1: Well, he said that it was all of the supermarkets that he had dealt with.

VIDAL: Right, okay. Okay, sorry, another question on this side please. No, they've all gone quiet. Hello, one there.

PAR2: Just on the political thing, I think it's unbelievable we wouldn't talk about the corporate control of agriculture. I'm Irish, I worked in the Philippines for almost twenty-five years, and the impact there of the corporations – their lobbying, their money, the way they have manipulated the local Department of Agriculture to allow GM food in – is just terrible.

The other thing, from the scientific point of view, so much of public science in countries like the Philippines now has been colonised by the corporate world. So, they're not going to actually deliver for the common good of the ecosystem of the people, they deliver for profits.

VIDAL: Very good point, very good point [applause]. Okay, can we ask some questions over here, please? Yeah, with the hand up.

PAR3: I'm Wendy, I'm from Liverpool. I just have a concern, as I come from a background in a small Australian country town, are cities sustainable? Can we feed them?

VIDAL: [Laughs]. Now, there's a good question. Why don't we stop there, and just ask the panel. Anyone got any views on cities? Can they feed themselves?

MULVANY: The amount of food that's provided from within cities today, is significant – it's about twenty percent of the world's food provision. I hesitate to say anything about individual cities. But, I've just gone through New Delhi, and a short time ago, Mumbai. Within ten kilometres of Mumbai – if I'm right – there are one hundred thousand buffalos. You'd hardly know that. Every little corner is used in some way or another. So, that twenty percent of the food is currently provided. The opportunity to grow much more from within cities is enormous.

And you should listen to the women from Todmorden in Yorkshire, who are guerrilla gardening, and they're producing food, and they're getting everybody to grow something in the schools, and beside the roads, and in the roundabouts, and all the rest of it. There are a lot of possibilities.

But the important thing is - as emphasized by the social movements – we had a forum in November last year – is strengthening the rural, urban food web, so that urban bits do their stuff, the rural do their stuff, but there's an interaction between the two.

VIDAL: David, could we have it in Britain? Should Hyde Park be dug up and turned into allotments, or something like that [laughter]?

HOWLETT: We could look out for your forthcoming article in The Observer. I don't know – you'd have to ask the Queen whether she'd let Royal Parks be turned over. I think they did in the war, didn't they? They did turn them into fields.

But, the issue is that we are going to have bigger and bigger cities, and at some stage in the future, we're going to have more people living in cities than in rural areas. Patrick has already gone there already. But, peri-urban agriculture, there's opportunities for vegetable growing and opportunities for farmers, so whether cities are sustainable is a bigger, bigger question. But, there's probably going to be more opportunities for agriculture to feed the urban populations. The issue is, are those opportunities going to be to smallholders, or will they be captured by the elite? And I would hope that we could have systems where they, smallholders do support themselves, and feed the cities.

VIDAL: Hm, Vandana, do you want to come in?

SHIVA: Well, this assumption that the world will move to cities is based on the assumption that peasants will be destroyed. I know, in India, that's the kind of policy that's guiding the forced uprooting of rural communities, whether they be tribals or farmers. The best livelihood, biggest livelihood, will be on the land in agriculture. And it worked, because the farmers were given an economy where they could make a living. And now that that's been broken – both through the monopolies on the input side, and the falling prices on the unfair trade side – you are getting squeezed out.

But, the cities are not leaving place for the poor either. Every piece of land is now real estate. Earlier people could set up slums. Slums get bulldozed in half a day. So, I don't think we can assume this migration will carry on.

And one reason the big supermarkets are knocking on our door – led by Walmart – is, the argument that you waste a lot of food. Now, if we do it through the supermarket chains, there won't be waste. The figures are out now. In the industrial food system, where food distribution is industrialised through supermarkets, fifty percent food is going rotten.

So, in fact, local food systems have the least waste, and sustainability of food systems in cities, includes reducing waste.

VIDAL: Okay, more questions. One here at the front, please?

PAR4: Hi, my name's Rosemary, I'm from Liverpool. I've actually plagiarized this question from somebody else today, so apologies to whoever asked me this question. It was the question: in today's food chain, who is the Joseph of the future, ie. who, is storing up in the good times, and distributing in the lean times?

VIDAL: Any takers on that one?

HOWLETT: A good friend of mine said that the only chains in the food system are the shackles that are put on the producers by the corporates. What we need to do is to strengthen our food webs. And, I think, by localising food provision, production, consumption, within an overall framework, that allows for the lean years to be fed by the fat years. So, you have to have some kind of government superstructure. But localising within that is the way forward. Who the Joseph is, I'm not quite sure, but it's not in St Louis.

VIDAL: Okay, more questions. Okay, one right at the back please?

PAR5: Paddy Connolly, SMA, Manchester. We were told by somebody on the panel that we should be conscious consumers. Israel is producing a lot of food from the land they have illegally taken from the Palestinians, and are bringing it into the supermarkets, Sainsbury's etc. Should we not boycott them [applause]?

VIDAL: Alison, we've all boycotted something – I remember boycotting South African food in Sainsbury's.

AUSTIN: So did I, so did I.

VIDAL: Did you, yeah?

AUSTIN: Yeah, I boycotted South Africa many years ago. I don't believe in a boycott, because all it does is allow the organisation to keep going. What I do know ...

VIDAL: Hang on, stop. What organisation?

AUSTIN: The supermarkets will keep going. What you need to do is to lobby, write, raise awareness, and ask for a change in policy. That, I do know, that all the supermarkets have been talking about it, through their trade organisation, about how do they deal with this issue? Sometimes, there aren't easy solutions, so if you can help provide easy solutions, in terms of labelling, right, fair, justice, food sourcing, then you'll certainly get a hearing. But to just boycott leaves the issue to continue.

I think you need to work within the organisations, and within the system, to create the change. It's an issue that I wasn't party to, because it really has taken place after I left the business, but I do know that they are aware of it, and they're struggling to find solutions. So help them, and keep writing, keep writing to the chief executives.

VIDAL: There you are – three hundred letters tomorrow please [laughter].

AUSTIN: Not cards, but letters.

VIDAL: Yeah [laughter], okay, we'll come back here. One more at the back please, here.

PAR6: I'm Alistair McIntosh. I've just been looking at some figures that were published in The New York Times, of all places, that seventy-one percent of the rural land sales going on in Scotland just now, are to buyers outside of Scotland. Now, that pattern will be replicated in many other parts of the world, and what it means, is that relatively poor people, such as tenant farmers, or people who don't own their own houses, are paying rent to relatively rich people elsewhere – largely a metropolitan rich.

What would the panel see as being the role for land reform in addressing the issues, in order to reduce the burden financially on farmers, so that they can afford to do things in the right way, without having to pay rent to the rich?

VIDAL: Vandana, I'm going to bring you right in here, because I know that's right up your street. What's going on?

SHIVA: You know, in 1942, we had a Bengal famine, and part of it was, the British had imposed landlord system for rent collection, and the original owner-cultivators had been transformed into landless peasants. And the women are the ones who fought against, both that famine, as well as the land injustice, through creating a land reform movement, in which they said, we will give our lives, but we will not give our rice. They just refused to provide the rent. And that spread, and created the land reform.

Now, with food sovereignty, because we realise the land question is vital, we have a very strong land sovereignty movement, which combines both correcting old injustices in land ownership, and preventing the new landlordism, and true land grab, and speculation.

VIDAL: And, David, thank you very much.

HOWLETT: Yes, there is the issue of land grabs, say, in Africa, by sovereign states and others. There's lots of opaqueness, there's deals happening – we don't know what is happening. The real risk is people may be deprived of their land, so there's two issues there.

One is to make sure that customary tenure is recognised – whichever country it is in Africa, or elsewhere. But also, if we're going to have investments, or land grabs, let's make sure there's rules and regulations in those countries, and that they come clean on what is happening. Otherwise, we do run the risk, of people saying – particularly in Africa – people saying, oh, there's a lot of cheap land there, let's go and buy some, because in twenty, thirty years' time, it's going to be really valuable. How do we make sure that doesn't happen?

VIDAL: We really do have to begin to wind up. Okay, I've been told we can ask one more question, but it could be phrased so it's not exactly a question, so we could ask [laughter] ... Maybe take two or three people. Anybody who's desperate to ask something? And then the lady in pink, who's desperate, and quite right.

PAR7: Okay, thank you very much. Actually, this conference is about peace and justice, but if we promote the corporation, will peace and justice apply?

Why I'm asking this: in Uganda we have fertile land, and we have so many people who have come from India and China, and they are cultivating the land, on a large scale. But the indigenous people feel manipulated, in most cases. Do you think there is peace and justice, in a way, if a corporation comes in a country, and then carry on the work?

Last year, there was a big campaign, and everywhere people were putting, 'please preserve Mabira Forest, preserve Mabira Forest', because they wanted to cut out all the forest, and then they are manufacturing sugar, what-have-you, and export to Tanzania, Kenya, Uganda – even outside, in Europe and Asia. But, how can we promote peace in that case?

VIDAL: Yeah, no, a very good question, and I think you won the battle of the forest so, well done. Okay, peace and justice. Any takers?

SHIVA: Wherever you look at, where are the conflicts, the conflicts might look like they're ethnic, or they are religious, or they're racial, but at the route of it is displacement of local communities [applause]. And that's the case for Sri Lanka, that was the case in every place where there are conflicts, and you are so right. Marginalising and displacing local communities cannot lead to peace and justice [thank you].

VIDAL: I'm going to have to ... I think we're going to be shot ... Thank you very, very, very, very much – you're a brilliant audience [lengthy applause]. We should reconvene here every Saturday night, I think [laughter]. No, thank you very much indeed, and obviously, thank you to the group of people up here – all of whom have come from a very different perspective – but I think we've achieved some sort of harmony.

I've actually learned a huge amount tonight, so thank you all very much indeed, thank you [lengthy applause].

TEAGUE: Before we thank our wonderful panel I'll say this is a wonderful way to spend a Saturday night, I think, although dance does beckon. We love being described as a nascent peasant movement [laughter]. Yeah, I could go for that, but we certainly are proud that NJPN – we're a grass-roots justice and peace network – has had the pleasure of the

company of our eminent panel, and our witty John [laughter], to lead us, in making a contribution to such an important discussion.

And, certainly, in the planning group's preparation, the distinction between food security and food sovereignty, has been something we've taken on board, and our network will take on board this coming year.

So, we thank you enormously. Vandana and Alison are with us tomorrow. David's flying off to Burkina Faso tomorrow, and Patrick's going off somewhere else as well. And John too. So, we feel very privileged to have had you with us, and thank you so much.