

JEAN DE KERVASDOUE

Professor, CNAM

Philippe Chalmin, Professor, Paris-Dauphine University, founder of the Cercle Cyclope

Thank you very much. Before I open the discussion to the floor I would like to hear from two of you whom I believe have expertise that would help us to further our understanding of the world food problem. Jean de Kervasdoué, whose expertise in the health arena you witnessed this morning, has also written very interestingly on the development of biotechnologies and GMOs. I happen to sit on the body that examines biotechnologies in France, the *Haut conseil des biotechnologies*, but I would rather it were Jean who spoke about them. Afterwards, I would like to invite Amit Roy, who works in the United States, where he runs a firm that advises on issues around inputs and fertilisers, to talk to us about this essential aspect of agriculture. Jean, but please keep it brief.

Jean de Kervasdoué

Thank you. Nonetheless, before I talk about GMOs, I'd like to make three brief remarks, because as it happens at one point in my life I was agricultural adviser to a prime minister. I have a vague understanding of the field. The first thing I would like to say to everyone and to you in particular is that the markets for agricultural products are surplus markets. That's what you've been talking about. What it means is that no agricultural country in the world can allow itself to have unregulated prices on agricultural products. The changes in regulations in the European Union worry me from this point of view, because even in the United States, as you know, this is achieved in other ways, namely granting or refusing to grant permission to bring land into cultivation.

Philippe Chalmin, Professor, Paris-Dauphine University, founder of the Cercle Cyclope

Not any longer.

Jean de Kervasdoué

Not any longer?

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Not any longer. Well, if I may, there is still an agricultural policy in the United States and there is still power associated with agricultural policy in the United States, simply because the upper Chamber in the United States is the Senate, and there are two senators for each state. The senator from South Dakota has just as much influence as the senator for the state of New York. Even Reagan, in his most powerful period, didn't touch agricultural policy. But things have changed. There are direct grants and subsidies for consumption. Otherwise, it's almost a free market.

Jean de Kervasdoué

Yes, almost. The second thing I wanted to say is about something you touched on just briefly, that the link between energy and food depends, of course, on the price of energy. If energy prices increase, it is clear there will be a link between the two markets, which confirms why you are concerned. A few words about GMOs. I think we know how this particular story will end. There are 130 million hectares of land planted with GMOs in the world today. Let me remind you that France has 30 million hectares of agricultural land. Europe, and France in particular, have lost almost everything in this area, because we have lost our research and industry and we are importing GMOs and, as you know, soya from the United States is now 90% GM. The figures are between 80 and 90% for almost all major crops in North America. Soon they will hit 100%.



Europe is in a curious position, which is maintained by a few, I don't dare say charismatic but well-known leaders, who make the French believe it is dangerous. Let me just touch on this briefly, because I have noticed that most people don't know what a GMO is. So let me tell you the history of Monsanto 810 very quickly and then I'll stop. In 1910, scientists discovered a bacterium, *Bacillus thuringiensis*, which had insecticide effects, particularly on caterpillars. With organic farming, you have the right to scatter your salads with *Bacillus thuringiensis*, i.e. bacteria, and of course you do. When you eat organic food, you are eating *Bacillus thuringiensis*. I would remind you of something most French people do not know, because 40% of French people think there are only genes in transgenic plants.

The French would be surprised, for example, to learn that at the lunch we had a little while ago, we ate sheep genes, wheat genes and carrot genes. But despite that, we haven't turned into sheep. We ate tuna genes before that but we haven't grown gills. You and other people are quite surprised by what I have just said. When you have GMO maize, the genetic structure of the maize is 100% identical to maize. When you add the gene from *Bacillus thuringiensis* into Monsanto 810, a company for which I have never worked, so I have no conflict of interest, it's dangerous. As you know, a gene is a sequence of basic elements that are exactly the same in the plant and animal kingdoms. When you begin to digest something, the first things you destroy are the genes.

People are under a misapprehension that has been fed by people with special interests, but which is very surprising. I don't think opinions in Europe are going to change. I think that one day, what I am saying will seem very clear. I think that a number of African countries, rightly according to the FAO, are resisting European policy by treating it as obscurantist. Because let me remind you, and this is my final point, that at least the first transgenic plants were used to limit pollution, pesticides in particular. So when you see African farmers in their cotton fields or maize fields, it doesn't really matter, or soya or peanut fields - I'm thinking of south of the Sahara - walking around with sprayers and getting it in their lungs and in their faces, you see that the advantage of a GMO plant, whatever you may think, is that it avoids using pesticides. The gene, of course, is dormant.

What people don't understand, and I will end on this, is that when you eat bread, you are eating wheat genes. But you are not eating an ear of wheat. The potential for the ear is there in the seed if it ever grows. To be honest, the kind of obscurantism that involves believing that you eat what a gene produces when you eat the gene makes me despair, but I don't know how to educate people in Europe and others to explain things that are really very simple. I will finish by saying that ever since agronomists have existed — and I'm an agronomist, that's my background — they have spent their time selecting genes. The advantage of genetic engineering is that instead of going fishing with a trawler, i.e. trying to catch everything within reach, you can target a single gene. Every single country other than Germany, France and Austria has understood this. As you know, that promotes a kind of monopoly or a small oligopoly. Very curiously, as you know, Mr. Bové's bail was paid by an American association and everyone is wondering who is interested in funding an American association so that Mr. Bové can prevent the development of the GMO industry in France.

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I apologise to our non-European colleagues, but I felt it was important. It's true that the European debate on GMOs really does smack of mediaeval obscurantism. It's hard to imagine and the result, effectively, is that it has bolstered a situation that means one can almost compare Monsanto's position on a world scale in this area with Microsoft's position in the software market. There's a lot at stake. GMOs are not the only solution, but they are without doubt one of the solutions.