



## DEBATE

### From the floor

I want to congratulate both of the first presenters. I come from Australia, and I want to add a few facts to the debate. Firstly, I come here as a farmer, and my farm gate prices in the last year were the same as in 1973. I have a graph prepared by the Central Bank of Canada and the US Bureau of Labour Statistics which shows that, while there has been a nine-fold increase in energy prices in the last 50 years, and a threefold increase in mineral prices, there has been zero increase in real terms of international food commodities. However, what we have seen in that time is a remarkable increase in productivity. I have reduced my labour force on my own farm from three to one and we have been able to produce about the same. This has been the case probably more than any other business sector, but there has been a cost to this. The cost has been that the farming community generally has aged; the capacity for training new skilled farmers has reduced, that is, faculties have closed. Farming is not a preferred profession.

I relate these things not so much to recount what is coming but rather out of concern with what is coming, because the skill base has been universally reducing to meet the forward demand you put your fingers on. Therefore, response to the price signals to come will be deferred in order to bring about the increased production you talk about. I think there has been an absence of understanding regarding the industry and its capacity to respond to price signals. I also come out of the mining industry, and what you have seen in the last 4-5 years with the increase in commodity prices is exactly what will happen with food, and those prices went up not just because of Chinese demand but because of the deferred capacity to respond to price signals.

My real proposition would be to say that there is an issue, in that those countries that have restrictions on imports at present have adversely affected the rest of the world's capacity to bring up their production levels, so the question is this: What is the obligation of those countries that do not have our import restrictions? Should they be preferred suppliers from the present producing countries, other than the countries which presently have import barriers which have prevented other countries from increasing their capacity in the meantime?

### Christopher Delgado, Senior Fellow, World Resources Institute

Those are good points. For those of you less familiar with global markets than you are, going back to the early 1970s, grain prices were 2.5 times what they were 20 years later; there was a long, secular decline, and that long secular decline, which was certainly bad news for farmers, was good news for food importers. It also bred policy complacency. In 2008, when the World Bank and IMF leaders came together, they immediately said that their countries were really suffering, and were unprepared to cope. Remember that fuel prices had quadrupled; but they did not talk about fuel but about food.

You could argue that many countries, particularly poor countries, were blindsided by what happened in 2008 in food and fuel markets; there was no reason for anybody to say they were blindsided when it happened again twice in the next five years. Certainly, the response in 2008 shows that there were so many basic things that had to be done ahead of time, before any crisis, and the longer-term ones like the training of people is a perfect example, so I could not agree more.

Finally, on import restrictions, in 1974 when you had much worse price spikes, and in 2008, the reaction of many countries is to isolate, and certainly in 2008 we saw isolation of many large Asian countries. The EU by putting in place a (temporarily lowered) variable levy in 2010 basically isolated its markets. When large chunks of the world isolate themselves from the world market, that means everyone else who is left has to bear the burden of adjusting the maladjustment between supply and demand that produced the price spike in the first place. Therefore, this is a major problem of global governance, and was discussed extensively in the French G20 meeting.



### **From the floor**

What about GM food? I think it is an important question for our academy; we studied the question three times, and we have statements about it.

#### **Marcos Jank, Executive Director, Brasil Foods**

Today it is more and more difficult to avoid GMOs, even if countries are still trying to do that, especially in Europe, but the fact is that GMOs are an important part of the solution for the challenge of feeding nine million people that I talked about before. If we do not have GMOs we do not have the productivity increases that we need. Productivity is reducing worldwide; we used to have increases by 3% a year, and now it is only 2% a year, so we are seeing a reduction. We had a big movement in the 1970s and 1980s, the Green Revolution; today we do not have that, and without GMOs we will have much more deforestation to comply with the needs of consumption that we have. There is a big debate as to whether GMOs are safe in terms of the environment and in terms of public health, but if we prove that and if there is no impact in terms of health, then I think they are necessary. We see that it is very difficult to find non-GMO food in the world anymore; all countries are moving to this area.

### **From the floor**

I am not a specialist, but if I understood correctly, there is a big chunk of production at a global level that is being privatised, meaning that when you buy land to produce for your country that is somewhere else, you take the production out of the market. I do not know how the opportunity cost is measured and if there is arbitrage in the country, but it appears to me that we have to look into the contracts. This phenomenon is particularly important in Africa, where most of the arable land is available, along with Brazil. However, at the same time, according to what you were saying, people are losing time discussing the appropriate answer to food security challenges in global forums.

It looks to me as if countries are basically not doing what they are saying, but it is already happening on the ground. There is a private response to the challenge, that is, I buy land just to get food for my country, and at the same time there is a broad dialogue in the international community. Have we measured this phenomenon as a share of total production, that is, this share of production that is out of the market, versus the one that is traded on the market? Do we measure this, and are we going through a residual market in agricultural products at a global level, with higher volatility, etc.? Is what I am saying true? I am really not a specialist. If true, is it discussed, and is it a large phenomenon worldwide? It is worrisome if it is the case, and it is a powerful way for states to act.

#### **Christopher Delgado, Senior Fellow, World Resources Institute**

I am certainly not a specialist on this, but I will tell you what I think I know. This has been discussed at a number of forums, including the Committee on Food Security, the FAO and the World Bank. The World Bank keeps a database of these kinds of investments, and there are a number of other organisations that do too; civil society is very interested in these sorts of issues.

The broader response to your question is that, if markets really work, and if you trust them, then it would make no sense at all to do this, because it is a much more expensive way. It can be attractive for some countries, because if it is a joint partnership, you are bringing in capital and knowledge and lots of good things, but the problem is that first of all you have to make sure that the people who are on the land are protected, and very often they are not; that is a policy issue for the recipient country, and it is a concern for a policy-oriented organisation like the World Bank. I do not speak for them, but I can tell you it is a concern for them. It raises a very complex set of issues that way.

The fundamental issue is that people do not trust markets, and emphasis needs to be on solving the problem of trust in markets, which is much easier to do now that the big players are getting much more integrated into agricultural markets than they used to be, not just the OECD or Brazil but also China and India. It actually is much easier to do that, and that is really where the direction of change will be. Picking up on the comment on Australia earlier, when there was no money in agriculture no one cared; suddenly there is money in agriculture, so of course people looking for investments put it into agriculture, but there was not the governance to go with this. It is coming along, but it is taking a while.



**Jean-Yves Carfantan, Senior Consultant, AgroBrasConsult**

I spent six months of my life on that topic, the so-called land grabbing process, and having visited different African, Pacific and Latin American countries, there is more polemic, much more discussion, than reality. People confuse contracts and projects that work in reality.

**From the floor**

I am an industrial specialist, so I will ask a naïve question. Following up the question on the politics of stocks, the two speakers were mentioning that the markets are wary of the stocks which are raised now by the states. The same could be said in reverse; some states are worried about the behaviour of some large actors in the markets. I have two questions, one on the short term. What do the various panellists, including the member of civil society, perceive as practical forums where these two misunderstandings or fears could be addressed, because we really need to work on that, especially to avoid non-market areas? That is my first question.

The second question relates to money in agriculture. Can we really think of the issue of stocks and the politics of stocks separately from the issues of subsidies which are given by some countries to some companies? Is it not the matter of subsidies which leads some governments to worry about pure market mechanisms?

**Christopher Delgado, Senior Fellow, World Resources Institute**

When the Agricultural Market Information System (AMIS) was being set up, the smart money in the commercial grain trade said that it would never be able to do what traders do, as traders have their Reuters or Bloomberg terminals in front of them and react instantaneously, whereas this was a public sector process that got information out once a month. Traders actually have a good idea of what is going on; the problem is that governments may do things in reaction to information or for any one of a number of other reasons. A lot of the price spikes in 2008 had nothing to do with actual shortage of food. However, when it is transparent and when everyone – including the body politic, the press and everyone else – can see it, it is much harder to do things you should not do, and that is the key.

**Philippe Chalmin, Professor, Paris-Dauphine University**

I played a part on the French side in the G20, and I am a bit sceptical of your enthusiasm about AMIS. You almost answered my question; we know all the information, and markets are pretty transparent. The problem is not information but understanding that information. I do not think we had food riots in 2008; we had poverty riots, which is completely different. Is there, to your mind, any hope of better world food management? We heard from the General Director of the FAO; I wonder if he is part of the solution, but whether at the moment the FAO is part of the problem, with its global inefficiency. Without wishing to be rude about the World Bank, I remember being there during the 1980s with people on your side who wanted to get rid of all causes of destabilisation, such as marketing boards and so on, because they wanted just a pure market. You were playing with fire to some extent.

Do you think that there is now a better understanding that agriculture should be put back on top of the list of priorities as a world problem, as you said in your introduction?

**Christopher Delgado, Senior Fellow, World Resources Institute**

I am retired from the Bank, so I cannot speak for it. I think the answer is yes.

**Louis Schweitzer, Honorary President, Renault**

I have a short question. I understood that the assumption was that there had been an increase in biofuel production. Does this not unnecessarily use agricultural resources which might be better used for food and other purposes?

**Marcos Jank, Executive Director, Brasil Foods**

I think the problem here is the use of one-third of US corn production to produce ethanol, because this is not global; it is an US issue, because it is happening very strongly in the US, not in other countries. For example, in Brazil we use sugarcane, which is completely different, because it uses a small amount of land, at eight million hectares in a total of 350 million hectares, or 2% of the total area. The productivity is much higher and the energy balance is much better, and at the same time I think the big challenge today is to produce energy from non-food crops, waste, biogas and cellulose. This revolution is happening, not as we would wish, but it is happening. Several projects are underway, including the use of biogas and straw in Brazil to produce electricity. The move to ethanol will happen in the next ten years, for sure, so the issue here is using non-food material or the best feedstock, and corn is problematic, especially in the case of the US.

There was a huge increase in the use of corn in the US and a small amount in palm oil in Europe, but that is not as important as the usage of corn. However, this is what happened; there were subsidies, there was a mandate for that, and this is part of the distortions you mentioned before. There are so many tariffs, safeguards and subsidies in the world that we have this situation in the US because of the mandate for energy, where the so-called "renewable fuel standard" established an increase in production that made it possible to use a third of the corn crop for ethanol.

**Jean-Yves Carfantan, Senior Consultant, AgroBrasConsult**

Marcos will introduce the experience of Brazil. It was not exactly what one would call a food secure country a few decades ago; it is now a much more food secure country than it was, and it is also a great exporting country, so I would like you to explain the main drivers of the fantastic experience of Brazil over the last four or five decades.

**Marcos Jank, Executive Director, Brasil Foods**

Agribusiness today represents more than a third of exports and a third of employment, and there is huge dynamism in most of the sectors. Ten years ago Brazil was important in soybeans and coffee but very little in terms of the main food chains; it was even a food insecure country, importing many other products, with huge interventions, public stocks, and price control by the government. Many prices were controlled by Brasilia, but in the 90's we had deregulation with the resulting huge increase of productivity.

Brazil was already the first country in the world in 2005 in terms of global net balance of agriculture, and continues to be today; it is third in exports but first in trade balance because it imports very little. It is different in this respect from Europe; Europe is bigger than Brazil but has huge agricultural exports as well as imports. The US also imports much more.

The reason is productivity. We had a huge increase in total productivity after 1990, which was the year of deregulation in Brazil, when the government stopped subsidies, controls and stocks. Therefore, the main explanation is similar to that of many other countries; we have natural resources. We have the land, water and climate. Not all countries have these, but many countries have natural resources.

Then we had investments in tropical research and development. Deregulation means competition, and international prices are going down compared to the trend in the last 60-70 years, unlike energy and mineral prices, which are higher than ever. The agricultural price has come down by 50% in the last 60-70 years, recuperating in the last ten years, but if you look at any long-term study, you can see that prices were down. A country that wants to be competitive needs to have a revolution in agriculture; this is the only way, and reductions in productivity were only possible because of it.

The fourth item, which is much more complicated for many countries, is economies of scale. Sometimes it is difficult to talk about economies of scale in agriculture – we have 550 million farmers in the world, and 90% of them have less than two hectares, so it is a difficult situation, because most farmers have very small pieces of land. However, what we see in all countries in the world, including those which have protections and subsidies, is an increase in the average size of land; this is happening in France, the US, Africa, and everywhere else. Therefore, economies of scale exist in



agriculture, and Brazil is a good example of that, because the migration of small farmers from Europe to the south and centre-west of Brazil 100 years was a way to gain scale. Scale is an issue in agriculture, though sometimes people do not like to admit it.

Regarding land productivity, gains are still positive worldwide, but they are lower in the last 20 years than they were before, whereas we had an explosion of productivity in Brazil in the last 20 years. This explosion was possible because of varieties of soybean, cotton and corn that came to the south of Brazil and were adapted by the Brazilian state research company, Embrapa, to the conditions of tropical agriculture in the centre-west. Soybeans were only produced in the south of the country until the 1970s, whereas today they are produced on large-scale farms close to the Equator.

Looking at land area versus productivity, Africa has seen an increase in grains from 1976 to 2011 but very little increase in productivity; Eastern Europe saw some increase in productivity but a decline in area; developed countries saw a decrease in area and an increase in productivity; Asia had some increase in area, though very little, and a greater increase in productivity; Latin America had a greater increase in productivity. The Brazilian case is the same – a huge increase in productivity, some expansion, especially during the 1980s and the beginning of the 1990s, and a huge increase in productivity in 2000's. Therefore, some countries are seeing more productivity, while some are seeing only increases or decreases in area under production.

The goal should be increased agricultural productivity, much more than the movement in terms of area. Brazil had this movement in the 1970s and 1980s based on tropical research, but also on rural credit and price intervention, but during the 1990s and 2000s, the increase was based on efficiency gains, less government regulations and stronger demand. This was extremely impressive, and applied not just to soybeans but also to cotton, coffee, sugarcane and different kinds of meat. Looking at the causes, we see increased use of technology, including fertilisers, agrochemicals and machinery, but also non-tillage agriculture, which does not rotate the soil, crop rotation and double-cropping. Double-cropping is a very interesting revolution and something which can be applied in many countries. There was also stock integration.

Most corn in Brazil is produced as a second crop; the first crop has been almost the same since 1994-1995, but the second crop is produced in the same area where we produce soybeans without irrigation. We can do that because there are new varieties of soybeans which need a much shorter period, and we can plant corn in the same rainy season. This was not possible 30 years ago. This has led to a reduction in crop area from 12 million hectares to seven million, and an increase in productivity from 20 million tonnes to 82 million. How is this miracle possible? It is done by growing two crops in the same crop season without irrigation, using areas that had previously been used just for soy. Now people are talking about three crops per year – soy, corn and brachiaria grass, allowing the so-called crop-livestock.

Therefore, the only long-term food security solution is technology, and technology is especially important in tropical areas, so we should concentrate all our attention there. Technology should not be used in isolation but integrated with food chains, technical assistance and in many cases clear definitions of property rights. This should be the trend we should be going towards, and this is what we can learn from the Brazilian experience.

### **From the floor**

The Brazilian experience has been absolutely dramatic, and they are worldwide influences today in science, technology and trading. The issue I would like to ask about is the provision of infrastructure, as the farming has got ahead of the distribution system, and perhaps Brazil should make some comment on these issues.

### **Marcos Jank, Executive Director, Brasil Foods**

We have several problems, and the main ones are not related to agricultural policy but rather to the lack of infrastructure. The case of corn is a good example; we are producing more than 80 million tonnes of corn, but the most important part of this crop comes from the centre-west, and because corn is cheaper than soybeans in terms of value per tonne, the logistical cost is huge, representing 40-50% of the price of corn in this region. The farmer is losing





money, because at the end of the day the infrastructure represents less money to the farmer. Infrastructure represents 10-15% of the price in most countries, whereas in Brazil it reaches 40% to 50%. There are huge problems in this area in Africa as well. I really believe that the beautiful job we did in productivity at the farm level was unfortunately not followed by deregulation, competition and investment in the infrastructure sector. This is the number one cost for agriculture in Brazil today.

#### **From the floor**

What has happened to the big debate that flared up and died out on the degree to which food markets have become financialised. There was a time when even the US Congress started an investigation. The amount of derivatives trading in food products increased by a factor of between ten and 30.

#### **Philippe Chalmin, Professeur, Paris-Dauphine University**

No real study, no academically based study, has proven any consequences for the financialisation of commodity markets in terms of showing more instability; perhaps there has been more short-term volatility. For example, compare the behaviour of the world wheat market and the behaviour of the world rice market. We do not have any derivatives for rice, whereas we do for wheat, corn and soybeans, yet in 2008 in price upheavals for rice were far greater than for wheat.

#### **Christopher Delgado, Senior Fellow, World Resources Institute**

I will just go through some interesting facts. Certainly, the major financial institutions went into actual physical possession of commodities after 2008 in a way they had never been involved in, and you can make of that what you want, but the fact is that in the last year they have all got out again and have sold the warehouses. Therefore, I do not think there is that kind of money in the business anymore, even if there was a business. You also see this in terms of the movement of long versus short interest in contracts and so forth. There is no doubt that commodity trading has passed from just being a service to producers and users of commodities to being a financial thing, but the kinds of issues that were raised in 2008 are not around anymore. The way that physical commodities are handled has changed so much, particularly in the last year.

#### **From the floor**

There was a push for diplomacy between Brazil and Africa, for example Brazil helping several African countries to export agriculture and also in bioenergy. My understanding is that the response by Brazilian companies has been very limited, and that the demand by several African countries has not been that high, especially in terms of bioenergy. Several ministers of agriculture in Africa have told me that this is not their priority. Is it a problem of communication about the new ways of creating bioenergy, or is it a problem with incentives for Brazilian entrepreneurs?

#### **Marcos Jank, Executive Director, Brasil Foods**

You are right. When President Lula came into power in 2002, he tried to turn Brazilian foreign policy to Africa, Argentina, Venezuela, Bolivia and some countries in South America. Among the ideas concerned were tropical agriculture and biofuels. It did not work well for biofuels, because it is an issue for very few countries with public policies related to biofuels, and Brazil had a long story regarding ethanol as an alternative to sugarcane. Energy from sugarcane has been a story since the 1970s in Brazil, when it replaced imported oil, and we had taxation policies which made it possible for ethanol to survive. Ethanol is certainly a solution for climate change, but needs differential tax treatment compared to fossil fuels, at least because of its lower energy content compared to gasoline.

Most of the African countries producing sugarcane are more worried about sugar, and they have had preferential access for their sugar for so long that it is much more profitable to produce sugar than ethanol. There is a lack of ethanol infrastructure and a lack of public policy, so it did not happen. This is not the real issue in Africa; the real issue would be cooperation in technology. I see much to be done in this area, and I really believe that if Brazil is the agricultural powerhouse of developing countries today, which we are, Africa will certainly take the lead in agriculture in



40 years. However, it very much depends on Africa itself, in terms of movement on land property rights, infrastructure and technology. Brazil can be part of that, and most Brazilian companies are ready to do that. Today I am in a company that is investing in Middle East and in Asia, and we are ready to invest in animal protein in Africa when we find the way to do that.

#### **From the floor**

Since climate change was mentioned, what about climate change in Brazil? Will that have any effect?

#### **Marcos Jank, Executive Director, Brasil Foods**

It is an interesting question. Brazil has problems and solutions on climate change because of agriculture. The main problem is related to deforestation, which is the big problem in terms of provoking climate change, as we are so used to it. Now it has been reduced through policies that were put in place, and part of this is because of agriculture, especially the expansion of cattle farming. Programmes like ethanol, on the other hand, are positive with regard to reducing climate change; they have a real and proven effect. Therefore, we have both good and bad effects from agriculture, but we can manage that. Deforestation can and has been reduced. Generally, the tropical areas would be more affected than others, but is not yet very clear to many Brazilians exactly what would happen, so we need much more communication in terms of the risks climate change poses to agricultural production.