

**CGIAR Audio Press Briefing on World Food Prices**  
**April 29, 2008**  
**9:30 am EDT**

**Operator:** Ladies and gentlemen, thank you for standing by. Welcome to the CGIAR press briefing. At this time all lines are in a listen only mode, later there will be an opportunity for questions and instructions will be given at that time, if you need assistance during the call please press "\*" and then "0" this call is being recorded and will be available for replay beginning at noon eastern time today through Thursday, you may access recording by dialing 1-800-839-7414 international callers should dial 1-402-220-6068. I will now turn the call over to our moderator Ms. Ellen Wilson please go ahead.

**Ellen Wilson:** Ladies and gentlemen, good morning from here in Washington DC. I'm Ellen Wilson from Burness Communications. Welcome to today's briefing on the many factors behind the rapid increase in the price of food. This briefing will provide expert opinions on how to address the issues in a comprehensive way. The scientists who will be speaking are leaders of three of the fifteen centers that are supported by the Consultative Group On International Agricultural Research or CGIAR. I wanted to cover two matters before we start. First, the online press kit is located at the following address on the web: [www.cgiar.org/news/worldfoodcrisis.html](http://www.cgiar.org/news/worldfoodcrisis.html). The press kit includes a statement from the CGIAR, bios of the speakers, background material from each of the centers participating today, contact information, and an audio recording and transcript of today's briefing as soon as they are available.

Second, the three speakers will present remarks for about the first twenty minutes of this briefing after which a question and answer session will begin. The first speaker will be Robert Zeigler, PhD Director General of the International Rice Research Institute or IRRI located in Los Baños, that Philippines. He is joining us from Los Baños. The second speaker will be Carlos Seré PhD Director General of the International Livestock Research Institute or ILRI based in Nairobi, Kenya. He is joining us from Stuttgart, Germany. And the third speaker will be Joachim von Braun PhD Director General of the International Food Policy Research Institute or IFPRI based in Washington. He is joining us from Washington. And now I would like to present Bob Zeigler, who will speak about what is driving up food prices and why, please go ahead Dr. Zeigler.

**Robert Zeigler:** Thank you Ellen, good evening everybody from the Philippines. Most of my remarks will be focused on rice, but I think that they are relevant to the overall broader food supply and price situation. I think the first point I would like to make is that we do not see this as a surprise; we were able to see the sharp rise of rice prices coming for a number of years now. Primarily the - the first time is that, it's been clear that we are consuming more rice than we are producing globally. So that is eventually unsustainable and would drive prices up. We have demand growth that continues unabated that's - and demand is driven by population, it's driven by economic growth, and increasingly Sub-Saharan Africa is increasing its rice consumption substantially, importing about 40 to 50 percent of its rice. Now we have demand growth, but unfortunately that's been paired with a decrease in productivity growth and yield growth. So we are having the - the demand for rice going up while the ability to produce rice is flattening or even decreasing in some cases. Now why is that happening? Well we had a reduction in investment in infrastructure to support rice production, irrigation schemes that were built during the 1970s and 80s are deteriorating, and a serious decline in agricultural research investments over the past ten to fifteen years. And the - there was little room for expansion of rice area. Most of the good rice area particularly in Asia is already taken up. Now if we look at the decline in productivity growth rates, we also have been facing extreme weather events, natural disasters, cyclones, typhoons and recurring pest outbreaks that have occurred in Vietnam and in Southern China have also put pressure on rice supplies. And of course we are all familiar with the biofuels frenzy that has distorted grain markets. It's unclear what impact that's had on rice prices, but certainly on maize prices it's been significant. And there is also the oil price rise that is contributing to increases in transportation costs

and much higher fertilizer prices. So a number of things are conspiring and have come together that are putting pressure on our cereals prices.

Now what are the consequences of this? Well there are some estimates of this that say that if present trends continue for very long we can expect a 100 million people to be pushed back into poverty. So it's a pretty significant concern for us. I mentioned Africa earlier, particularly the urban areas in Africa, in Sub-Saharan Africa have been increasing their rice consumption dramatically, so it's very unclear what major spikes in rice prices will have, the impact that it will have there. So I think it's pretty clear to us that productivity growth to the development and dissemination of improved varieties and technologies was really the only long-term viable solution for bringing our prices down. And certainly keeping them down and making sure the rice is affordable for our poor rice consumers.

So we asked ourselves what do we - what do we need to do? And it's clear that we have to look at the short term, the medium term and the long term. For the short term we know that we have a number of technologies that are not being adopted and utilized by farmers over much of the rice-producing world. If we can get that information on proper crop management, how to manage their harvest better, how to produce the quality seeds, then we can have a significant impact on the productivity of the rice fields, and certainly over the medium term, we need to invest in the research base that actually supports and promotes the growth of our cereals yields and certainly our rice yields. And it goes without saying that we really need for the governments to reinvest in the national extension systems, the research systems, and infrastructure such as irrigation.

So there is a number of different efforts and undertakings that need to be taken up that we believe are capable of turning the current price in supply situation around, but it's going to take investments and these investments are going to have to be sustained over the long term. A couple of quick fix, band-aid investments are simply not going to do the job. In terms of the policy requirements, I can leave those to Joachim von Braun to address. So I think that's my quick view on rice for the moment and will be happy of course to take any questions.

**Ellen Wilson:** Thank you Dr. Zeigler. Our next speaker is Dr. Carlos Sere, who will speak about the driving forces behind the world food situation from a livestock perspective. Please go ahead Dr. Sere.

**Carlos Sere:** Thank you Ellen. Good afternoon. This is Carlos Sere from ILRI. The livestock picture is a bit more complicated than the rice picture. If you look at what's going on you will see dramatic increases in dairy prices, which have now in the least last few months come down a little. You see meat prices going up, particularly poultry, but much more modestly than the dairy products. What's behind this? Largely it's the increase demand by India and China due to economic growth and the change in consumption patterns. We know that consumers when they move let's say from \$2 to \$10 a day per capita, they largely expand the consumption of vegetables, oils and animal products. This is happening in big countries around the world; this has a big impact.

The other dimension is obviously energy prices, fueling the biofuel demand and obviously raising grain prices dramatically. And finally there is the issue of short term and bad weather in Australia and New Zealand. These two countries are major players in the international dairy markets which are rather thin markets, thus this is compounded into more structural longer term impacts.

So that is the sort of the overall picture. What does it imply for poor people? Well, very clearly that depends whether you are a net consumer or a net seller of these commodities. Very clearly, for the poor consumers particularly in countries for example Kenya or India where traditionally they have consumed a lot of dairy products, this is really bad news. Now, the big important message is that this is not that bad for other poor people particularly poor producers of livestock commodities. This

is actually a very important opportunity. The higher prices are allowing millions and millions of small holder producers, produce a high value products -- meat and dairy products -- which middle-class consumers are willing to pay for. So it provides them with an income and the important thing is that this income is achieved using large feed products with relatively low opportunity cost. They don't feed a lot of grains; they largely use crop residues, forages, and grass. So very clearly for example in India -- this is a country with tens of millions of small holders producing individually small amounts of milk based on these systems -- the higher prices mean it is a way out of poverty for them.

So what can we actually do? Very clearly, we have to address the impact on the poor consumers and smart subsidies for food, not necessary for meat and milk are obviously going to be very important depending on what the consumption patterns of the poor are in individual countries. Obviously the issue of biofuel subsidies and other support policies particularly in the developed world have to be addressed; definitely we think these high prices have to run their course and we need to make sure that these prices effectively transmit to poor farmers, so that they really respond producing more, which is the only long term way to address the problem as Bob has explained. Obviously research and the support services for technologies are going to be critical and a lot can be done in improving these as Bob had explained.

Now the basic point is to address the short term consumer problems in smart ways without distorting the market and making sure the markets allow the poor producers who are the bulk in the developing world benefit from these higher animal product prices.

I would like to finish by stating that the politics of food have really turned complicated recently. If you think of it, we have different types of poor consumers affected very differently; we've got Northern consumers of energy to drive cars competing with Southern consumers of cereals in Africa, seriously affected in their livelihood. In all of this you have a huge incremental stress on the environment in a sense the tradeoff versus food and energy securities. So in a nutshell, we can't expect simple policies to address these very complex tradeoffs. We will have to work and get much more refined analysis to address these in the most socially desirable manner. Thank you.

**Ellen:** Thank you Dr. Sere. Our final speaker is Dr. Joachim von Braun who will speak about the overall policy issues at play. Please go ahead Dr. von Braun.

**Joachim Von Braun:** Thank you. Before I come to the policy issues, I want to point out that the nutrition situation of the bottom billion of the world population is at risk when they are not shielded from these price rises. The higher food prices lead poor people to limit their food consumption and shift to even less balanced diets, with harmful effects on health in the short and long run. The child which is not appropriately nourished under the age of three for a couple of months will be harmed for the rest of its life. So the question whether these food prices, food price increases, will stop and come down again and whether then everything would be back to normal is a market related question. Concerning people, it's a different issue; we have to keep in mind the nutrition situation of the poor.

I want to highlight two issues in particular at this stage; one is agriculture costs are increasing a lot due to the energy price increases. Fertilizers become more and more unaffordable for the small farmers who are at the center of response to the world's food crisis. And transport costs have become higher and higher so these -- the cost side of agriculture will keep the food prices high even if we make major efforts to increase production.

We are a policy research institute, so we look at the food crisis and their causes from an economic and policy perspective and conclude that there are three major policy failures which are at the core of this current crisis. One is a long term neglect of agriculture growth in the small farm sector

of the developing world. Second is the ill-designed response to high-energy prices with biofuels. Our models' analysis suggests that if a moratorium on the biofuels would be issued in 2008 we could expect a price decline of maize by about 20% and for wheat by about 10% in 2009-10. So it is significant.

And the third policy failure relates to acute policy disruptions due to export bans. More and more countries have closed their borders and thereby narrowed the international market. And one such example was Vietnam when it closed its export and sharply reduced its predicted export -- rice prices jumped up by 30%.

We need to address these policy failures.

Speculation has become an increasingly important factor. Initially price increases were drawing speculation in. Now speculation is partly drawing the prices up. Changes in supply and demand fundamentals can no longer fully explain the recent drastic increase in food prices. Rising expectations and to some extent hysteria are among the additional factors that have played a role in the increasing level and volatility of food prices. But speculation concerns should not be over emphasized. There are a symptom of the true scarcities in the world food markets. The true scarcities because of low production and productivity increase and high demand.

My conclusions are that three actions are needed: the scaling up of humanitarian action and social protection with cash and food transfers. Secondly the - the investment in agriculture particularly in agricultural science and technology and market excess. And third, trade policy reform in which developed countries would revise their biofuel and agricultural trade policies and developing countries would stop the new trade distorting policies, with which they are hurting each other such as export bans. Thank you.

**Ellen Wilson:** Thank you Dr. Von Braun. Now we'll take questions and I would direct questions to the most knowledgeable expert on the topic unless you state a preference. You will have a chance to ask one follow-up question before we need to take the next question. The operator will now explain how to queue up for questions. Operator, please go ahead.

**Operator:** Okay, at this time if you do have any questions please press "\*" and then "1" on your touch-tone phone. If at anytime your question is answered or you would like to remove yourself from the queue, you just press the "#" key. Once again if you do have a question it is "\*" and then "1" on your phone. We'll wait just a moment here while everything queues up. Okay and it does look like our first question comes from Seth Borenstein from the Associated Press. Please go ahead.

**(Seth Borenstein, Associated Press):** Yes thank you for doing this. First I am wondering if all three of the gentlemen can talk briefly about whether they think that this current agricultural knowledge in science and technology is enough if you - if all the other barriers were removed to feed the world now and through 2050. Is it - I guess the question is, is this more the market as you talk about and less the technology or the lack of the technology and science getting to the farmers. And the second part of the question to be honest is - is if the other two gentlemen if Mr. Zeigler and Mr. Seré agree with Dr. Von Braun on the need for a, what would be a moratorium on biofuels?

**Ellen Wilson:** Okay. Let's start with in the order that the speakers spoke. Let's start with Dr. Zeigler.

**Robert. Zeigler:** Thank you. That's a good question there. I think the short answer is that though, no we don't have enough technology on the shelf that can comfortably roll to 2050. And we know that much of the technology that we - that we have developed to be more effectively adopted -- that's one of

the (unintelligible) which would help but over the longer term the wide range of the issues that perhaps who (unintelligible) able to do it.

Certainly we haven't mentioned climate change. That is going to have a serious impact on the future (unintelligible.) We have got both take fuller advantage of - of the policies that we have already created not (unintelligible) advances that have been made in molecular biology and genetics certainly in the plant side to improve our productivity. Things are - I mean we have a reasonably good technology now but we can't just (unintelligible).

The second question about do we - do I agree with - with Dr. Von Braun on the moratorium on biofuels, I think that we have to ask ourselves -- what is the - the source of the carbon going to the biofuels. If it's maize, soybean oil or palm oil I would say - I would support a moratorium. If it's sugarcane or other non-consumable products, a moratorium would be (unintelligible).

**Ellen:** Dr Zeigler, you're breaking up. If you could speak more into the phone...

Well basically the point is that we have to take advantage of the - of the tremendous achievements we have made and the advances we have made in molecular biology and genetics, to - to continue to make improvements in - in crop productivity and yields. The technology that we have on the shelf now is not simply not adequate. And then we have to be - be very mindful that climate change scenarios suggest that we are going to have to do quite a bit of new research on plant and systems management so - so we can adapt to the - the changes that - that will occur.

Now the answer to the question about moratorium on biofuels if - if we are talking about biofuels derived from maize, soybean, oil palm, yes I think I would - I would support a moratorium on that. If we are talking about a more - if we are talking about biofuels generated from sugarcane or other non-consumable plant products I would - I would not support a moratorium there.

**Ellen Wilson:** Okay, thank you for that contribution. Dr. Seré?

**Carlos Seré:** Yes I basically agree with Bob. I would just like to add that if you think we need to produce about twice the volume of food to respond to increasing demand by 2030 plus the challenge of responding to these alternative uses – we now want to fix carbon, we want to produce energy, all these other things -- definitely a dramatic increase in productivity is required. And as Bob indicated technology will not – technology on the shelf will not do the trick. Very clearly we need to continue investing in this. And in terms of the moratorium I think the key question is really understanding all these trade offs and looking very carefully. Even if you are using if you want cellulose forms you might be chopping down the forest and having a negative impact in terms of CO<sub>2</sub>. So the tradeoff is to me the central dilemma for the future, and good research needs to be produced to understand these tradeoffs in much more detail in a more targeted manner.

**Ellen Wilson:** Okay. Dr. Von Braun?

**Joachim Von Braun:** Let me clarify the biofuel moratorium point. I am not advocating a general moratorium on all biofuels because there are biofuels and biofuels. There are good and bad ones. And the point made earlier refers to the grain and oilseed based biofuels. The waste based and sugarcane based biofuel production can be very good, and the opportunities of agriculture being an energy producing sector should not be in principle discarded. On the question regarding productivity and do we have enough knowledge to deal with the agriculture challenges, the answer from an economics and policy perspective is clearly no. It is today largely research and development investments which drive productivity. World agriculture has productivity growth rates of 1% to 2%. This is just too low to meet

the population growth and the increased demand. That's why the world has been eating more than it is producing. So R&D investment has to go up in order to -- and that is knowledge investment -- in order to address the problem.

**Ellen Wilson:** Okay. Now we would like to take the next question.

**Operator:** Okay. And I am showing that our next question comes from (Missy Ryan) from Reuters. Please go ahead.

**(Missy Ryan, Reuters):** Hi thanks for putting together the call today. As we look at the policy and investment responses from different world actors like, you know, The United Nations, The World Bank and then the different governments, it seems like there has been a different response from the United States Government and the corporate sector in terms of re-examining the utility of grain based biofuels and investing and developing more agriculture than there has been from for example the EU and some of the international bodies that I talked about a second ago. Do you agree with that? Is the United States behind the curve in responding to this situation?

**Ellen Wilson:** Dr. Von Braun, did you want to take that?

**Joachim Von Braun:** The - the curves in which the various actors respond are driven by different considerations. The US investment in biofuels was largely driven by energy security considerations. And the Europeans originally also invested mainly for energy security. Then environmental considerations came along, and the great surprise at the end was that the biggest impact was on food, agriculture, and poor people. And of course the biggest investor has the biggest problem to adjust, and that should explain why it takes probably a bit longer for the US to revisit its first generation bio-fuel investment. The US seems ahead in innovation and technology sector and that is promising.

**Ellen Wilson:** Okay. Operator, let's go to the next question.

**Operator:** Okay. And I'm showing that our next question comes from Philip (Brasher) of the Des Moines Register, please go ahead.

**Philip Bradsher:** Yes, probably a question best for both Drs. Sere and Von Braun. To what extent have poor consumers been affected particularly in Africa by increasing maize prices. How much of a crisis point has that reached. Or in Latin America as well, but we can address in sub-Saharan Africa. And also with regards to the moratorium, the bio-fuels industry in this country (US) has brought out some studies showing that, or suggesting that for example a waiver of the US renewable fuel standard would not have that much of an impact on ethanol production or corn production, so I'd like you to respond to that. The governor of Texas just last week asked for a petition for waiver of the renewal fuel standard, the ethanol mandate.

**Ellen Wilson:** Dr. Von Braun.

**Joachim von Braun:** Ask my colleague Carlos Seré to respond to the consumer price effects in Africa through maize in more detail. What I have picked up during recent visit to villages in the South of Ethiopia suggest that international price effects have, by now, almost fully translated into local price effect. And a doubling of the maize price and the increase of imported rice even in that region which doesn't grow rice is not mitigated at all by any increases in wages. So the real income purchasing power has deteriorated. People have to simply adjust by eating less numbers of meals and that has serious consequences. It means hunger.

On the modalities on how to approach the bio-fuel – a potential bio-fuel moratorium -- I think that has to be assessed country by country. Addressing it through the standard, or for instance, in Europe the quota would be one way. Other countries such as South Africa have simply ordered to not build or like in China to no longer run the ethanol plants. So it - and it needs to be considered that as the investors may need to get some compensation, you cannot, I think you have to be fair to investors as well and not to blame it on them only that subsidy policies led to unfortunate outcomes.

**Woman:** Okay. Dr. Seré.

**Carlos Seré:** Yes, I think what von Braun has stated is correct, and if you look at the recent news around the world – the riots in West Africa and many parts -- clearly the urban poor are the one which are very directly affected. The rural poor -- it's less immediate and there is obviously price transmission issues into the countries in the more remote areas. But just to give you an idea of the importance, the Kenyan consumer price index now particular complicated situation over the last year went up like 20%. And if you look at the structure of that consumer price index, 50% of it is food, a large part of that is cereals, Ugali as they call it there. So definitely it has transmitted into these economies particularly in the urban areas.

**Ellen:** Okay. Operator, let's go to the next question.

**Operator:** And our next question comes from David Biello of Scientific American, please go ahead.

**David Biello:** Hi, two quick questions. You said that the existing technology is not enough but I'm wondering what some of these existing technologies might be that need to be more effectively brought into the field to up rice production or other grain production. And then second I wonder if you Dr. Seré could address the feeding, you know, livestock particular grains rather than, you know, to enhance meat production because that's a good commodity that can bring people out of poverty versus feeding those grains to people.

**Ellen:** Okay. Dr. Zeigler, did you want to take the first question and then we will have Dr. Seré take the second.

**Robert Zeigler:** Yeah, happy to. In terms of existing technologies that would need get out to the farmers, certainly much more efficient nutrient management to fertilizer management is ready to go in rice, in wheat and in maize. I know that there are very elegant studies that have been distilled to a level that are adoptable by small farmers, so getting that out can certainly not only improve yields but also make fertilizer use much more efficient and environmentally friendly. There are some very exciting technologies that post-harvest that we know can reduce storage losses and milling losses that are adopted by farmers could be quite effective. So those are just a couple of examples of the sorts of things that need to be done. Likewise simple things like high quality seed, clean seed, healthy seed in farmers hands can also improve yield. So those are - they are not exactly sexy technologies but they are product of years of research that can have an impact if they reach the farmers.

**Ellen:** Okay. On the second question, Dr. Seré?

**Carlos Seré:** Yes, indeed livestock production is very different in the developed countries in the north in large parts of the developing world, where in the north feed-lot operations feeding grains -- about eight kilos to get a kilo of beef -- is the way to go, in the developing world, a large amount of low quality roughage feeds etcetera is available and is used in producing livestock products. So this tradeoff is much more critical in the intensive systems in the north than in the developing world. And in

essence we are pitching, if you want, consumers from the north -- high income consumers who have already had enough meat -- are bidding it away now from poor people. And we know that at low amounts animal products are extremely important in terms of providing for nutrition as von Braun explained. Micro nutrients, proteins, etcetera, animal foods are very important but obviously prices going up, they are pitching, if you want, the wealthier consumers from one part of the world against the other low income part. Thanks.

**David Biello:** So what can be done or what would you suggest be done in a place like the United States?

**Carlos Seré:** Well, I think obviously sort of bringing down the consumption levels in high consumption country like the States is really challenging. It would be very difficult to think of a taxing system or something like that. It really probably goes largely through education in terms of food and health issues trying to change those consumption patterns, yeah. But it's definitely not an easy thing to do, it's just somewhat, I think, to getting if you want US consumers to drive smaller cars.

**Ellen:** Operator let's go to the next question.

**Operator:** And our next question comes from Deborah McKenzie of New Scientist, please go ahead.

**Deborah McKenzie:** Hi, thanks very much for doing the conference. Listen I think I heard Dr. von Braun say at one point that prices of food will continue to go up largely because of increases I think in oil prices he was saying. Even if we do get production increases. I would like to know if people have crunched the numbers to get some idea of what kinds of increases in yield production per hectare we need to do over the next ten to 30 years in order to maintain prices at a certain nominal level, say, at today's levels or not much more?

**Ellen:** Dr. Von Braun.

**Joachim von Braun:** The oil price is driving agriculture prices from two sides. One - first from the cost side. The tripling and quadrupling of fertilizer prices is indicative of that. So on the cost side and secondly on what we call the opportunity cost side. So for agriculture becoming an energy producer producing bio-fuels by taking land and water out of food and feed production, that is the linkage. It however affects different elements of agriculture in different ways. It's particularly strong in the sugar and in the corn sector and very much weaker in the - with the other grains. The oil price of now approaching \$120 a barrel is a key factor and can actually read almost a linear relationship in a bio-fuel producing area between energy price and corn price. What yield increases are needed depends very much on the future outlook of food and feed and fuel demand. The yield increases, which we currently have of one to 2% per annum for the major grains are far below the needed ones, which are in the order of magnitude of between three to 5% per annum over the next 15 to 20 years.

**Deborah McKenzie:** And do you think you can achieve that with technologies that you can envisage working on now?

**Joachim von Braun:** The technologies on the shelf I refer back to my colleague Bob Zeigler.

**Deborah McKenzie:** Not on the shelf, working on and the things that in the medium to short term --

**Joachim von Braun:** Yes. The yield potentials in large parts of the world and especially in Africa are far above of yield reality. It's no surprise that African agricultural growth was the highest of any

hemisphere over the last three years -- between 4% and 5% per annum. So with the right investments in science, technology, extension and market access supplying infrastructure, the job can be done. There is no reason to be fatalistic about the situation. But the required investment volume is far underestimated. It's not a few tricks. It's large investment what's needed.

**Deborah McKenzie:** How much?

**Joachim von Braun:** Well, the agricultural growth needed in Africa to make it sustainable at 5% to 6% according to our analyses is, which we have published two years ago, required incremented foreign development assistance of about \$6 billion to \$8 billion a year, \$6 billion to \$8 billion a year for ten years and that assumes that the African countries themselves would massively increase their own investment. So we are having to talk about large amounts of money. And the research component in that is also significant.

**Ellen Wilson:** Okay. Operator, let's go to the next question please.

**Operator:** And our next question comes from Paul Alexander of Associated Press in the Philippines. Please go ahead.

**Paul Alexander:** Yeah. So you talked at the beginning that this crisis have been predicted for a long time. Can you give us an idea of what about this crisis has surprised you at all and what are the worst-case scenarios that we are facing if we don't deal with this soon?

**Ellen Wilson:** Dr. Zeigler did you want to start with that one?

**Robert Zeigler:** Sure. I think the biggest surprise for us was the magnitude of the price rise [of rice] over just a period of a few weeks going from - in December a price of \$300 a ton to just this week over a \$1000 a ton. So that was - that was - that was a surprise that - and what was behind that is as Von Braun mentioned the closing of the trade with Vietnam, India and China. So that was the - that was the biggest surprise I think. In terms of worst case scenarios I am not sure how far I want to go down that road considering that people who are complaining about transgenic technologies always tend to bring up the worst case scenario and then paint it as the expected scenario. But obviously if the monsoons were to fail in India, another big cyclone were to hit Bangladesh prior - a month or two before the harvest, if brown planthopper and virus outbreaks in Vietnam and southern China were to hit, and a big tycoon moved through central Luzon in late September, it would be a pretty dismal situation.

**Ellen Wilson:** Dr. Seré, did you want to contribute on the surprise issue -- what you found surprising?

**Carlos Seré:** Yeah, I think in our case it was similar. The dramatic rise of dairy prices was a - was a real surprise to us. We have been observing some of that in the past but the combination -- this is the worst-case scenario of things happening at the same time: drought in New Zealand and Australia, rapid 7% to 8% increases in consumption in India and China, and all of these things happening at the same time. That's really what - what has hit us that sort of these things do happen, yeah.

**Ellen Wilson:** Okay. Operator can we take the next question?

**Operator:** And it looks like our next question comes from (Lisa Freedman) of ClimateWire, please go ahead.

**(Lisa Freedman):** Hi, thank you. Dr. Zeigler, going back to climate change and the extreme weather disasters that you had mentioned. What are some of the major areas of research needed to cope with what scientists say are going to be ever more extreme weather events and natural disasters caused by global warming?

**Robert Zeigler:** Well, the - it's - the main effort would have to be to adapt our plants to whatever the future holds. Most scenarios predict the increase in frequency of droughts or unreliability of rainfall. So we need to develop crops that will tolerate droughts better than the ones we have today. Certainly increase in severity of hurricanes, typhoons, cyclones will no doubt contribute to more severe flooding. So we need to develop crops that can tolerate the flooding. Many crops are near, such as rice, are near their biological limit to high temperatures during flowering, and if temperatures rise too much we will - you will have dramatic yield drops. So we need to develop crops that will tolerate higher temperatures far better than the ones that we now currently have. Now the nice thing, there is a nice thing about all of this is that if you consider certainly drought and submergence of flood tolerance and salinity tolerance for the salt water intrusion of - on the coast that would be a product of rising sea levels and more severe storms, those exact same traits are required today in many of the areas of greatest concentration of rural poverty in the world -- in South Asia and sub Saharan Africa. So we can be trying to address the problems of climate changes and still meet present day problems.

**Lisa Freedman:** And how far along are we in developing crops like you mentioned that can tolerate flooding, droughts? Is that - it can do the -- is that the seed improvement technology that you are mentioning?

**Robert Zeigler:** Yeah. We are actually - I mentioned earlier the tremendous revolution in molecular biology and genetics. We have at the International Rice Research Institute have already developed really spectacular flood tolerant rice materials that are in the very last stages of testing in Bangladesh and Eastern India. And that was an elegant work in applying bio molecular genetics tools for breeding. We are - we believe that traits like drought tolerance and high salinity tolerance are possible. Again because we have a much, much better likelihood of understanding the complex genetics that lie behind these traits. 15 years ago we would not thought that we would be as far along as we are today. So that's I think - those of my co-speakers on this call have mentioned their optimism and the reason we are optimistic is that we are seeing progress already being made.

**(Lisa Freedman):** Thank you.

**Woman:** Thank you operator. Can we take the next question and could you also repeat the instructions for queuing up for questions? And we will take our last few questions.

**Operator:** Okay. Once again to ask a question please press "\*" and "1" on your phone. And if you do have your question answered or would like to remove yourself it is with the "#" key. Again if you do have a question it is "\*" and "1". All right. It looks our next question comes from (Missy Ryan) of Reuters. Please go ahead.

**Missy Ryan:** I think that there been at least initially there was a little bit of confusion in - about whether this was - if this was exclusively a price crisis or whether it was the supply shortage. When -- from any of the speakers -- if there aren't any changes in the kind of policy and investment responses that you are urging, when will we see actual widespread supply shortages on a global basis?

**Ellen Wilson:** Dr. Von Braun?

**Joachim Von Braun:** The supply shortage has become real over the last four years. Indicative of that is the declining levels of world grain stocks partly induced by the policy changes especially in Europe and also in China. The supply shortage should not just be assessed by the total volume of annual production but by the widening gap between production and consumption. So the price crisis has been driven by fundamentals of supply and demand up until late 2007 in our opinion. If you want - so you can test it by supply demand driven models. They give you the price increase in the direction, which we actually had it. Referring to what we now have as a price crisis of a more complex nature is appropriate as you did. Because a nervous government responses such as export bans and public stock rebuilding in this situation have set in and are driving prices for some commodities higher and for others like wheat, recently, more up and down. We have a highly volatile wheat market, which gained close to 200% and came down by another 40% in the last couple of weeks and will probably go up and down further. And this volatility is very serious for poor people. We require stabilization policies.

**(Missy Ryan):** And just to clarify one thing. When you say that supply and demand were driving the price increases up till late 2007, was that the period until which you studied it, or was it after that speculation took over?

**Joachim Von Braun:** No. I look at models, which we run from the past into the future. So from that's where we derive - what I would refer to the market fundamentals. And in 2008, especially in the last couple of months, price increases far exceeded what global supply and demand would suggest to you. And that's then a response to the government erratic trade policies, the export bans and opening up the opportunities also for speculative trading.

**Ellen Wilson:** Thank you. Operator let's go to the next question.

**Operator:** And our next question comes from (Michael Mathis) of AFP please go ahead.

**(Michael Mathis):** Hi, hi thanks very much for having this conference call. We appreciate it. I am wondering if Dr. Von Braun can talk a little bit about the effect that the wheat market in the United States is having on the world market. You were talking about a highly volatile wheat market, and a major report in the Washington Post just came out today was saying that the US now has less wheat in its grain bins than at any time since World War II. And that's approximately just four days worth of wheat in terms of world supply. So, how important, how big an impact is the US wheat market having on the global market? Thanks.

**Ellen Wilson:** Dr. Von Braun?

**Joachim von Braun:** The world wheat market, the volume internationally traded, has remained virtually constant over the last five decades. And it's a significantly larger proportion of world production and in the case of rice. So, normally that market is less volatile. The US wheat has come under pressure through an indirect effect of the biofuels production which has squeezed soybean and wheat partly out of the rotation. So, corn up, soybean pushed, and wheat pushed, and out of that came decline in stocks and the volatility. We today look more to - if in Europe especially Ukraine and in Russia - for the volume of wheat as well as to Europe including France as major players in the international wheat trade. That's - if you look at the quick reaction to reopening of prices to reopening of Ukrainian wheat trade, it gives you an indication as to how multi polar the world wheat market has become; it's no longer dominated by the US.

**Ellen Wilson:** Okay. Operator, next question. We are taking a few more in the minutes that we have left.

**Operator:** All right. our next question comes from Mike Casey of Associated Press, please go ahead.

**Mike Casey:** Yeah. Dr. Von Braun, you talked about the role of speculators early on, who were we talking about here, how have they contributed to higher prices and what can be done to minimize their impact on prices?

**Joachim Von Braun:** Who we are talking about here, I prefer to cast a net wide. Speculators do not include just capital investors, hedge funds, and so on, but they include governments who with erratic trade and stock policies, traders small and large, millions of farmers who contemplate do I sell today or next month, and billions of consumers who have become concerned around the word and stock up a little bit here and there, and that adds up. So, the word speculator has a negative connotation taking care of under - under stressful circumstances is part of what we see as market response.

Secondly if the commodity exchanges appropriate regulation has set in in an overheated market that is required making futures trading more costly higher deposit requirements from market participants are part of this, and ending future's trading for instance in for many products in the Indian commodity exchange is one step further. The market requires a bit of regulation, but pointing at the commodity exchanges as culprits would be totally wrong. We better face the reality and - and look at the - the actual price was and shut our eyes and hope that things would go away.

**Ellen Wilson:** Thank you, we will take two more questions. Operator?

**Operator:** Okay. Our next to last question comes from (Bruce) from the Chicago Tribune, please go ahead.

**(Bruce):** Thank you - thank you for organizing the conference. Could you discuss why funding for research in the crop yield has been declining and separately do you see any movement on trade barriers that keep crop prices high?

**Ellen Wilson:** Dr. Ziegler, would you want to take that one?

**Robert Zeigler:** Yeah, I can take the first part of the question. You would say we are victims of our own success. The tremendous achievements in agricultural research that resulted in the green revolution in the developing world led to a sense of complacency. People felt that the world food crisis was solved, that food security was no longer an issue, and it really fell off the agenda of funding agencies both in developed countries and in developing countries. This is obviously an extremely short-sighted view of the world, but it was - it was literally thought and that certainly had been in discussions where people were saying that food security is no longer an issue, the problem has been solved. So, I think what we have demonstrated is that science and technology can in fact solve very difficult problems and challenges that face us, but that we can't take our eye off the ball, and we have certainly taken our eye off the ball. Now the second part I think maybe Carlos or Joachim can answer better than I.

**Ellen Wilson:** Okay. Dr. Seré?

**Carlos Seré:** I will pass it to Joachim.

**Ellen Wilson:** Okay.

**Joachim von Braun:** We see virtually no movement on trade barriers in the WTO Doha round negotiations. That agenda is unfortunately stowed as to relevance. And the new trade barriers, the export bans which - which more than 20 countries have issued - have not found an appropriate international forum yet. We feel that this requires coordinated international action because individual countries cannot dare to open up their trade if the neighbors and the rest of the world doesn't open up. So, this is in our opinion and an issue for the G8+5 country meetings in this summer, and it needs to be addressed by a revisiting of joined grain stockholding at a regional or a global level.

**Ellen Wilson:** Thank you and our last question operator?

**Operator:** And our last question comes from Seth Borenstein of the Associated Press. Please go ahead.

**Seth Borenstein:** Yes, and thanks again for doing this. Especially for Carlos Seré and Robert Ziegler. Can you talk about the role, there are some scientific critics who say CGIAR and others have not done enough on soil are too seed oriented and not soil science oriented enough and that much of the problem is that science groups like yours have ignored soil, and that's why we are in some, you know, that's exacerbated the problem.

**Ellen Wilson:** Dr. Seré?

**Carlos Seré:** Okay. Yes, indeed I think as Bob explained, plant breeding was one of the early successes. Natural resource management and soil management as a part of that definitely had less measurable impact and therefore probably being under invested, and this is very much what we are realizing I think now -- that really these investments are needed. And so the whole issue of natural resource management is coming up much higher in the agenda these days. Bob, over to you?

**Robert Zeigler:** Yeah. I think that - that although your points are well taken, I think that's one of those little stories that gets repeated often enough, it takes on a life of its own. We have been -- and certainly our work at IRRRI has been very conscious of the importance of soil science research. In fact in 1992 we first discovered and started to detect a yield plateauing -- a yield growth plateau -- we had an external program review here, and the recommendation was that this is such a serious, such a potentially serious phenomenon that we should launch a \$50 million project to understand the basis of that decline in yield growth, and the primary suspicion was the underlying soil health. Of course, as rice prices continued to decline, we couldn't find any donors who would support that work. And as our budgets were continuously cut over the last 15 years, we were just not able to invest in soil health areas and others. So, the - the idea that we have neglected this because we think that soil health is somehow less important is unfounded.

**Ellen Wilson:** Thank you to everyone for attending this press briefing. If you would like to set up individual interviews, you can reach Megan Dold at 301-652-1558 extension 5720 or (Jeff Haskins) on his mobile at 254-729-871-422. We would be happy to try and find some experts for any follow-up questions, and wanted to also remind you that the online press kit is available at the following Web site, [www.cgiar.org/news/worldfoodcrisis.html](http://www.cgiar.org/news/worldfoodcrisis.html). An audio recording of this briefing will be available for playback through Thursday by dialing 1-800-839-7414. International callers to get the audio playback should call +1402-220-6068 or visit the online pressroom. Thanks again to everyone for participating in this call.

**Man:** Thank you.

**Man:** Okay. Bye-bye, thanks.

**Man:** Bye-bye everyone.