

## DEBAT

### **Khalid Meksem, président de l'université Mohammed VI**

Rod has given us an excellent presentation on what can be done. There is a huge problem in terms of what scientists are developing and reality and how things are translated into real life. The problem lies in two major areas. Firstly, we need to understand that Africa does not need what we call pre established protocols – prescriptions. Rod has shown that 3,000 years ago Africans domesticated rice, which means that they have been active in agriculture.

I believe that we should try to listen to the Africans. If we listen to the farmers, it will be possible to translate the science and other things into reality. However, this can only be done with their involvement or what I would call an integrated set of technologies where we go from hard science and implement social sciences and economics – and we have talked about banking, for example – and then bring this technology to the hands of people who will use it. However, this should not be done by saying to the farmers 'We know this works and you have to execute it'. There has to be a way of implementing things where these people are involved from the beginning, we should think about rice the same way an African farmer and consumer think about it, or they will tell you at the end 'You know what? We do not like our rice this way; this is how we like it. and the effort is lost'. If you buy a baguette in France, you want it in a certain way. You therefore do not do breeding for wheat the same way in France and Italy. The Italians want wheat for pasta whereas the French want it for baguettes and so on. Similarly, Africans want their rice in a certain way and you have to talk to them about the varieties that they want and then take what Rod is developing with other colleagues and bring it through traditional breeding to the varieties that people want to use in Africa. For me, this is how we can take science and put it in the hands of people who will use it.

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

Thank you. You forgot –

### **Khalid Meksem, président de l'université Mohammed VI**

Yes, I will come to that; I can talk about it right now.

Well, when we talk agriculture and there were two questions here, so are we talking really hard, intensive or are we talking small? Either way for me, sustainability has to be a key, for the simple reason that everybody is talking today that by the year 2100 and, it is tomorrow you know, we will have 4°celsius more added to our climate temperature. What will this 4°celsius do to our climate? You will see rain where you do not see it. I was actually in Morocco these last three months and there was a lot of rain, flooding you know? Something that I have not experienced in many, many years you know, when I was living as a child in Morocco or when I came back visiting. We see today the impact of climate changes and this is going to go on. So the 4°celsius means that scientists like Rod have to work on new ways, bringing new genes that will actually interact very well with those changes. We cannot do agriculture the same way we have done it in the past. We have known the green revolution, we have introduced fertilisers into the equation and we know also that nitrogen runs off, polluting underground water, with phosphorous, we know what happened to our lakes. This is enough for your congressman or your politician to go fishing on a lake and he sees some dead fish, so the next week you will see legislation saying no fertilisers, no this, no that.

OCP in Morocco actually did something a little bit different in the way it approached the African continent for example, we have developed a new strategy based on sustainability. At OCP we are a fertiliser company, we would like to sell fertilisers. However, today, you cannot sell your fertilisers in the same way you have been doing it for the last 60 or 70



years so, like we were talking before, next generation crops we are talking next generation fertilisers. Those next generation fertilisers, how can you develop them? Well, first you have to do what others do not want to do; invest money in providing something to the locals. So, we have developed in several countries in Africa including Ethiopia, what we call a fertility map. A fertiliser map is where you take the soil and you look at the ingredients that are there, following the results of the test, why are you going to go to the farmer and say, 'You need fertiliser' if his soil is rich enough? So you have to be honest and that is the approach of OCP. Although we would like to sell more fertiliser, 'this is our continent, this is a new way of doing business, let us first develop these fertility maps'. We shared the data with the scientists who are the governmental agencies and everybody over there and guess what happened? To our luck in most of the land where we developed those fertility maps so we have seen a need of phosphorous, a need of certain things but we have seen no need for nitrogen for example or other stuff. So we were able to sell more of our products in certain countries but in a smart way where people know this is what they need. You do not have to sell something else that they don't need, if you need a shirt and you do not need pants, you are not going to buy the pants this is the approach in agriculture. So, try to give people what they really need. Do not use their ignorance in certain ways to try to sell them stuff that they do not need. The approach to agriculture in Africa has to be sustainable, first; secondly, biodiversity is very important. Africa is known for many other things than just rice or wheat, cassava for example, cucurbitacea and other things. Do not take away from the Africans what they are used to, to bring stuff to them that you would like to sell because you want to make profit. Try to help them bring what they have in a way so that they can actually have a high yield in cassava plants. Help them bring those technologies into crops, legumes, veggies and so on, that they need.

There is another thing that we forget most of the time about Africa, Cucurbitaceae. Does anybody here know what Cucurbitaceae are? It is a family of plants including watermelon and melon that Africans in many countries rely on in their food and it is not something that happened yesterday, but for many years. If we think about watermelon for example, why would Africans take watermelon? In some areas they do not have access to milk, watermelon is very rich in vitamin A, so there it is, this harmony which has been established for thousands of years between humans and mother Nature.

Why do most companies invest in what we call cash crops? Because they want to make a profit. Marginal crops, horticulture crops, legumes, these are really what the Africans need and this is where I think most of the research should be. With that I will open for questions.

**Suresh Kumar, rédacteur en chef d'Africaindia.org; ancien responsable et directeur du département des études africaines, université de Delhi**

Let me give comments to the different people and the first comment I would like to start by going back to the agriculture and to all those people of the land. On that issue there is more clarification needed on the ownership of land, the land is divided into three parts not one part. One, the colonial part, second is the indigenous part and third is this the new government 2005 onward, the private investment land lease not the land ownership, to be clear. Here I would like to give the example of Zimbabwe. Zimbabwe, after 2008, the value was decreasing, GDP was down but slowly with the agriculture now they are coming up. Particularly in the agriculture sector, Zimbabwe is galloping now because they distributed the land to the farmers and it is coming up. Zimbabwe's GDP in agriculture is growing stronger and stronger day by day and one example of colonial. The second the South Africa you talked about. Yes, there are complications with land redistribution, this is complicated, let us not touch that today. The second, more important thing is the land on the [inaudible] in different regions, northeast, eastern Africa [inaudible] system, what is that? In that 1) increase of ownership; 2) increase of ownership with the financier rights; 3) collective ownership, what is that, in doing so ownership with the payments right.

For example there are old people, 70 year olds, 75 year olds, who cannot plough in the field so what they do? They give to the youths and on the payments basis are proportional some would be 30:60:40 the crop share. The third collective system is the village has a collective system and they do the agriculture on the common land and share the different systems provided in different countries. The third party, the land lease and here you have given me the direction to share the legal rights to hear different religions, different jobs, they have the legal rights and in most of the

agreements, along with the central government, these [inaudible] committees sit with them and 50 year land lease rights are given to the private companies in the present context. So this is the present system on the land coming through the roads. On paper, it is excellent. My inquiry is, because I do not have any scientific background, my question is that is there any difference between America which is the new Africa right and in your research, one. The more important question is, because it is shared by [inaudible], what are the intellectual property rights? Is it applicable on your research or not because you are going to share those rights with the whole world, that is more important for me. Third, Philippe, regarding something I did [inaudible] in India, on seed, on fertiliser, there is no subsidisation on [inaudible], more important, now there is no subsidisation on power. For agriculture, there is no subsidisation today. So this is one point and the second is yes because India has a large number of people below the poverty line so we have the public distribution system along with that government fixed price of that, that is no incentive to the farmers. I believe they will not produce. I believe they will say, 'No, we will not produce wheat, we will produce cotton, we will get good price. Why produce tomato? No need, no, no, no you will get good price'. So these are the incentives given to the farmer so that they produce the stable food system. Thank you.

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

Thank you. Rod would you like to give some answers?

**Rod A. Wing, professeur, université d'Arizona**

Thanks for your specific questions here so with respect to the, what is the difference between our work and the NERICA lines. So the NERICA material has been developed essentially just by conventional breeding purposes so what we have done is essentially sequenced that donor parent of the NERICA lines and now we essentially know where every gene is in their genome so we can more precisely identify genes that can contribute to agriculture of NERICA lines.

In terms of intellectual property, the genomes that we have produced, they are all in the public domain and we do not have any intellectual property rights to that information which is a policy of the National Science Foundation. However, if we use the genomes to discover an important trait, let us say a gene and the function of that gene, there are opportunities to patent such traits, but we are trying to stay away from that. I guess the one point I want to make is that we are going to have this additional two to three billion people on the planet in less than 50 years and we have to work together as a community to help solve this problem and having to deal with intellectual property is really a waste of time. It puts up a lot of roadblocks and that is a really big problem that we have in that years ago you would get seed from India, you would get seed from Africa and you would exchange seeds with no problem at all. Now everybody is putting up these barriers, for me to get seed from you I have to do this and that and to me that is really slowing things down dramatically. We need to solve this problem quickly to be able to share our germplasm without intellectual property associated with it.

So, this one last thing, one of my ideas is that as a community we should develop a universal material transfer agreement that would be worldwide. If we were working on this 9 billion people question together we could exchange material freely. At the IRRRI gene bank, for example, anyone can write for seed and it is actually free. But there are problems in China. To get seed out of China it is almost impossible. I think it is the same thing in India and Africa. The thing we need to do is to work together cooperatively. That is something that you guys, as a policy making group, could help forge a solution to.

**Khalid Meksem, président de l'université Mohammed VI**

Yes, after what Rod said, Morocco has a long collaboration with India, OCP funded close to 5000 projects and I would like to mention this today because I met some other colleagues in Morocco and they told me that it has been very

difficult to get legume seeds out of India. So if we are going to, as Rod said, to solve the 9 billion or even 10 billion question I think we would like to see more collaborations from India and China in actually releasing what belongs to the Human race; this is us, this is ours, being human does not know any passports, any borders. We used to think it is Africa's problem, I can tell you one thing from my own experience, when I was growing up in the 70s in Morocco it was very hard to see any Chinese, the only Chinese I knew was Bruce Lee from the movies. It was very hard to see any Africans, you know, today you walk on the streets of Casablanca or Tangier, you see a lot of Chinese, you see a lot of Africans and fortunately my fellow Africans and they are brothers, they are there for a reason because they want to migrate to Europe. So, in the world that we live in we have to provide stability to everybody because it is a common problem, we have to work on it together. So, therefore I think the question of seeds, it should be really open access to everyone and no governmental agencies should say, 'No, this is ours' and most of the time when you talk to the officials they tell you: 'We do not have a policy' so maybe it is those people who were asked that do not want to release those seeds. So that is number one.

Number two, going back to farm policy and economics, for example, what we see today in Africa is the growth of two kinds of farmers. You have the entrepreneur farmer who knows when to plant, when to enter the market and he is very well informed. So that farmer, for example I give you the example of veggies and legumes, so the price of watermelon when you enter the market in Morocco is MAD 10 a kilogram which is close to USD 1.20/kg if you enter at certain dates. Now if you are just two weeks later the price will drop 10 times. So, I join you Philippe in a way that governments should do something to guarantee certain prices because what happens, a farmer who enters in the first two weeks will make most of the profit, the one who is left behind will not make any profit. He will most likely lose his investment and we see this more and more so there is this huge gap between those who are informed and I give the example of Morocco because I know it very well, but I am sure in other parts of Africa it is the same thing. So really there should be more and more involvement by governmental agencies to guarantee certain prices that will guarantee that the farmer will stay alive. Sometimes it is not a question of making him rich, it is keeping him alive. So keeping a farmer alive is something that is going to be very hard in the future because what we have seen lately is the politic of China for example going to Africa and competing with, not with the rich Africans, with the poor Africans. So we have seen this in the case of, for example, poultry, chickens so the Chinese they would go and compete with farmers that raise chickens in Africa because they will bring most of their feed in all the low cost so that their chicken is cheaper than the African raised chicken. That creates a lot of confrontation between what China is bringing and what the Africans want. Really if this is the way we are going to help Africa, I would say, 'Leave Africa for itself'. Do not bring this kind of competitiveness because all what you will do is destroy more of Africa, destabilise Africa and remove the Africans from their land to take advantage of their resources. So the politic of agriculture has always been a major issue whether it is in highly developed countries or countries that are trying to figure out where to go and in Africa it has been a real issue, especially in the last years because everybody sees Africa as: this is where I can make my 5, 8, 10% profit and thinking about profit, we do not think about sustainability. Thinking only about profit we do not think about the people so we think more about how much I am going to take away from this continent. We should think, 'What can I do together with this continent to make profit without hurting the locals but putting also some wealth in their pocket that they can also buy my other products'. Thank you.

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

Any other comment, we still have five minutes.

**Philippe Chalmin, professeur, université Paris-Dauphine**

If I may, on the problem of property rights on genes and seeds, I think this is of the utmost importance. One of the reasons why the green revolution was a success, if you remember, was it went through institutions like [inaudible] which were funded by non profit organisations, namely Ford and Rockefeller Foundation. It seems to me, I do not know everything about your activity but nowadays it is far more costly, far more capital intensive to develop new seeds. Of course I am taking the general example, because I do think, you did not speak, you are politically correct, you did

not speak about generals but I think what you are doing is biotechnology from one point or another but the big problem is and, where the anti-GMOs are right, is a question of commercial monopolies developed by Monsanto and two or three others and the question is really a question of global governance. We do not have any global governance there. Is it right to develop a label or a policy right on a trade for example like Monsanto has done on many subjects and imagine if India does not want to sell its seed, they know that it could be commercialised by others. So we really have a problem and which I think it is a good question that the anti-GMOs should ask, which is really is that ethically, is that, well I do understand property rights for medicine for example it is exactly the same and the way but for plants, seeds, I think that to keep [inaudible].

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

Well, gentlemen, I think we are going to a new workshop on GMO issues and if it is about GMO I could give my contribution from Brazil because 90% of the whole crops in Brazil are GMOs and nobody died about that and all those debates are approached in a very different way but I think it is another topic. Does somebody want to add some very final consideration on...? A very short point because we are already out of time.

**Suresh Kumar, rédacteur en chef d'Africaindia.org; ancien responsable et directeur du département des études africaines, université de Delhi**

Colleague, I like to just add one more point to your contribution. We did not discuss more about the food processing right from the example from Morocco watermelon. France are taking it, preparing the juice quarters coming back to France. One more example, [inaudible]. [Inaudible] is an indigenous product of Eritrea and Ethiopia; it is a [inaudible] fruit. In [inaudible] they are taking [inaudible] in ships and bringing back the juice bottle. Why not in Africa itself? [Inaudible] it should be processed in Africa; that is what my concern.

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

Thank you. So, we... the final one?

**Landry Signé, président fondateur du Global Network for Africa's Prosperity**

Thank you very much. I think that was really [inaudible] so thank you very much for your outstanding presentations and to conclude, I think, perhaps one aspect we may discuss next time could be the implementation, the policy implementation, because most of these solutions are known but poorly implemented. Other than that, thank you very much.

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

Thanks a lot, thanks a lot to everyone and to the speakers for their contribution. I think we had a very rich debate. We addressed different aspects of these questions and we will try to give a summary report tomorrow morning of all those rich conversations. Thank you very much.