



Animal Source Foods and Child Cognitive Development: A USAID Success Story of University Research to Private Sector Implementation

Q & A Transcript

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Male: Thank you, Tag. And right now we're going to open the floor for questions. Just to let you know, when asking a question, please state your name and organization before asking your question. And we are going to try to alternate between the online audience and our in-person audience. And for those of you online, we have about 35 people or so here in person joining us today, and we have about – how many people online for –? 30? 32 online joining us today.

So with that, I'll open it for questions.

Male: Hi, Steve Covak, USAID in E3. The question is in terms of the meat treatment or the group that received meat, did you document any beneficial performance from vitamins, like B12, as a result of the group consuming meat?

Male: Yes. Well, Vitamin A levels were increased. In terms of other vitamins, I don't think we've looked at those yet. To be honest, this is still being published. A lot of the data's still being published from this.

There were elevated iron intakes, zinc intakes. Both iron and zinc are very important in cognitive function.

Male: We have a question from online.

Female: Yes, this question is from Tara Garnett, from the Food Climate Research Network at the University of Oxford. And she asks, "Can you say something about the tension between nutritional goals and the role of ASF, and the environmental problems associated with livestock?"

Male: I knew I was going to get this one. Well, first of all, I think that we need to understand that in this population of children, to put this in context, I think 60 percent of the children were moderately to severely malnourished in terms of micronutrients. They got two ounces of meat a day, a very small amount of meat. And that increased their cognitive function significantly. Why?

Well, meat is a wonderful source of many of the micronutrients. It's condensed. It's dense source. It's very bioavailable, and it's easy for children to eat.

Now, the rate of consumption of the children in this study in this critical period is not going to have an impact on the world's environment. What has an impact on the world's environment is the amount of meat that is consumed when you get as incomes go up. If you look at the projections for 2050 for 9 billion people on this planet, part of that demand for food comes from the increased population, but a large component of that

increase comes from a change in diet that occurs with increase income. So in a sense, we should not impose the problems of overconsumption that we have in developed countries on the underconsumption we have in developing countries.

Now, are livestock – I look at livestock’s long shadow, the FAO study, and I see it terribly flawed, in part because of the methodologies used. Much of the productivity for livestock in developing countries is a range-based system. It’s not intensive the way our livestock systems. It’s not competing, so with foods that could be consumed by human beings. Is there overgrazing? Of course, there’s overgrazing. But if I look at the crop agriculture of the world, I could say when I go to Ethiopia, for example, that the crop agriculture actually does far more damage than livestock.

So I think the principle should be that we should intensify in a sustainable way, both of those systems, and ensure that both crops and livestock are done responsibly when it comes to natural resource management.

Female: Joyce Turk, Bureau of Food Security. I think another important factor to bring out in this particular study, but also in relationship to climate, is an environmental preservation, sustainability, our species. The species that are involved in the studies, this particular study was not necessarily beef-oriented, was it? I was poultry, mainly.

Male: Well, the study in Kenya was – the meat was beef. But it coulda been chicken or it coulda been fish. The general consensus is that the results would have been very similar. In the case of IYON, it was poultry, and poultry was appropriate for women to use at the village level, and they did very, very well. I was amazed.

In one of the villages in Techiman in Central Ghana, I visited a village and there was a little lady there who was – let’s say she was very humble, and her surroundings were very humble. But she told me that she’d already saved \$1,000.00, which is unbelievable. Yeah. So that worked. So you need to scale your animal-source food production.

The other thing we did find that I didn’t report is that women whose income-generating activities were livestock oriented, their children were more apt to get a better diet than ones who had income generating activities in other areas.

Male: We have a question from online.

Female: Yes. This question is from Penelope Pool from Robert Beck Consulting, and she asks if there were any parallel programs for improved forage for

ruminants in the steady areas, and if not, are there any plans to include programs such as improved forage to increase meat production.

Male: We did not work on forage. Actually Ilry does a lot of work on forage. We tried to separate ourselves from what Ilry was doing so that we were complementary and not competing with them. And so we tended to go to extensive systems. We did a lot of work on pastoral systems, whereas, Ilry did much more work on more mixed cropping systems. No, there was not – and the program has ended, so we are – it’s now being continued as the Livestock Climate Change CRSP, which is headed up by Colorado State University.

Male: Good morning. Eliot Masters from the World Agroforestry Center, Abt Associates. In follow-up to the question on species where the meat’s coming from, I’d like to broaden the ground a little further. When we talk about animal-source foods, particularly in Ghana, I’m just back from a very extensive market survey and I know there’s a huge amount of egg, huge quantity of eggs flowing into Ghana from Ivory Coast right now, and I’m very curious, because I know that moderate-income families can easily afford eggs as compared to meat. Has the IYON project addressed this issue of eggs, or even milk?

Male: Well, I’ll tell you how eggs fit into this is that egg production was one of the poultry that they had, was one of the income-generating activities that they took to market in Techiman, which is a big regional market.

The other thing that was very clear in this project was connections to markets were very important in how successful the women were. But we did not do – they were not part of the nutritional evaluation.

Male: Any scope for follow-up on that issue, do you think?

Male: I challenge USAID to do that.

[Laughter]

Male: It’s become a hot potato.

Male: Thank you.

Male: We have a question from online.

Female: This question is from Chris Golden, from Harvard University, and he asks if the increase is noted in protein, iron, zinc, and calcium from animal-source food determined – if they were determined by assessing in take or by assessing real nutritional status through blood sampling. “Often it is

difficult with things like iron and zinc to use solely intake data to determine the importance of food with so many other mediating factors like bioavailability, absorption, and infectious disease that can leach onto those nutrients from cells. What would be your suggestion to improve this type of research in the future?”

Male: Well, take blood samples and analyze them. But we did do blood work, and we did have changes in blood chemistry. We did lot of work on intake, but there’s been a lot of work done on the bioavailability of micronutrients from meat, and it’s very high.

Now he’s absolutely correct. If like they do often in Kenya, you drink tea with your meal, well, tea has tannins in it, and tannins chelate of both proteins and micronutrients. If you have a corn diet or a cereal diet that has phytic acids in it, which do exactly the same thing, so you might have a five-percent iron composition in bread, but if you eat it, you often do not absorb all that iron, because it’s chelated by the phytic acids in it.

So he’s absolutely correct. Is there more to learn? Yes. But the one thing I would say it’s very clear from the data that was taken in IYON – I mean in the child nutrition project in Kenya, that there was a significant phenomenological affect in the sense of the children being more cognitively advance.

Female: I’m Jessica Tillahone in the nutrition division here at USAID. I was wondering when you have the four groups with the meat, the milk, et cetera, did you also measure growth attainment, especially height, looking at stunting rates and which of those groups – if it was similar to the cognition measurement, if the meat were the higher – how that played out.

Male: We saw a greater growth, stature growth in the milk group in girls, and we saw greater muscle mass increase in both males and females in the meat group.

Male: Rob Bertram, director of the Office of Agricultural Research and Policy here at USAID. Tag was very generous with his thanks at the end of the talk, but I just want to say that he’s been one of the champions of this issue, and through the development of the Feed the Future research strategy which we did jointly with APLU, Tag was really a strong voice, and I think very effective in helping us really put this issue front and center. So I want to say thanks to you, Tag.

A couple comments, and then a question. Your graph that showed the meat going up, it actually showed the milk group doing the poorest, which is I think counterintuitive and I would be interested at some point if we do

more of this, to combine those two and see if we get some sort of synergistic affect there, or to better understand, anyway, the milk issue.

But just recently I heard a comment by a nutritionist talking about a decision about a little over 20 years ago, to take out a milk product from corn/soy blend, which is a major part of the food aid assistance that we give, and that taking that milk out has made that much less nutritious for children than it would otherwise be. And then the –

Male: I'm sorry, Rob. When you say it makes it much less nutritious, what do you mean by that?

Male: Well, I mean that the outcome for children is not as good on the corn/soy blend as it was when it was fortified with milk powder. So I'd be interested in any comments, and I see Jim Jasmine sitting there, who is our dairy lead, so maybe he has thoughts on this better informed than me.

The last point is a little less than two years ago, there was a big conference in New Delhi on agricultural and nutrition and health, and at the end of that, I was one of the people asked to give comments, and I remarked on the fact that there was very little discussion of animal-source foods. We've heard a lot about biofortification. We heard a lot about other issues around gender and a lot of important things, but animal-source foods was missing.

So my question to you is how much has the nutrition community embraced this idea? Because what I saw there at that meeting was a lot of people concerned about over nutrition, obesity, chronic diseases, a lot of what you talked about in terms of the developing world kind of projecting its issues onto poorer people in developing countries. So I'd just be interested. And maybe some of the nutritionists that are here could comment on that as well.

Male: Well, I would – let me say that I don't know the reason for the milk, but there is a reason, and I would – Lindsay Allen, who was involved in this study, who's the director of the USDA Western Human Nutrition Center at USDA, was very much involved, and she has an answer to that. That's probably a good way of ducking that, but it has something to do with the calcium and its impact on micronutrient absorption, and that was my recollection.

You opened up a whole can of worms with that last part, so it's big. Animal-source foods, when you put out an FRA for animal-source foods, you never know what you're going to get. We got one on honey. *[Laughs]* So I have a personal concern, I guess, that we have really a huge problem with malnutrition in the world. But I see a very aggressive

set of attentions being turned to over consumption.

Certainly, over consumption is a problem, and unlike in the United States, where obesity tends to be a problem of the lower middle class poor, for the most part, in developing countries, it's a question of wealth. With the increasing income, you get increased consumption of refined foods, increased consumption of meat, and so there's a tension there, I think, that needs to be sorted out. I would certainly hate to see the resources devoted to malnutrition be turned to over nutrition in developing countries. That is it's not that I don't think it's a problem. If it's a problem, let's find other funds to do that with.

There's been – it's interesting. We did a AAAS symposium. I had Howard Boyce on that symposium, who does biofortification. We had some people who do supplements, and we had our animal-source food things. And it was a very lively discussion. In fact, the BBC picked it up and Paul McCartney actually commented on it and said that this whole thing about animal-source foods was rubbish.

Well, I sent a little note to the BBC and is aid, "Well, Paul McCartney and are old guys. We've got low metabolic rates. We don't need meat, really. But children are a different story. Children have high metabolic requirements. They have small guts. They need highly digestible, fairly dense sources of these. So to think you're going to get all your iron for a child from spinach, means you're going to have to feed that child a bale of spinach. So there's this idea of transposing one nutritional state to another population without would I would say careful thought.

So we in developed countries, have a very different nutritional set of issues with us than those at the bottom, those who live in developing countries, and we need to be mindful of that. Is meat over consumed? Is it an issue for the environment? Absolutely. But we need to look in the mirror a little bit more on that one. We need to say, "Okay." When I look at the spectrum of you have biofortification. You have genetic transformation. You have plants. You've increased the nutritional content of plants. You can provide supplements or you can change people's diets.

Now my feeling is that there is room in the spectrum in development and in recovery from a catastrophic events for all of those things. But the fact is in the end, you want people to get nutrition from food. And when you build food system, you're usually increasing the development in that country. So supplying supplements is good, as long as you've got somebody on the Hill who's willing to fund it, but once they retire or don't get elected, it's really up in the air.

So what you want to do, I think, is you want to use these appropriately in

segment that's relevant to their characteristics. So I have to say biofortification through genetic engineering is I think an important approach, but I think if I can get meat into the diet of children, I've done more than quite a – I mean it would take a zinc program, an iron program, a B12 program, investments in all of those. So here's an example of how with a relatively small amount of money – we didn't have a lot of money as a CRSP – this project was funded about \$300,000.00 a year for, what, five years, six years, and that's a fairly small investment. Plus, it also trained a lot of PhDs and master's students.

Female:

Hi. Thank you. My name is Jessie Calsmith. I'm with Fintrack. The USAID Office of Food for Peace is focusing a lot of its nutrition attention on infants under the age of two. Can you comment on animal-source foods for infants? And then, also, for child, what age group does "child" mean in your research studies?

Male:

Okay. There was a lot of emphasis because LANSA did a whole series on the first sort of 1,000 days of life, and there is no question that that is very, very important. But nutrition is something that's important through lifespan. And so the question this study, which was with schoolers five years old, yeah, these – there was obviously a response. So maybe if you think of their genetic potential, that may be influenced strongly in the first thousand days of life, including in utero. But that doesn't mean that where they are when they're two is where they have to be for the rest of their lives in terms of a percentile of intelligence, let's say. So it shows that children are responsive afterwards.

Now maybe they would have been even better had they had good nutrition in the first 1,000 days, but remember that overall productivity and overall capacity is a lifelong endeavor. And so if you don't have good nutrition even if you're in your 50s, you can't do work. You're not as creative. You're not as energetic. And so we shouldn't just – the one danger about the 1,000 days of life is that you begin to segment a process of development that is really lifelong.

I have to say in the education sector, we've done the same thing, basic education. Not higher education. Well, the fact is to have a society, you got to have basic education, and you got to have higher education. So when you segment things, you do it, I understand, because you want to focus your resources and have an impact. There's no question about that. The problem is that then, as we have now in Africa, you've got all sorts of kids who are coming out of basic and secondary education that has been reasonably well supported, and they've got no place to go.

So you don't want to forget about kids. We save lives. And my feeling is that if you save a life, you have a responsibility to somehow help that life

be reasonably productive. And so we don't want to forget about kids after 1,000 days are up. We whatnot – and I'm not saying that USAID should do the whole thing. But I think the donor community or we as an NGO, as a development community, have to look at the spectrum of our influence and make sure that we take on the responsibilities at all stages of life, appropriately. That gets me off the hook, by saying "appropriately."
[Laughs]

Female: Hi, I'm Bridget Ralyea, from the office of Food for Peace. First, I want to draw people's attention to the fact that we've just undergone major reformulation of our commodities. Some of our fortified blended foods has had whey protein added to it. Vegetable oil is now fortified with both Vitamin A, and Vitamin D. This was the result of a major study through Tufts University.

But I also want to raise a concern about the fact that this is being called animal-source protein, when it really is meat protein. Our office works with the most food insecure, and the most vulnerable, and the hope of getting much meat in the diets of the kids that we work with is it's really a pipe dream. And so I was really hoping to come here and hear more about eggs and milk, so I agree that there needs to be maybe some more research on it, but I wonder if it's just a bit misleading to call this the animal-source protein, when it's really meat protein.

Male: We call it animal-source foods because it covers a wide range of product from animals. Do we need to know more about eggs and milk? Yes, sure. Is meat the answer to people in relief situations? Probably not. But this is an answer to people who are chronically poor who have – they're not so poor that they don't have capacity. So a little bit of training helps them move up in terms of the nutritional profile.

I don't think I suggested that this is a cure for all situations. It has its appropriate place. And the thing that I would say to you is there are things in meat that if you can add those to a diet are very good. If you don't have that capacity, then you need to fortify.

Male: We have time for one last question.

Male: Thank you. My name's Mike Simon. I'm a AAAS fellow. And following on the idea of going beyond the initial stages, any plans or any data yet or any plans to study the impact of these changes on girls as they start to have children in terms of the health of their offspring, the health of their families and so on.

Male: We would love to do a longitudinal study. By somebody at A will go – this community in Kenya, at Embu, was one of the original communities

in the nutrition survey. So now we've gone back to that community, what, 10-15 years later. We have not done longitudinal work, but you should look at this – the work of one Motorel in Guatemala, which is really very, very – and it's generalizable. It's not just Guatemala. He's looked at the trajectory of these people over 35 years – 30 to 40 years. And it's really quite an exciting piece of work. I'd be happy to help you get that reference.

Male: And with that, I'd like to thank Tag one last time for coming into today and sharing with us. We really appreciate it.

[Applause]

Male: Thanks.

Male: And as I said earlier, please take a moment to fill out our evaluation for those here and in person. They're on the chair. And for those online, we'll be sending you the link. And you can find this event and other resources on Agrilinks, and not too distant in the future, we'll have the recorded version up for you to utilize. So thanks very much.

Male: There's a video out here that I have more copies if they're gone. It was made by a friend of mine who's an *National Geographic* photographer, and it sorta captures the more of what I talked about today. But it's reasonably entertaining, and if you'd like to take it, it's called *Hidden Hunger*. And if you want to – those of you who are familiar with Vimeo, it's online. I think if you search for "Hidden Hunger," you will find it there.

Female: If you go to the CRSP, we've got it there. _____.

Male: CRSP.net. So that's another place to look and find it. That's C-R-S-P dot net. And, also knowing the importance of nutrition Agrilinks, if you have resources or know of resources, you can upload those resources to share on Agrilinks, and go to the Agrilinks library and post 'em there.

So thank you very much, and everyone have a good day.

[End of Audio]