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

Presentation Transcript

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Association of Public and Land-Grant Universities

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Male: My name is Zachary Baquet. I’m the knowledge management specialist for the Bureau for Food Security. Welcome today for the November Ag Sector Council. We’re looking to reschedule the October Ag Sector Council. Sorry that we had to cancel it due to Super Storm Sandy or Hurricane Sandy, or whatever you want to call it. So look for that in the future.

I just wanted to kind of briefly go over a few new items to check out on Agrilinks. We’ve got our latest video note with Dr. Shukri Ahmed speaking about risk insurance. Then we’re also have another event kind of concurrent with this one on the partnership for innovation. That actually will be recorded and put up on Agrilinks as well just like this Ag Sector Council.

I’d also like to highlight the next upcoming Ag Sector Council. We’ll be joined by the enabling agricultural trade project, talking about their latest fertilizer brief. And that’s coming up on December 5th.

Also, watch out for probably in that first week of December, we’re going to be looking to do a Twitter chat in collaboration with the Development Credit Authority office here at USAID, and so keep an eye out for that. We’re looking to do more of those at least once a month. We just did our third one on the Women’s Empowerment Agricultural Index, so you can check out some of the highlights of that up on the Agrilinks blog.

I’d also like to highlight that part of our evaluations which you’ll see on your chairs or we’ll be sending links for those of you online, highlighted the fact that people really wanted to hear more about livestock. They wanted to hear more about nutrition, also the linkages between agricultural and nutrition. And so, hopefully, with this with this presentation by Montague Demment from APLU, will be able to be addressing some of that.

So also please hold questions till the end. And with that, I’d like to hand over our introductions to Julie Howard, chief scientist for USAID.

Female: Great. Thanks very much, and good morning, everybody. Promises to be a very exciting session, and I don’t want to stand for too many minutes between you and your speaker, but Tag is an old friend and colleague and I did want to say a few words about his work. Tag is the vice president for international development at the Association for Public and Land Grant Universities here in Washington, and his work today is going to focus on work he did while he was at UC Davis. He’s former director of global livestock collaborative research support project. He’s a professor emeritus of economy at Cal Davis. And Tag’s going to speak, as you see here, on animal-source foods and child cognitive development, and how the project
passed from being a USAID-funded project to taking on its own sustained life with the private sector.

And I guess I wanted to just spend a couple minutes giving you three points, really, building on the same point about how projects pass on to take on a life of their own. I think Tag is one of those lucky people who in mid-career can look back and see some of the impact that he’s having not only in this particular sector, but on Feed the Future itself and on development policies related to food security worldwide. And what do I mean by that? Well, I know you all are familiar with Feed the Future. I suspect you are. The US Global Hunger and Food Security Initiative really came out of the 2007-2008 food price crisis.

President Obama’s leadership at the L’Aquila summit in 2009 which committed by the US to significantly increasing its investments in food security to $3.5 billion over a three-year period, and also leveraged in significant investment from other donors, a total of I think $22.5 billion, but also has been leveraging over the past year a much, much greater investment from the private sector as well. So that’s in itself a game changer for all of us that food security is back on the agenda.

But related to Tag’s work here, it’s not your father or grandfather’s food security, or your grandmother’s food security. For the first time in my career, we hardly say “agricultural” without saying “nutrition,” and really five years ago, that didn’t happen at all. And I think it’s due to the work of folks like Tag, other people in the university community that we now do think about agricultural in terms that this is not just about increasing agricultural productivity or even about increasing farm incomes. It’s also about improving the efficiency through the value chain, but it’s also very, very much about improving nutritional quality, improving the statistics on stunting, looking at malnutrition, at the same time as we’re looking at agricultural. So we look at agricultural improvements, but we also look at their impact on the nutrition of the family.

It’s really hard to underestimate I think, or do justice in just two seconds to what that means for USAID and other partners. It means for us that we’re asking all of our missions, not just to look at investments in agricultural anymore. They’re very much held to a standard of, “How are your investments, how do your priorities reflect a focus on nutrition?” And we’re seeing how this is really spilling over to the countries themselves. So, again, for the first time in many of our careers, ministries of agriculture are speaking with ministries of health, and we’re seeing kind of a multiplier effect as other donors take this on as well.

So for example, after the Olympics, the UK, which holds the G8 presidency after we relinquished it this year, is also putting significant
focus on nutrition. So I just wanted to lay that out. That’s new and it really builds on work like what Tag will be discussing with you today.

The second point I wanted to draw your attention to is we’re also seeing the ascendance of livestock in general as a Feed the Future and US government priority. I think we can trace that back. We really having invested significantly in livestock for a quarter of a century, but the Horn of Africa events, the erratic climate events in Sahel, have really brought front and center the importance of livestock as an animal-sourced food, source of animal protein, but also their role as savings accounts, their role in diversification of income, their role in providing some kind of buffer for people to absorb shocks a bit better.

So I think we’re very excited particularly in the research section to see enhanced focus on livestock. We’re working with partners in the public and private sector, particularly on the development of animal vaccines.

Okay. And then last point I wanted to make, also related to Tag, is just it think this kind of research really brings to the fore the important role that US universities play with USAID and development in general. This research shows sort of with persistence over 30 years of research really to build an evidence foundation for the kind of I would say sweeping policy changes that we’re seeing today with regard to nutrition, with regard to investment in livestock. So we value those kinds of partnership in USAID. And, again, US universities and their contributions are being brought front and center to development agenda.

Tag will talk about not only the importance of research, but the importance of capacity building alongside research. That’s been a hallmark of many of the investments that USAID has made over the years, particularly the collaborative research support programs. And many you may know sort of we’re launching now a new era in USAID/US university relationships with the launch of the Higher Education Solutions Network by Secretary Clinton and Administrator Shah last Friday. And this establishes seven development laboratories at different US universities and consortia to focus on everything from food security to better utilization of aid data to social entrepreneurship, all in a multidisciplinary setting.

So with that, just those three points, really, sort of thinking about nutrition and how it’s really ascended and we really brought that front and center. Secondly, livestock, the same way. Thirdly, just to reflect as you listen to Tag about the influence of universities on development and sort of our thinking nowadays about how universities are brought into policy discussions, and I think we’ll be much more directly interacting with us at USAID as we go forward with Feed the Future and implementing the G8 new alliance. Thank you.
Male:  Okay.  Good morning, everybody.  Thanks for coming.  Thank you, Julie, for that introduction.

I would just say in response to what Julie said that we really welcome Feed the Future as an initiative.  It did something that we in the land grant community have been trying I would say somewhat unsuccessfully to do, which is cross the barrier between agricultural and human nutrition.  And one of the delights of being a director of something like a CRSP is that you can step across that boundary at a university because you have some resources to do that.

Today, I want to talk to you about something that’s near and dear to my heart.  I’ve been doing international development for a long time.  I won’t tell you how long, but I was a Peace Corps volunteer in Ethiopia and worked with USAID back in the highly solacy era of Ethiopia, so you can guess how long – well, you can take your guess.

And in that time period, on and off, I’ve gained sort of my personal perspective on development, and one of the things that I think is fundamental to any successful development to the sustainability of anything you do is human capital.  And human capital is critical in development countries.  Nothing is sustained by outside efforts, in my experience.  I’ve reviewed lots and lots of programs.  I’ve had programs of my own.  And unless you build the capacity in development countries to carry on what you do, or to have the expertise for what you do, then things are not sustained, and they are not scaled up.

So today, I want to talk about human capital, and the most fundamental component of human capital really starts with children.  They are the future of human capital in a country.  I don’t know how well you can see the eyes of this young man, but he’s peering into the room with I think some apprehension, some expectation, and he’s looking into the future.  This is a Ghanaian.  His future is Ghana’s future.  And if we can increase the capacity of this child, multiply it across a population, then you can have a huge impact on the things that we’re most interested in, which are economic and social development.

I want to give you what I would call a conceptual model.  This is something that comes out of our actually consultation that APLU organized with USAID for Feed the Future.  And it’s also something that I’ve somewhat borrowed from a professor at Emery, Mortoral, who’s done some of the best longitudinal studies ever, about 30-plus years in Guatemala on the impact nutritional interventions early in life on everything up to what happens to you when you’re 30 or 40 years old.  And this is the kind of – it’s not the kind of monitoring and evaluation
USAID can do, but it is the kind of monitoring and evaluation that actually is necessary to understand the true impact of nutrition early in life. But I call this the virtual cycle, because it’s a positive feedback cycle.

What happens is you increase food supply and diet quality, one of the objects of Feed the Future. You reduce poverty and malnutrition. You improve child and maternal nutrition, so children are more cognitively active. You improve an education system which improves your workforce, which gives you a greater knowledge in technology development and entrepreneurial activity, which increase economic growth, and that feeds around the cycle in various repetitions. So this is I think a useful conceptual view of the system that we approached.

We focused our efforts right here. Now what I want to do is I want to talk about a USAID success story, and know that USAID is very interested in success stories, and so are we. We want to be successful. We want to see the results of what we o before more than just a generation of information, but we want it to actually impact people.

Well, there were 30 years of commitment on this through USAID in various forms. There was the nutrition CRSP research in the 1980s, and I’ll talk about that in general. We’ve had quite a large consortium. It did work in Mexico, Egypt, and Kenya. That was followed by the global livestock CRSP which had two projects, the Child Nutrition Project, which was in Kenya Embu, and in three places in Ghana IYON project, and I’ll talk about that. So we went from 1980s to the 1990s to the 2000s.

Some background. Probably you all know this. More than a billion people suffer from malnutrition. Much of it is micronutrient malnutrition. Many of these are children.

What are the impacts? Well, micronutrient malnutrition affects the immune system. It affect cognitive and physical development. It affects workforce productivity, lifespan and quality of life, all the things that make an individual productive in a society.

Fogel, who got the Nobel Prize for some of this work, professor at Chicago, estimates that half of the economic growth during the industrial revolution in England was due to nutritional impact. So that gives you a sense of the relationship between nutrition and actual economic growth.

So the human nutrition CRSP – this is the one in the 1980s. This was the first one. In 1977, the National Research Council conducted a world food study, and out of that came the question, “Does moderate malnutrition have an impact on human function?” And the general consensus was that energy was thought to be the main causal factor. Now if you had taken
that information at that point in time and used it in your project design, you might have found that you weren’t successful, in part, because we now know that energy was not the major limiting causal factor.

But in response, USAID developed the Human Nutrition CRSP, and it was an observational, nonintervention study in Mexico, Kenya, and Egypt. It lasted for five years. It was a survey study. They measured the changes in children. They observed what they ate, and they made general broad conclusions. It was a mega survey.

The most important findings of that CRSP were that quality was much more important than quantity, that animal-source foods were the best predictor of cognitive function. That is the amount of animal-source foods in the diet, even when it was controlled for socioeconomic status and other variables. But sadly, it was ignored. And I’m skipping ahead a little bit. When I became director of what was the small ruminant CRSP, later the global livestock CRSP, I was surprised that this finding was not well known. It was kind of buried in the literature. And I thought, especially from a livestock point of view, this was fairly significant.

So what happened? Well, I need to digress a little bit. When the small ruminant CRSP, which I inherited as a director, came to an end, we worked with John Lewis, who was very supportive in redesigning the CRSP, and we redesigned it in ways that were sensitive to USAID’s needs, but we did have some latitude. We were able to run three major workshops, one in Tashkent, Uzbekistan, one in Entibi, and one in San José, Costa Rica, where we brought shareholders together for four days to set priorities.

The one in Tashkent was really interesting. This was in 1996. I stood up and asked people, as the director, to set the priorities, and it was a great silence. And they looked at me and they said, “Well, you’re the guy with the money. You set the priorities, and we’ll do what you say.” Well, it took us a little while to actually convince them that they – but by the end of Day 4, they were arm wrestling over priorities, which was really quite an interesting experience.

So in each case, we spent a considerable amount of time trying to define the issues. And out of the Sub-Saharan workshop, one of the issues that came up was child malnutrition. So what we did in each one of these was we set a series of problem models, and those problem models, that was a question about what needed to be done, what were the primary issues. Those were turned into RFAs for the competition for the CRSP projects, and one was won. The one for child nutrition was won by UCLA, University of Nairobi, Hawaii, and UC Davis. And it was then to do an intervention study that would either confirm or reject the hypothesis that
animal-source foods were important in cognitive and physical development.

Well, it was quite an effort; 1,000 kids over a 5-year period. Each child got a container with his name on it with the treatment food. There were four different treatments. There was a control. That is we measured students who were not given a supplement at lunch on a school day. We had milk plus gutherie, which is a local stew, meat and gutherie, and milk and gutherie, and those were isocaloric. So they were balanced calorically. The students got these every school day. Each one was measured if they didn’t eat them all. We measured just about everything about child behavior, physiological response, growth, school performance, and intelligence tests. We employed I think about 100 people in the process of cooking these meals for over a 3-year period, and then were all put on motorcycles and driven out to the 12 different schools that were involved.

Ravens scores, this is a culturally neutral intelligence test. The meat group did about 15 to 20 percent better on Ravens scores. That is an IQ score. In terms of test scores, they did a grade and a half higher in school, the meat group. This is a meat group, by the way. [Laughs] Compared to all other groups in behavior – we measured the behavior on playgrounds – they had the greatest increase in percent time in high activity, and the least in low activity. They spent more time in leadership and initiative behaviors. That is they initiated behaviors. They tended to be more leadership. And the teachers complained they were more talkative, playful, and disruptive. So there was a very definite impact on the behavior.

In fact, I spent a fair amount of time, ’cause my then high school daughter worked on this project as a volunteer one summer, and I could walk into a classroom and I could tell you exactly if it was a meat classroom or if it was a control classroom. There was a total difference in behavior.

We published the results of this and other work in a special supplement of the Journal of nutrition, and we had a conference here in Washington DC that presented the results, and we want to know what was the next step. And what was the next step? Well, people said, “Oh, sure meat’s good for children, but how are you going to get meat into the diets of children?” That was the challenge.

So we put another RFA, and in this CRSP, we’ve always used planning grants. We gave a small amount of money and a little bit of time. And then we had I think – Susan, what was it, four planning grants that were accepted. And then after the planning grant, they wrote a full proposal, and we selected a team from Iowa State, led by Grace Marquis. She went
to McGill – I was McGill Iowa State. And then a wonderful group at the University of Ghana, led by Larte and Kolcraft, they have quite good capacity in Ghana in nutrition.

Now what was this? IYON actually means “meat” in the local language. But it was how do you then get meat into the diets of children? IYON then spent a year doing a survey across Ghana, more than a survey, workshops where they sat down with the local NGOs, with the communities, and analyzed what they thought the constraints were on the consumption of animal-source foods. And I will show you a little bit more of the problem model. But in general, it was certainly the knowledge of a nutritional impacts of the food groups. People did not understand that meat was actually good for children, and in some cases, people thought it was a negative impact on children and income of households.

We then created an intervention experiment. How did we do this? Well, we formed women’s groups, and those women’s groups were led by a trained facilitator that the project selected, very dynamic and charismatic young ladies, who were then trained in all of the aspects that were required of the program. And then they went in and helped organize and lead and sustain the women’s groups. And they provided nutritional education. Income-generating activities were done in conjunction with HFR, and microfinance was done through the CRSP.

And so here is the problem model, and we use problem models as in a sense a rich hypothesis. What we did was in developing our projects, we tried to identify in the planning phase what was the issue we were thing to attack. That we knew. Animal-source of foods, availability, and accessibility, and utilization. And then what were the constraints to this, which are the circles. And what were the ways we were going to intervene that we thought would possibly change the system. So the idea is to develop a kind of a conceptual model. That allows you to allocate your resources and to make sure who is the appropriate members of your team. So in this case, poor nutritional knowledge, unequal household allocation, cultural beliefs and practices, were all tackled by a nutritional education through the women’s groups.

Financial support for caregiver income was provided by the microfinance. And the training for animal-source food income generating activities and entrepreneurial skills was done both through the women’s groups, and with the assistance of an NGO, including capacity building for the extension. This was done sort of outside work I will show you today.

So what was done then was a controlled experiment. In that experiment, there were 600 baseline mother/caregiver pairs that were actually measured. They were then divided into three groups. The ones that would
receive in a community the intervention, the people in that same community who did not receive the intervention, and then people in communities outside of the project which were non-implementing communities. And data was then collected on nutritional knowledge, diet diversity of the children, nutritional state of the children, women’s income, household food security. So it was in a sense, an experiment to see how well our intervention actually would work.

Well, what were the outcomes/ well, household food security decreased, incomes increased of women, increased consumption of animal-source foods by children, increase in protein, calcium, iron, zinc, and in the diet if children, improved child nutrition status, i.e., weight for age. And interestingly enough, the banks got very interested in this because the women were saving lots and lots of money. So it had a very positive affect.

Post-IYON sustainability. Over $2 million have been loaned in this program now, and 2,200 women are involved. That’s from a start of six women’s groups. The majority of the income was increased enough in the origin group, so they’re sending their children to private schools. One trainer who’s particularly good, has established 80 news groups in and around Accra. And the education and microfinance model for IYON is now the business model for a number of the rural banks. In one case know of, the rural bank’s main business now are these women’s groups. And the recent nutrition CRSP that was formed has a design which I’m pleased to say is consistent with the IYON model.

If you want to look at the specifics of this, there’s an IYON supplement in the African Journal of Food, Agricultural and Nutrition and Development that will give you the details of all these results.

So let me conclude by saying to you that to me, children are the future, and their knowledge and creativity and leadership are the future of developing countries. And so if we want sustainable development, development driven by country ownership, when we must Feed the Future. Thank you.

[Applause]

Just a second. Let me just thank some people, too. First of all John Lewis, Felipe Manteiga, John Hobgood, John Thomas, and Josette Lewis were really supportive of us, and gave us the freedom to be able to do things in I think an interesting way.

I have to thank Joyce Turk, who’s been in this for 20-plus years in the small ruminant CRSP, and she’s outlasted us all. And Joyce was totally
supportive, but gave us enough freedom to be creative within the space that USAID allowed, and I just want to thank her and applaud her for her work.

I’d also like to thank Title 12, which really establishes a very nice framework for the relationship between US Universities and USAID, and Title 12 is being revived a bit by BIFAD, which is believe revived in a sense, by Brady Deaton.

And the principle investigator, Charlotte Neumann, Nimrod Bwibo, Lindsay Allen, Suzanne Murphy, Grace Marquis, Allen Larty, Essey Kolcraft, all – running one of these projects is really quite a challenge. You’re dealing with bureaucracy. They had to deal with my bureaucracy at UC Davis. They had to deal with federal bureaucracy. They had to deal with in-country bureaucracy. And then they had to get the job done. And it takes quite a bit of leadership and sacrifice.

I’d also like to thank the thousands of participants who have been in all of these studies. We poked and prodded them probably more than they wanted, but they were incredibly tolerant of our invasiveness.

And then the rural banks of Ghana are really have taken this and I’m very pleased that they stepped in. It gives a sustainability that I think is remarkable.

And then one other person. Susan Johnson, would you raise your hand? Susan Johnson has worked with me for, oh, a long time. And Susan has been terrific. She has been a real force in the creativity of this program, and as associate director at Davis, and now runs the Borlaug LEAP program at Davis, another wonderful relationship we have with USAID.

So thank you very much, and I’m happy to take questions/comments.