

# RESEARCH FOR DEVELOPMENT: HOW THREE INNOVATION LABS ARE DRIVING IMPACT

---

QUESTIONS AND ANSWERS TRANSCRIPT

JUNE 29, 2017

## PRESENTERS

Patrick Webb, Tufts University - Feed the Future Innovation Lab for Nutrition

Peter Goldsmith, University of Illinois - Feed the Future Soybean Innovation Lab

Dena Bunnell, Kansas State University - Feed the Future Innovation Lab for Post-Harvest Loss

## MODERATOR

Julie MacCartee, USAID Bureau for Food Security

Ahmed Kablan, USAID Bureau for Food Security

*Julie MacCartee:*

Great. Thank you so much, Patrick, Peter, and Dena. It was really great to see your presentations, and for those of you who just joined, if you would like to review any portion of the presentations, you can see that it is available for download at the bottom left of your screen.

All right, we've had some great engagement in the chat box. Thank you so much to everyone who posted a question, or a comment, or shared a story from your work. We really appreciate seeing the quickly moving text there in the chat box.

So we've had a lot of questions come through. We've been collecting them along the way and we have about 25 minutes or so to get through as many of them as we can now. So I'm gonna run through a few questions. I'll generally direct them towards the person for whom that question came during your presentation, but of course all three presenters are welcome to chime in on any question. Feel free to just break in and start speaking if you're interested in adding something to that question. This can be a little bit of an informal back and forth.

Let's see. Going through the questions that came in, one interesting one came in during Peter's presentation, so Peter, perhaps you can start with this question. One second. I'm just pulling it up. But actually, it was echoed again towards the end of the three presentations. So Matthew Krause said, "Do drive scale and thus impact, it seems to me that we should be talking more about connecting all of these innovations in question to the private sector that can commercialize." And then Virginia Sapilia said to Dena, "Can you speak more specifically as to how the private sector is engaged in this research, particularly as it pertains to work with commercial potential such as storage solutions."

So I was hoping that all three labs could touch a bit on your engagement with the private sector, what that has looked like in the past, what it might look like going forward, and Peter, do you want to kick that off?

*Peter Goldsmith:*

Sure. Really good question and I think not in my top ten there is kind of a theme that says that really our work is a bridge to the private sector really taking off and taking over from the development efforts, so helping that and supporting the private sector is central to what the Soybean Innovation Lab tries to do.

I'll give you a couple of examples. One, we're currently engaged in Northern Ghana and in Ethiopia is a question about soil PH. Soybean is very sensitive to low PH and little work has been done around the development community in terms of first soil

testing, which is so critical for tropical soybean, and then soil correction, and the challenge is correcting these soils using lime. Lime is very bulky, not very expensive but very bulky, and a logistical challenge for small holders.

There's a Swiss company called Omya that has developed a prill, a very small micro-grained form of lime called Calciprill, and they have not applied it or tested it in a developing country setting. We brought that product in working with the private sector, but you don't want to just go immediately to farmer trials or demo plots. You want to have good evidence. This is what Feed the Future and Global Food Strategy based on evidence is asking us to do, provide some formal evidence to guide companies like Omya. So we partner with them on our smart farms in Ghana and Ethiopia. We are now trialing this Calciprill product as a solution for small holders.

So it's very much working in partnership, listening to what the needs of the private sector are, and then bringing them into your – I don't want to call it research. It is research but it's very applied and really oriented to the needs of the practitioner, in this case, the private sector. So that's one example that I'd use.

*Julie MacCartee:*

And Dena or Patrick, would you like to follow up, Dena perhaps second?

*Dena Bunnell:*

Sure, I can jump in, and so our private sector partners, they're diverse and it does vary a bit in the country in which we work in and what makes sense in the context in which we're working. I think one particularly good example where we have engaged actually the in-country private sector is our work in Bangladesh. So our team at Bangladesh Agricultural University, a big part of the work that they're doing is on hermetic storage, so their work includes GrainPro and Pixbags, but neither of those are available in-country and so they are currently at a price point that is above what the average farmer can afford, especially to have multiple ones of these bags on their farm. And so what we've been actively doing is engaging with ACI, which is the largest manufacturer in Bangladesh, and partnering with them to actually produce these hermetic bags locally, and so that's something that we're working toward currently and they have agreed to produce these bags and they have agreed to do the first run for free with an agreement from Bangladesh Agricultural University that they provide the technical expertise that goes with distributing these bags.

And so they'll basically be selling them at cost to farmers once that production happens and so the goal of that is to provide an opportunity for these farmers till the

demand exists, and so if we can reach that price point, we have the potential to have a real impact on the storage management practices. And then in addition, we're advancing local industry instead of just focusing on only US-based private partners. So that's one example that I think is a good one for what we're trying to do in the countries that we're working in.

*Julie MacCartee:*

Thank you, Dena, and Patrick, do you have any comments on the private sector engagement as well?

*Patrick Webb:*

Yeah, just I agree with both speakers, but private sector matters for so much of value chain work and agriculture in general. I think recognition that private sector has an important role in protecting diets, essentially, is a more recent realization. There are a number of universities that are working with the labs or independently looking at hermetically sealed bags. There are commercial companies in the US and others now appearing in Africa and Asia where they're looking at storage technologies.

Right now, they're often a little expensive and some of the evidence of effectiveness still needs scrutiny, but there's no question that private sector has a role to play in developing technologies, appropriate and affordable technologies, for postharvest storage, but also for getting higher quality seeds to the field that can prevent pest and insect damage that allows molds, for example, like toxins to attack those plants, the appropriate kinds of fertilizers, all of those are private sector domains that need to be expanded with a view to better understanding of why it matters in relation to toxin contamination of the food supply.

Now just beyond the private sector, I think there's a growing demand in the public sector in the extension domain, in terms of ag extension, but also primary health care service. There's demand in many countries for what should ag extension agents and primary health care givers could they be aware of, what messages should they be imparting to members of households to enable them to be more aware of the threats and the potential solutions so that they can generate more demand that can be met by the private sector for the appropriate technologies. So I think it's not just private or public. It's the interaction of the two that will work at scale.

*Julie MacCartee:*

Thank you, Patrick, and I'd like to follow up with a question that came in during your presentation, Patrick, that you answered a little bit in the chat box but I think

could stand to be answered verbally as well. Anna Trolo, recognizing that the Nutrition Innovation Lab has an incredible wealth of research findings that are being produced, asked about how your findings can be scaled up to make an impact at the country level to stop stunting, and a little bit further, if you wouldn't mind digging in a bit more into how the Nutrition Innovation Lab's findings can be used in a practical sense for nutrition programming, especially by people who may not be connected with or aware of what your lab is doing?

*Patrick Webb:*

That's a pretty broad question, Julie. Yeah, it's really important that we are also, like other labs, developing working on technologies. For example, in Bangladesh, working very closely at certain drying and storing technologies that can help extend lifespan, let's say, of perishable, nutrient-rich foods, whether they're horticulture, vegetable, or potentially even fish aquaculture foods. So some of the technologies that we're exploring are looking at how do you enhance the availability and accessibility not just to the producer but to consumers that are market-based all foods with key nutrients that are essentially in nutrient-rich and therefore perishable foods. So that's slightly different from storing grains or storing bulk commodities post-harvest. It's enhancing the nutrition of the diet of producer and non-producer in low-income settings. The kind of work the Innovation Lab is doing at that kind of scale includes pretty important assessment of market access, to what extent being close or distant from markets is a major driver of agricultural decisions and decisions to buy or sell different kinds of commodities.

One might believe that that stuff has been known for a very long time through the ag econ communities and it has, but our panel research, for example, in Nepal, that I mentioned, is showing just how important it is to understand that when one promotes, for example, production diversification assuming that that will lead to diet diversification, another key outcome of concern for the security strategy, well, promoting diversification seems to work when households are distant from functioning markets and not accessible with good roads because they are relying relatively more on own production, not entirely but relatively more. The closer you get to markets where there's high demand for commodities you can sell at a reasonable price, then actually specialization kicks in and you get less production diversity but more diet diversity that is coming off the market.

So we're looking not just at technologies but at the right investments in roads and bridges might well be really important nutrition sensitive investments to enhance diets, and we're also then looking at policies and strategies so that we then can tailor

the messages appropriately, so it's not just everyone should diversify their production base. That's important in some areas but not others.

*Julie MacCartee:*

Thank you very much, Patrick. I'll skip down to a question that came in during Dena's presentation for the Post-Harvest Loss Lab. Joan Jennings stated that, "We have found some projects to use low-tech techniques recommended by national ministries of agriculture to measure moisture such as using salt or sugar in a storage receptacle. Does the Post-Harvest Lab have any experience information on results with these?" And Dick Tinsley chimed in to ask, "Can't an experienced person tell moisture mostly by feel? Not perfect but accurate enough." Would you mind chiming in on those questions?

*Dena Bunnell:*

Sure, or at least I will do my best. Thanks, Joan, for that question. It's actually an interesting one and it was one that was actually a topic of debate at our annual meeting this year, and so I think one of the challenges that we find as these innovation labs that are university-based organizations is that we have researchers doing the work who are very much researchers and so we've actually had some of our researchers that don't think that the salt method, for example, is a good method and they want something that is more specific, however others that have more of a practitioner base swear by that salt method. And so we don't have any exact research on the salt method in the work that we have done but we know that some of that work is out there and I think that that's constant push and pull between what the perfect getting in the way of the good and how do we have really good research but have it be accessible, and so, yeah, I think there's some push and pull there.

To the question about testing by feel, one of the main problems with just doing it by feel, and certainly we see a lot of farmers that do it by feel or do it by a bite test where they'll bite into the grain and see how dry it is. The problem is that to create an environment in which something like aflatoxin can thrive, that difference in moisture doesn't have to be that much. So for example, for maize, it's recommended to dry down to around 12 percent, but often that grain gets stored at 14 percent or above, and at 14 percent, stored grain can create those conditions for those fungal toxins to thrive. So while it might seem like those are really close together, the implications of even that small difference in percentage can be very great, and so having a more accurate moisture measurement other than just feel can really ultimately have an impact on people's health and livelihoods.

*Julie MacCartee:*

Thank you so much, Dena. All right, another question came in from R.T. Darmin that I think is of relevance to all of the innovation labs, but it came in during Peter's presentation, so perhaps, Peter, you can kick off the answers. He said, "I'm curious if you, as the innovation lab, use the Web, such as the Agrilinks website, to share all of this great knowledge that you are producing and/or are developing a knowledge bank to fill in the gap when you cannot be on the ground?" And I think we can expand that question a little bit for each lab to tell us about how you are cataloging and storing the knowledge that you're generating and also how you are sharing it both with other innovation labs and with other USAID implementers on the ground.

*Peter Goldsmith:*

Yes. Thanks. Great, great question and you probably shouldn't have gotten me started on this topic because this is a very, very important topic that I think is understudied or under approached. So the short answer is SIL is highly engaged in Web-based tech transfer and webinars. All our meetings, we use a GoToMeeting platform, whether it's GoToMeeting or GoToWebinar. We're just constantly using it. It's absolutely essential and the question is bang on.

We're very sensitive to moving people around, especially moving people back here but moving people around we feel is not a good use of USAID dollars and development dollars, but that opens up a much bigger question about the connectivity of our partners and that's where we're spending a lot of time now, and I think that a lot of development value could be released if investment were placed on improving the connectivity of our partner institutions and organizations where we're supporting, whether it be the private sector or whomever. There's a lot of capacity on the continent in terms of connectivity and we've found that last mile connectivity is what falters. I think we would be able to use development dollars much more wisely, have much greater impact if we really focused on this one infrastructure investment connectivity for our partners.

There's a lot more on that subject but I'll leave it there and I really thank the questioner for asking it because it really is very, very important for effective development and stewarding scarce resources.

*Julie MacCartee:*

It was mostly a question about knowledge sharing, how each of the labs is cataloging its knowledge, whether that be through the Web or through another means and how you're actively engaging with other partners to share all of these great resources.

*Patrick Webb:*

And obviously I agree with Peter about hugely important. Obviously several ways the NutritionInnovationLab.org website. All the publications are there, presentations are there, every event, so that's open for everyone, and of course all the data collected will be open access, so these large surveys that I'm talking about, they offer a wealth of household-level and farm-level information that we're actively promoting particularly developing country partners to access and use for their own purposes and we'll certainly engage with them in that.

I literally just came back last night from Nepal where we have an annual, this was the fifth annual scientific symposium we've organized I have to say funded by USAID Mission which sees the importance of building capacity and sharing information. We had over 400 registrants for this five-day symposium this year and we used that as a real-time outreach to all our collaborators, scientific, and research, and programming in Nepal, but especially policymakers. So we actively bring in civil servants and policymakers from all sectors, agriculture, health, livestock, wash, so there's an actual dialogue around implications of research as it is coming out, a real-time engagement. This year we opened it up so it was global. There were many participants from Africa as well as South Asia.

So yes, Web-based engagement is really important but so are those kinds of fora where you bring researchers to engage and interact directly with policymakers. And you can have vastly more impact through that kind of engagement than simply publishing papers. It's really important to find the appropriate ways.

The other, finally, is the Nutrition Lab has been very active in developing curricula with universities in the countries with which we work, as well as programs of both education and research. So we set up a master's in nutrition and public health in Nepal. We set up the country's first dietetics program in Malawi, just two examples, and this is another way of building in new data, new findings relevant to those countries into training programs within tertiary institutions in those countries, but especially building in those skill sets, not just research findings but what it took to do this research and working with local faculty to build up capacity, essentially a training of trainers but an academic and scientific training of trainers so that we're leaving behind capacity in countries to undertake and understand this kind of work, not just share findings.

*Julie MacCartee:*

Thank you, Patrick, and Dena, would you like to discuss this a bit as well?

*Dena Bunnell:*

Sure. In the interest of time, I'll just say I very much agree with the points and the priorities that both Peter and Patrick have laid out and really just say that it's an area we're continuing to work toward as a program. I think that we've got a lot of room for growth but certainly I think that all of those avenues to disseminate information are important and we're continuing to try to get our findings out more across all those platforms. So it was a well-placed question and thank you for it.

*Julie MacCartee:*

Great. Thank you, Dena, and I agree. All right, we're just about at time but I wanted to squeeze in one final question for Patrick that came in almost right at the beginning of the presentation from Gary Alex who stated that, "The finding that sheep and goats in the house is related to environmental enteropathy is very interesting. Have there been any analyses of the social factors that might affect this such as caste or the number of small ruminants owned?" And as a side question, just how do we take into account such unintended consequences from the promotion of nutritious food? Can you give a brief answer or address that one?

*Patrick Webb:*

Briefly, unintended consequences. That is something we all need to bear in mind much more. We need to promote the production and management of foods, including animal-sourced foods, that are crucial to improved diets and nutrition, but we do have to pay special attention to unintended consequences which is all about appropriate management, quality of seeds or animals, effective health care of crops or animals, and so on. Yes, we are going to be digging deeper into the characteristics of households that allow ruminants to wander in and out. Obviously chickens are another dimension of that, but that's pretty much universal, versus those that don't. This is of course critical for both wash and the whole area of micro biome, shared pathogens between livestock and humans.

This is a cutting edge area that needs much more research. It's not easy because you have to do careful analysis, which means collection of either human and animal feces or urine, and therefore lab analyses and DNA analysis, so this is an area for the future where we need to understand more about what not goes into the mouth but what comes out, what is digested or not, and to what extent the environment in which children grow up influences that. This is really important and something for the future.

*Julie MacCartee:*

Thank you, Patrick. Well, there certainly is a lot of research ahead to be done and I know that the innovation labs, both the three that were showcased today and all of the Feed the Future Innovation Labs will be delving into lots of interesting research going forward.

So I would like to extend a sincere thank you to our presenters. We really appreciate you taking the time and the chance today on an Agrilinks webinar and we're very grateful for the information that you shared. I'd also like to thank the Feed the Future KDAD project for producing this webinar, and most importantly, I would like to thank all of you, our attendees, for making these webinars possible through signing on, through asking your questions, and for continuing to return to Agrilinks.

So we'll go ahead and wrap up the webinar today. We will be taking a break in August, so no Agrilinks webinar in August, but we will be back in September, but there will be some exciting changes on the Agrilinks.org website coming soon, so please do continue to keep an eye open for our newsletters in your inbox and signing on to the website to engage.

Thank you very much and we will see you soon.

*[End of Audio]*