Agriculture Sector Council Meeting

Feed the Future: R & D Strategy

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Participants

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Sponsor

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Josette Lewis: Thank you. Wow, it’s a full house for a holiday week, so thanks. Maybe it’s ’cause it’s very cool today. This is a really good opportunity, I think, for a discussion about where the agency is heading in the area of agricultural research as it relates to the kind of foundation that we’ve built over – spanning now almost 50 years – as well as sort of where we want to go looking forward. Those of us who’ve worked in the ag sector for a long time really are finding ourselves at an enormous opportunity to take a step back and really reflect on the important lessons that we’ve learned from our agricultural investments – some more robust, 15 or 20 years ago, than they’ve been recently – but also to really rethink how we can take those strengths and blend them with new opportunities going forward.

The research strategy has been a high priority under this Feed the Future initiative. It’s gotten a lot of top-level attention from our own administrator, who’s a very strong supporter of science and technology, as you know, and it’s been something we’ve been doing jointly with USDA. So I think this is really one of the first opportunities we have to discuss more broadly within the agency the draft-research strategy and where we want to go forward with this, and so we really welcome this as an opportunity to involve more people in the agency to help shape this going forward, as well as then to be at the front lines of really implementing this. So, again, really see this as an opportunity for discussion more than formal presentation.

But since we’ve had to move fairly quickly in developing this, we wanted to give you a bit of a background on sort of how we came to where we are, what do we see as potential priorities for our research agenda going forward, and then a little bit of discussion, I think, that is particularly important in thinking about, “How do we implement this given the linkages within our own agency at the global, regional, and country level, which we’ll see is an important theme in this?” So what we’re gonna start out is talk a little bit about the context of “What is it we’re really trying to achieve with a new strategy for research? What are some of the general principles that we think were important no matter what the priorities are, in terms of how we would implement a strategy going forward?”

So, I have to figure out this. OK, that doesn’t do it. Do I need to point this at anything in particular? (Laughter) Bottom circle, and what am I pointing towards? OK, I need your help, Dan. (Laughter) This one. Ah. Got it. OK, let’s see. Oh, it did. Sorry. OK. Well, we’re just gonna have to do this the old-fashioned way because at this point I have the presentation is loaded up there. OK. All right. A little technology here from a molecular biologist.
So the beginning, again. I wanted to talk a little bit about sort of the general principles of what we’re trying to achieve. The first is to not just think about our own investments but to think about the international research system more broadly because really this is an area where the US can provide significant leadership. We’re truly renowned for our expertise in science and technology in the US generally and for our leveraging of science and technology for agricultural developments specifically. So I think this is an important opportunity for us to think about, “How is it that our investments can help actually strengthen and reshape the international research system?” Because we have that leadership potential and we actually support multiple levels of the system.

So starting out, it was very important to recognize that research takes place on multiple and interrelated levels within the international research system that spans the global, the regional, and the national, and that those are all critically important for achieving impact. And in fact it’s the weaknesses in those connections between global research and its application at the national level, sometimes working through regional organizations, that probably is hindering our impact. You can make global advances in science and technology, but agriculture is all essentially local at some point. All technology has to be adapted, has to address local priorities, and fit within the local production systems, both biological and social and economic.

And so it’s very important that these different components are linked together so as – for national citizens to be able to feed information into the setting of global priorities and for global research to be adapted at the national level. We have an important opportunity here because the CGIAR system, which is the largest international research system at the global level that we’ve relied on, is undergoing a major reform process where they’re taking a step back and not only looking at management reforms but also how is it that they can improve the impact of their investments by being more focused, setting priorities more carefully, as well as working with a broader range of partners to deploy those research findings. Again, one of our key thoughts going forward is that the underinvestment in national systems in particular has left a big gap in our ability to achieve impact through global advances, and that is something that we should take this opportunity to address in particular.

Another is that we wanted to really have a focused agenda for research, and this term “purpose-driven research” actually comes from Gebisa Ejeta, who was the World Food Prize–winner last year, and who is very passionate about the importance of harnessing advanced science, like what US universities can contribute, to really directed solving problems of small-scale producers. So we
want to target specific constraints going forward rather than have open-ended
topics – whether you look at the research that we fund with our US university
partners right now or frankly even the CG system. It’s more topic based or even
institution based in some cases, rather than having a very clear and concise set
of priorities that they’re working – problems they’re working to solve.

As we’ll talk a little bit more explicitly, we also want to improve our ability to put
multiple components of – or multiple solutions together in a systems approach.
There are no silver bullets. There are technologies that can make major
advances, but generally technologies and better management practices are
incremental, and it takes multiple infusions of improved technology and
management practices working across different production systems within an
area to truly transform agriculture into a high-producing, high-income-
generating, market-oriented system. And so by taking a systems approach, we
hope to do a better job of integrating those multiple pieces of research and also
linking those better to development interventions.

So, as I mentioned, we think that we need to tackle fewer priorities and invest
more deeply so that we can invest in getting closer to the actual adoption of
technology and to ensure that we’re mounting a level of effort that truly can
help us solve problems rather than get partway down the pathway. And then,
lastly, if you look at our own portfolio of research within the agency right now,
it’s largely defined by programs rather than by a continuum effort among
different partners working toward common constraints. So right now what
defines our agenda is largely the collaborative research support programs in my
office, the CGIAR system in Rob’s office, and then a smattering of mission-
funded programs, which vary enormously in terms of the connection to – back
to the global investments that we make.

So rather than defining our agenda by programs, we want to, again, define the
agenda by priority constraints and look at how we can link our partners
together, taking advantage of some of the advanced research among US
universities, private sector, USDA, with the CG, or with national programs, or
with subregional organizations, to get greater coherence among those levels of
effort. So that’s kind of the context of how we were thinking about a strategy in
terms of what we want to try to achieve in addition to funding more research.
Then, turning to, now, how is it we set about developing a draft list of priorities.
So there will be a few slides talking about the methodology we used, then I’ll
turn it over to Rob, who will talk in more detail about what the priorities are
right now.

We started out by using poverty and nutrition as the lens. The Food Security
Initiative, Feed the Future, the two top goals of that are to reduce poverty and improve child undernutrition. So we took those two goals and sort of worked down in terms of identifying what were some potential researchable constraints to address those. As you’ll see through a series of slides, that led us to identify some of the key agricultural systems that would target large numbers of poor and malnourished children. We then looked at, within those agricultural systems, “What are some of the specific constraints in those production systems that would have large-scale impact?”

We’re looking at research, here, so these should be researchable constraints. Research isn’t the right tool to address every constraint in agriculture or food-security, so we’re looking for things that are specifically amenable to a research agenda, or where research can make a significant contribution. We had a workshop in February with a number of outside experts in a broad range of research areas to talk through some criteria for selecting projects within these priority areas, things looking at technical feasibility, looking at the cost of actually bringing a technology fully forward – basically, criteria that would allow us to establish a portfolio of investments rather than just think about projects in isolation.

And ultimately an important principle has been to build a pipeline of research, some of which will pay off in the short term, others more medium, and then some with a longer-term impact. So that we can continue to sustain support for increased investment and research, we have to be able to show some impacts in the near term as well as tackling some of the major constraints that this renewed interest in research allow us to finally tackle. So the next is a series of slides that sort of help walk you through that priority-setting process, and this is work largely done by IFPRI, which we were able to take advantage of.

And so what it is, if you think about it as sort of a geographic information system, you think about layering of maps, this first map shows you the prevalence of poverty, those living under $1.25 a day. So if you think about our Food Security countries, they hopefully map pretty well according to those darker-colored countries there. Here is child stunting, which is an important measure of undernutrition. Again, you’ll see that these map fairly well to our Food Security focus countries. But they’re also then, for the purpose of our research endeavors, help us hone in on what are the agricultural systems where these large populations, poor and/or undernourished children live.

And this is – I know you can’t read all this, but what this does is, this is actually an established system analysis of different farming systems that identify what type of farming system that you have. This is forest-based here, rice wheat
obviously up here – so what that does is obviously help you identify what are the key production systems that we might target. And this chart is kind of a synthesis of all of those maps put together. And what you can see is that in Asia, a rice-wheat or rain-fed mixed system – these are probably the keys for achieving very large impacts on poverty and child stunting compared to a highland system, which has very few people within it. Again, then, in Africa, you can see the cereal root crops mixed system like you find very prevalently in East Africa and some parts of West Africa, root crop systems, maize mixed systems that are very prevalent in southern Africa, are where you would get your biggest bang for your buck in terms of targeting the large numbers of people.

So from this we then took the next step, to think about what were some of the specific constraints within these large production systems that might enable us to get at our top-line goals of reducing poverty and increasing child undernutrition. And with that, I’ll turn over to Rob, to talk through that.

**Female:** Can you read what the ag________ are, ________?

**Josette Lewis:** Yeah, sorry. Rain-fed mixed in South Asia, rice wheat in South Asia – and, by the way, this is not the comprehensive list. This is just one chart to illustrate it. So we’re not going with highland mixed in South Asia. Rice in South Asia, cereal root crops mixed in Africa, root crops and maize in Africa, agropastoral millet and sorghum in sub-Saharan Africa, highland perennial systems in Africa, and forest-based systems in Africa.

Again, this is not comprehensive. You’ll see as we actually talk through the research priorities, it’s broader than just those, but it did help us hone in on where we would be able to target the largest number of people.

**Rob Bertram:** Thank you, Josette. Good morning, everybody. So when we went through this – and which do I push, here? I’m sorry.

When we went through this constraints analysis that Josette’s discussed, we found that our research priorities that we saw emerging fell into three general categories and then some sort of cross-cutting issues around them, so I’ll talk first about this advancing the productivity frontier.

This is where you would find a lot of what we would find the traditional areas of
agricultural research investment, things like yields, breeding and genetics – and you notice we’re including crops, livestock, and fish. I think there are new opportunities opening up in livestock in particular. Fish, I think, is more of an open question, but we think there’s potential there, too. Biotic stresses, things like pests and diseases. Before leaving this, also just mention genetics and breeding but also genetic resources. We know that genetic resources are underfunded in areas like livestock and fish, and that’s an area where we need to be looking for – ensuring that we have the building blocks to use when we go forward in the future if we can bring to bear new techniques.

Biotic stresses – pests and diseases – very familiar, of course. Abiotic stress – a newer thing. People have been breeding for these for years. These would be things like drought and heat tolerance. But these are much harder to breed for using traditional techniques. Molecular markers help. Transgenic approaches are opening up new potentials, and of course our biotech team in ESP has been working on this for a number of years. But that’s certainly an area where we see, going forward, particularly when we start to think about climate change, and I’ll say a little bit more about that, later.

Also, looking at sort of bigger-picture things for the future, things like hybrid wheat and rice, where we could look at potentially up to 30 percent or so gains in rice production using these new two-line hybrid technologies that are just being developed now and which we envision coming on in a few years. And an advance like that has tremendous impacts, not only on the producers and the consumers, but also the kind of decisions people can make about, say, diversification. If we can provide for key staples like rice and wheat with less land, that opens up more opportunity for other opportunities in higher-value crops, vegetables, and kind of diversification.

Improved nutrient and water-use efficiency – again, another area that’s opening up now in some very exciting ways. Nitrogen use efficiency in particular has tremendous potential for increasing yields but also reducing or mitigating climate-change effects in areas where nitrogen fertilizer use is heavy and greenhouse-gas emissions are higher than we’d like them to be. And finally another one that emerged here is the infectious disease. This is not a new one in livestock, but I think, again, the kinds of tools we have now enable us to look at some things like bovine chloro-pneumonia, theileriosis, Rift Valley fever, and others. And of course – I’ll say more about this, but this is an area where we see great potential for partnering with USDA.

Now the second thing that emerged was more this issue of systems, and a lot of us have different ideas about what systems approach means, and Josette’s
already talked about this a bit, but we’ve learned a lot in the last 15 years about the rice-wheat system in South Asia. This is a system where we have seen – by integrating what we call global technologies in rice and wheat and at the same time looking at how water is managed, how energy is used, how land is managed, the agronomy, all the different pieces, including, actually, marketing and policy – we’ve learned a lot. And that’s basically in this second bullet. And this is where things like agronomy, soil, water management, weeds, etc., would come in.

And what we’d like to do is see if we could duplicate this kind of approach that we think has been so successful and transformative, to use the word Josette used, in South Asia, in the Indo-Gangetic Plains, to some of the more stubborn environments where we realize poverty and hunger are concentrated. We don’t have all the answers in some of these. We know in East Africa highland systems, roots and tubers are important, but we don’t have a real conservation-ag system there that will successfully integrate crops and livestock yet.

We don’t have all those answers, but we need to develop them. We know that eventually we’re going to need what we call sustainable intensification of these systems. That’s what this has been about, and we ultimately think, to get at the issue of poverty and hunger in places like Africa, we will need to have that kind of intensification come along as well.

In the West African – well, before I go there, the southern and east African maize-based systems – again, maize is key, but it’s not the whole picture by any means. Livestock are there, grain legumes are there, other crops are there, and we want to try to take the kind of approach that’s worked so well here, to integrate local production systems with globally advanced technologies. For example, drought-tolerant maize would be a good example that we’d like to see that we think could be transformative there.

In the West Africa Sudano-Saharan system, I think we see real potential for climate change and agriculture coming together there. I mean, climate change comes in everywhere, but here, where water is so key and weather is so key, and we have partners in the Sahel like AgMet and AgriMet, that we could link that kind of information, on climate, on rainfall, with producers and allow them to get ahead of the curve. And we’ve seen – there’s other technologies that could come into play there. The farmer-managed forest regeneration, alley cropping of various kinds, and so forth. So again, a conservation, agriculture sustainable intensification approach that really enhances productivity and incomes.
And then here, the third area that emerged was this whole area of food safety and nutrition. And we’ve put grain-legume productivity here for a reason. Cereals, you know, have increased enormously in recent years, in terms of their productive potential. Grain-legumes have lagged in this respect, and that has had a negative impact on diet quality in a lot of the world, unintentional but nevertheless real, in terms of micronutrients and so forth. So we see this as a huge area for potential. Again, this is one where we think our universities and USDA could be important partners with us.

Another area, of course, that many of you are familiar with is bio-fortification, increasing micronutrient density of key crops, microtoxin contamination, another one that is becoming even a greater issue now as we try to do local purchase in our food-aid programs and we find that the materials are not safe for consumption. So this would probably be one of the areas where we’d like to work in a way that targets a whole range of interventions, whether they be genetic upstream interventions that we might do with advanced research partners, as well as the kinds of investments missions might make in post-harvest handling and marketing approaches.

Then we have zoonotics. This is the issue of livestock diseases that affect people. And I think this links the whole area of what we call the one-health initiative that we’re – increasingly now have the buy-in from our partners on the health side of the agency – that a real approach to integrated health requires looking not only at people’s health but also the health of their livestock. And then finally environmental health. Often agriculture is tied with issues like – around malaria or around sessa or other things where the potential – oh, I’ve already advanced here – the potential for making an impact on human health via how we manage our agricultural production systems is substantial.

Then we come to cross-cutting issues. And here we saw three that really emerged. One of them is policy. And here you can see areas that you would normally think about – markets, food safety and regulations, genetic resources, bio safety, water and land management – I include water and land management there because I think there is a global element for water and land management that isn’t always just gonna be fully captured at the system level. And I think it particularly pertains to some policy issues and especially, I think, in water, but potentially there are some issues, of course, in land as well. Gender – you know, I think – we’re looking at this a couple ways.

Women are far more effective, when we look at household dynamics, in terms of achieving the nutritional goals and child malnutrition goals that we’re seeking to advance in this initiative. They’re far more effective at managing household
resources. So we want to really think about ways, if we’re serious about the hunger and malnutrition aspect of this, that we can empower women. So this is both women as beneficiaries of technologies but also as participants in the R&D process and I would say also related processes, things like extension, marketing, etc., where in many cases it’s basically – in Africa it’s often a woman-managed enterprise to begin with. So we want to think very strategically about that and then also think about the respective ways that men’s, women’s, and children’s roles come together and to try to get the best outcomes we can in terms of both poverty and hunger.

Climate change – this is one where – agriculture is probably, if not the most sensitive sector to climate change, it’s certainly one of the most sensitive sectors. And one of the areas we’ve already mentioned, abiotic and biotic stresses – and of course drought and heat and salinity might be obvious, but we also know that certain diseases are going to change with climate change in terms of where they are found and how severe they are under certain conditions. We’re looking at resilient systems, and this is this idea that sometimes you can get two for one, sort of adaptation and mitigation goals.

If we think about tree systems, tree-based maize systems in agroforestry systems in southern Africa, we get a maize yield productivity gain. At the same time, we get a gain in terms of resilience because we get greater levels of soil organic matter, increased water retention, and a range of other benefits. Even the accessibility to fuel wood, sustainable fuel sources, etc. So there’s a lot of potential there.

We also are interested in broader mitigation impacts. I think there’s an article in PNAS, Burney, Davis, and Lobell, that I would really commend to all of you to look at, which talks about the enormous impact that modern agriculture has had in reducing carbon emissions, CO₂ emissions. In other words, that even though emissions have increased, through sustainable intensification of systems, we actually would be producing less carbon than we would otherwise. And also could mention here – well, I’ll come to that a little later.

So, some global research mechanisms that we’re going to use. We have the CGIAR system Josette has already mentioned. We have competitive grants with US universities and private sector. Certainly right among these would be the CRISP, but other possible approaches as well. And then we have collaboration with USDA. We’ve just signed the Norman Borlaug Commemorative Research Initiative with USDA. There’s an MOU between our two agencies.

And we’re looking at two areas of particular collaboration. One would be at the
intramural level. That would be with the agricultural research service, the in-house programs. And we see a lot of potential there in things I’ve mentioned like livestock diseases, grain-legumes, other potential important diseases of crops and livestock where the US can also benefit and development objectives can benefit from investments the US is making. And then, extramurally, through the new national institutes of food and agriculture, which will be making grants to the public and private sector in the United States, primarily US universities, but we can look for ways under this new initiative, to enhance the relevance of those investments to our Food Security objectives.

And then partnerships with national programs. This is one that’s absolutely key. As Josette said, our analysis suggests that the huge fall-off, really a collapse, in funding of national research systems that began about 20 years ago has had a major impact, a limiting impact, on what we can achieve through our research programs. We now have a new opportunity in Feed the Future to work with missions that are reenergized, they’re restaffing, they have the prospect of funding – I mean, ____ have the prospect of funding. We can’t take this for granted, but we think that the most compelling agenda we can come up with will give us the best result possible under whatever resource constraints we face.

But certainly this area with missions is one where we want to do a lot more work – I mean, I’m sorry, with national programs. And it comes back to this idea of purpose-driven research that Josette mentioned. By virtue of partnering with people at the national level, public and private, we think that we’re going to get a much better sort of feedback loop in our own research work, but we also get that sense of ownership that we think is critical and the sense of a shared endeavor. And I’ll say a bit more of that on this next – actually, I’m going to wait and say a bit more of that for the last page, so I won’t elaborate here too much.

OK, the CGIAR system reform. Josette mentioned this. I’m going to quickly go over this. At the management level, we have a new consortium board giving us systemwide governance for the first time over all the centers. So that’s one big gain from our perspective. Secondly, we have a fund that’s been set up, or being set up, at the World Bank, where we will – sorry, how do I go back? Is there a way? Yeah, I– oh, golly, I didn’t mean to mess us up so much.

So we have this fund that’s being set up that we hope is gonna be a way that the long-term research funding that we and the Canadians and the Brits and the Japanese and the other Europeans and the Brazilians and the Indians and all the Chinese bring to the table is going to guide the priority objectives of the centers and not enable the special projects so much – we’ve seen too much of that in
the past – but rather see this funding from the fund as setting the strategic direction. And the way it’s gonna do that is through this, the strategic results framework, which is still under development, but we’re very excited because we see the same things that are emerging in Feed the Future have emerged there, and I want to recognize Meredith Sewell in particular for the work that she has done in this regard, but it’s that same focus on hunger and poverty and gender and climate change.

So, many of the same things – I mean, it’s not a surprise, right? I mean, we’re all – the donors talk to each other in the context of the G8, we deal with the same processes in places like CAADP, so we’re thinking alike, but I have to say, – and I also want to credit the Africa Bureau in having been sort of at the forefront of really getting a focus on productivity and growth, which is also I think inherent in what we’re seeing in the SRF, this results framework. So then from the SRF we’re going to see mega-programs emerge, and these programs will span across various centers. So it’ll be system-level programming rather than center-level programming, and we’ll have some of the familiar commodities – rice, wheat, maize, bananas, roots and tubers – some new combinations – we won’t have multiple programs on the same crop anymore. But we’re also looking at agriculture, health, and nutrition emerging, at markets and trade, forests and trees, climate change, and then, very importantly, land, water, and ecosystems and systems-level programs. And that’s where we see a huge opportunity to link the whole sustainable intensification agenda to guide where CGIAR is going and also enable our investments to better link with it and support it.

Very key in the reform that we call it is this idea of enhanced partnership. So the idea is about linking the CRISPs, linking USDAs, linking the private sector in our country with the CGIAR and at the same time also finding better ways to link to national programs, partners at the national level, and to a broader set of investments. And then, finally, I think we wanted to end on this because we think that this is the next big step in front of us. Eight percent of the global research funds under Feed the Future are in this global research investment piece. The rest, which cover many different areas, are in the field, primarily – to some degree in the regions and the regional bureaus, but primarily at the bilateral level.

And those investments are critical, whether they be about research and technology, but also if they’re about seed systems, if they’re about infrastructure, if they’re about markets and trade value chains, we need to be able to figure out how to put these pieces together, and when we develop this – I think you mentioned this, Josette, but Verne Long made a huge effort to draw in a whole range of priority analyses from places like CAADP, from counterparts
in Latin America and Asia and so forth – and so we’ve tried to be demand driven in that regard – taken our clues from what emerges bottom up. We’ve also tried to inform it with some really good thinking about where some of the opportunities are. And in a sense we think that that’s what we need to do here, as well – link what’s emerging through our missions, through our other partners in the field with the kinds of analyses and investments that we can make and see how they can mesh together, and, again, thinking beyond just R&D, but to the whole agricultural system that’s going to be critical if we’re gonna make this idea of sustainable intensification work in a way that really improves our outcome on poverty and hunger.

And, finally, we see some opportunity – we’re not the only donor that’s decentralized like this. The World Bank, DFID, and others, similarly, have the bulk of their money through bilateral programs. So, again, for example, the New Trust Fund at the World Bank, that could be an important partner here. Bank programs and others. And we see the regional for a light CAADP as well as the CGIAR, as a place – and CAADP is the Comprehensive African Agricultural Development Program – we see that as a place to engage in these discussions, to get this purpose-driven research agenda, where we really do have those partnerships, and where we can get not just the donors on the same wavelength, but also working in sync with the national partners through their either national or regional organizations.

So I think we’re very interested in that discussion going forward. Obviously the whole proposed research agenda is also on the table. There’s a lot more detail in terms of the kinds of things we would do. We didn’t try to be too prescriptive. Rather, we used examples of things that we thought were key. But I think we have to go into this with an open mind, and we recognize, too, that new things will be coming. We can’t anticipate everything. So it’s not so much a straitjacket, but it does give us I think a criteria-based and constraints-based approach for making those kinds of investment decisions.

So I think I’ll end it there. Josette, do you want to add any more?

**Female:** No. No, I just really welcome the discussion.

**Male:** All right. Thank you very much, Rob and Josette. The floor is open for questions. I encourage those who are participating online to type in their
questions. They’ll be asked. And so please just state your name, organization, and your question, please.

*Female:*  
(Laughter)

*Male:*  
Silence.

*Male:*  
Thank you very much for that presentation, both Josette and Rob. Phil Stephens of Agriculture. A basic question – perhaps I heard it and didn’t think about it at the beginning – who are you directing your recommendations for? Who will use and work on these recommendations? Thank you.

*Male:*  
You want to do it, or do you want me to do it?

*Female:*  
We both could ________. I mean, really it’s a combination of speaking to our own agency as well as giving us a framework in which to try to think about how we work with the international community more broadly. Again, I would underscore the – this is an area, agricultural research is an area where the US is a major force in the international community more broadly, and what we do as an agency can help positively shape the broader international research system. So part of this is speaking to that larger system. These are sort of – our – the framework in which we engage, for example, with the CGIAR system, which is a multi-donor, half-a-billion-dollar-a-year research system where we’re one of many donors but a pretty major one, and if we were to go in a significant way, for example, on the systems program, say, that we prioritize major advances in a systems approach in the East Africa highlands, and to try to go in there and help shape how the CGIAR thinks about that and how other donors interact with that kind of an agenda is an example where this goes way beyond our own internal operations.

By the same token, I think it will serve as a reference point for us internally, so as we think about programming new resources for agricultural research, this would be our guide to help us think about what some of the priorities and modalities would be for new research funds with our existing programs, taking the strengths and perhaps focusing them in some cases, or scaling up in others,
of our existing research activities that show promise within this framework of thinking.

**Male:**

The other thing I would add to that, Phil, is that, you know, this came out of the Feed the Future initiative, the whole-of-government approach that Josette mentioned, and in a sense it’s a way of communicating with the US research audience. It was developed jointly with USDA, so it’s – in a sense it reflects input from both agencies. It will guide both agencies and, we hope, also perhaps partners like MCC, who are interested, but I think we do believe it will help people in the university community and the CGIAR community, etc., understand some of the key ways that we’re hoping to respond to this challenge that’s basically coming from the president.

**Male:**

Rob Neuter with the Overseas Cooperative Development Council. I think it was a great presentation and exciting information. The part I’m wondering about is, not very much is addressing the extension, the application, the uptake by individuals and producers and systems. Is that a whole separate strategy, different presentation, or where are the, maybe, couple highlights of the linkages between the two?

**Female:**

Yeah, no, that’s a really good question. In some cases, it probably will be a separate strategy, one that obviously is very linked. I mean, we have started some thinking, for example, around – well, certainly around the extension arena in our own office. We actually have some new efforts in the three new activities in the area of extension, to try to get a better handle on sort of what is the state of play of extension, both public and private, extension systems globally, what is some of the thinking going on in the international community in some of these areas, and how we can develop new approaches to extension that would obviously play a critical role in the uptake and delivery of technology. I would also say we’ve also done some thinking – sort of more premature at this point, still – around the institutional agenda that underpins agricultural research. Again, an area where we have a huge legacy of having trained thousands of agricultural researchers around the world. If we’re going to increase our investments in national systems, national research systems, be they universities or agricultural research institutes, what did we learn from our past investments, and what do we need to do going forward that really gets not only at the human capital but also at the strengths of those institutions, the management and strategic components of institutional development.
They’re all obviously interrelated, but in effect the research priority setting has gone a little bit further. The extension piece I think is coming along nicely, and then the institutional development piece is still something that we need to tackle in relation to this.

**Male:** The only thing I would add is that transforming systems piece – that’s gonna be in there. I mean, that is integral to what we’ve seen in South Asia and the investments we’re making there, so we’re not as far along in other regions, but we somehow need to get all those pieces to come together.

**Female:** Hi. Barbara Bestham here at USAD Natural Resources Management Office. Thank you for the presentation. I saw it flowed very sort of naturally, but I had one comment and a question. To me the biggest challenge facing Food Security is how to increase productivity while reducing the environmental footprint. For example, in developing countries, on average, 82 percent of all the water is used in agriculture. Given climate change, other uses, competing uses, how do we reduce water? And so to me, when I think of a system, I’m thinking of the whole basin system. How do we work at that scale to increase productivity, reduce pollution, deal with competing water uses?

And the other question I had – I didn’t see anything about wild capture fisheries, which is the largest traded food in the world. Developing countries export more fish than something like rice, wheat, coffee, sugar, and tea combined, and yet there’s huge needs to – research needs to deal with capture fisheries, which are very important for nutrition. Can you comment on that? Thanks.

**Male:** Yeah. First of all, on the productivity versus environmental footprint piece, absolutely. I think that would be right at the heart of what we call sustainable intensification. In other words, how do we manage the resources in a way that gives us our income and poverty-reduction goals and our Food Security goals, but does it in a way that not only respects the environment but also deals with the – as you pointed out, Barbara – the challenge of climate change, the challenge of greater competition for resources going forward. In that regard I would say that we’re going to be – this is not entirely stand alone. If we think about something like water in the basin that you mention, there’s going to be water resource within this, but there’s also water research beyond it. And what I would tend to see – that we have good opportunities to link biodiversity-
related research, which we do now, for example, on fish stocks and things like that – well, through ICLARM and such, through the World Fish Center – we would have that opportunity, and, similarly, with things like landscape issues, with water and forests and trees and such, I think there will be opportunities to link those.

And on the water side I hope that as we continue to work on the water earmark and the definition with Congress, that we can get more and more towards a multiple-use approach that recognizes these competing objectives. I mean, none of this can stand in isolation. But we were – the pressure here was to be very focused. So we’ve tried to do that in a way that still looks at those kinds of issues that you raised, but within this broader productivity and incomes focus.

Now, on the last point, on capture fisheries, I don’t know that the debate is over on that. I mean, we’re gonna continue funding fisheries research. That’s – and that may be funded various ways. In fact, this year, we’re looking at using some climate-change money in support of it. So I don’t think, again, we don’t want to draw any hard lines. I don’t know if you want to comment further, Josette, but the agenda there – it’s not that it isn’t – I don’t know that – I wouldn’t say that it didn’t emerge at all. It was –

**Female:**

I think really we’re looking at a production agricultural agenda. I mean, these are the comparative strengths and institutions that we currently have the greatest capacity to leverage in an agricultural-focused set of programs. I think working on capture fisheries as a research agenda is certainly – opens up a huge scope of opportunity, but it’s often a very different set of institutions and a different set of partners that we would bring into play to really address that one, looking at it as much from an environmental-sustainability lens as a food lens. And so I think really we can’t be all things to everyone, and that’s where we’ve tried to focus on where we have the comparative advantage, which is building on assets that we’ve generated through our investments in the past, which has been largely around agricultural production systems as opposed to food systems writ large.

**Male:**

And I – you know, what I would say finally, Barbara, is we’re looking at basically doubling our funding for world fish this year, partly through biodiversity funds, partly through climate-change funds. Now, they’re gonna take the lens that you’re talking about. They’re gonna be looking at Food Security issues as well as environmental sustainability, stocks, spawning areas, all the issues that matter.
So we’re not turning our back on that at all, and I – somehow I think we need to do some actual thinking on, “How does this link?” We met with people from WRI on this whole issue of environmental services, and there is a connection, of course, between Food Security and everything else we work on in environmental services. So somehow we’re gonna need some explicit attention to this. I don’t want to discount your point. But – and I want to – the last point was that – you know, we are – we’re not turning our back on that at all.

Female:

Maybe just to add one point on the research priorities. In some ways they’ve been divided into two kind of big categories, the sort of global public goods, research that can be done on a set of global issues that has broad applicability across countries and regions. So easy examples are, you know, a new livestock vaccine that, you know, if you had a vaccine against avian influenza, it would be globally applicable. If you have a drought-tolerant maize variety, it can be applied in just about every region of the world. So those are truly global research investments that aren’t tied to specific contextual applications until you get further down the line, and I think we’re trying to be a little more strategic about where we invest in these sort of global public goods, and where do we invest in a much more intensive, site- or region-specific agenda.

So things like water-resource management, working on forest margins, looking at soil fertility, where there’s a lot of context-specific research that has to go on, that’s where that systems program can be a really powerful focus area. It doesn’t mean that soils research isn’t important, but soils are hugely variable across the world, and to improve soil fertility, other than taking fertilizer, which is kind of a global public good – it’s much more context specific. What kind of organic matter, what kind of management practices have to go into that particular kind of soil is much more specific to the biophysical, the social, and the economic context of that system.

And so that systems approach is where we will potentially intensify some of our research around particularly the natural research agenda, the water, the policy, the market pieces. It’s not to say that they’re not important, but I think what we’ve learned, if any of you just look at the portfolio of activities in our office – you know, we’re doing global research that’s not necessarily always global. I mean, some of it is very valuable, but it’s solving very site-specific types of problems, and I think we need to be more strategic about how we put that site-specific stuff together with other investments so that we can truly get major advances because developing – solving one pest problem through – I don’t
mean to pick on any projects, but through an IPM practice – could be hugely valuable for that one production system. But we’re not gonna be transforming it solely through that one technology, so the scale of impact of our investment of that more context specific has to be put together with the other pieces to truly be transformative.

Male: OK. We have a question from online.

Female: Yes. Actually, I have two questions that I want to communicate at the moment. Can you hear me?

Female: No.

Female: No, OK.

Male: No.

Female: Not at all.

Female: OK. I’ll be louder. One of them is from Cecilia Cooper from the South Africa mission based in Pretoria, South Africa, and her question was – “In South Africa, the NARS are worried about the CGIAR reform. They’re not very sure how it will end up like. They have been told by the CGS present in the region that for all the aid they have been providing them, they will have to pay for it in the future. Small economies will lack a research capacity and are worried that they will be worse off. How can such countries be assisted?”

And do you want me to ask the second question, or would you like to answer that and then we can move on later on?
Male: Well, I can just – I’d be interested – you know, we can take some of this offline to know more detail. I don’t think that that’s a standing policy of the – that’s not part of the new reform in any way, that somehow partners would have to pay for the services. I mean, most of what the CGIAR does is research collaboration, where it’s not a matter of paying anyone, so I’m a little surprised but would be happy to look into this and find out more. We certainly – we want to see this as an area where the national programs, especially for countries like South Africa that can also be contributors of technologies as well as receivers and users, have a real role to play regionally. That’s why these are countries that are strategic partner countries in the Feed the Future initiative.

Finally, this board that I mentioned that’s governing the CGIAR – there is a member from South Africa who used to be head of the research system there, so there’s certainly – there are people that should be attuned to the kinds of concerns that the colleague is raising, but we’re glad – and I’m speaking not just for myself but the rest of the international research and biotechnology team – that we’d be happy to check into this. And the second question?

Female: Yes. Actually, I’m gonna have two more. One is from Sarah Fulton from the UN Foundation, DC. “How do you plan to work with and incorporate the UN system into your research, moving forward, particularly FAO, with large data on some of these areas that you have highlighted?”

Male: Well, FAO would certainly be part of this strategy in terms of the – we talked about connecting with other donors like the World Bank. Now, FAO is not a donor as much as it is a partner, although in some programs they do serve, through trust-fund approaches, as a funder as well. So certainly at the national level, and I think to some degree at the international level – I mean, FAO is co-sponsor of the CGIAR system. It hosts the technical secretariat in Rome. So FAO has been engaged at the CGIAR level. I think at the national level going forward, we will be looking across the donor community and the development community, not just donor community, but – Josette, you want to add to that?

Female: Yeah, I mean, the other area where we haven’t partnered in FAO in a big way but they’ve been a very valuable source of information is some analysis that they do. I mean, so FAO has done analysis on capacities in plant breeding, for example – done surveys of national systems to look at the human resource and institutional capacities. They’ve been very helpful in trying to think about and
make the case for investing in national research systems, so in some ways I think, in that case, FAO’s analytical capacity is a valued resource. We also, in our work on extension, trying to look at what the world of extension looks like, been working with FAO as part of a collection of donors and development partners that are engaged on – renewed engagement on extension areas.

**Male:** A question from the audience?

**Female:** Yeah. Catherine Stratus with the EGAT Bureau. I was interested in the national research systems part of it, and I was wondering – are there any countries that are doing a good job of revitalizing their national agricultural research systems, or any of the missions that are playing an important role in helping develop a strategy?

**Female:** I think that’s a really good question that we don’t have all the answers to. I mean, that’s, I think, one of the issues we would really like to tackle as an agency, is how do we build greater linkages between thinking about a global research agenda and insuring that it connects to national programs. Within our own agency, we’re so decentralized, you have to go and find out what each mission is doing, and then whether you just take that, some collection of not necessarily comprehensive or strategic but just sort of – which mission has decided to take this on, and build that up and say that’s your research agenda, or do you have to have more of an iterative process, I think is the real big question for how can we, as an agency, kind of come together in some new ways that use our global resources to better support and connect to our mission programs as well as have that global agenda reflect the priorities at the national level. I mean, again, we’ve really relied on information from subregional organizations who’ve done the work of collecting from their national members as to what the sort of subregional priorities would be, rather than tapping into our missions, because this hasn’t been a high priority for many missions for quite a long time.

I do think that we’ve already seen renewed interest in research in a number of the mission programs. If you just look – I mean, randomly as implementation plans and strategies are coming forward, you can see research within that, but it doesn’t necessarily – there isn’t a consistent framework or linkage between how the agency in Washington and the agency in the field is working in this area, so I think that’s an area for a lot of dialogue within the agency, as to how to improve
that. In terms of national systems that are doing an outstanding job, again, I think this is an area where we need to do more work and find out what’s going on in terms of assessments and who’s investing significantly going forward so that we can really make our investments in ways that leverage and reflect new approaches to looking at human institutional development.

**Male:** This is part of why we’re putting so much emphasis on working with other donors, as well – particularly the World Bank, that tends to invest in this kind of effort. The processes like CAADP in Africa and related processes elsewhere contain a political commitment to invest in agricultural research. That’s one of the four pillars – science and technology under that. Getting the follow-through is not always easy, but it is – what I do see happening, definitely, is the elaboration of some plans, some of which are excellent, and are really owned by the national program. I mean, they’re feeling empowered.

But Josette is right. This is a beginning of a process. I think we’re going to need to engage much more closely with the Africa bureau, with the Asia bureau, the other bureaus, on assessing these things as we go forward. But clearly our missions are asking the same kinds of questions.

**Male:** More question from online – one more from the audience. ______, _______.

**Female:** OK.

**Female:** John may have a question.

**Female:** We have an online one next, and then John.

**Female:** OK. It’s from Arvin Bunker. And, “As you focus on systems agriculture research, do you anticipate research improve agricultural extension services? Are the research needs different for public-funded extension services and private-sector extension services?”
Female: Yeah. As I think an earlier question had come through, we are looking very seriously at the whole arena of extension, both from a research standpoint and from a development standpoint. You know, we recognize that research plays a significant role in the whole extension system along with input – industry development, for example, farmer organizations. There’s a whole host of critical organizations and institutions that play a role in the technology, development, and delivery of extension. But if you fold them up, if you kind of collapse a good portion of them under the old term extension or service delivery. So we are looking at, in effect, research in this area, looking at – we’re funding a major assessment along with FAO and some others on where extension systems – what they look like around the world, you know, who has strongest extension systems, what are the diversity of models in any one country, what is the level of funding for public versus private extension – trying to get a snapshot on what extension means in a broad range of countries around the world because it’s not been something that’s been the subject of a lot of development attention in the last, I don’t know, 15, 20 years. It’s always 15 or 20 years for agriculture, it seems.

(Laughter)

So we are doing some kind of research in that area. We’re also a member of GFRAS, which is a global forum for extension and agricultural services that is part of a group of donor and different development partners, some multilateral institutions among them. Again, having – elevating the conversation around extension so that we can all kind of learn and look together. I don’t see this being a big area of global investment in research per se. I think we will be investing a bit in sort of modeling and development of best practices in extension, but I think it’s more an area for providing guidance to increase the level of investment and to assess the effectiveness of different extension systems and models. And so, again, this an area where perhaps globally we can be a source of information tools and best practices, but that really the bulk of the investment and extension systems would take place at the national levels, so for an organization like us, through our bilateral missions in country, and then for countries themselves to make extension a priority, both public and private. As they develop their own Food Security investments plans, are they giving extension priority attention?

There was one other thought I had about extension, but it slipped my mind, so –

Male: John?
**Male:** John Riffin-Bark, USAID, Office of Human Resources. What will be the strategy-approval process within the agency, and what are the implications for staffing and office organization, reorganization, those kinds of issues? And, finally, what will be the relationship with GFAR?

**Female:** Approval process for the strategy – I don’t have an answer to that. We’ve been driven largely by priorities of the administrator in terms of timing on moving this forward, so I guess whether there will be a formal approval process remains to be seen. I guess we should bring that up. In terms of staffing and operations, as you may know, they’re creating an office for the Food Security initiative within the agency, and I believe research will be part of that – part of that office, so what the staffing implications would mean is yet to be determined. We don’t know yet what that office exactly will look like and if that will mean changes in our current staffing plans.

Clearly the elevated interest in research means that we need to be prepared to respond, both here in Washington and in the field. I think a lot of our ag DLIs coming in actually have good technical backgrounds in agriculture and serve us well at the country level. And of course we already have quite a few ag officers already who also have backgrounds in technical areas and sensitivities around research that I think they’re probably welcoming the opportunity to get back into these areas. So I think it would be a combination of our current staffing pattern within the foreign service, which has emphasized more technical depth in the way we’re doing recruitment, as well as perhaps mild staffing up here in Washington in this area.

**Male:** I would just add that this is a joint strategy with USDA, so USDA will be involved in the going forward and the process by which two agencies and State Department and MCC perhaps, even, arrive at what we call a joint – a whole-of-government strategy. So they’ll be – I don’t’ know what that means exactly in the way of a timeline. I don’t know if it means that we might have one document that is more general for things like the Feed the Future web site and one that is more detailed as sort of a working document with the research community both internally and externally on a more informal basis. I think there are various options out there and we haven’t sorted all those questions out.

GFAR. That’s the Global Forum on Agricultural Research. It is an organization that is small but – based at FAO, but links to, or tries to link the various pieces,
not just researchers – extension, private sector, etc. – into a forum, and they have co-convened with CGIAR a global conference on agricultural research for development that was held a few months ago. I think they see themselves as a forum for the ongoing dialogue around these issues that includes the CGIAR, but it’s much broader than that, as well. And it remains to be seen, John, just how they will position themselves, but I know that the sustainable intensification idea got a big boost at that conference. It was real –

Female: Momentum.

Male: – momentum and consensus emerging there about this. And I think that they want to be involved. They’ve got some very good people working for them – Uma Laily, Jean Terry, and others that have been writing some of their strategy papers and such – so I think that the question is still out exactly what that role looks like, but I think they will be engaged.

Male: Let’s thank Rob Bertram and Josette Lewis for joining us today.

Male: Thank you for thanking us, but I want to make sure we thank Verne Long – who’s not here unless she’s on the Web thing – I don’t think she is – Cynthia Baldwin, who has just worked tirelessly on this, Meredith Sewell, Harry Ray, and Anita Regme, who’s here from USDA, have really been the core team working on this, and I appreciate – we appreciate all that work.