What's All the Fuss About? How USAID is Embracing Systems Thinking With Supporting Frameworks and Tools

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Kristin O'Planick: Welcome, everyone, to today's Microlinks webinar, *What's All the Fuss About? How USAID is Embracing Systems Thinking with Supporting Frameworks and Tools*. I'm Kristin O'Planick with USAID's Bureau for Economic Growth, Education, and Environment. I'm so pleased to see participants joining us from around the globe today for what I think is one of the hottest topics in development. The market systems development community has long grappled with how to best capture evidence of systemic change, which is a critical challenge that we must solve to fully realize the benefits of a market facilitation approach. And as we learn how to do this, I hope the methods are broadly applicable to other systems approaches in development.

Today our presenters are going to share from three distinct viewpoints. We'll hear USAID's latest thinking about systems and the program cycle, including discussion of the new ADS201, and the 5Rs framework. We'll share the findings from a multi-year trial conducted by the Leveraging Economic Opportunities (LEO) activity that applied various complexity aware monitoring tools in Bangladesh, Sierra Leone, Georgia, and Mozambique in order to assess their utility for capturing systemic change. And we'll also dig into the Sierra Leone trial more specifically to capture the implementers' perspective on the trial.

Now let me introduce our presenters. Tjip Walker is the Senior Policy Advisor for Local Systems in the Bureau for Policy, Planning and Learning at USAID. He is currently leading agency efforts to promote sustained development through greater attention to local systems. The constellations of local actors, public and private national and grass roots organizations and individuals whose interactions produce development outcomes.

Ben Fowler is a Principal Consultant for MarketShare Associates. He works to facilitate the development of inclusive market systems in Africa and Latin America, and specializes in the set-up and implementation of learning systems that support program improvement. Ben has published guidance on how to use the value chain approach to alleviate food security and benefit vulnerable populations.

Kim Beevers specializes in complex market systems and last-mile business and investment initiatives for frontier markets. Kim is most interested in commercial and start-up solutions that chip away at big problems in difficult places. She's currently the Portfolio Director and Technical Lead for Sierra Leone Opportunities for Business Action, a market systems and private sector development initiative

implemented by Adam Smith International. And if you're just joining us, you probably didn't hear earlier that Kim is joining us from Sierra Leone. So, if we run into any technical hiccups with her participation, please forgive us, and we will attempt to deal with them as best we can.

But, please be reminded to type your questions into the chat pod as we go, and we'll do our best to answer them at the end of the presentation. And we will put up a resource pod later on with today's slides, and links to supporting documents for you to download. Tjip, over to you.

Tjip Walker: Thank you. It's a pleasure to be here. This morning – or afternoon, depending on where you happen to be – I gave my last Microlinks presentation about three years ago on essentially the same topic. And I was thinking back to what I said then, and what I'm able to say now, and I'm just amazed at the amount of progress that the agency has collectively made to essentially take what was a relatively foreign and novel idea and now integrate it in as part of our standard operating practice. And that's, in fact, what I'm going to be talking about briefly this morning, to sort of set the tone for the two presentations that follow, is to talk a little bit about where we have come, and essentially to make the case that, for those of you out there who want to engage with systems more actively, that there is now … essentially you're not moving with the tide, that there is support within the agency for doing just that.

So where I want to begin is with the Local Systems Framework. This is a policy paper that came out in 2014, and essentially serves as the foundation for a lot of the work that we are currently doing in the systems area. The basic point that it made was that where sustainability is the ultimate objective. And, of course, that is the objective in most of our programming, but not necessarily all. For example, in humanitarian assistance it might not be. But where it is, USAID is committed to strengthening local systems. And by local systems, we essentially mean the systems that are associated with solving a particular problem. That policy came out, as I said, in early 2014, and it did a number of things in terms of talking about what might be necessary to advance the concepts of systems thinking, identified ten practices that help to support this, and then had a call for a series of actions to move this forward, two of which I wanted to focus on this morning.

One is that we … There was a … The first one was to integrate systems thinking and this idea of local systems into the program cycle. And as I'm sure most of you

know, a program cycle is essentially USAID standard operating model for how we engage with countries and with partners and citizens in the developing world.

And then the other one was to develop ways to measure systems change, because we knew that in an environment that we are operating in with … where accountability is important, that being able to measure whether, in fact, the changes that we were initiating were, in fact, having an effect, and moreover were leading to the kind of systems change that we feel is necessary for improvements in sustainable results.

So that was essentially the call to action, which is what we have across the agency, including work being done under the LEO project, been trying to advance over that time. A major milestone in this regard was the release in early September of a new chapter of our internal regulations, the ADS, which deals with the program cycle, and lays out the entire set of regulations on how we plan, develop projects, develop activities, monitor, evaluate, and learn. And, to go along with it, we introduced a new depiction of that program cycle, which emphasizes, as you can see, learning and adapting and so forth, which in and of itself is a bit of a change from the previous depiction.

Now, as I said, this … what is important is that this particular new chapter, also established as a high-level principle, that is intended to cut across all aspects of the program cycle, this commitment to sustainability and local ownership, and does so by strengthening the capacity of local systems. So, in fact, this has now been integrated into the way in which all of our actions should be proceeding.

More specifically, I wanted to point out a couple of things that I think help to advance that. There is no requirement in here about doing a particular kind of systems mapping exercise. It is very much left open to project designers and strategic planners to decide how they want to advance this particular objective. But there are, nevertheless, a series of elements within the ADS that do, in fact, help systems … those who are interested in engaging systems do their work better.

One, and I think perhaps the most important one, is that the earlier versions may have been based upon a presumption of a static environment, where you could do a plan, and you could be reasonably comfortable that the situation would stay relatively constant till the end, and so you could come out with fairly tightly linked cause and effect relationships. That has been turned on its head. Right now, I would argue, is that throughout there is a presumption of change, that the countries in

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which we are operating are always evolving in different kinds of directions, and that while we may take snapshots at particular times, the expectation is that change is ongoing. And therefore we need to plan and we need to design projects and activities with the presumption that that change is going to be there. Hence, a big emphasis on learning, as we go through these processes, and on adaptive management, which allows us to be flexible in response to what we do, in fact, learn.

Another important part of it is, I think, an even greater attention on context, understanding the environments in which we operate, and a recognition that those environments vary. They very, certainly, from country to country, from region to region within a country, and even from system to system, from the agricultural sector, to the education sector. Those contexts may, in fact, be different. And that there's also an assumption that we need to learn about those contexts before we engage.

Another element to it, too, is that there's now a greater degree of flexibility on articulating a theory of change, and also along with it, depicting a logic model to go with it. So one of the things that is perhaps the most dramatic change is that in the past we had relied exclusively on the log frame for describing both the theory of change and depicting it in a series of boxes and lines. And that is no longer … that is one of a number of options that is available to people, if they feel that that's the right one. But you are entitled and able to do lots of other things.

And I think the last part of it, which is not new to this particular ADS, but one of the things that it helps to make clear is that … is to make a distinction between a project and an activity. And this time, for example, there's a whole series of more specific guidance on how to design activities. But this is important from a systems point of view because essentially, activities are the things that we have some control over. These are the things that we actually implement. And, indeed, what we're trying to influence as the system is, in fact, what happens at the project level. So project design actually then becomes a articulation of how we want to change the system over time.

The second element that I wanted to briefly mention was our progress on measuring systems change. And again, we've been doing this in parallel and in partnership with a number of other work streams, including the work that is being done by LEO, and more recent work also by the Global Development Lab at USAID, all working on it. And I think you'll hear some of these themes echoed in other presentations later on.

But the first one that we recognize is that if we are going to try to measure systems change, we need some way of taking what can be a very fluid and complex situation, and create a way to focus attention on what might be identified as the critical elements. So you need some kind of a framework.

For USAID, what we have done is that we have been working on developing what we call our 5Rs Framework. It's called 5Rs because, as you can see from this graphic, at the bottom there are five characteristics of this particular system, all of which start with the letter R. And to support that, we just recently have released a technical note that describes the 5Rs Framework, and talks about how to apply it across the project design cycle. So how to use this to do your planning, design your project, monitor and be able to adapt. It, along with the local systems framework, is going to be listed in that resources pod. And there's also a URL there.

So, just a few other things to mention. One of the other points, I think, that we need to recognize is that because systems are in fact dynamic, even as we begin to think about designing any kind of an engagement with them, any kind of an intervention, we are already beginning to notice the fact that they are dynamic, and this process of measurement begins almost immediately. So, it's not, again, a task that one can wait until you've actually got a design and say, "Oh, how are we gonna measure it?" It's essentially the same sort of argument about why we need baselines. But in this case it's from the very, very beginning we need to think about it.

The second thing is, again, is that while implementing partners who are responsible for carrying out various kinds of activities may very well be focusing on those particular activities and monitoring whether or not those activities are leading to the outcomes that are expected, there's also a need to understand what is going on at the project level which, as I mentioned earlier, is where the systems change actually occurs. So, if you take that systems diagram and place it there on top, the idea is is that these activities are going to be focused on making changes in certain aspects of that particular system, all of which are intended to nudge the system itself in a particular direction. And that's, of course, is what the whole process of project design should be helping you to figure out is where do you want to intervene? What are the expectations around it? But also recognizing that, since this is a dynamic process, and that you are dealing with emergent properties of this particular system, that you need to understand that activities may, in fact, not necessarily lead to the outcomes expected.

And then the last thing that I wanted to mention is the fact that we've also come to the conclusion that, in order to measure something like as rich and as dynamic as a system, that it's going to require what we would call a portfolio approach, that we need a variety of methods for monitoring and evaluating what's going on in that particular system. So while indicators, and particularly indicators that were generated alongside local actors and have meaning in that local context, there are other sorts of methods that may be more useful to capture other dynamics that are going on, some of those other Rs. So narrative-based approaches, such as Outcome Harvesting, which you will hear a little bit more about, or the SenseMaker® approach, those are kinds of narrative based approaches that are very helpful to understand how participants within the system are perceiving the changes around them.

And then also harnessing the set of systems visualization tools, such as Social Network Analysis, which you'll also hear about in the tools trial, or causal loop diagramming, other sorts of things which are designed primarily to help understand and visualize what's going on within a system, but also can be used iteratively, over and over again, to measure whether, in fact, the system is, in fact, changing. So we feel that we're gonna need to draw from all three of those methods in order to understand systems change.

So finally, let me just say where we are. I think that one of the things that we've … progress we've made on the measurement front is that collectively, I think we've developed a bit of a game plan about the importance of pursuing this, looking for frameworks, developing various approaches within those three areas, that portfolio approach. And we have come up with this game plan. One of the pieces of evidence of this was a public consultation that we had in late August, 2015, … and there's a URL there where you can go and get some more information … where we talked about our general approach with our partners, and got essentially a loud vote of confidence that, in fact, this sort of idea of testing on a variety of methods was, in fact, the way to go.

So we've not moved into this identification process of methods, and looking and testing tools. And then that's precisely what the next two presentations will be talking about, is testing out several of these tools in live contexts. And that is an ongoing process. I don't think anyone would feel that this is the process that we've got going … excuse me … that we've done enough on that, and that we still have some more work to do. But I think that we're in a good enough shape that we can

begin to start looking at the frontier. And for us, and particularly going back to the new changes in the ADS, it's beginning to actually design these design projects that essentially embrace systems from the get-go, that do so in a way that, from the beginning of the initial planning and engagement, all the way through is essentially taking the system as our unit of analysis, and engaging with it fully and effectively. And at least I would argue that our 5Rs paper was a good and useful guide to doing just that.

So that's the end of my particular presentation. But what I think you will be hearing later on is essentially drilling down into the center of these three steps on identifying and testing methods and tools. And Ben will take it from here.

Ben Fowler: Thank you, Tjip. I really appreciate the introduction that you provided. And I think it provides such a helpful overview of the interest in this topic, something that we're seeing not only within USAID, but also further afield.

So to reiterate what Kristin said at the beginning, my name is Ben Fowler, and I'm a principal consultant with MarketShare Associates. What I'm gonna be speaking about today is the work that was done under the Leveraging Economic Opportunities project, a three year research initiative funded by USAID, in which MarketShare Associates led the work on understanding how to measure and even to understand systemic change, particularly from a market systems development perspective.

So, when we started out three years ago, we were essentially trying to understand first, what were the key issues that practitioners were grappling with? We understood that there was a lot of excitement about the issue about systemic change, there was a lot of interest and momentum about how actually this related to market systems programming. But we kept coming up to two general questions which were, what actually is systemic change? And then second, are systemic changes actually happening? How can I know whether I'm seeing any systemic changes or not?

So that led us to a process of testing a number of tools to help answer those two questions. First off, we solicited the opinions and feedback of a number of practitioners, via an online webinar, and we also looked at the tools in terms of their practicality. Was there enough information available that practitioners who were interested in applying the tools would actually be able to? And that led us to narrow

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down to a short list of four different types of tools that we tested. And you'll note that they actually fit very well with Tjip's three buckets. There's one, at least one from each of those three.

So the first one that we looked at was standard measurement tools. These are tools that you use to capture changes in predefined indications of systemic change. So first you have to identify what you think systemic change looks like in your context, and then select from a range of typically standard tools, things like interviews, focus groups, surveys, to go out and capture them. And what we found was that those were the most common among practitioners that were indeed trying to test systemic change – these were the most commonly used, often paired with things like theories of change or results change.

The second tool that we selected was a narrative-based approach called Outcome Harvesting. And Outcome Harvesting seeks to identify what outcomes have happened within a specific area of interest to a project, and then work backwards to try and understand what were some of the causal factors, and validate, through speaking with a host of different stakeholders, as to some of the key reasons that those outcomes happened. Outcome Harvesting tends to be applied with a wide range of stakeholders within a system.

The third tool that we looked at was SenseMaker. And SenseMaker is another narrative based tool, but it differs from Outcome Harvesting in that the collection of micro narratives is typically done with a smaller set of respondents in order to achieve a statistically representative sample. SenseMaker then applies the narratives by allowing the respondents to self-signify, or analyze their own responses and categorize them according to a range of different criteria. This is then analyzed quantitatively in order to generate insights in terms of the overall responses from this range of qualitative data that's been collected.

The fourth tool that we selected was a visualization tool for understanding what a system looks like, and the flows that happen within the system. It's called Social Network Analysis, and we find that it's often applied in terms of, at least with market systems, to understand who's within a network, what are the range of players, and what are the specific ways in which they're engaging with each other.

So, once we had selected those four tools, we did a process of testing them in two different ways. First, we tested them ourselves by conducting an in-country trial of

each one of the tools. We paired that with a examination of the findings of a set of partners who either had previously or were concurrently testing the tools themselves. That provided an opportunity to triangulate the findings that we were having from our own trials with the ones that others were having in a variety of different contexts.

So, one of the tools that we tested was related to the standard measurement tools. And we did that in Bangladesh, where we developed a set of system health tools meant to understand the dynamics of a market system, and determine whether that system is functioning in ways that are effective in facilitating the types of changes that we're looking for in the market system, or not. And there's a separate webinar that was put out about two months ago on Microlinks which provides a lot more insight and detail into that tool testing process, and the interesting tools that we developed during it.

Second trial that we did was in Mozambique, with the SenseMaker tool. In that trial we examined a market systems project that was seeking to facilitate the access of small holder farmers to a range of commercial services provided by larger commercial farmers. And the tool trial there sought to understand the perceptions of farmers, of this new business model, and understand the reasons why or why not they were engaging in the model, whether it had actually taken up or not, and their perceptions of the changes to the system that had resulted from the introduction of this new business model.

In Georgia, and I'm gonna talk about this further a little bit later, we applied the Outcome Harvesting tool with a livestock project, that was seeking to facilitate improvements in the dairy system. And the graphic there shows one of the interesting findings that came out of the study, which was that there was a startling increase in business diversity tied quite closely to the beginning of increased revenue being generated in the dairy sector. And I'll get into more on that project a little bit later.

Finally, we applied a Social Network Analysis in Sierra Leone with the SOBA project. And I'm fortunate that Kim Beevers is joining us. And following my presentation, she's gonna provide more information about the specifics of that specific trial.

So it's important to emphasize that these are far from the only tools that can be

used. And the spaces paper that Tjip Walker referred to actually outlines a broader set. But these were four that we felt were particularly relevant to practitioners, and particularly practical, in terms of their potential application.

So, having outlined the tools briefly, I'm gonna walk through a few of the findings that we had in terms of how these tools can be applied. So we conducted a comparative analysis across the four tools after we had completed our trialing. One of the key things that we looked at was how helpful were these tools in terms of their ability to inform decision making? And we looked at that in a few different aspects. One of them was about the interpretability. In other words, you've applied the tool. You have the findings. Now, how easy is it for you to interpret those findings in terms of what they're telling you about your system, and also about what you should do about it. What is the implication of that finding for your project? And we found that the tools differed quite a bit in terms of their interpretability. Obviously, this is a bit of a typology, and so there are specific cases where the tools may vary to some extent. And it's also important to note that this is a comparison of the tools as applied on their own, so not in partnership or not in conjunction with other tools. But what we found in terms of interpretability was that Outcome Harvesting and standard tools tended to be the most straightforward, in terms of being able to actually understand, without a lot of subsequent application of additional tools, what they were telling you. SenseMaker and Social Network Analysis were somewhat less so.

Another important factor for practitioners is around how easily the results from the tool application can be extrapolated to the broader population, for example, to the set of beneficiaries that the project's seeking to reach. And we found that standard tools and SenseMaker tended to be … perform best at that because they both emphasize traditionally the use of statistically significant samples that would allow you to draw conclusions across a broader population.

In terms of contribution analysis, we found that standard tools and Outcome Harvesting were most helpful in terms of being able to assess the contribution that a specific development project had made to the observed findings. And the others were not as able to do so.

We also looked at the application of each tool within the project cycle. And that's running down along the bottom of that graphic. And while we initially looked at the practical application of those tools for finding systemic changes or early signs that

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systems were changing, in which they all performed well, a little bit less so, Social Network Analysis in certain contexts. We also found that the tools could be very helpful from a diagnostic perspective, in terms of understanding the system itself at the beginning, as a way to inform programming.

So that was a critical way that these tools can be used that we weren't necessarily seeking to test, but that emerged quite clearly, and particularly in the Network Analysis case that Kim's gonna speak to.

Other key tool trial conclusions are that it's very important to select the tools that you're going to use carefully, taking into account your capacity to use them, and importantly, the questions you want to answer. Too often we saw projects struggling with trying to apply a tool, given the lack of either clarity in what they wanted to answer, or else struggled with the resources to do so.

Related to that point, it's important to note that standard tools are often enough, and can be quite adequate in answering the types of questions that projects have. However, particularly if looking for an expected or negative changes that may have happened, non-standard tools can provide a really nice complement in being able to surface those.

Equally, there are significant differences in the cost requirements and capability requirements of each of the tools. It's important to note that SenseMaker and Social Network Analysis typically require the greatest resources, and therefore that needs to be carefully considered. It's also important … and this echoes what Tjip was mentioning … that you need a framework. You need a framework to understand what changes … to understand and interpret the changes coming out of your tool application, because these tools were not designed specifically to try and measure systemic changes, and thus, particularly in the case of the non-indicator based tools, a lot of the findings that come out may not actually be that pertinent. So you need a framework that can help to guide you in terms of the questions that you're asking.

So that's a nice seg into secondary of work that we did, which was very much informed by the tool trialing that we did with these four tool trials. And that was the development of a framework that would allow us to understand the findings, and to interpret them. And the framework is called the Disrupting System Dynamics _____ .We find it's complementary to the 5Rs framework that Tjip mentioned. And it's helpful in both the design and the monitoring and evaluation aspects.

There's not time today to go into every single detail of the framework and the background. That would require its own webinar. But I'm going to focus on a few of the key aspects, as they relate to our tool trial, and in terms of how we applied the tools.

The first key feature is the boundaries, and setting those boundaries. It's important to set the boundaries of your trial and of your systemic change monitoring in a way that you're not going to exclude important systemic changes. We found that often there's a automatic reaction to set the boundaries, say, around a market system, in the case of a market systems development project. But that actually, in some of our tool trials, the most interesting systemic changes happened outside of those boundaries. So taking into account strategy, your developmental vision, risk mitigation in terms of being sure that you're not creating risks, and you're aware of the potential for those risks, and practicality, are all key considerations. This should shape the design of your questions.

A second aspect is the history and conditions of the system in which you're seeking to understand. There are factors that seek how the system operates, and other key influences that are going to affect the results that you observe. So it's important to be cognizant of those factors.

Third, identifying the interventions that the development actor has engaged in that are seeking to create those systemic changes. And that might be quite narrow in some tool trials, and that might be quite broad in others. It's important to understand, based on the circumstances of your application.

The fourth area that we looked at was how to collect and interpret systemic changes. And that is reflected in the upside down pyramid in the center. There's a couple of key messages that comes out of this pyramid. The first is the importance of understanding the significance of the changes that you observe within your systems. And that's something that came up for us repeatedly, because we found that the existing frameworks that we were looking at didn't actually provide practitioners with a way to understand whether the results they were seeing were actually significant, in terms of achieving the types of systemic changes they were looking for or not.

So, the second key point is that significance, as we see it, includes two main

dimensions. One is the depth of the change, and one is the strength of the change. The depth is reflected by the vertical line of three different types of changes. The first set is disruption. Disruption are disruptions to the system dynamics in place at the time of the initial intervention. These are things that you can observe at the agent level. And what we mean by agent level is they're things that by observing a single agent within the system, be that a business, a government or other household, et cetera, you can observe that change having occurred. And those are often very important types of changes. In many of the existing frameworks, those are the only changes that are focused upon.

But this framework makes a distinction by also calling attention to changes that happen at the collective level. So the collective level is the area where you see interaction between different agents. It cannot be observed by seeing _____ of changes in a system, and the stickiness or deep rootedness of the changes in which they represent. One of these is networks, which is the web of connections between agents in a system. And the other is norms, the informal rules that govern collective behaviors and expectations of behaviors.

Using that framework to interpret and understand the changes that we observe through the application of various systemic … tools for measuring systemic change is critical. And then, that leads to the final element of the framework, which is the development impacts on target populations. And that calls attention to the important reality that, for many projects, it's not enough to just look at systemic changes, and whether they've occurred, because first those systemic changes are often a means to an end. They're justified in terms of their ability to better achieve the development impact that the project is looking for, and also because it's important to understand potential negative impacts that may have occurred, recognizing that systemic changes are not only positive, and can actually have a negative impact.

So, having briefly outlined the framework, I'm going to walk through a quick example of how we applied it using the Outcome Harvesting tool in Georgia. We applied the tool to a project called the ALCP project that was working in the dairy sector on promoting larger scale cheese processing. At the time, cheese processing was mostly done by small scale farmers, and particularly female farmers. And second, the promotion of food safety and hygiene practices that would allow small holder farmers to access the more lucrative fresh milk market, rather than selling their product as processed cheese.

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So I won't go into all of the elements of this framework, but when we applied the Outcome Harvesting tool, we first understood the importance of applying it to the entire Tsalka region. So we didn't limit our analysis on the basis of the market system, but rather to the region in which the project was operating in order to gain a broader sense, and be open to a broader set of changes that may have occurred. And that was important because the ALCP project already had a quite robust results measurement system. And so their key interest in applying Outcome Harvesting was understanding some of the unexpected or even negative changes that may have happened, systemic changes.

So when we looked at the history and conditions to understand what other factors might be relevant to our application, it came out there there were a number of complementary investments, both on the private and public _____ the way that they system operated, and the benefits created for the system actors. It also was clear that there had, for some time, been a norm that was allowing women to control income from their direct sales of household production. So when they were able to make their own sales, they were able to keep the income that resulted from that.

In terms of the intervention that we examined, we looked at the improvements that they made across milk production and processing, including those food safety and hygiene initiatives.

So with that set helping us to set up the trial, we then applied the Outcome Harvesting tool and sought to categorize the types of changes that we saw. On the agent level, we saw evidence of disruption in the system dynamics in several ways. One was that key actors, both project partners and others, were making investments in the areas that the project had promoted. But more importantly that there were strong beliefs among both the processors and the female milk producers that this new model was appropriate, and that it was actually supporting their own development objectives.

Looking at collective-level changes, we saw several cases in which information flows had improved, between the government and the processors, and the processors and the milk producers.

Finally, we saw important evidence of changes in norms within the system, in terms of the expected behavior, about how women were able to spend their time, and in

their decision-making power. These are the other household members, and others within the market system. When we looked at the developmental impact – and the paper gets into a lot more detail about the process we used to trace back the links between these factors – we saw that there were increases in assets and leisure time for the female milk producers, and an increase in the perception of opportunity that they had.

So to summarize the presentation, I think some of the key points are that there are practical tools available that practitioners can use to capture systemic changes, but that it's important to have a framework in order to interpret and identify what you're looking for, and set out what tools you want to use. The disrupting system dynamics framework helps both to identify what those systemic changes are, and to guide in the measurement of them.

And with that, I'm going to pass over to Kim Beevers, to go into more depth about the LEO application of the Social Network Analysis tool in Sierra Leone.

Kim Beevers: Yeah, thanks, Ben. I really appreciate it. So to reiterate, I work with Sierra Leone Opportunities for Business Action (SOBA). I'm the Portfolio Director and Technical Director there. We worked on a Network Analysis. I think we began about a year ago, and with _____. I did want to highlight that this was a huge effort, and a lot of people contributed to it. The full network analysis is online. I only have about ten minutes to run through some of the key findings.

So a quick introduction to SOBA. SOBA is a market systems and private sector development program implemented by Adam Smith International. We're working on the renewable energy and agricultural sectors. Within agriculture, our work primarily focuses on the food trade system. For those of you who don't know, Sierra Leone is a frontier and fragile market. A year ago, the Ebola conflict was … Ebola issue was still ongoing, and a bit of a challenge. That definitely influenced trade and trade relationships at the time. Sierra Leone also has few large scale businesses. So understanding the dynamics between smaller traders is particularly important. And this is especially the case for the vegetable market system.

So a Network Analysis. A Network analysis is a tool for mapping and analyzing relationships. Often there are a wide variety of network analyses out there. Sometimes they use big data. Other times, as in our case, we did all the data

collection. Why did we choose Network Analysis? SOBA was focusing on three core objectives. I think the first was trying to understand the market dynamics. We were looking at the vegetable trade. We were looking at information flows against vegetable trade, and particularly looking at supporting service sector response. So the ag-input sector, and the financial services sector, which were core investments for our program at the time.

We also wanted to identify leverage points. So again, because there are so few large businesses with which to work in Sierra Leone, and again, particularly in the vegetable service sector, we had a hard time finding entry points, and actors through which to work, particularly informal, and we needed to look a little bit more creatively to find some of those relationships. And the third one is, we had hoped to use the Network Analysis as a systemic change measurement tool. So could we identify some _____ figures, looked at distinct levels throughout the trade network, both small and higher up, and watched as behaviors changed, were there specific points and specific indicators that we could utilize to see systemic change over time?

So I'm going run through a couple of the interesting and influential findings that we found throughout the Network Analysis, and that have definitely influenced how we're thinking about our work and some of the follow-on interventions that we had.

So the first is we were able to identify a lot of really interesting and influential actors. These were centrally-located business. You're seeing a picture of Mr. Mohamed Kanu, who is very well located and a central figure in vegetable trade, based out of Waterloo. He has the opportunity to be both a bottleneck, given his position, as well as a gateway for changing behaviors.

The second one, the decentralized communication network. So … let me run ahead. So this is a picture of the communication network. If you look at four, here, you'll see a picture of the trade network. So this was particularly interesting for us. When trying to think about influencing behaviors, it's not just influencing trade, but also influencing the information that goes alongside of that. So, when we were thinking about how to affect change, we had to think about how we would influence communication, versus how we would influence trade. And what we found in this case is they're not necessarily the same mechanism or same approach.

The third one, which I think is also really fascinating, is the gender _____ .So there was a lot of, I think, gender dynamics to the trade and information network. So,

trade between men constituted just about 6.8 percent of trade relationships. Trade between women constituted 55.9 percent of relationships. And trade between men and women constituted 37 percent of relationships. But, really interestingly, we found that higher placed males were typically trading with higher placed females within the system. So there –

Adam (Microlinks):   Okay. We have temporarily lost Kim Beevers, who's presenting from Sierra Leone. We had a feeling this might happen. She's in a very remote location. So, Ben, if you can hear me, yes, if you feel like going on there and trying to go through her presentation, that would be great. I will also see if I can get in touch with Kim on Skype and see if we can get her back. But go ahead, Ben, and why don't you go ahead and take over, and we'll see how it goes from here. Thanks for your responsiveness.

Ben Fowler: Okay. Throwing me on the spot. All right. Well, I'll do the best I can, and hopefully we can get Kim back here to share more in her role as the on the ground person. She undoubtedly has a range of additional insights I won't be able to share.

But moving on to the fourth and fifth points. One of the key findings that we had in applying the Network Analysis was just how fragmented the trade networks were, which is quite interesting, because there were actually at least three nearly completely separate trading networks. And that had a big influence upon SOBA's thinking about how it would design its project, because in essence, the idea that it originally had of working with, say, a lead firm that was gonna be able to cut across all of the different actors in the system, just simply wasn't realistic. It became clear that the information flows that were occurring across actors were quite segregated. And so unless you were able to touch each of those discrete networks, you were going to have an issue with not actually facilitating the types of changes that you wanted to.

Another key point is that … or the fifth point is around how the social networks and social relationships actually had a really important role to play in how entities interacted with each other. So what that means is that there were actually long chains occurring within Sierra Leone, in terms of how the traders interacted with the farmers. And often there were many different sets of traders, input providers, and other service providers like credit providers. So the way that … there was a lot of governing of those relationships based on how they were connected to each other.

So that means things like, for example, there was a pretty critical issue uncovered in terms of how the relationships, the credit based system that was being used in order to fund resources back to the farmers, was actually based on being paid after the sale had happened. So you can imagine that in a perishable crop like vegetables, waiting to be paid until after the final sale is made creates lots of potential issues around spoilage, responsibility for assuming the risk, and so on. And so the social relationships played a big role in transferring risk back to the farmers from others within the system.

So, in terms of the key aspects, then, in terms of who the players were, and what kind of things came out, I want to touch a little bit on that first point, in terms of who the key actors were. We found that Social Network Analysis, in the case of SOBA, was particularly critical as a diagnostic tool. So echoing that table in my presentation, it essentially was extremely helpful for SOBA in determining how exactly it was going to intervene. And I understand that Kim is now back, so if she is, I will pass it back over to her.

Well, it looks like I may have jumped the gun. So I'll, I'll just keep on going, then.

Yeah. So essentially it's helpful as a diagnostic tool. It was able to uncover those key relationships and the fragmentation between those different actors. For that same reason, it was very helpful for SOBA to determine who it needed to work with. So, for example, picking firms that were all engaged in just one of those networks was going to be particularly unhelpful in its aims to facilitate broader change across the entire system. And so, practically what that meant, in terms of how SOBA intervened, was that they selected key traders as their ag dealers, and traders that were spread across the network. They also looked at those traders who were … and allowing those traders to find hidden out-growers. Those were the out-growers that actually had that information, the product, that were doing the risk sharing. So it was important that it was actually leveraging some of the information that came out from the Social Network Analysis, and the associated qualitative study, and finally, linking those buyers, then, with the key traders, as a key way to link, then, supply and demand.

Okay. I'm just gonna pause for a moment, because I think Kim is gonna test her microphone.

Adam (Microlinks):	All right. Thanks for everybody's patience. Kim is trying to get back online. That doesn't seem to be working too terribly well right now. So Ben, if you could just go ahead and continue. Kim, if you can hear this, and you are able to just get back online with your audio, just feel free to jump in whenever. Otherwise, Ben, why don't you just …
Ben Fowler:	Thanks everyone for your patience as well while we work through this.
Adam (Microlinks):	Yeah. Go ahead, Ben, and just continue, please.
Ben Fowler:	Okay. Well, I'll just keep going, and then hopefully Kim will come on in time for the Q and A session, and she can elaborate on, I think, some of the key important points that are here.
	So just finally, as a summary, one of the things that really came out was that Network Analysis is most helpful if you pair it with some qualitative follow up on some of the key findings. And that's because some of the issues or things that emerge in terms of, for example, the way a network is structured, the links between different nodes, perhaps the connectedness of different actors … all of those need to be understood in more detail. So Network Analysis is really helpful in surfacing some of these key and interesting issues. But it can't also explain to you what is the relevance, or how that should inform your own decision making if you don't also use some qualitative tools, and partner the two approaches.
	Another point is that there's actually sometimes hidden actors within the system that are not immediately apparent to programs. So without having an understanding, or being able to use Network Analysis for that purpose can be quite helpful.
Kim Beevers:	Hi. Sorry about that. I think we figured out the tech issues. Thanks, Ben.
	Okay. Well, thanks, Ben. You've done most of the presentation I think at this point. But, I guess maybe the last pieces to talk about are the difficulties with the tool, which I'm sure a lot of people have questions about. Definitely this was a really time

and cost intensive tool for us. It required a lot of work, particularly because we had to go out and collect all of the data. We weren't able to use a big data set and go from there. So we literally went out and asked questions to different vegetable traders, and followed up trade networks.

The analysis, which is, again, highlighted in the actual paper I think with greater depth, is a pretty technical skill. We used Cytoscape, which is an open source software, and leveraged a lot of relationships and engaged with a lot of academics to try to figure out the best way to do this analysis. And then, at the end of the day, we can never know whether our full data set is entirely complete. You do the best that you can in terms of mapping, and collecting data, but it's hard to know whether you have a complete data set. And that's actually really important when it comes to _____ measures.

So, it would be very challenging to look at a Network Analysis now and four years from now, and know whether they're comparable or not. Certainly there are _____ points and actors and specific measurements that we can utilize to have a sense of whether things are changing. But to view a systems map today and a systems map a decade from now, we can't know if they're really comparable.

And I'll leave it at that. Again, the full paper is online, it goes into a lot of these findings with greater depth.

[End of Audio]