Economics of Resilience: An Ounce of Prevention, a Pound of Cure

Presentation Audio Transcript

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PRESENTERS

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Julie MacCartee:	Hello everyone. On behalf of Agrilinks, MicroLinks, Feed the Future, and the USAID Center for Resilience I would like to welcome you to our webinar on the Economics of Resilience.
	We're going to have a great discussion today about the benefits of investing in resilience centered on a recent study commission by USAID on the economics of resilience to drought in Kenya, Ethiopia, and Somalia.
	My name is Julie MacCartee and I'm a Knowledge Management and Learning Specialist with the USAID Bureau for Food Security. I will be your webinar facilitator today. So you'll hear my voice periodically, especially during our question and answer session.
	We also have a team on hand from the KDAD Project, our AV tech and a few others who will be engaging with you all in the Chat Box today.
	Before we dive into the content I'd like to go over just a few items to orient you to the webinar. First please do use the Chat Box to introduce yourselves. I see that many of you have done that already and let us know your organization and where you're joining from. It's always great to see that we've got people joining from all different places around the world. The Chat Box is your main way to communicate today. So we encourage you to use it to post questions at any time, share resources and discuss the topic at hand with your colleagues.
	We'll be collecting our questions throughout the webinar and we'll answer some of them along the way in the Chat Box as our presenters can get to them. The rest we'll hold till after the presentations.
	You'll see that there are some resources available for download on the bottom-left of your screen. So I encourage you to check those out. Those are the reports from the study that we'll be discussing today.
	Lastly we are recording this webinar and we'll e-mail you the recording, the transcript, and some additional resources once they are ready.
	All right I'm going to go ahead and introduce our speakers and then we can get started with our discussion on resilience.
	So first up will be Tiffany Griffin, who currently leads the Resilience Measurements, oh yeah, Monitoring, Evaluation and Analysis work for the Center for Resilience at USAID. She has also served as Monitoring, Evaluance, Monitoring, sorry, Monitoring and Evaluation Specialist at USAID supporting the Feed the Future initiative. Here let me, apologies there, I wanted to make sure that Tiffany's face is on the screen there.

There we go, Tiffany Griffin will be our first speaker giving our introduction.

Next up will be Courtenay Cabot Venton, an independent consultant and international development economist who works with a range of donors, governments, and nonprofits around the world. Courtenay led the study on Economics of Resilience that we'll be discussing today.

Then we'll also have Mark Lawrence, who is a Ph.D. nutritionist with the Food Economy Group. He has been a leader in the development of household economy analysis, which is used in the study that we'll be discussing today.

Then last but not least we also have two resources online to help us engage in the Chat Box who are Tanya Boudreau, also with the Food Economy Group as a partner and Karin Garnier who is a Knowledge Management Specialist with the USAID Center for Resilience. So you'll probably see them engaging as well and Tanya may chime in verbally during the Q&A portion.

All right with that I'd love to pass the microphone over to Tiffany to give an introduction to our webinar today. Tiffany?

Tiffany Griffin: Thanks Julie and welcome everyone to this webinar on the Economic Value of Resilience Strengthening. As Julie mentioned my name is Tiffany Griffin. I am the advisor for M&E and Strategic Analysis at USAID Centers for Resilience. I won't speak for too long as we wanted the bulk of this webinar to be focused on the presentation and lots of healthy Q&A. But I did just want to say a few words about the importance of the work that you're about to learn a little bit more about.

So as you're all aware resilience means a lot of different things to a lot of different people. The reasons for applying resilience to our work are equally diverse. For us at USAID we have a lengthy technical definition of course, but in practice resilience is the ability to manage adversity and change without compromising future wellbeing. You accomplish this ability to manage adversity and change by strengthening the strategies, assets, and resources, people leverage in the face of shocks and stresses.

So we believe that when you do this, when you strengthen people's ability to successfully manage potential or realized risks at least three things will happen over time. First you'll save lives, second you'll strengthen the economies of the countries we're invested in through sustaining household's income and that this will de facto strengthen the global economy and third you'll reduce humanitarian economic liabilities, so

saving donor's money and freeing up extremely limited resources for other demands in the system.

But as we all know believing that these three things will be accomplished when we strengthen resilience is not enough. It's not enough to just believe we need evidence to back-up these beliefs.
So at the Center for Resilience we've committed to generating evidence that will illuminate whether our theory is correct, whether these three things actually do happen when you strengthen resilience and then hopefully strengthen how we program accordingly.

So today's webinar is focused on that third bucket that I mentioned, reducing humanitarian liabilities. There will of course always be disasters and when they occur we'll need to support the global community accordingly. But it's also our job to devise strategies that help our resources go farther and do more. We believe that by saving in the ways that Courtenay and Mark will outline in just a second we'll be able to accomplish that.

So with that I just want to thank you all again for attending the webinar. We hope that you learn a ton and we're really looking forward to engaging in some healthy dialogue after Courtenay and Mark's presentation. So Courtenay over to you.

C. Cabot Venton: Thank you so much Tiffany and hello everyone. Thank you so much for joining, it means a lot. We're really looking forward to presenting the key findings from this study and hearing your thoughts and feedback as well through the webinar.

I just want to give a few shout outs before I just start on the presentation. First of all this study is a collaboration with the Food Economy Group and Mark Lawrence who will be presenting it has undertaken extensive and detailed household economy analysis to underpin the economic models that we'll be presenting today. So it's a great pleasure to be presenting with him and this study would not have happened without Mark so I just want to say a big thank you and also to Tanya who's on the call as well

And I also want just want to emphasize that this study involved collaboration with a really big range of agencies, so USAID Country Teams, WSP, FOU, UNICEF, Government of Kenya, so many different agencies provided details and evidence, as well as peer review. Also the HEA baseline data came from a range of agencies who have done so much work to collect this information, including USGS, FEWS NET, Save the Children, Mercy Corp, Agesto, Axhead, so as you can see this was a collaboration of many people so I just want to say thank you for that.

So we would like to initially take you through an overview at a very broad level of the study parameters and the key findings. Then we will dive more deeply into how HEA works and how we were able to use the models that we built to look in more detail at how resilience building might work in practice.

So the overall aim of the study was to compare the costs of what do losses and benefits of four models. The counter factual model is a late humanitarian response and next we then compared with a scenario where we assumed that if humanitarian response arrives early, which we define as being before negative coping strategies has set in.

We then built out a safety net scenario which builds on the early response scenario and assumes that a safety net transfer is made every year to all very poor and poor households, alongside an early response to any ongoing humanitarian need. And finally we modeled a scenario, a resilient scenario where we layered in an additional increase in household income on top of the safety net and early response scenario.

It's really important to note that this scenario is defined by the outcome. So we looked at an increase income as a result of investment in resilience building. We didn't specify the activities that would lead to that change and I'll talk about that a little more later on.

We modeled these four scenarios across 15 years for a total population of 15 million people across 54 livelihood zone in Kenya, Ethiopia, and Somalia. And just to sort of put that in perspective the 15 million people represent about a half to a third of the total population that's regularly impacted by drought in these three countries. So we can assume that the findings here would increase by an estimated two to three times if we extrapolated to the whole population. There we go.

Our hypothesis as Tiffany was talking to it is that greater investment in early response and resilience building will lead to both direct cost savings for donors, as well as reduced humanitarian need for smaller food deficits. And an early response here as I just mentioned is defined as taking place before negative coping strategies are employed which also should lead to avoided losses. These gains that help to unlock funds that then can be invested in more early action and resilience programming, which begins to hopefully yield a positive cycle of humanitarian assistance.

We produced three estimates for this analysis, which I just want to go over briefly so that you get a sense of what some of the numbers mean. So the total net cost come together, the cost of humanitarian response plus the cost of programming over the 15 years and this estimate we really wanted

to isolate because it shows how much a donor could save directly on humanitarian assistance costs.

We then produced a second estimate where we adjusted this net cost for the transfer amount that is additional to have full deficit. So the safety net scenario assumes that transfers are made to all very poor and poor households. In the previous estimate the total net cost unadjusted we assumed that the full cost of providing this transfer, but this does not reflect the benefit that arises from transferring more than a household needs and we wanted to be sure to reflect both the cost and the benefit of the transfer amounts that were surplus to household deficit, so that's what this adjusted figure is representing.

Then the third estimate incorporates the benefit of investing in these different scenarios. So we were able to estimate in this study the changes in income and livestock holding as an estimate of the avoided losses to households from a more proactive response. So the total net cost with benefit layers in these avoided losses and those are offset against the cost.

The next few slides I'm going to use to summarize the aggregate findings across all three countries. So this is for a population of 15 million people. Our key finding is that resilience building, in other words the safety net combined with the improved income and early response would save upwards of $4.3 billion over a 15-year period. Another way of looking at that the benefits of investing in resilience would yield on average across the three countries $3.00 for every $1.00 spent. And if we break that down to look at the ratio of donors cost savings as it relates to the avoided losses at a household level the humanitarian assistance costs represent 68 percent of the total savings and avoided losses represents 32 percent. I would just caveat that ratio is the fact that we're obviously able to incorporate some significant areas of avoided losses for these households, but obviously there were lots of things that we could not monetize which would push that 32 percent up.

We then applied these savings to US Government spending on humanitarian assistance in the region. So the USG spent $5.4 billion in these three countries over the last 15 years. And the analysis that we are presenting suggests that investing in a more proactive response would reduce the direct costs to international donors by 30 percent, which would be equivalent to savings of $1.6 billion for the USG. When avoided losses to the households are incorporated into this analysis the savings increased to $4.2 billion.

We also had a little look at how much the USG spends globally on humanitarian aid that's to the tune of $6.3 billion and as we know we

spend about $20 billion on humanitarian assistance each year in total; so just to give an idea of order of magnitude.

These findings so far have focused on the resilience building scenario, but I also want to highlight that this scenario is specifically layering in increases income with a safety net transfer on top of an early humanitarian response. And that early humanitarian response is estimated to save more than $100 million per year in aid cost alone. So I just want to emphasize that this isn't just about investing on resilience but it's also about pairing this with mechanisms that can facilitate an early response to sites in need.

So this gives you the very high level snapshot of the main findings of the report. We want to now take you in a little bit deeper to the analysis that underlies the findings. So at this point I'm going to hand over to Mark who is going to walk you through the HEA model. Then after he's had a chance to speak I will pick-up on some of the more nuance findings in the different countries to give you a sense of what we were able to look at.

So Mark I'm going to handover to you.

Mark Lawrence: Thank you Courtenay. Yeah as Courtenay says I'm going to explain a little bit about household economy analysis, HEA and how we've used it to model the impacts of the different scenarios on different types of household.

HEA has been used in East Africa in the early 1990s mainly for early warning on these assessment activities and it's been used by the USAID FEWS NET Project for the last 15 years. HEA baseline data is collected by a livelihood zone. As Courtenay said we've looked at 54 livelihood zones covering a population of 15 million people.

We've made use of existing baseline data, that there's been no new baseline collection for this study. We focused on pastoral and agro pastoral livelihood zones as you can see from the map and that's because of the importance of livestock assets in these zones and that links to the analysis of avoided losses. But we've also looked at agricultural areas in Tigray in Northern Ethiopia.

HEA is a livelihood's based analogical framework. There are two elements, the baseline analysis and the outcome analysis. For the baseline we begin with a geographical zoning by patterns of livelihood to generate the livelihood zone map. Then within each zone we break the population down into four wealth groups, from very poor to better off. And for each wealth group we analyze livelihood strategies focusing on food and cash income and patterns of expenditure.

For the outcome analysis we typically take data on a shock, such as a drought and apply it to the baseline to assess the impact at household level. We can also look at the impact of positive interventions such as a safety net or a resilience building project.

So a little bit more about the outcome analysis here. From the baseline we get data on the amount of food and cash income coming from different sources, from crops, through livestock as you can see here, labor, up to self-employment. Self-employment includes things like firewood collection, charcoal selling and so on.

We can compare these estimates of income against two emergency intervention thresholds. The first of which is the survival threshold which is a measure of the level of income required to cover 100 percent of basic food needs. We have a second threshold, the livelihoods protection threshold which is a measure of the income required to sustain livelihoods in the short to the medium term. So this threshold includes expenditure on agricultural inputs for example.

The first step in the outcome analysis is to superimpose the effect of the hazard, in this case the 60 percent loss of crop production. Income drops as you can see here below the survival threshold giving us a survival deficit. The next step is to add in coping. In this example we're looking at an increase in income from labor migration and that leaves us with the final deficit which in this case is a livelihoods protection deficit. Now in this study we have always measured the deficit against the livelihoods protection threshold.

We've run outcome analyses to cover a total of 15 years, 2001 to 2015. So in some of the graphs you will see one bar for each year, so a total of 15 bars. But in this case we split the year into two seasons so we have a total of 30 analyses.

Now this is an example from Southern Somalia where there are two seasons which are called the "Gu" and the "Deyr." So we compare our 15 year sequence of income estimates that you can see here against the livelihoods protection threshold to get the picture as far as the deficit is concerned. This tells us about number of years or seasons in which there is a deficit and the magnitude of that deficit.

We do this for each wealth group. This gives us the basis for totally up the number of people facing the deficit. Now you'll notice that the livelihoods protection threshold changes from season to season and that's because of changes in the price of its component parts.

But we made use of real data to generate the input into the model, that is data on crop production, on livestock production, and on market prices. The crop production and market price data comes from existing monitoring systems and that data was provided by the FEWS NET Project. The livestock data comes from a livestock model which uses USGS satellite-based estimates of rainfall as its input.

Now a word about the early intervention scenario. So this scenario was based upon the monitoring data that I just referred too, but makes a number of assumptions about the affect of early intervention, some examples of which are given here. So we start with crop production. We have an assumption that if we intervene early this will result in a 10 percent increase in crop production in the post-shock year, so that's the year after we're seeing the shock.

There's a rationale attached to this which is given below. So we're assuming that if we intervene early then people will have less need to divert labor away from farming towards coping strategies such as firewood collection, so they can focus more on their farming, that we will see an increase in labor productivity, and an increase in expenditure on inputs as well. Now that's just one example.

Another example then on livestock production we've assumed that early intervention would result in a 5 percent decrease in livestock mortality. This would result from higher expenditure on veterinary drugs and fodder and/or water. The staple prices we've assumed 7 percent decrease in staple food prices paid and this is linked to lower demand as food aid is distributed and with early intervention as people are able to purchase before prices reach their peak.

So these are some examples of the types of assumptions we've made in developing our early intervention scenarios. But I would say is that as much as possible we've tried to be conservative in these assumptions.

So before I hand you back to Courtenay I just want to run quickly through once more how the analysis was pieced together. So for each livelihoods zone, for each wealth group in each livelihoods zone we use the baseline and the monitoring data to estimate the total income from crops and household level, we then added milk and livestock sales and other sources of income, for example causal labor and firewood selling. We're always comparing that information against the livelihoods protection threshold.

We then add in stocks and savings. So there's a stocks and savings component to the model that's shown in red here. This represents the amount of income that is available to carry it over from the previous year into the current year. So if we look at this very bad year of Du, sorry Deyr

2010 we can see that the model indicates that there would have been some carryover from the two previous seasons which were both relatively good with income quite considerably above the livelihoods protection threshold.

Finally we can add in the affect of an intervention, for example a safety net transfer as in this case. So that gives us our final picture with the intervention added in.

So now I'll hand you back to Courtenay to continue.

C. Cabot Venton: Thank you Mark that was really helpful. So the HEA model gives us data as you've seen on that estimated number of people with a deficit, the size of that deficit, as well as estimated income and livestock holdings each year. We then take that and create an economic model which combines this HEA data with data on the cost of response, the cost of programming, other factors such as multiplier impact to estimate the cost and benefits of each scenario.

So I now want to take you through some of the more detailed findings with examples from each of the three study countries to show you how the modeling can provide insights of your response and what it might look like to have a so-called resilient population, in other words one that can cope without external assistance.

So this first slide shows the HEA model over 15 years in Turkana in Northern Kenya. The left side shows a very poor pastoral population and the right side shows a very poor agro pastoral population. As you can see both populations are struggling to meet their livelihoods protection threshold in any year and are chronically in need of humanitarian assistance. When we layer in the safety net transfer you can see how critical this support is to the pastoral group on the left. The red indicates savings, which is something that households can only do when they have income far enough above their livelihoods protection threshold to begin to be able to save. This ability to save is almost nonexistent, suggesting that this population needs a much higher level of support if it is going to graduate.

On the right you can see that the agro pastoral group has savings in most years. While it's pretty minimal it suggests that this group with lots of caveats around ability to access markets and finance, et cetera, but that this group may be able to have a little bit extra to invest in productive activities that can grow over time.

A regular point of conversation as we were developing this study was around how we determine when people are resilient? So how long and how much investment is required and when is that tipping point?

So we setup a thought experiment with our models. What if we gave every household a $450.00 investment fund in year one and this fund allowed households to invest in activities that yielded 30 percent income each year? The top graph shows a Somalia agro pastoral zone without the one-off investment fund. So the gray bar at the bottom of the graph represents the household sources of income as Mark was just explaining. The blue bar represents the safety net transfer and the red bar shows savings. And you can see the green line representing the livelihoods protection threshold.

Without the safety net households have years both with a deficit and without, although the safety net is critical in most years to ensure that households stay above their livelihoods protection threshold.

In a second graph we see the same exact same population, but now the yellow bar represents the investment income from that one-off transfer that we initiated in the first year of the model. In the case of this population the safety net transfer, the blue bar, is no longer needed after three years. This population is able to cover their deficit in bad years, with the income from good years with the exception of 2010-2011 which was a bad year.

Critically investment in good years is vital to allow people to earn the income that they need to see themselves through the bad years. I think that this point is a really important one because it highlights how fundamentally important it is to bridge the gap between humanitarian and development actors in these kinds of context.

We now tried the same thought experiment to an agricultural zone in Tigray, Ethiopia. So as before the first graph shows the household income represented by the gray bar, with the blue bar representing the safety net transfer. It's clear that the safety net transfer is fundamentally preventing households from a humanitarian crisis, but it is only just raising them above their livelihoods protection threshold.

In the second graph we provide our one-off investment fund in year one and in this case households still require the safety net transfer for ten years to prevent a food deficit. So this analysis raises some really important questions around the depth of support that's required in these protracted contexts.

What type and level of investment do we need to make in Tigray in order to see people become resilient? What is the tipping point? Where does the cost of that investment become prohibitive? Certainly there are also questions around our assumptions on the level of investment that would be

required to allow a $450.00 one-off investment fund to yield a 30 percent return. Is it infrastructure and access to market, finance sufficient to allow households to generate these types of returns and how much investment would be required to make this feasible? So I think that really starts to tease out some of the issues that are really specific to local context around how we build resilience.

We also were able to do a really interesting bit of analysis in Tigray. So resilience is complex and multifaceted and determining whether a household or a community is resilient is hard to measure and this analysis was really interesting because it really showed up that sometimes success might be measured as the disaster that never happened.

So we had HEA baseline data from 2006 and from 2016. So Tanya and colleagues of the Food Economy Group were able to compare empirical evidence on how things have things over this 10-year period. One of these trends that immediately stood out was that yields had increased dramatically, in some cases by over 80 percent. But there was no change in household status, so why was this happening?

Population growth had been so dramatic in Tigray over this same time period that while yields were increasing due to high investment and improved production technique landholdings had significant decreased, effectively canceling each other out and meaning that people were no better off on the face of things.

So we asked the question: What would have happened if there had been no investment in agricultural improvement? And we, Mark built the 15-year HEA model using the data from the baseline to reflect a scenario first with the agricultural investment and then compare to see what would have happened to this population without the agricultural investments? We then built in the economics and costs of response and compared the two. The model suggests that the improved agricultural yield saved over $1500.00 per household on aid costs alone; that didn't even include the benefits to households.

So while the investment in yields didn't appear to have made a difference on the face of things this investment had clearly mitigated against a larger and much more expensive crisis.

So I just want to walk you through some of the policy implications that come out of the work that we have done. First of all clearly investments and resilience is more cost effective than providing ongoing humanitarian assistance. That was loud and clear across all of the countries studied.

Safety net and resilience building measures should be complemented by mechanism to ensure an early response when there is a spike in need and triggers for earlier response need to be based on a comprehensive seasonal assessment that considers multiple criteria. We're very clear that it wasn't just rainfall that was driving need, it was the combination of rainfall and price and other factors.

Both consumption support and investment in productive activities are needed, but this differs depending on the context and requires a tailored approach.

I think really important as well is one of the first questions that people ask me is, "What does this mean for my investment?" "What package of interventions should I be investing in?" And just to revisit a point that I made earlier which is that this study does not – it models the outcome of an increase in household income and household income could increase through a whole variety of measures, investment in health improvement could reduce household expenditures, a team could mean that more kids are educated and are sending money home, a conflict resolution program could result in greater stability of household income, that could be investment and access to finance, you know you got the idea there are a myriad of possibilities.

This study expressly does _____ _____ *[audio break]* packages of measures can most cost effectively result in a change in household income. And further _____ *[audio break]* that household needs are varied and they change in space and time. So trying to meet those needs with a set package of interventions or one particular strategy may not be so successful. As we see in the findings it's really depends on the local context and livelihood as well.

So I think one thing that came out of a lot of discussion is really that shock responsive and adoptive management approaches that can respond to a particular context and changing circumstances of households should help to realize outcomes most effectively.

So I'm just going to give you six top takeaways and then present a couple of sort of forward looking and food for thought kind of ideas that will hopefully feed in for our Q&A and then we can go into a broader discussion.

So our six top takeaways, number one, investing proactively and people resilience should be the priority. It will save 30 percent on donor costs alone, whilst also protecting billions of dollars of income and assets for those most affected. The second is that early humanitarian response is key, saving more than a $100 million per year in aid costs alone and those

resources are critical to start to free-up some of the pressure in the humanitarian system. The third is that investment needs to go beyond direct transfers at scale. So the study highlights that investing in resilience as defined in the study is more cost effective than providing ongoing humanitarian assistance. However, that doesn't mean that providing for example direct transfers at scale is feasible and it's really necessary to start to figure out what kinds of approaches can most cost effectively achieve these changes if they are going to be implemented at scale.

Fourth, investing in good years is essential to mitigate deficit in bad years. A good year's household can generate the income that is required to see them through the bad years. That seems obvious but I think it's a really important point within the context of our discussions around bridging humanitarian and development actors and really comes out very visually in the study. Fifth, context is critical. The depth and breadth of support that is required varies depending on the livelihoods zones, the degree of variability from year-to-year, the level of poverty, et cetera. And finally a focus on shock responses and adoptive approaches to resilience is needed to allow for flexible responses depending on changing context.

And last but not least just some food for thought in case it's relevant or we can dive into other things, but a few things that struck us as we were working on this. These findings are highly relevant for slow onset or protracted crises and we know that these represent a really significant portion of all crises.

So how applicable are these findings in other context and countries? Can we apply similar rules to some? Do the costs and benefits of resilience change in other protracted context or would we find similar things? How much can we extrapolate? Another point for USG spent $6.3 billion on humanitarian assistance last year and we spend around $20 billion every year across the whole system, so how would these savings manifest if applied to the whole system? Yep and then the third, should we be thinking about the best package of interventions or adaptive and agile programming? And if we're thinking about agile and adaptive programming how do we track and measure that? And finally how would these findings translate across to a conflict or refugee context?

So we started look at this a bit with Somalia, but we really stayed focused on the impact of the drought, but what do the costs and benefits look like in a conflict context and how do we build resilience in this context?

So with those points I am going to handover and open up for the moderators to lead us into questions in Q&A.

[End of Audio]