# 2010 Africa-Middle East Regional Microcredit Summit

**Session transcript**

## Microcredit and Crop Agriculture: New Technologies and Other Innovations to Address Food Insecurity Among the Poor

**Day 2, 10:45 AM - 12:15 PM, Tsavo B**

**Chair**: Mr. Shadrack Mapfumo, Vice President, MicroEnsure, South Africa
**Panelists**:

- Mr. John Kihia, Country Director – Kenya, KickStart International, Kenya
- Mr. Michael Njuguna, Director Finance & Business Development, Africa Harvest Biotech Foundation International (AHBFI), Kenya

**Shadrack Mapfumo:** [starts midsentence]…households. The other speakers that we have today are Mr. John Kihia, who runs the sales and marketing activities of Kick Start in Kenya, and he has over 100 people that he works with. John has experience in rural and economic development which spans over 20 years, 13 years of which have been spent at Kick Start International. He started as the Head of Impacting Monitoring and designed the state-of-the-art impact military program. Previously he worked for Ekresed [unclear] and Keov.

You will also be hearing from Michael Djougouneh [unclear] who is the Director of Finance and Business Development at Africa Harvest. Michael has 20 years of international development experience in agri-business development, raw financing, agriculture research, and technology transfer. He has worked with resource-constrained communities to develop innovative financial products that have resulted in the adoption of agriculture technologies. Given this distinct service, we've asked these two speakers- and we'll start with John- to make his presentation and tackle the three questions that I read earlier. He will be followed by Michael, and then I will be the last one to make a presentation.

We will then give an opportunity for questions and answers, which we expect will be for about 40-45 minutes. I ask people who will be asking questions to try to speak using the speakers, as the whole discussion is being recorded. So we ask you to use the speakers and also to speak as loud as you can. Thank you.

**Mr. John Kihia:** Thank you, Shadrack. Good morning ladies and gentlemen. We are facing a few problems fixing the computers and therefore are a bit delayed. I'm sure that we will be able to catch up. I want to lead the talk with a question of water as a major obstacle to food security for small-scale farmers. For years, most of the small-scale farmers have always been looking up in the skies for rain as an agricultural input, and therefore we've done very, very little agriculture water management.

In a country like Kenya, last year so many people died and livestock died because it was very dry. Right now it's raining heavily, and now the same livestock is being swept away by the floods and people are dying because of the floods, and it's less than 12 months. So this is the question I will be tackling. Looking at it from an agricultural point of view, I want first of all for us to look at the nature of agriculture in Africa. Just as we had [discussed] in the previous presentation in the other room, about 70% of the operations in Africa live in the rural areas, and they are small-scale farmers. They generally live as families on small plots ranging between half an acre to five acres. The fact that they are living out there doesn't mean that they are getting anything free. They purchase whatever it is that they consume in their house, they purchase services, and therefore they live in a market economy. They do not have

enough food to eat, and that's why quite often we find food coming into Africa, rather than the other way around; there are very few other sources of income.

In fact, you can go to a village and find that it is only the policeman and a teacher who have a salaried job. Other people are busy [working] on their small pieces of land. Therefore, many of us perceive these people as a problem. The question today is "are they really a problem?" If we closely look at them - they do have access to land, so that's an asset. They have basic skills: as they are growing up, they acquired basic skills on how to work on their small pieces of land. They are not lazy, they are quite industrious and quite innovative. Very few of us would survive in those kinds of circumstances that they do live in. They are entrepreneurial and they are very ready and willing to invest their time and energy. Many of them will go looking for wage jobs because they know they have energy that they can sell and get a salary. They have motivations to succeed, and they are very ready to use whatever it is that they have in order to take care of their families and to see that their kids live better lives than they are living today.

So in aggregate, there is a massive reservoir of unrecognized and unexploited capital in the form of socio-humans waiting for a practical opportunity. So their lack of money doesn't really mean that they do not have something that they can tap on.

If we then take a closer look at Africa, especially from a microfinance point of view and as investors, many of us crush our heads and ask, "How much will it cost if I go and invest in these people? What risks am I putting myself in? When would I start getting my returns?" And many people run back to their urban areas where they can do the investment. The fact is: there is a huge agriculture potential with these people. However, we find that they are still suffering from terrible food shortages, and famine and malnutrition are not strange things. And yet we have lots of food that goes to waste; about 40% of what they harvest goes to waste.

So, what's the problem? There are quite a number of problems or quite a number of things that have been identified by people in various sectors. These are seeds, self-fertility, knowledge, information about markets, access to markets, infrastructure – there are a multitude of problems that we have cited as things that affect these people.

However, the fact is that in Africa only 4 % of land is under irrigation. In parts of Africa, we experience two rainy seasons, and in others we only experience one rainy season, and 95 % of people depend on these rains. If we look at the supply curve of the food, we find that when it's raining, there are feasts. When it is dry, there is famine. And then, the next time it rains, there is lots of food, which we can't actually store, so it goes to waste. If you look at the demand – the demand is constant. We don't get to a point where, because it's not raining, we stop eating. Therefore, we look at the number of things we can do. If we increase the effect of rain-fed production, what will happen is that we will increase our feasting periods (i.e. we will have more to feast on). But we haven't dealt with the famines.

You can see that when there's famine, the demand is higher than supply. If we add water into the equation, this will basically align the demand with the supply. We'll be able to produce 3 to 5 crop cycles every year. People will have greater confidence in their business, and therefore they can plant high-value crops instead of drought-resistant crops, which are low-yielding. If we add irrigation, we find the supply and demand are aligned. We are able to bring the famine period slightly up because there are some people who will be producing at that time.

At Kickstart, that is a question we have been trying to address. We are a social enterprise, and we look at stabilizing income-generation. Once we stabilize income-generation, then people can stabilize food production. We operate here in Kenya, in Tanzania, Mali and Burkina Faso, and we're also selling our

products in 18 countries. The way we work is that first of all, we identify- just as we've gone through the first few slides – we identify profitable businesses in rural areas which people can engage themselves in.

Then our engineers design the required capital equipment , which will open up on that opportunity, and then we establish a supply chain from manufacturing to distribution, and then we work with local dealerships. We go out in rural areas, and people who are already selling agricultural items to farmers are the ones that we work with in delivery of our products. Then we create awareness because when you have a new product that people are not aware of, they won't come forward to buy. So we create demand, and then we assess the impact because what we want to see is social change. It's not just that we're selling a product, it's the impact that we cause on the people. We can then exit the market, and let the market forces continue working.

We have two very effective products. One of them is called a Spomonemeika [unclear], and as we saw earlier on, people in rural areas have lots of energy. Most of it is not tapped, and that's why we've made them manual[ly-operated]. The Spomonemeika, which you can actually see it out there in the exhibition, is foot-operated, and it reaches at to 100 dollars. It's very high performing. Then we have one that is operated with your hip. You rock as you move back and forth. It's lighter, it's low-cost, and it's portable – so if a farmer has several plots, you can move it from one plot to the other. And it reaches at 7 dollars. I want to go straight to the impact that we have with these pumps by giving a case study of a young couple: Felix and his wife. Felix moved from a rural area and came to Nairobi because of the perceived problems that, in the rural area, there are no chances of generating money. He was employed in a small food kiosk. He could see people bringing in tomatoes and vegetables, and he could see the amount of money that was being paid. He thought of the small piece of land he had at home, and he went back home and bought a pump and he started irrigating. Now he's making more than $1000 a month and he permanently employs three people. If you go there when they are harvesting their French beans, you'll find about 10 people working on their plots. Now they are buying more seeds, they are buying more fertilizers and other agrochemicals.

Felix is not alone. By the end of February 2010, we had more than 144,000 Felixes. In total, they had created about 93,000 businesses – getting about 469 people out of poverty. Together, these people are pumping into the economy 93.8 million dollars annually. So when you look at the potential of Africa – because basically we have just scratched the ground – the potential is huge. The challenge is tough in getting to these people. It is estimated that the population of Africa will have grown to 1.5 billion by 2050 and therefore these people need more food. If you are only irrigating 5 % of all the land, we won't be able to feed these people, so you need to irrigate more and more land. The potential of Sub-Saharan Africa is: we estimate that the people who can basically use a pump range between 13 and 15 million. We really need financing in order to help us get there. If you look at the financing opportunities that we have found, there is a lack of cash. Therefore if we get somebody who is able to provide cash so that people can have access to these technologies, then they are able to utilize the other resources on their farms to make their farming better. They lack collateral; if they have a small piece of land and they have a title deed and you're asking [them] to give it out as collateral, then the other members of the family start crying out – they don't want that to happen. Financing institutions are basically asking for collateral.

We lack a proper product that targets the rural poor – a proper financing product that we can say aligns with the times when farmers harvest, and gives a grace period within which a farmer will plant and wait until the crop is ready and then take it out into the market. We also need to improve on the financial infrastructure so that these people have greater access to these financing activities. Therefore, what I'm looking out for in this Summit are partners with whom together we can explore these opportunities, so that we can reach these 13 to 15 million people in Sub-Saharan Africa. Thank you.

**Mr. Shadrack Mapfumo:** Thank you very much, John, for such an insightful presentation. Now it's time to have a presentation from Michael.

**Mr. Michael Njuguna:** I work with an organization called Africa Harvest Biotech Foundation International. Africa Harvest is a not-for-profit organization. We have operations here in Kenya and in several countries in Africa, with offices in Kenya, in South Africa, Washington DC and Canada. Primarily, we deal with technology development and technology transfer. I chose to share our experience with one of our projects; I felt that would be the best way to kind of illustrate what technology, coupled with other inputs, can do to a small holder farmer. The project that I selected is a tissue-culture banana project, which we have been implementing here in Kenya, in parts of Tanzania and also Uganda. The table there shows the importance of bananas in Kenya, because it's rich in carbohydrates, minerals and vitamins. In Kenya it's grown by about 400,000 small holder farmers, with an average of 0.2 hectares. Per capita consumption among the families that grow is about 300 grams, but for the rest of the families it is about 60 grams. Most small holder farmers will sell up to 76% of what they produce and only consume 24%.

Now, banana farmers in Kenya, and generally in Eastern Africa, face a number of constraints, and I think John has already shown some of them: pests and diseases, inadequate extension, lack of awareness of new technologies, limited access (even for those who are aware) to those technologies, limited access to credit, inputs and huge post-harvest losses. In some of the studies we have done, we have seen that some farmers can lose up to 40 % due to poor handling, and of course, limited access to the market. On the other hand, [this is] what we did in the late 90s: the banana industry was being devastated in this country, so we decided we were going to introduce tissue culture among the rural households.

Now, tissue culture is superior to the conventional way of cultivating because you can get large quantities of clean planting materials. They also have shorter harvest cycles, and substantial reduction in losses from pests and diseases because they are clean. Generally they yield bigger bunches, and you can coordinate the marketing more effectively because they tend to mature at the same time. So we decided that we were going to introduce this culture in some of the banana-growing areas in Kenya. Our approach – and that's the approach we use even in other projects – is what we call the "whole value chain" approach. In this whole value chain, you create awareness and carry out a baseline survey to establish the status of the target community.

After awareness creation, we also do seed availability – we ensure the plantlets are available to those who are interested. We train them on how to grow, on good agronomic practices, orchard management, post-harvest management and treatment, and finally, marketing. What happened is that we realized, of course, that no one organization can do everything. So we had different organizations providing different support services, because if you try to provide all the services, obviously you cannot be effective. So we had a range of organizations, some of them providing extension and technical support to the farmers – like our organization – working with the Ministry of Agriculture and the agricultural research institute CARI [unclear]. Then we had private sector labs that were providing the tissue culture plant – and for your information tissue culture is not genetically modified (I think I need to clarify that).

I know people have different perceptions about genetically modified [plants]. I have my own views – which probably are different than some of the views I had. But tissue culture is not genetically modified. We also had other players providing credit, like Carex and Equity Bank. Then [we have] marketing and input supply, and of course this was funded by Rockefeller, IDRC, Dupont and currently, because the project is still going on, it's being funded by Alliance for Green Revolution in Africa.

Now, awareness-creation basically entailed bringing farmers together in groups and using all kinds of methods to reach them to create awareness: forming groups, getting them registered with the social

services and training them on technology and sometimes even having farmer-to-farmer exchange visits – or what you can call travelling workshops. What we have learned over time is that farmers learn a lot more from fellow farmers – as opposed to when the ex-pats come and just tell them about this and this technology. They learn a lot more when they visit other farmers. Now, other than awareness – because what we learned over the years is that every time you introduce the technology, you inform the farmers and you patch [unclear] a demonstration and they can see and they are convinced - the next thing they ask is, "So where do we get this innovation? Where do we get this technology?" We started different distribution nurseries in different parts within the reach of different target communities – the reason being that the labs that produce the tissue culture are mostly around Nairobi. Sometimes we deal with communities that could be 200 to 300 kilometers away, and expecting small farmers to come all the way is obviously not possible. So we ensured [this] – for instance, you can see in some cases you'll transport the plantlets to the farmer groups, and then in other cases we purchase nurseries where famers can go and purchase the tissue culture.

Now, I want to show you the role of microcredit in the adoption of new innovations. In one of the projects, before we started the implementation, we went and carried out a study. We [asked] farmers, after creating the awareness, "how many plantlets do you intend to buy?" and then we got the data. Then we asked them, "If we provide you with some microcredit to adopt this technology, how many would you want us to supply to you?" You can see from that bar graph that the demand increased by 280[%] when we introduced microcredit. So microcredit has a very, very important role to play in the adoption of new innovations. What we do nowadays is anytime we're introducing a technology, we make sure we go with a microcredit provider, so that when the question arises, "how do we get resources?" we can always link them with microcredit providers.

Because of that, obviously you'll find good agronomic practices, good training, good technology – then the farmer has a much higher yield. We carried out a study 2 years ago about the project that we had implemented and we realized that on average, the tissue culture households were producing 32 tons per hectare while the conventional [households produce] (and it is documented) only 6-14 tons per hectare.

As I said, we also trained them to ensure they handled the technology properly, so as to reduce the post-harvest losses by handling, claiming, grading and packaging the bananas. One of the things we have done to increase the income to the farmers is to ensure that farmers sell in kilos, as opposed to selling via eyeball price-negotiation, where you look at a bunch and say, "this a hundred shillings" – but using kilos they get sometimes 2-3 times as much. The study we did 2-3 years ago established it had impact at the community level, with one [impact] being the fact that when you have groups that are cohesive, they can address other community concerns [aside from] just technology.

Obviously, empowered groups are development-ready and can engage in other activities – they are even able to address some of the social vices, like in security, because they have come together as a community, and they are able to monitor projects like the CDF. In Kenya, we have what we call the CDF (Community Development Fund), which is given by the government. This empowers the community, who are able to monitor the use of that CDF. In fact, in one of the constituencies I know, there is an MP who was thrown out because the farmers who are part of our group and our network started demanding to know what he had done for the last 10 years, and they decided to throw him out. Now, the project had a social impact, and that is increasing farm household food security. Apart from that, the fruit in itself, by being available, reduced malnutrition.

Most households were able to diversify and engage in other projects, and obviously there was the element of increased income. The projects had a gender dimension, in that among the households that we were dealing with, they were one-to-one, that is the ratio of male to female was one-to-one. Generally, there was economic empowerment to women, because bananas are considered to be a woman's crop. So there

was that economic empowerment. We noted that some of the households that were participating were able to improve their housing, and others were able to acquire other assets like bicycles, mobile phones and so on.

The project had a significant impact when we analyzed at the national level, because between around 1994 [and] 2004 there was an increase in banana production in the country. While the entire increase of 77% could not be attributed to tissue culture, we realized that tissue culture had served as a catalyst. There were of course other benefits, including employment, lower banana prices and improved food security.

Finally, I want to conclude by noting that small holder farmers can successfully adopt new technological innovations – because I know that is a debate in many circles. Can they? Can they not? Our experience shows it is possible. Simple technologies have the potential to have a huge impact among these resource-constrained communities. The whole-value chain intervention is effective; because if you introduce only microcredit and don't provide other services, then obviously you cannot achieve what you desire. Finally, we believe microcredit should be considered, especially to increase adoption for highly-vulnerable households. Thank you very much.

**Mr. Shadrack Mapfumo:** Thank you Michael. In the plenary sessions, we had an objection which was raised by the Chair that the panelists – he didn't feel that there was gender sensitivity – there were all men on the panel. So we wanted to change that. Now I would like to welcome Helen Kitigi, who is the General Manager of Faulu Kenya, one of the leading MFIs in Kenya, and the first here to be regulated and to [start] that process in Kenya.

**Helen Kitigi**: There are three central constraints in attaining food security, the three being availability, accessibility and adequacy. With availability, the three questions that we ask are whether there is enough food available through domestic production and imports to meet the immediate needs. The second question is whether the production is environmentally sustainable to meet long-term needs. We have seen a lot of new technologies for food-production, but if they're not sustainable and they cannot meet the long-term needs, then attaining food security will be arduous. The third question in availability is whether the distribution systems are effective enough in reaching low income and rural communities. The second component is accessibility. The question here is whether the vulnerable in society have the purchasing power to attain food security. This is very closely related to what most of the players in the MFI industry do. Most MFIs are actually in the business of transforming lives by empowering them to be self-sustaining, and having the ability to actually fend for themselves and provide their families with basic needs – their basic needs being food, shelter, clothing, education, health and dignity in the community. The other question is: can these vulnerable communities afford the minimum basic diet for an active and productive life?

The third component is adequacy. Does the food supply provide for differing nutritional needs? Is the food properly processed, stored and prepared? We've heard from different speakers on the issues of processing and storage. These are critical issues that, if MFIs have an understanding [of them], then we can begin to support this area in a more effective way. My proposition is: for us to attain food security, improving agricultural production in developing countries is fundamental to reducing poverty and increasing food security. I will not discuss this in detail because I think they've been discussed by speakers before me. [They discussed] some of the innovations and ideas that have come about in improving the yield of the farmers and their farming activities. Other critical factors I just wanted to touch on are the ability of developing countries to do research, and also have the farmers adopt the new technology. Also, when research is done, do they have access to the information so they can increase their yield, and so they can do proper marketing, preservation and storage of their goods? The last one is financing, and I think that is where we have an opportunity as MFIs.

Now, research has shown that there is a general shying [away] by MFIs from financing agriculture, and I just want to read this quote from a report that was done recently in 2009. The basic tendency is for microfinance institutions to shy away because we believed that the agricultural sector is risky, and therefore putting money there and financing farmers is a risky business. I want to challenge us –if we actually understand what some of my colleagues have talked about, for example the value chain, and some of the technologies the farmers can actually use to improve their yields, improving marketing and storage- we actually have an opportunity to lend to farmers without feeling that we are going to lose the money.

I'll take the few minutes just to share with you Faulu's experience with this. At Faulu, three years ago we introduced a product called *Mavuno*. *Mavuno* in Swahili means harvesting. What we did is we studied the cycles of different crops across the country and we structured products in line with the cycles of income that the farmers receive. If we are able to understand the dynamics, and also partner with organizations that are able to help the farmers increase their yields, it's actually an area that we can support. The essence of the *Mavuno* loan, the structure of the product is: the term is matched with the harvesting of the crops (i.e. how long it takes to harvest). I'll give an example of a province we call North Shrift in Kenya, where we have maize that grows over 9 months. What we do with these farmers is we structure a loan product where we have the principal payment [due] at the end of the 9 months, when they harvest and they deliver the maize and they're able to pay us. What we also do is we look at other crops; for example, in other areas of Kenya you'll find 3 month cycle crops, like potatoes and tomatoes. We do product differentiation, and so we're able to also finance these farmers, but without taking the product we have given to the North Shrift farmers, so that it can feed their crop cycle.

*Mavuno* today, contributes 20 % of Faulu's outstanding loan balance, and with that we are able to impact about 23thousand families in three regions in Kenya. What I would propose is that MFIs look into portfolio diversification across crop types and regions, farmers' education through partnerships with ex-pats (so that they are able to improve their yield) and product differentiation. When we do that, the we'll be able to mitigate the risks in the agricultural sector and be able to support the quest for achieving food security in Africa and the world over. Thank you very much.

**Mr. Shadrack Mapfumo**: Now I come again, not as the chair, but as a panelist. In short, I think what I can say is that I'm going to be talking about Weather Index insurance, because that's what I do every day. The idea will be to show how Weather Index insurance works to unlock credit, and what the effects are to the small holder farmers. We're going to be using one life example from Malawi, and then another life example from the Philippines.

If you look at the diagram that I have there, which I normally call the ladder, most of the small holder farmers usually have access to land, and they also have access to labor, which is either their family members, or other community members. The beginning of the challenge is there is usually uncertainty as to whether they will have rain or not, in which case they have to depend on whether the lord above has sent rain or not and whether it has been sent in season or not. Most of them usually don't have any irrigation facilities.

As Helen was saying a few minutes ago, you tend to find that microfinance institutions shy away from such farmers because they see the risk that is there in giving those farmers loans. In a year when there is a drought or excess rain, they are not able to recover [their loans]. So what normally happens is: if you're a farmer in a position where you only have land, labor, and rain - which they depend on, whether it has rained or not – (you are at the level where if you see all my ladders [on the slide], the third is where the yield is), you start getting an increase in yield the moment you bring in microcredit. To bring in microcredit, there is need for risk management.

So in the cases where you bring in crop weather index insurance, the tendency has been that microfinance institutions become more willing to offer loans. Once the farmers are given loans, the effect is that they are able to buy adequate and high quality inputs. The moment they use high quality inputs, our experience has been that you also find some contract farming organizations interested in coming and contracting such types of farmers – because they know they are going to get high quality outputs. What we can see here is that insurance has given them access to microcredit, but it has also given them access to a market for them to sell their products.

But again, you also find that once you have a contract farming arrangement, you already have at least a guaranteed price in most of those, and you also find that, for people who have bought a contract farming arrangement, they also usually get agronomic services. I know we have some governments who have extension services; but most of them don't give very good or high quality extension services. If you have a got a contract farmer, or a contract farming organization, they will almost always try to make sure that the farmer has got food and has got fertilizers, but he also has to use the best-quality practices for them to get the highest yield.

We also find that even in that case the farmers can also get access to innovations like the Warehouse Receipt system that the World Bank and other innovators have been talking about. I want to share with you a story about Harry Kafawulund of Malawi. This is a gentleman who, before he got [involved with] the program, which was financed by Opportunity International bank of Malawi, used to take grain from his storage, use that grain, and the following year would get a yield. But then, when he got Weather Index insurance, together with microcredit from Opportunity Bank, he was able to move to that house. This picture was taken about two years ago.

I was in Malawi last week, and I asked one of the Opportunity International Bank employees- they were telling me that now, where you see no windows [in the picture], windows have been put there, and it has been plastered and painted. When we asked him if he had thought about the opportunity that he had been presented with, what he said to us was, "The benefits for me are a better living standard and better food. I have been able to build a better house, and I have bought an ox-cart from last year's earnings. This would not have been possible before." This again is strong evidence that the Weather Index insurance really transformed [his life]. That is not the Weather Index insurance alone, but when you put Weather Index insurance together with microcredit, this is one of the cases which can show you the transformational effect which it can have on someone's life.

What did microcredit and Weather Index insurance do for Harry? He got a loan, he got higher quality inputs and a secure contract farming arrangement, which gave him agronomic training and relatively high prices. The other technologies that were adopted [include] the use of satellite tracking. For the farmers in the Philippines, we have developed a typhoon index, which if you see the red line, is actually the eye of Typhoon Frank. Any farmer who is within a grid, … [unclear] kilometers of the eye, could actually be paid a certain amount, so the loan would actually depend on it. If they had bought insurance more than the loan amount, they would also get a payment. There, you can actually see that we are using satellite tracking, which is a versatile technology, and also in locating how far the farmer is from the eye. We also take GPS coordinates of the farmer, so that at the very beginning we know where they are. That's technology to make sure that we can transfer the risk from the farmer to the insurance industry, which has the … [unclear] to manage that risk.

Other innovations that can promote agriculture are warehouse receipts, combined with microcredit, in which case the farmer can actually be given microcredit as a lump sum consumer loan. When the farmer puts his crop in the warehouse, he can actually get some loans which can supplement his livelihood, so that when the prices are high, he can take advantage of that. One of the things that we think can also be helpful even with warehouse receipts, is using cell phone systems and internet systems to advise farmers

of the prices, to advise farmers of good agronomic practices, and also even to advise farmers of insurance payouts. We actually think that there are technologies that are there- warehouse receipts, cell phone systems, internet systems, Weather Index insurance- all those technologies are easily available to the rich, but we actually think that they can be adopted and be used to transform the lives of the small holder farmer. Thank you.

**Question and Answer Session:**

**Questioner 1**: Thank you Chairperson. My question is on the last part of it– you're talking about contract farming arrangements. In my country, Tanzania, the contract farming arrangements have not been that successful because the farmers do not have the bargaining power at the end during the harvesting. Most of them are being exploited very badly, to an extent that now the government has decided to learn the inputs itself, because the companies were going to the farmers, offering inputs, offering pesticides and everything during the harvest; but after they harvest, then the problem comes, because they've already entered into an agreement that they will buy [at a specific price.] So I wonder: what arrangement do you have here in to contract farming – can they change the prices according to the world prices, or do they stay to the prices [established] when they entered the contract?

**Questioner 2**: [Translated from French] I found it difficult to understand what was going on with microinsurance. My question is this: I would like to know the mechanism of insurance, and I would like to see the link between agriculture, microcredit and insurance, and how the insurance functions. Thank you.

**Questioner 3**: Thank you. My questions are for Michael, and there are two. Could you talk a little bit about the challenges that you have experienced in the project you were implementing? Secondly, did the project address the issues of market access, or market linkages? As we know, when you have a group of producers concentrated in an area and producing the same product, that might have implications on the pricing. Could you talk a little bit about that? Thank you.

**Michael:** I'll just mention one challenge. The first one was for the farmer to accept the technology, because the tissue culture comes as a small potted plant from the lab. When you show the farmer, you tell them that it will grow to become a banana. And they say, "No, no this is a flower. Can you prove to us that it can grow to become a banana?" In every place what we learned is that you have to do a demonstration [in order] for them to accept that it can grow to become a banana.

Also, there was the issue of availability of diverse cultivars that the farmers required. A farmer will be telling me, "you know I like a type called Moraru, but you don't have that particular of variety in tissue culture." There are quite a number of challenges, but those are some of them.

When it comes to market access, we have a very interesting experience in which we brought farmers together to form a private marketing company called Tessidel. You'll be happy to know that while that company had to be supported initially, right now it is breaking even, and it is providing services to farmers as private company. Farmers have bought shares. In fact, two weeks ago they held their first AGM, with farmers with shares, and an audited financial statement. The TC Bell company is addressing the issue of marketing. What is important is that that company has reduced the number of intermediaries within the marketing chain. Instead of having 5 or 10 people handling the same crop, you have only one company –that way, a farmer can have a better return on their investment.

Now, to answer the two questions that are insurance-related, the first one on contract farming arrangements. The one that you are talking about is the one that originally was also in a number of countries – where the contract farming organization would be allowed to give inputs to the farmers. What

you find, a good example being Malawi itself, is that most governments have gone ahead and said, "The contract farming organization cannot issue interest to the farmers." Then what the farmers need to do is get a loan from a financial institution so that they can be able to finance their inputs. Then they enter into a minimum-price type contract – so they just enter and say "OK, you will give me a minimum price of this, but if the price that other people are offering is better than what you're offering, I will go with them." The best for you, the contract farming company, is that with all the agronomic practices that you have imported on the farmer, he will use them. What normally happens is, you usually try to make sure that they match the price that is being offered in the market – that has been the experience that we've seen. Contract farming itself still has some challenge, which is the reason we're talking about warehouse receipts as another solution which could also help with the issue of prices.

A question was asked by the gentleman about the link between insurance and microcredit. Most of the programs that we see in operation, what they have is insurance covering the loan. If a farmer takes on a loan, that loan is covered, so that if there is a drought or excess rain, the financial institution is paid. This is similar to the equivalent of life insurance credit life, where you find that for all microfinance institutions, a number of clients doubt they actually get their loan approved. The insurance that we are talking about here is credit life for farmers, so to say. This is actually on the weather side.

**Mr. Shadrack Mapfumo**: If we have answered those questions adequately, what I would suggest is: can we have three questions, if they are available, that are targeted at Helen, Joan and then some other questions for me – that way we can give an equal chance to the other panelists. Any questions for Helen?

**Questioner 1**: Thank you, my name is (Agoume David) from Uganda. I think the issue of agricultural financing [is important] – I'm asking you: do you have any criteria, do you have a minimum acreage of the farmers which you finance? We would like to know what minimum acreage can be viable for farmers, especially given that most of the farmers are subsistence farmers – they're not high commercial farmers, but subsistence farmers in rural areas. I think that could be very helpful.

**Questioner 2**: One question to Helen: Of the total loan portfolio that is standing in your books, what is the percentage of loans – of the portfolio – that is ascribed to crop financing and to crop agriculture? Perhaps [you will share] if you have additional information in terms of the other presentation, that is according to the sector, which would be the percentage in terms of policy. What is the percentage you have set up?

**Questioner 3**: Thank you so much. My question is related: in the pyramid we saw in the last presentation, whereby have the value chain, how is Faulu cooperating with Kickstart and Vision to make sure that each one is doing the right job at the right time so that we have the whole value chain for all the firms working quite well?

**Dr. Helen Gayle**: Ok, I'll start with the first question, and that is whether we have a minimum acreage for financing. We actually don't have a minimum acreage because you find that some farmers don't actually need acreage to produce, For example, recently in Kenya we got – I don't know whether it happens in other countries where you have almost fads in economic activities where you go to an area and the farmers there generally start growing tomatoes, and suddenly everybody is growing tomatoes. I don't know whether it happens. Currently in Kenya we have huge farming in prawns. The Kenyans who are present know what I'm talking abou. On a quarter-acre piece of land, you can actually have a very viable business of culturing fish and selling. So, actually, what guides us in the loan size is actually the loan size. We do assessments to see whether whatever you're doing – the farming activity that you're engaged in – is able to generate the loan repayment. The answer is actually: we don't look at acreage. However, in areas where we have farming for crops like maize and wheat, we actually [60: 40 / no audio] loan that

perhaps will divert some of the money and use some there and then, when it comes to repayment they have a problem

I don't know whether I answered that adequately. The other question was on portfolio size of the *Mavulu*, or the agricultural sector. Right now it stands at 23% of our total loan portfolio, and it's about 800 million. That is the outstanding loan balance right now. Now, we have a credit policy where we limit exposure to agriculture and also other sectors. For example: business and consumer loans. So we actually do have a policy on that. I think it ranges from organization to organization, depending on the level of risk that that particular sector would have.

In terms of the last question from the lady, what we do in terms of collaborating with experts, in increasing the yield and storage and insurance, for example, we do partner with them because our role is to provide the finance. So we will go to, for example, his organization, and we identify a certain group of farmers. They will provide the capacity, build the technology, and then we will do the financing. If it has something to do with maize, we would partner with an organization that is specialized in that area, and we work together that way. Thank you.

**Mr. Shadrack Mapfumo**: Ok, we have two short questions, because we've run out of time – two short questions directed at John.

**Questioner 1**: John, hello. My name is Rachel Zedig, and we represent John Dearwater here, so we have actually gotten to work with your organization in the past. I'm just curious - two small questions for me - what is the average land size that you're irrigating with your farmers? And what are the challenges of increasing the capacity of farmers understanding not just the use of irrigation, but water management, rainwater harvesting and the amount of water needed for specific crops – so that we raise the general capacity of farmers?

**Questioner 2**: I think this is a bit of an extension of the previous one. You started your presentation elaborating on a number of constraints for supply and demand in agriculture and for consumption and production, and then you went on to say, "Well, we have seen productivity to be increased by water availability." You mentioned, and in the country where I'm working, I think it's not so much water that is the main constraint, but storage facilities, markets, and also the productivity and availability of seeds and fertilizers. I would like to know whether you have in fact a broader integrated approach on the value chains, or whether you limit yourself to the water management system.

**Mr. John Kihia**: OK, I'll start with the first question on acreage. There are two numbers: one of the numbers is the average area that we find farmers irrigating. On average, farmers are irrigating on .56 of an acre, and generating on average $1,100 per year. However, the capacity of the super moneymaker is 2 acres, and we have some farmers who are basically utilizing it to its full capacity. The capacity of the hip pump, which is a smaller pump, is one and quarter acres. So that's the capacity of the pump, and therefore you can actually see that most of the farmers have actually not pushed any of those pumps to their limit.

The other question is on the general knowledge that farmers have on water management. I think the first thing that we intended to do is to get farmers to understand that water is a necessary input that people need to invest in. For years in Africa, subsistence agriculture has been practiced in such a way that once a farmer puts the seeds in the ground, and then they apply manure and then they apply their energy, then they look to Heaven, where they think water will come from. So the first thing is to create awareness and knowledge that water is a necessary input that you need to put into the business if you want to clearly supply the market that you're serving. In any business, if somebody doesn't have control over the

different variables that they do have then they're cannot assure anybody that they're going to actually set something in the market. So we have spent quite a number of years doing that.

Now, since two years ago, we have started training farmers on water harvesting. We have specific staff who are going around training farmers on water harvesting, and apart from water harvesting, other agronomic skills that a farmer would need in order to utilize the pump to its full capacity. Now we are incorporating awareness of the pump, plus more skills in terms of agriculture and in terms of water harvesting.

As we move forward, we will be working with drip people, in organizations who have drip kit systems. We'll be training farmers on how to use that, and how to properly manage their water in such a way that once you have a tank, you can use a pump to put water into the tank, and then use the drip system to manage that water appropriately. It's a process, where you start with the real knowledge of water, and then get into how you manage that water. In terms of the product: as I said, we do need to be specialists. If we are a jack of all trades, it becomes really difficult for us to deliver, and as an organization we have really committed ourselves to pursue the area of irrigation as an addition to what farmers would require in order to increase their productivity. However, we are partnering with other companies – seed companies, fertilizer companies – so that they can also go out there and deliver their pieces of knowledge. Whenever we have field days, we hold those field days with other companies and we will all be able to tell the farmers what the different inputs can do to their productivity.

**Mr. Shadrack Mapfumo:** Ok, I want to thank all the participants for the lively discussion, and I also want to thank the panelists for their insightful comments.