



# Road to Market

Interviews conducted in Zambia 2004, and Ghana 2005, illustrate the outcomes of three contrasting strands of research.

“ I am taking this cassava from my farm to sell in the market. When I go to the market, I assess the prices and decide what I will sell for. Some of the market women also buy my cassava. I know that the people who buy from me are going to sell the cassava at a higher price than I will. There is no industry that I can sell to, because I have no transport. If there was transport then I would sell to those places, and I would get more profit than I do at local markets. The immediate problem is getting my produce to the market. If people do not come to buy this cassava when I have reached the market, the next problem is bringing it back. Then I will take it to the road side, but the prices that I will get are very unpredictable, that is if I find someone to buy at all. ”

**Akwe Buwa**

A farmer near Accra. January 2005

# Road to Market

**M**arkets are where we buy and sell. We take them for granted: every day - in our own communities, in our countries, and all around the world - goods and services are exchanged.

But in sub-Saharan Africa, millions of small-holders and cultivators of kitchen gardens struggle to bring their goods to market. They find that there are simply too many obstacles along the way. Some can't find an intermediary to take

their goods to market. Some can't transport their goods, or keep them fresh, so they sell them locally and more cheaply. Some lack the information that allows them to take their produce to where it's more likely to sell. Some lack access to the technology, training or credit that could allow them to improve their ability to process their food, and to grow their businesses. Some struggle to meet the quality and export standards that would allow them to sell their

goods abroad. And whether by immediate cash needs as at the start of a school year, or by the simple inability to store their goods, some are forced to sell quick - and cheap.

Over the past ten years, research funded by the UK's Department for International Development, through its Crop Post-Harvest Programme, has looked at some of the main barriers to some of the world's poorest people bringing their goods to market. The research

has tried to bring together buyers, sellers and facilitators as well as academics and scientists. Most importantly, the research has brought about change and improvement. And that change has been moulded by the very people that it seeks to benefit. That's the only way to make any development strategy sustainable. Only those on the ground know what is possible, and only those who have problems with buying and selling their

produce can tell what is missing. We have tried to listen to these voices, and make them heard. We talked to people at every stage of the food chain, from farmers to street vendors to the Ministry of Health, 'from farm to fork'. This publication shows what we found in two countries: Ghana and Zambia.

It's a heartening tale of how research can improve lives, of how change can happen for the better. Read it to find out how.



**Hilary Benn**

UK Secretary of State for International Development

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# Contents

Introduction to Warehouse Inventory Credit in Zambia	6
Interviews conducted with stakeholders in Zambia	8
Introduction to Informally Vended Foods in Zambia	14
Interviews conducted with stakeholders in Zambia	16
Introduction to Cassava as an Industrial Commodity in Ghana	24
Interviews conducted with stakeholders in Ghana	26
Contacts	36
Acknowledgments	38



# Warehouse Inventory Credit Systems in **Zambia**

6

Maize in Zambia is farmed annually, which means that at certain times of the year, markets tend to be swamped with excess produce. Small-holder farmers typically have to sell their crop early to obtain ready cash, and often have difficulty storing it for long periods of time. For this reason, they are reduced to selling their crop at very low prices, to satisfy immediate needs. Farming inputs such as fertilisers need to be bought at an early stage in the planting process. As a result of such needs, farmers are often forced to sell their produce, even though prices are low. The lack of marketing information available to small-scale farmers means that local traders can take advantage of their ignorance, and buy crops at very low prices. If there is nowhere to store the crop until prices are better, farmers have no choice but to accept what they are offered. As one farmer explains: "It is a matter of giving you a little because you have got a problem."

The warehouse receipt system, also known as warehouse inventory credit, was implemented to address post-harvest losses, mostly with maize. DFID started supporting the Natural Resources Institute (NRI), now part of the University of Greenwich, to carry out research and pilot work on this subject in 1992, and this was

continued under the CPHP in 1996. The aim of the research has been to identify features of warehouse design, which can be applied in local contexts. Field studies were carried out in Zambia and Ghana, including a review of existing economic systems. From this research, and a collaborative technical assistance project funded by the Common Fund for Commodities (CFC) from 2000 to 2004, a new system was developed to address storage problems that small-scale farmers were experiencing.

The warehouses have been developed to encourage storage, which can reduce the loss of crops through weevil infestation and damp. When a crop is deposited, warehouse operators can issue warehouse receipts against the stored commodity. They are secure places, which will protect and keep crops until the depositor wishes to collect them, as a form of secure collateral. Warehouses are regulated by the Zambian Agricultural Commodities Agency Ltd. (ZACA), which oversees warehouse operations, setting and enforcing commodity standards. In April 2001, ZACA, headed by Chief Examiner Mr. Martin Hamusiya, was incorporated as a company limited by guarantee.

Standards set by ZACA also ensure that farmers

can, as one community has put it, "play the market". In the past, it has been difficult to predict prices for maize. New grading and weighing systems give farmers an idea of what they can expect for their crop. Research was conducted to test procedures for assessing quality grain, and a review of end user quality specification requirements was carried out. One challenge for the grain sector is quality uncertainty, so small-holders often suffer discounts, and cheating on weights. Through the warehouse receipt system, farmers know what standards large-scale buyers expect. Warehouses provide a ready market place, where traders can buy products in bulk. When a depositor feels that prices are good enough, he can release his crop from storage and sell it at a price which suits him, avoiding the low prices of the immediate post-harvest period.

The warehouse receipt system also addresses the problem of satisfying immediate needs when markets are swamped. When a depositor delivers his grain, he can secure a loan from any formal financial institution, using his grain as collateral. For small-scale farmers in particular, this relieves the stress of having to sell a crop to pay for immediate concerns like fertilisers and school

uniforms. According to one farmer: "This is the best thing about the warehouse receipt system." Bankers agree that the system is very beneficial to small-scale farmers. Previously, a farmer would never have been able to secure a loan with ten bags of maize. Now, provided that the warehouse is ZACA guaranteed, and the borrower is able to produce a receipt, he can secure a loan using maize as collateral.

Without specifications, formal contracting is difficult. There is no stamp of quality on grains, which means that securing trust is difficult. Now, trust is being developed between financial institutions and small farming communities, illustrating greater communication on many different levels. The total warehouse space, under the system, is currently 105,000 tonnes. Banks are often sceptical about the reliability of farmers to pay back loans, and farmers are sceptical about the ease of access to credit. With sensitisation and training workshops, trust is slowly stitching stakeholder relationships together. Small-holder access is being supported by an IFAD-funded small-holder enterprise, named SHEMA. Now, small-holders can bulk up their crop to sell it further down the chain to larger traders.

The system has been sustained through consultation with stakeholders at every stage of the implementation process. Supportive legislation is being pursued, which is intended to firm up the lending ability of formal financial institutions, like banks. Progress is attracting increased warehouse capacity and financing from major banks including Stanbic Bank and Intermarket Banking. In the first year alone of operating, certified warehouses achieved eighty percent occupancy.

There is progress, but many people do not know about the system, or think that they can not be part of it. Some farmers are sceptical about getting loans, others have heard about it and would like to find out more. As the Secretary of Kanakantapa Cultural Development Community explains: "At the moment, I think that farmers have been battered right, left and centre by the market. If farmers are not given proper information, they will be suspicious." The Kulya Nkoma Agric Co-operative has been formed to develop communication channels and empower farmers with market information. These are crucial linkages needed to reach the poorest, wherever they are.

# Interviews with stakeholders from **Zambia**

Secretary of the  
Kanakantapa Cultural  
Development Community:  
**Mr Jophael Mampube**

**Z**ACA offers a very promising kind of arrangement. Storage problems lead us to sell our maize prematurely, I would say. We don't have the means to store our produce. As a Farmers' Co-ordination Community, we have looked at possibilities of introducing storage, but the costs are enormous. Because maize has to be kept in certain conditions which we are unable to meet, we must sell it straight away. If we had the means to store crops, farmers would be selling their maize at a more convenient time, and they would be able to buy fertilizers during

the planting season. Because we sold off too quickly, money is spent. We need to buy the fertilizers now, but we have no more maize. We end up planting less than we would like. To have the farmers organised is the best way. We may not have all the farmers producing enough to take to the storage depot, but if they could come together, then they could raise a figure that would be good enough to store. Also, that helps as a way of monitoring and encouraging the farmers. The banks giving credit is the best thing. Our hope is that the interest is not too high, eating away at the profit of our farmers. This is one of the fears that they have. The main problem that they face is collateral. It is

easier in town, as it is possible to use your house or your car as collateral. But farmers are apprehensive to use their title deeds because if they fail to pay, then they lose their land. They would have nowhere to go, so they will struggle on their own rather than go to the bank. Banks tend to bombard people with the same requirements. We need more information about warehouse receipts, so that the farmers can have confidence. We need to explain to them exactly what the system is all about. At the moment, I think that

farmers have been battered right, left and centre by the market. If farmers are not given proper information, they will be suspicious. The system itself is very good, and it is something that we have been waiting for. All you need to do is educate people. Things have happened before, where farmers think that good things are coming, and they ended up losing out. But it is not too late. We are seeing confidence coming up now.



*Storing grain, Wangwa Farms*

Because we sold off too quickly, money is spent. We need to buy the fertilizers now, but we have no more maize. We end up planting less than we would like.



Small-scale farmer at  
Chongwe:  
**Mr Stephen Mbafti**

I have taken some skills that I learnt from commercial farms, and applied them here. After harvesting the maize, we sell it because we have no place where we can store it, so we only keep a few bags for our own consumption. We have workers here, and they need salaries to be paid, so immediately after harvesting the maize, we sell it so that we can find the money to pay the workers. The money that we will get when we sell to the Food Reserve Agency is not bad as such. If we keep the maize here, it will be attacked by weevils, and since we have nowhere to store it, we must sell it immediately. We need to pay for fertilizers, the fuel, and the tractor, and we also need to cultivate for the next season.

**I think that the problem with the warehouses is that we do not know what will happen next year, whether the price will be up or not, maybe the price will be reduced. That's why we sell immediately, and plant again.**



*Inspecting grains, Wangwa Farms*

Small-scale farmer at  
Kanakantapa:  
**Mrs Chishala**

Our main crop is maize, and we are trying to add soya beans. One of our problems is that we do not have enough man power. We have to employ one or two boys to assist. We don't plant what we should plant, because the rain starts late here, and when you start planting with no man power, you can't plant much. We don't have bags, or medicine to control pests and keep

the crop for longer. Prices are not good. In most cases, we sell our produce to the Food Reserve Agency, very cheaply. We need to sell quickly, and we don't have anywhere to store to wait for good prices. If we had a storage system, it would help us a lot. We could keep the crop and wait for good prices, and we would not mind paying for storage. We could keep it for months, and if we could find someone to help us with storage, we would be very pleased. Also, if we could get a loan from the

Chairman of the Kanakantapa Farmers' Association:  
**Mr John Tembo**

We have heard about the ZACA warehouse system, and we want to get some details. I think that it would help small-scale farmers especially, to have some income after they have harvested. If they have to wait for some time, it is difficult. People tend to have money now, but after some months they have nothing, because they don't have incomes for the future. They do this so that they can use that money for other activities in the farming situation, and of course to support their families. They have a problem with storage, and are not able to keep their crop for a long time, so to avoid wastage they will sell straight away. With farming being a business now, farmers must be sure of where to

get the resources to develop their farms. If you are not sure where to get funds, it is very difficult to operate a farm. The banking system can provide the necessary support which will be useful to people who need immediate cash to develop their farms. People are also not sure where to sell. They hear that people are buying, and then they just sell for any price. The problem of organisation brought us to think of forming the Farmers' Association. People were not working together, and because they were not organised, traders could take advantage of them. We saw that organisation would give farmers strong lobbying power, which could help them to secure better prices for their produce.

bank, it would help very much. We could buy a machine to help us plant our crop. My husband has been applying and applying for a loan, but he has been unable to get one. I have also heard from other people that the rates of interest are very high. Transport is a major problem. Where to find it? We need money, and we don't have such funds to spend on transport. The roads are very rough here, no bridges. Try to visit us in January! I don't think that you will pass, as the roads will be full of

water. This is a very big problem for us as small farmers. If we cannot find a market for our crop ourselves, we know that we will not get a good price for it, and wait sometimes for three months without being paid. We need to find an alternative market, where the prices will be good. Sometimes traders will visit us, and they offer us peanuts. When you are desperate, and you don't have transport, money or anywhere to store, you have to sell your crop at any price.

Warehouse operator at Wangwa Warehouse, Chisamba:  
**Mr George Phiri**

I think that the warehouses are good, because they are safe. It is better with ZACA, because there is now an agent between the farmer and the buyer of a product. ZACA will find someone to buy the crop, and they are the ones who organise everything. Before, season to season there might not be anywhere to sell. At the end of the day, farmers would reduce their prices.

Small-scale farmer at Kanakantapa:  
**Mr Musama Chilungo**

I am working with my mother, who has just started farming. After I graduated, I came back here to help her. It is our first year of farming and we have not had any problems so far, but we have not really thought about it. I think that the warehouse receipt system sounds very promising, especially if it enables us to get a loan. What I don't know about is the interest, how high is it? I do not yet know who I will sell to, but we are intending to sell straight to millers.



*Farmers at Chismaba*

Small-scale farmer at Chongwe: **Mr George Mwila Kangwa**

After harvesting our maize, we sell immediately. We take it into town and sell it to the millers. We have had some difficulties with selling all of our maize. Sometimes we would spend maybe one week waiting to sell it. Here there is no proper market. If you hear that there are people buying maize, wherever it is, then that is where you must take it. We don't store, in the sense that we don't have proper warehouses. Although there is a co-operative warehouse, we don't take maize there, because we have to pay. If it was free then we would go there, but as it is we would fail to pay them. The problem that we have is trying to find

someone to buy our maize. We peasant farmers do not grow that much, and we are not sure of the prices. Any price that someone wants to charge us, we have to take. Just to buy one bag of fertilizer is very difficult. We are peasant farmers: you know, fertilizers are difficult to find. If we bring our maize for storage, does that mean that you are going to

getting a loan is that the money is an advance, and I will use it. Even if the price is not good for me, that money will still be claimed back, and it will have interest. That's where the fear is. We can't just be lent money without interest. What if we have difficulties later on? Getting a loan would depend on the interest, and if I could get a loan, then I would store.

got children, I need to take them to school, and I need to eat. You know, I just depend on that twenty or ten bags a year. I cannot wait, because in the meantime my children will not go to school. Those who have more volume of produce might be able to wait, but we cannot. We need the money. How are we going to plough again if I do not have money and

Here there is no proper market. If you hear that there are people buying maize, wherever it is, then that is where you must take it.

tell us the price that we are going to get in March next year? We would rather like it if we knew what that price would be in March, then we would deliver our maize to a warehouse. The problem with

Where there is a loan, there must be instructions that will follow. They don't just give loans minus any argument to follow! I have seen the difficulties. We have money annually. I have

I am waiting around? I will sell just like that, because what I want is to plough again. I don't have solutions to those problems, so I have to sell whether the price is high or low.



Small-scale farmer at  
Kanakantapa:  
**General James Leke**

I grow beans, Irish potatoes and maize. I think it is a very welcome idea indeed, especially for this area, because we are so far away from the market, the roads are not that good, and not all of us have transport. If you are able to, let's say, trade in that voucher with someone else who might be able to give you some input, for example fertilizer, then the production at your farm will be going on without necessarily having sold your crop for cash. I would rather have crop in most of my fields at all times, rather than keeping them full of something which is ready for harvest, but you can't harvest; you can't transport it and so on. Just recently, I had Irish potatoes which I couldn't move because I didn't have transport.

During the time I was trying to secure a market for that crop, the field could have been used to grow something else. I am still unsure of my market. If the market price is indicated as being in such and such a range, it is easier to invest in a crop. I try to plan my production costs so that I will break even, or have a small profit margin. If I do not know the price, it becomes very difficult. Farming is a business, and pricing is very critical. **Traders who come to buy my crops have their ears tied to the market in town.** If they know the price at Soweto market, for example, you can't go too high otherwise they won't buy it. I also have to keep listening to the market trends; that is how you can negotiate your price. I have one or two contacts, and roughly I know how to price. There is very little information on market

trends, trading vegetables and so on. There is literally nothing on television or radio. We need this information to keep abreast. Coming together as farmers gives strength, but it is the attitudes of farmers that we have to think about as well. Some of them just come here to relax! Without belonging to a co-operative, I wouldn't have had any power at that time. Information in terms of groups, I think, is widely known in these communities. It is the attitudes of individuals that matter. If there is no commitment, then it is not effective. If the facility and the co-operative were explained to the people, definitely I think that they would be able to come together. At one time, we thought there were too many co-operatives, and we were trying to scale them down! If the principle is right, there is no problem.



*traditional grain storage house*



Chairman of the Kulya  
Nkona Agri-Co-operative  
Society at Chisamba:  
**Amos Rubani Makweja**

**K**ulya Nkona means eat and sleep. It is the opposite of what we expect our farmers to do, because we must act as a community and take responsibility. We were finding that without the warehouse receipt system, we could not keep our maize until it could get

good prices. So, we wanted to wait until the price would be higher. By December, the prices will be higher, and then we will sell. That is the main point. Before, we just got a very poor price for our maize, because we didn't know about the warehouses. Today, we are safe. Nobody can cheat me, because all my maize is kept where everything is to be recorded. I now know the profit that

my maize will make. I can look to anyone who will give me a good price, and then sell to him. From the beginning, transport has been a problem. But we managed to get our maize to the warehouses, and it cannot be a problem now, because it is paid for by the buyers of the maize from there. They pay to get my maize to their millers. The other thing that has been good about the receipt

system is that we can put our maize in the warehouse, and take the receipt that we will get to the bank. Then we can get a loan from the bank, to help ourselves and the family. They give us a percentage, like a deposit, while our maize is kept in the warehouse. Our maize is our security, and the bankers can do what they want. They know where your maize is, and that it is safe.

Board member of the Kulya Nkona Agri-Co-operative Society at Chisamba:  
**Mr Roderick Nyendwa**

**T**he receipt system has helped us to keep our maize safe, and it is treated. There are no insects that can tamper with it, and it is safe for a long time. The bankers know that the maize is safe. When banks see the receipt, they can give some cash to go and buy more inputs to get ready for the next season. Before, we used to panic. Here in the village, we don't have a safe place to store maize. What can you do with it? It would be washed away. But it is safe in the warehouse. We are very good at growing maize, and shelling it, but not storage! Even keeping the insects away – we don't know that one. Previously, we didn't know how to come up with quality maize. What we used to have were a lot of bugs and dirt inside the crop, and no bags to store it in. But ZACA have taught us that there is a certain way of cleaning

maize, and we must get rid of a certain amount of trash and weevils. We now know what we must come up with so that our maize is good quality. Before we knew about ZACA, we started taking two trucks of thirty tonnes each to Lusaka, and our maize was condemned. We had to accept a very low price for that maize, because it was cheap and of bad quality. What could we do, with a truck in Lusaka, eighty-one kilometres away? We had to agree. Now our farmers are learning. When we came back from Lusaka after that season, we pushed our farmers to go back and start cleaning their maize, so that we could come up with good quality. The warehouse receipts are a new thing. I think the banks are learning, because at least now they are receiving us – they did not in the first place. When we took our maize in September, no one wanted to receive us. With ZACA saying 'this is a new thing, try it', it is working.



*Farmers at Kulya Nkona*

Warehouse computer operator at Wangwa Warehouse at Chisamba:  
**Mr Moses Kaleshe**

**I** operate the computers here. Before the warehouses, I don't think farmers knew how to keep maize. I would say that farmers did not know that maize must be stored with certain moisture content. They were keeping it at maybe fourteen or sixteen percent; and it was going bad. Then ZACA introduced a new system for keeping maize for a long time, at the moisture content of twelve and a half percent. We can advise farmers on how to keep the maize. Because we grade it, they have a better idea of how much their maize is worth; and they clean it. Farmers are now happy in their minds that they know what we expect.

Board member of the Kulya Nkona Agri-Co-operative at Chisamba:  
**Mr Pikita Sakile**

**B**efore joining the co-op, I was standing on my own. I completed school in 1998, and now I am staying with my father, but I farm on my own. I find this difficult especially in terms of finding farming implements, animals, fertilizers. For fertilizers, I saw that it

was difficult to obtain them, so I decided to join the co-op, and I have already obtained a loan from Mr Makweja. Before joining this co-op, I used to grow cotton. I discovered that there was less of a profit in cotton, and a lot of labour was involved. I sold my father's maize, then after that I brought maize, and I joined this organisation, where I am standing as a chairman. We have no other means of storage.

Before using the barns [warehouses] we used to sell directly to the millers. Now we wait so that we can assess the market. If we find a market then we will sell that maize. We have a problem with storage when it is not in the barns. Sometimes we find that the termites will attack our maize. We only store maize temporarily in the villages, then we transfer it to the barns, which last longer. The

temporary storage that we use can be disturbed by rains, so that shelling becomes difficult. We only store temporarily, so that we do not have to sell straight to private buyers. The problem with them is that they don't give us a good price. It is a matter of giving you a little because you have got a problem. The warehouse receipt system has allowed me to buy some implements. As this is my first year, I am able

now to have some animals, and I have got a plough. At least I am at a certain stage. I used to grow a lot of cotton, because seeing the poor market used to hinder me from growing maize. But last year I was able to see something better than what I achieved from the cotton product, and I decided to start growing maize. My neighbours in the area and I have seen the benefits.



Assistant manager of  
Wangwa Warehouse at  
Chisamba:  
**Mr Mwansa Museba**

**W**e were one of the first people to try the ZACA warehouse system in Zambia. I think it has got a lot of advantages, especially for the small-scale farmers and the peasant farmers in the villages. Once they have receipted their maize at one of these certified warehouses, then they don't lose it through rains. People have very poor storage facilities in the villages. Once the maize is receipted, farmers are assured of a market. Even before the maize is sold, once it is receipted, they can use the receipt to get part of the proceeds from any commercial banker. When the maize first comes in, we weigh it to establish what the quantity is; it is then tested. Sometimes maize coming in might be infested with weevils, or the grain might be a very poor quality, or damaged through poor storage. We grade the maize into grades A, B and C. If it is really bad then we have to reject it. Once the farmers have receipted their maize, they can carry on growing for the following season, with the money that they have got from the bank. Previously, if a farmer fails to sell his produce, he would have no money to prepare and plant for the following

season's crop. Once the maize is brought here, we keep it until the farmer has found someone to buy it. The farmer is paid his money through ZACA. Once the maize is sold, the bank is paid off and the farmer is given the balance. Before the warehouses were here, most of the crop would go to waste once the rainy season was here, because of the poor storage facilities in the villages. Previously, if the farmer could not get a market, then his maize would go to waste. Now he doesn't have to worry about the market, as long as he can get his crop into a certified warehouse. People who are looking for maize will go the certified warehouses, and buy maize from there. This is a market actually for the peasant farmers. They go into farming knowing that whatever they produce will be sold. In the past, people would produce a crop, and perhaps half of it would go to waste when the rains came. The market trends tend to dictate themselves; but once the crop is bought here, farmers have a rough idea of what they will be able to sell their produce for, because it will be graded. A normal warehouse will not give a certificate which a financial institution will recognise, in a form which would enable borrowing. ZACA is backed by the financial institutions.

Small-scale farmer at  
Kanakantapa:  
**Mr John Joemwenga**

**M**y farm is twenty hectares. My main crop is maize. I do not use the warehouses directly, but I take my maize to the Kulya Nkona Co-op, as I am now a member. Before this, I would sell from the field straight to the market in town. This is an advantage to us because, whenever we get our grain, we will store it until the prices go up. What we used to do was sell the crop to whoever came to us to buy. Taking our crop to the market involves a lot of things: transport, for example. We were anxious, and all we

Small-scale farmer at  
Chongwe:  
**Mr Maybin Kangwa**

**T**he problem with keeping our maize in storage is the price. After harvesting, the owners of fertilizer and other input costs need their money. So I think that the idea of a loan would be a very good way of assisting the farmer. But the problem is that, once I have kept my maize in storage for six months, and I have to pay for it, how do I know that the price will not be lower than it was when I first started storing it? I know some farmers who have gone to millers looking for a market. According to the quality of maize, the quality and the standard that you keep it, if it's not proper quality, they will

wanted was money, so we would sell to anyone who wanted to buy. I do not know about the loans from banks. We give three-quarters of our produce to the warehouse, and sell the rest to brief-case buyers who come here; so that we have some immediate cash. We are exploited by this method. There are a lot of other things involved in our costs: for example labour, fertilizer. Those people do not consider such things; and when they come, they just want to buy at a lower price. If we take all the maize to the warehouse, we will starve. As we are waiting for the rest of the money from the warehouse, we use

money from what we sell immediately. We could get a loan through the co-op if we wanted. Loans are an option, we just don't know much about them. We never used to store anything. We were exploited, and received nothing. We have started using this system because we have seen that we can get something out of it, and we have started using it this year. There is a difference between then and now. We have seen the benefits and there is a light at the end of the tunnel, but we are learning. We also produce a better quality of maize now, it is not just farming and nothing else; we have more of a goal.



*Grain specimen*

say that they cannot take the maize, because it has weevils in it; you have to buy chemicals for it. Now, we peasant farmers cannot manage, because we don't have money to buy chemicals. From here it is too expensive. If we could find that money, then we would sell to them, because the price is good. The problem is that we don't know what the prices will be, and the people in the warehouses

do not know either. We peasant farmers have fear because we have no other resources. We just depend on one thing, maize, and if I only have one hundred bags, then that is my future. At least if I sell immediately, the price will be reasonable. We need to get that money before the rain comes, so that we plough in time. All I can say is that there is no other option.

*Mrs Rosemary Nachepembene, Soweto Market*

# Improving Food Safety of Informally Vended Foods in **Zambia**

14

By empowering people with the knowledge and technology to improve their own environments, the aim of this project has been to benefit small-scale, cooked food vendors operating in the markets of Lusaka in Zambia. Many vendors operate without guidelines, as managing partner Rodah Zulu explains: "I don't think that people are sensitised, what is it that they need to do? There should be some guide lines which people have to follow, for any business." This project has built upon two years of research. To increase the nutritional value of foods, to assist in the preparation of safe foods and to generate higher incomes, vendors have been trained to separate raw and cooked food, to use metal instead of plastic plates, amongst other practical applications of food safety. By making vending sites permanent, vendors are more able to look after and take responsibility for their premises. The project has adopted inclusive strategies of raising awareness. Improving co-ordination and participation at all levels has been a key component of the work, feeding practical and direct

information back into the research process.

Views collected from a project funded by the DFID Crop Post-Harvest Programme, and managed by the Natural Resources Institute (NRI) of the United Kingdom and the National Institute for Scientific and Industrial Research (NISIR) in Zambia, have been reflected in the following pages. Adopting a broader approach, the project also addresses problems such as unemployment and AIDS which are indirectly related to food safety. Sustainable and informative communication channels have been created by reaching the vendors at their own level, bringing them into the process of decision making. This kind of knowledge empowerment is sustainable because understanding has increased between different groups. Attitudes have changed dramatically, because in the past, Health Inspectors would receive abuse from vendors who feared being closed down unreasonably by the authorities. As Health Official Brighton Sinkala explains: "Even when we find that things are not right with the results, we still go back. This time, we go back to create a

remedy for the situation." Despite the formal protocol that Health Inspectors must be accompanied by a policeman, their role is understood, and information that they gather is shared.

Taking information and samples from vendors, without providing them with feedback, harbours mistrust and misunderstanding at all levels. Workshops have helped to train both vendors and Health Inspectors, and to improve the relationship between these two key groups. These events are purely informative; there are no material benefits for attending. This ensures that competition between vendors is not based on material benefits, but sustainable information. It also means that everyone attending is there for their own professional self-development. Vendors are also spreading information that they get from meetings and workshops. Lillian, who owns a restaurant in Soweto Market, explains that she is "going round to talk to those people who did not attend the workshop, so that those who did not attend are also learning."

Emphasis has been placed on involving

key policy makers in the research, so that its findings might be included in the national agenda. Sensitising the policy environment, and raising awareness about the problems that vendors face, have been woven into the project work from the start. New linkages formed with key policy members, especially with the respective Ministries, have given credibility to the project and its findings. Vendors have become more aware of their ability to influence change within their environment; and have expressed a strong interest in influencing other vendors and facilitating change in their community. Grace Zulu owns a restaurant in Buseko Market. "It is important that we tell those who were not at the workshop, so that they can change. If you have got the determination, then you can improve, even if you have no money."

To improve laboratory capacity and accuracy, new technology was provided under the project, including computers and cool-boxes for storing samples. Previously, the markets were not places where samples could be taken and analysed in depth, for

both social and technological reasons. New linkages between different groups of people have enabled workers to deal with problems before they occur, rather than having to deal with the consequences. Part of the problem has been communication. As Scientific Officer Alines Chakwiya comments: "How do you explain '*E.coli*' to a vendor?" By improving communication between Health Inspectors and vendors, understanding is paving progress.

Vendors have taken up suggestions and new information with great enthusiasm. But, as in any environment, there is only a certain amount that individuals can achieve. Real progress has been achieved in terms of awareness-raising and engaging the enthusiastic participation of the communities, but they still face the problem of trying to work hygienically in environments lacking basic infrastructure. Absence of running water, toilets, drains and waste removal are major constraints that need to be addressed if the full potential benefits of the research are to be realised.



# Interviews with vendors from **Zambia**

Managing Partner for Informally Vended Food Programme at the National Institute for Scientific and Industrial Research (NISIR), in Lusaka: **Dr Rodah Zulu**

**T**here have been a lot of complications in terms of livelihood, particularly with the HIV epidemic and unemployment. The project was trying to see if informally vended foods could be made a sustainable source of income. The environment in which people were trading was very unattractive. Although it is early to assess incomes, there have been significant improvements. I don't think that people are sensitised; what is it that they need to do? There should be some guidelines which people

have to follow, for any business. Before the project, there existed a relationship between members of the coalition partners. Now I can say that this relationship has been strengthened, especially between the Environmental Health Officers and the laboratory personnel. The laboratory staff went into the field to see how the samples were collected, and the Health Officers went to the labs to see how the analysis is being done. Vendors did not realise that they were actually killing people through their practices, and their handling of food. Each result from the laboratories was explained, and this helped vendors to understand the dangers. In the future, we want to

When it came to the vendors, it was more participatory. We used lots of pictures, to show scenarios, but from their own environment so that they could identify with them. We also allowed vendors to give their own ideas; for example, they have all picked their own uniforms. It came from them, and they have decided slowly to change.

continue working with the vendors. We feel that this interaction is necessary so that people can trust us in the future. We cannot just start and then stop activities. What is different about this project is that we have involved all critical players, from the policy maker, to the implementer, to the beneficiary. Here, the information was being diffused into the

community immediately, with no need for dissemination after the project is finished. There has been a great change in the way that the project has been implemented. We incorporated information in such a way that practical parts were compulsory. When it came to the vendors, it was more participatory. We used lots of pictures, to show scenarios, but from their

own environment so that they could identify with them. We also allowed vendors to give their own ideas; for example, they have all picked their own uniforms. It came from them, and they have decided slowly to change. Also, we could not train all of the vendors; but the way the information was passed to vendors, it has enabled them to train others.





Owner of Lillian's Restaurant

Restaurant vendor, Buseko market in Lusaka:  
Mrs Grace Zulu

I started cooking in the market in 1999. I used to work, but when I lost my job I sat down and started thinking if I could start cooking, and I decided to go into the cooking industry. We were very lucky this year, as we have had a workshop which I have benefited from very much. I was chosen as a representative to attend the workshop, and we learnt a lot of things, especially where food hygiene is concerned. We had a hand out book, and a video about food poisoning. I started changing things, and I went into town, bought some material and made uniforms; that was the first thing I did. We were also told to use metal plates, and although I had no money, I am trying bit by bit to change things. We also learnt that not covering food can spread disease;

and that wearing ornaments might cause food poisoning if they fall into food. I consult the manual if I need to remember something, and I can show others, like my neighbours. They are getting the message. It is important that we tell those who were not at the workshop, so that they can change. If you have got the determination, then you can change, even if you have no money. My customers are appreciating these changes, and they congratulate me because they are noticing. In the future, I would like to see running water. We have one tap in the market and it is very far. In my case, sometimes I have difficulty getting boys to fetch me water, and they charge a lot of money, especially when you consider that the market we sell in, food is very cheap.

Owner of Lillian's Restaurant, Soweto marketing Lusaka

I own my restaurant, which I have been running for eight years. I have about six workers helping me together with my young sister. I decided to set up my business because I needed to provide for my children, after studying business at school. I will not turn my children out onto the street, so I had

to provide for them. I went to the workshop to learn more, so that I can learn what to do with my customers. They taught us a lot of things, especially about hygiene. In our market, there are things which we have to deal with; and one of them is bad hygiene. Things that we did not know, we were taught at the workshop. We learnt a lot of things that we did not know before, and I think that we have

changed. It is not just that I am telling people that I know. I am going round to talk to those people who did not attend the workshop, so that those who did not attend are also learning. We used to lose a lot of customers. We saw some pictures which taught us that hygiene was important, by comparing those things in the pictures to how we are supposed to prepare and cook our

food. It is now our duty to teach our friends, so that they can change also. Before, we were

just doing things minus knowing. We need more workshops in the future.

It is not just that I am telling people that I know. I am going round to talk to those people who did not attend the workshop, so that those who did not attend are also learning.



*Vendor at Soweto Market*





Environmental Health Officer,  
Ministry of Health, Lusaka:  
**Mr Brighton Sinkala**

**M**y main role is to collect samples from the market, providing scientific information to the vendors, with the knowledge that they have to improve the safety of their food. I am the contact person from the vendor to the person working in the laboratory. We tell vendors about personal hygiene, the hygiene of the premises, food hygiene; we also talk about contamination and how it can be prevented. Other innovations in place are shown in the way that vendors serve their customers. If they have been using a dish for washing their hands,

since there is no running water in the markets, we provide them with buckets with a tap in the bottom, which enhances food safety. Before this project was implemented, there were workshops, but they did not emphasise practice. This one goes right back to the vendor, so that he can benefit from it. Together the vendors would help to develop the interventions to curb the situation. I have not seen this before. Initially, the vendors' perception was: "Here are people coming to victimise us". We now come up as partners in development with the vendors. There has been an attitude change. If I go to the market, I will be welcomed with less protocol. Before they

would not allow us even to take a picture, now they pose for pictures! Even when we find that things are not alright with the results, we still go back. In the past, we would go back to close their premises, this time we went back to create a remedy for the situation. This has created appreciation for the project, for vendors to accept us. The fruits are being seen, as there is a way that they can market their food stores, through the health packages that we have been providing. We have also produced manuals and posters, which are more user-friendly and longer lasting. Policy makers have been in agreement with our proposals. We are trying to pass by-laws,

because of some remarkable improvements, to enable vendors to obtain licences. Some vendors have actually gone to the extent of changing the structures of their restaurants. They have bought water tanks so that customers can wash their hands. There is a need to motivate vendors, by saying that we appreciate their commitment to this programme by licensing them. I think that policy makers are now in a key position to do something. **Some markets, you will find have over four hundred food vendors, and yet they have no running water.** They have one stand pipe, from which all of them have to draw. The same is true of

refuse collection, and the toilets, with such an erratic supply of water. That is the responsibility of the authorities. People are trying to clean their premises, the vendors are doing their very best to live up to the knowledge that they have perceived. When we have taken surface swabs and found germs, we have gone back after the workshops, and found that vendors have bought detergents and minimised the danger. The project has reached vendors on the level that they can adjust things around them, and they do. In as far as there is an exchange of information, vendors see the difference. They even ask: "What about those results?" They appreciate what we are doing.

*Vendor at Soweto Market*



Health Inspector, Lusaka  
City Council:  
**Mr Chabala Chanda**

**A** key problems that we face with vendors in the markets, is that we are not able to control their operations, as we do other restaurants, with for example minimum standards. With the coming of the project, we have realised that we can set up certain minimum standards, which vendors can comply with. Selected marketers were trained in food and personal hygiene, and also storage. Since these vendors are small-scale, we promote covering food from flies, and some managed to get

fridges. Initially, vendors would just display their products out in the open, so that customers could see them. We pointed out that vendors could still let customers see their food, by covering it with transparent covering, while protecting the food from contamination. Some entrepreneurs have come up with new ideas, such as a water drum with a tap in the bottom of it, which we have promoted, because the cost is quite affordable. Vendors simply did not know about certain diseases, and information has not been passed in this way before, when it is brought down to their

level, and they can understand the reasons for contamination. The vendors were shown the procedure of what Health Inspectors do with the samples collected, and why. This has changed their attitudes of what we are here to do as public Health Inspectors, so that they understand that it doesn't just stop at them. It has a ripple effect to the health of the public as well. You can see a marked difference between those who have attended the workshops and those who have not. Their restaurants are cleaner, they wear uniforms, and they know how to handle their food and water more safely.

Restaurant owner at  
Mtendere market in  
Lusaka:

**Mr George Phiri**

I own this restaurant, which I have been running for one year. I operate together with my wife. We attended a workshop, where we were trained in food safety for the vendors. There is a big difference now. I have become knowledgeable of things which I should or should not do to improve my restaurant. For example, I did not know that plastic dishes were so difficult to clean, and that we must get rid of them. Even before the workshops, we have been working together with Health Inspectors to help improve on hygiene and conditions in the market. The visits from Inspectors have helped us to use our small places properly and to keep them safe. With more visits and information, I think that the future is bright for improvements. We did not notice what we had to change before. With the extra money that I have made, I buy other things to improve the restaurant, because if I don't do that then improvement will not be gradual. Now that I have a little money spare, I can afford clothes and shoes for the children, and their schooling.

Restaurant owner at  
Soweto market in Lusaka:  
**Mrs Florence Mitimangi:**

I started my restaurant in 1996. The extra money that I have got from my business, I use to help my family at home. I have got six children, and I do not stay with my husband, who lives some hours away. I must provide for them: and after I left school, I decided to go into business. I had no choice: and it was my responsibility to look after my children, and I also have to look after four other orphans as well. I have started learning a lot from the project. They came around to ask us if we would join the workshop, and I attended the one in Lusaka. I learnt that running water is better for people. Before the project, we used to use the same water for washing and cooking. We get the water from the taps in the city market, as we have no taps here. The water is very far away: but when it is here, we boil and give it to customers to use before and after eating. We also have no toilets; there is a big distance to go. Because of that, we sometimes

lose customers. We would like more work shops, so that we can learn more, and improve our business. As we are talking now, we have seen a big change. You can see that the place is clean now. We know how to separate and store food, which we put in the fridge. We used to expose our food so that customers can see what they are going to buy. They told us to keep the food kept away. When the customer comes, they choose from the counter what they want. We have explained these things to our customers, and they have also learnt. They do understand, and they do follow. My customers know that this is a clean place, and even when they learn that the prices are higher, they do not complain. We also tell other vendors about this. We went around to thirteen places, and we told our friends about these practices. We explained to them good and bad practices. I want to learn more about the things which I don't know. We need to learn a lot. As you know, we can only start on the ground. We can see the differences, and we have worked our way up in stages. I think that I am even becoming fat!

Restaurant owner at  
Mtendere market in Lusaka:  
**Mrs Veronica Tembo**

I am the owner of this restaurant. I have been here for almost six years. Over the six years, I

have noticed some problems. The prices that we sell at are very low, and I find it difficult to make a profit. People in these markets do not have a lot of money to spend. But over the years there



*Mrs Florence Mitimangi, Soweto Market*

Customers at Grace Zulu's restaurant in Buseko market in Lusaka: **Mr Albert Phiri, Mr Kenneth Chuya, Mr James Kalenga and Mr Jeff Banda**

It is a clean restaurant, with a lot of respect from the owner. It is different from other restaurants. Even when we have eaten, our appetites are still there. We should continue this type of cooking, and we will be coming every day!

have been some positive changes. Before, when I started this place, I did not have so many customers. The secret we have now is how to look after our customers. Now we are doing fine. I was at

the workshop, and I have learnt how to improve our hygiene most especially. We learnt how to use chlorine to clean water, and how to cover food, and our food is just more appetizing.



Ministry of Health in  
Lusaka:  
**Mrs Christabel Malijani**

**W**e find that people have to look for anything make – shift, and we have been faced with the problem of operating under sanitary conditions. At the moment, it is too early to say that infrastructure has improved. But the knowledge that has been imparted has changed something. People are aware of food contamination, more or less poison to the consumer. They are aware of that now, and they are aware of what they need to do in the future. Some of them used to have containers for washing the same plates in the same water for the whole day. From my own observation, there are changes. Vendors are now able to say: "When I am in this environment, I should do this or that". These

workshops are the first of their kind. It was not just a question of teaching vendors. There was the lab component, whereby people were shown the amount of germs before and after washing their hands. You don't need a lot of money to provide a container with a tap. I am sure this idea has been passed to others in the market. Some vendors had the knowledge as they went to school, but they did not know the direction in which to practically undertake it. They needed guidance on how to move from the first step. Now they know how to move, within their own means. Do you need any money to wash your hands? We created relationships and communication which were not there before. The police-man type of relationship has disappeared, and vendors even complain that we have not been to see them!

*Street Vendore at Mtendere Market*



Restaurant owner at  
Mtendere market in  
Lusaka:  
**Mrs Veronica Tembo**

**I** have been running my business for eight years. I failed my grade nine, and I have a child. My husband left me, and I sat down to think of my child and my parents. Instead of troubling my parents, I started my business just using coins! Now I have four children and a husband, and the restaurant helped me to feed my child, who is now doing

grade eleven at school. The capital of starting a different type of business is very high, but a restaurant is easy to start up. I have noticed some very big changes since the project and other support has started. On my side, since the training, business is OK. There is an improvement in my cooking, which people are noticing. I want to learn more, I know that I can change my position through learning. I have been making new uniforms,

but we can't do it fast because it means money. We have promised to make changes bit by bit. Now, we are able to keep food safer, and we have been trying to find a way around the water problem, as we only have one tap. Without water, there is nothing that we can do hygienically; but if we sort this out then it will be easier. I have taught my workers what I have learnt at the workshop. I am also making other changes, and I have bought new plates.

I want to learn more, I know that I can change my position through learning. I have been making new uniforms, but we can't do it fast because it means money.

Scientific Officer, National  
Institute for Scientific and  
Industrial Research in Lusaka:  
**Dr Alines Chakwiya**

**M**y part in this project is mainly doing micro-analysis. I think that the main problem that vendors face is that they can only contribute with what their environment is like in the markets. The infrastructure in the market is a problem. In most cases the vendors don't have water, and most of what they do use is recycled. This is reflected in the samples that we get. I attended the workshop training led by the project. We saw

that most of them appreciated what they were told. Vendors had no knowledge of the kind of contamination that they were causing due to their habits. From that time, they very much appreciate what they have learnt, why they can do one thing and not another. I think that pictures were the most effective method of transferring information in the workshops. There was the problem of translating diseases. How do you explain *E.Coli* to a vendor? All you say is that there are germs there, although they are invisible, they are contagious. We showed them pictures, and they

got it. They knew about diseases associated with germs, but there was no knowledge about habits associated with those diseases. Mostly, contamination is from raw to cooked food. The project has greatly affected the behaviour and attitudes of vendors, because even as you go round the markets, vendors are trying to introduce running water. They know the reasons why, and they are doing it. They now wear uniforms, and rubbish is properly collected before the end of the day. For the future, it would be good to see this project integrated into national policy.

Health Co-ordinator,  
Soweto market in Lusaka:  
**Mr Dickens Chileshe**

**M**y role is teaching health education in food hygiene and food cleanliness. Our main target has been those who prepare cooked food. Of late, there have been a range of problems, ranging from poor storage of raw and cooked food, uncovered food, and the poor drainage

systems. There were no uniforms, and anyone would participate in the cooking. We introduced uniforms in order to identify those who were cooking, and to make sure that those selling have clean clothing. I think that we have learnt a lot from this programme that we did not know before. Especially things like providing running water, preparing clean surfaces, how to clean the working

environment. We inspect the premises every day. There has been a tremendous improvement since the workshop which we have noticed. A clean environment will attract more customers. Our vendors are confessing that their businesses have improved. For the future, we are looking forward to improving waste disposal and sewage facilities, and also to extending services to others.

Cook in Lillian's  
restaurant, Soweto  
Market in Lusaka:  
**Miss Ruth Phiri**

**I** did not go to the workshop, but I have been taught to change water frequently by those who did. I have also learnt to clean buckets where we leave water for customers, and to use clean uniforms. This is my first job in the

food industry. I have been here for three months, and I think that there is a very big difference between here and other places; you can see because it is clean. I know that customers feel at home here, and I am looking forward to the time when everyone can be trained, because I am unhappy when not everyone can work to these standards.

For the future, we are looking forward to improving waste disposal and sewage facilities, and also to extending services to others.



*Traditional maize dish*

Aunt Rose's Restaurant,  
Soweto Market in Lusaka:  
**Mrs Rosemary  
Nachepembene**

**I** have been running this restaurant for the past ten years, since I have retired. I started because I can make a better living this way; when you are busy, your mind is happy. I am also very busy, because I also operate during the night. First of all, I started looking for a place, and bit by bit I have been trying to improve it. I did attend the workshop, and it

was very helpful, but we need to make our places better. My attitude has really changed after the workshop, as I saw that we were really behind. In the future, I think that the workshops and Health Inspectors can help us, and make our businesses a better place. The workshop has helped me to be enlightened. I know now how to look after my customers, and to keep food, and my customers are even telling me that they have noticed a difference.

Restaurant owner at  
Soweto market in Lusaka:  
**Mrs Brenda Mukamba**

**I** have been running this restaurant for one year and six months. I work for myself, but I have three helpers. I decided to set up a restaurant, because it is a fast business, and people need to eat every day. I have customers from all over. I used to work in a

restaurant, and so I decided to set this up when I left. I went to the workshop, and we learnt a lot of things. I have had to improve on cleanliness, and learning to separate fish and chicken is important to prevent diseases. We also learnt different storage methods. Before, when washing plates, we would not use two bowls for clean and

dirty water. Now we know that we have to use one for drinking, and another for washing. Now we wash vegetables in separate water from that which we use to drink. I put chlorine, which will kill germs, in the water that I use. We learnt a lot in the workshop, and we are hoping to have another one. I also have a manual on personal hygiene.



*Veronica Tembo, Soweto Market*



*Cassava farmer near Accro*

# The Sustainable Uptake of Cassava as an Industrial Commodity in **Ghana**



Traditionally in Ghana, cassava is grown as an intercrop to provide food security for small-scale farmers. It can survive very harsh conditions such as drought, which is important when the majority of farmers in Ghana rely upon rain fed and not irrigation methods of watering their crop. After harvesting, it is sun dried or smoked, and sold for domestic consumption in the form of *kokonte*. But there is a surplus of this product in local markets. Cassava is viewed as a crop of low value; at times when production is high, it often cannot be sold. Fresh cassava only lasts for a couple of days, and if it cannot be sold then it goes bad or remains un-harvested as an in-ground surplus.

*Kokonte* is known as a poor man's food, and literally means that you must face the wall so that no one can see what you are eating. Building upon seven years of previous research funded by the Crop Post-Harvest Programme, the research team managed by the Natural Resources Institute and the Food Resources Institute in Ghana and now expanded to include others, have discovered that cassava actually has a huge amount of potential. It can be converted into different products

which can be sold for industrial uses. It can be milled into flour and used in a variety of markets.

By processing cassava into High Quality Cassava Flour (HQCF), it can be used for example, in baking products. In order to provide a ready market for potential users of the flour, and to prevent disappointment and distrust of the project, bakers were shown cakes made from cassava before they were asked to try it for themselves. Mrs Gladys Wilson attended workshops led by the research project, and now uses cassava flour in her baking. She explains: "If you want to use cassava flour, you have to put in more ingredients, but it is cheaper. There is a ready market for this flour. In some towns, people have never heard of it before, and they are very excited about it". Using cassava flour as a substitute for wheat flour is improving profit margins for bakers by as much as one hundred and seven percent.

The private sector has collaborated with the research team to improve methods of cassava processing for specific end users. Three medium-scale processing companies now source their supply of cassava from over one thousand farmers in the Brong Ahafo and

Greater Accra Regions. Introducing cassava products to these industries is providing small-scale farmers with markets for a crop which was previously going to waste. Sourcing cassava from local communities, companies such as Amasa Agro-Processing Ltd, Feed and Flour Ltd and Afrimart Ltd are providing a reliable source of income for farmers previously worried about where they could sell their produce.

It has been important to sensitise both farmers and industrial end users about the potential markets for cassava flour. To ensure that the uptake of cassava in industry is sustainable, end users need a guarantee of regular supply. Farmers need to know that new varieties of cassava they grow will be sold. Previously, traditional methods of preparing cassava were not providing a reliable market. Due to lack of storage, these traditional methods of preparing cassava meant that it would go bad in a matter of days.

Amanfro community explained: "According to our system, when the rains are here we normally encounter problems with marketing. In the past, there was often too much cassava, because everybody was harvesting. Whatever price was being offered,

we would have to take it. Now we have a standard price for what we produce through this new process." HQCF can be stored over years, provided conditions are favourable, providing income on a regular basis.

Mr. Kwasi Oware, Director of Amasa Agro Processing, has promoted the project as a way of mending broken links between farmers and end users. "My vision is the promotion of a linkage from the farm, to the factory, to the market." Project manager Dr Nanam Dziedzoave is pleased with the progress: "The harmony that exists between the end users, the suppliers, the small-scale processors has achieved its aim. We advertise, and liaise with extension workers who have constant contact with farmers. Fortunately now cassava is becoming a cash crop, where before it was seen as a poor man's food."

On an industrial scale, the flour can be used in plywood production as a glue-extender, and as a base for paperboard adhesive. These markets were previously supplied with imported wheat flour and starch-based adhesives. Research trials were carried out in several factories to assess the specific requirements for the end user, and to modify

the flour accordingly. Western Veneer Plywood factory is the longest and most regular end user of HQCF. Extensive research and participation with Western Veneer in testing samples and improving qualities in the flour, such as viscosity, have created opportunities for cassava flour as an industrial commodity. The factory is now using one hundred percent cassava flour, and no longer requires wheat flour as a raw material.

Through this project, alternative markets for cassava products are continuously being developed. A new method of converting cassava into glucose syrup has been developed for use in confectionary, and industrial alcohol. In the future, market linkages need to be strengthened to give small-scale farmers easier and faster access to ready markets. With continuing sensitisation and communication, the future of cassava looks bright. Mr. Kwasi Oware comments: "The saying is that if you eat *kokonte*, you must face the wall. Through research, we have come up with a product that is acceptable to the middle-income group. No one will face the wall again. We are going to face the people!"

# Interviews conducted with stakeholders in **Ghana**

Chief of Kokofu  
Community:  
**Mr George Kwojo**

**N**ow we can use extra money to pay for the children's school fees. Formerly, we were using *kokonte*, and it could not last. The information that we got was that we realised we can make cassava flour. Some people came and said that they could provide us with a machine so that we could turn our cassava

into flour, and improve it. No one was buying the *kokonte*, so we liked to change the money into cassava flour, which we are doing now. The cassava flour is more beneficial than *kokonte*. We can load a lot of sacks of *kokonte*, but no one will come for it. With cassava, even if we make a small sack, someone will come for it, and we will get our money. We do not have an idea about searching for a market. I know that by and by,

this will help the village. If we do the work and get the buyers, we can send our children to school, and we can progress. This has started happening now. If we are getting money, then we are happy. We can see the benefits. Now, if we plant cassava, we know that people will come and buy it. Our group all have belief and trust that this work will be progressive. We will have support, and this is progressive to us.

Farmer at Kokofu:  
**Mrs Mary Asaouaa**

**I** have about two acres of cassava farm. Cassava is an intercrop of the yam that I grow, and it gives me better income. At first, the cassava prices were very bad. Now they are better. One thing is that yam is our staple food here. Cassava is always an intercrop over here, as it does not need any input throughout the year. In the past, we did not know of a place where we could sell cassava. At the moment, it has been used in different processes, and there is always a market for what we have. I have got five children, who are learning in Atebubu. I have got labourers who help me to harvest; and when the land is hard, labour is a little expensive. The money

that I get from the cassava flour will help to pay for this, and this does not worry me. In the past this would be a worry, because no one would buy it, and we would not have money to pay for such things. The problem that we have now is transport, as we currently use a bicycle. We have money as a community, but it is not enough to buy a truck. I have lived here for more than ten years. Before, when I came to the village, people were making cassava chips; there was no money and the community was not happy about the future because we had an excess of cassava. When we first heard of the project, we had a doubt. We wondered: 'How can this help us?' But we saw that access was opened, and we have hope for the future.

Farmer at Kokofu: **Mr Kojo Tekyi**

**I** am a farmer. This year, my cassava farm is three acres. I also grow sweet potato. If I compare these two things, I realise that the cassava is moving faster: this year alone I have made more from my cassava. The difference that I have found is that, from the money that I have made, I have been able to make some changes. If I can get more money, then I can send my children to school.





*Cassava after harvest at Amasa Agro-processing Company*

Agricultural Extension Officer at Kokofu:  
**Mr Peter Fiashidey**

**M**y role is to supervise and direct the community in carrying out the correct process. The process involves some technicalities, and I am the technical person who guides the community to produce the cassava flour and glucose syrup. We have a room which was built specifically to produce the glucose syrup. We were told about the process from the Food Research Institute. When we first started producing the flour and syrup, we perceived that fungus was growing on it. We told the Institute; they did some more research, and now we have a process that we can use. We were taught in a group. Farmers don't understand the technicalities, and I guide them. At first, farmers wondered how they could produce glucose syrup from cassava, and they were not convinced from the start. But, later on,

they have seen that the process works, and that it can be converted, and they are now eager to learn. We have a lot of cassava here, and rice that is used to produce glucose syrup, grown by the farmers themselves. This is the first project of this kind in this area. The surplus of cassava has now had added value; and the money that farmers get has been increased, and improved the financial situation here. We went to a workshop in Accra, and we saw all of the different uses for cassava. We have seen that those new markets can give us opportunities. The only thing is that those companies are far away. If they can open another small branch near by, that will open up the cassava flour in this area. Our flour is collected from here, but the periods are not regular because of the distance.

Farmers at Kokofu:  
**Mrs Afia Mansa  
and Mrs Mary  
Owusuya**

**W**e grow yam and cassava. We grow one acre each of cassava. I have nine children, and Mary has four children and also some grand-children. Our children go to school, and some of them are in town, learning a trade like tailoring and

hairdressing. It is the cassava that is helping us to support them. If the trade can go that little bit higher, we might even be able to send them to university. Those making bread in town will also come and buy our flour, and this has increased our income. During the past years, before we produced the flour, there would come a time when no one would buy, and all

the cassava would go to waste. Now we can send it to a bigger market in Accra. It will be taken to Accra; maybe in the future, companies will be interested in this even more. First, we doubted the ideas behind this new method of cassava production. But we have seen business grow. We thought that we would be left with no cassava!

First we doubted the ideas behind this new method of cassava production. But we have seen business grow. We thought that we would be left with no cassava!"



Project Manager at the Food Research Institute, Ghana:  
**Dr Nanam Tay Dziedzoave**

A lot of noise has been made about the potential of cassava, but it is not matched by an aggressive search and sensitisation of the markets. There were no industries that use cassava as a raw material, and the concern of the project was that industries use large quantities of material. If cassava could be converted into an industrial raw material, then the level of

utilization would increase tremendously, and we would have a bigger market. Through workshops, we have generated interest in the potentials of cassava. We looked at developing the market potential and fine-tuning the development of the flour to be able to meet the requirements of industry. We also looked at new markets; for example, industrial alcohol and glucose syrup. We sensitised the industrial stakeholders, so that they would realise the value of this work. To minimise

scepticism, we did not just go to communities like Watro to ask them to produce flour. We went first to the bakers in Atebubu, and trained them in the utilisation of the cassava flour. When we went to Watro, all that we had to tell them was: 'Look, the bakers in Atebubu are already using that type of flour, and if you produce this quantity every month, we will pay you and give it to those bakers.' We brought the Watro community and the Bakers' Association together, and let them

negotiate the supply of the flour. We then stopped mediating between the two, and let the process run by itself. Our approach has been to take the private sector partners on board, looking for them, promoting the idea to them, letting them buy the idea, and walking along with them in developing the business of supplying. What has excited us about the project has been the coalition approach, the idea that everyone is a part of what you are doing. They own the thing

with you, and they want it to succeed as much as you do. Now there are others who are interested in promoting the products that we have got from cassava, and to take the work forward we have formed a coalition 'ABDEG', the Agri-Business Development Group. We have found working with different industries a very good experience as a result of the project. This is what we are looking towards in the future, and we know that it will be full of challenges!

Processing Cassavo at Watro



Farmer at Kokofu:  
**Isac Antwi**

I am a farmer in Kokofu community. The crops that I grow are yam, cassava and maize. Yam is the main crop, as food. It is the main staple food here, and there is no

farmer here who would not grow yam. Everybody also grows cassava, because it lasts throughout the year. My wife and I are farmers, and I have eight children. Labour is easily available here. Over the past years, I think that cassava was

not farmed in a serious way. Now that we have formed a group, I think that we are more serious, as we have seen that cassava can help. With the coming of the project and more information, we have discovered a way of getting more income.

Farmer at Kokofu:  
**Hannah Bochy**

I harvest cassava and yam as an intercrop, as I change the two during the year. The cassava has been beneficial to us. In the past, we were just farming and we did not know where we would sell it. Now, we process

the cassava into the flour, and people will buy it. This can help me to achieve more income. If I do the work to make cassava flour, then I can look after my children better. I have six children: two girls and four boys. Through this new scheme, we have support. I have got assurance that, by and

by through this work, we can see some benefits in the future. Formerly with the *kokonte*, it would be here for a good six months, and nobody would come for it. With the cassava flour, it will be transported and we receive money. Although we wait, there is no problem with this.

Farmer at Kokofu:  
**Mr James Okyere**

I am a farmer, and I grow cassava and yam. I do not have a good price for the cassava. With yam, the price is better. I have heard about the group,

but I have not joined one. I think that if I join, then I will have more income. At the moment I have no support, and I am finding my work difficult. When I am alone, I cannot do very much, and I must have a

lot of help to get a little financially. There is often nowhere I can sell the cassava, and I often end up having to get rid of it. From the farm, I bring it to Kokofu town where people will buy it from other towns, but they are not regular.

Farmer at Watro:  
**Mr Michael Boateng**

I am in control of the grater and the press. After the women have done the peeling, then I will remove the excess water and grate the cassava. I have just joined the project and I have been working in Watro community. I also harvest maize, ground nuts and other vegetables. There is some difference in marketing with these products. The cassava flour provides a constant price for me, because it is weighed. The others are not: sometimes when I get to the market with my other crops, then the price will be different. It is the quality that determines the price, as compared to other crops; and it also has many uses. The other uses that I know of are

for plywood and in the bakeries. Initially, we could not find a place to sell the cassava, and we could not store it. We would often use the surplus to rear animals. Now we know that there are many uses for it, I feel that if we grow cassava, then we can sell it. Initially, many people stopped farming cassava, because what we had to pay for labour would not even cover the costs of farming it. After processing to flour, I can get more income, and now we now have an interest in it. I don't think we will process it locally now, as we have no market for that. If things go well, it is better to continue with the cassava. Initially, we did not know about this method of processing, and we had no machines.

Farmer at Watro:  
**Mr Martin Aduko**

I am an extension worker. I work with twenty-one communities. I give technical advice to farmers, and inform them of the processing method. I have also contacted thirteen other communities who are not yet a part of the project, but their response is very encouraging. There is one problem which is that of equipment. I am in the process of finding more official assistance to help with this problem. The aim of the project is to include as many farmers as possible in this process. We want to have better markets for cassava. For some of the farming communities, there is quite a distance from the community to the town. How to get the

produce to the marketing centre is always a problem, and the road networks are not good. I would say that, through this work, we have been able to link farmers to the marketing centres where farmers produce. The marketing agencies now come directly to these areas to buy and pay for cassava. Most of the farmers are not well-educated as to how to market their produce. They farm and harvest at the same time, which brings a low market. If they do it in phases, and produce in phases, then the market will be much better. Previously, the market women could see that there was an excess of cassava produce, and they would dictate the prices. They would offer a low price. A lot of the farming communities within the pilot areas,

even though they are not yet a part of the project, will bring their cassava to have it processed here. As an extension worker, I have been facing problems. When I go and speak to communities, I often face scepticism from farmers. This new method is quite tedious. To come all the way here and process the cassava means that most of your farming duties at home will be left. But with a little education and confidence, people have seen that this method can make a difference. There is now a ready market, but production costs are high. I think that the attitude towards cassava has been drastically changed since the start of the project. When people are dedicated, as they are becoming, these problems can be overcome.

*Drying Cassava for processing*



Ministry of Food and  
Agriculture, Brong Ahafo  
Region:

**Mr Lawrence Kofi Krampa**

The aim of the project was to identify regions which had an excess of cassava. Brong Ahafo is the food basket of the country. There was excess cassava in store, and the farmers were unable to get a market for it. The prices were so low because people were not buying it. Production was one-sided; only producing *kokonte* which is a major food group. We introduced alternative

markets for the cassava, so that it could be used for industrial use, as well as for bakeries and confectionary. We had to make sure that farmers were organised into groups, and trained how to produce HQCF so that they could sell it. After an initial survey, we introduced the process to farmers, and gave them the objective of the project. They decided to join it because they knew that it would be a good opportunity to market their cassava. Before the project, there were co-operatives, but none concerning cassava

production specifically. Group formation was an early stage of the process, as we had to choose pilot villages. Watro was one of the pilot villages that we chose. We were trying to address the problem of access to the market, so we decided to use a collaborative approach involving the private sector. By the inclusion of the private sector, we have direct access to the market. All that is produced here is sent to Accra. There is a ready market for the flour any time that it is produced. Initially, people would not buy the cassava.



Farmer at Watro:  
Mrs Serwaa Yaa

I farm my cassava at Watro. I grow it all year round. I also grow ground nuts and yam. Initially, there was not a good market for cassava. When I harvested it, I had to take it to the market. If I did not sell it, then I would have to bring it back to the house to store it. It used to go rotten. Now, I can send it to be processed, and I can get my product. I can now sell it here rather than transporting it, and I can have a ready market. I have two acres of cassava field.

Farmer at Watro:  
Mrs Juliana Santawa

I am a farmer. I have six children, four girls and two boys. When I farm, I find it difficult to pay my labourers. In the past, we used a local method of smoking the cassava into *kokonte*. Or we would sell it fresh at the market, and we would not really get a reasonable price for it. Initially, the cost of cassava was meagre, and now it is better. Within the community, I heard about the processing group. In fact, my mother is a member. I am not a member, and if I harvest my cassava I will sell it to the group to process it, as I have no power to process it on my own.

Farmer at Watro:  
Mrs Victoria Jyambea

I live in Watro. I have eight children, seven girls and only one boy. I am a farmer and I also process. I was born and bred here. Initially, when I started growing cassava, after harvesting there was no market. There was always too much *kokonte* at the market, and we could only use one method of processing it the traditional way, by smoking it. After taking it to the market, we often had to bring it back home again, and weevils would take over the whole lot. The benefit that I have from the cassava flour is that I have enough money to pay for school fees, and also to re-invest into the next season's farming. I also use part of the money to cater for the rest of the family. When I was not a member of the processing group, I could not cater for my children's school fees. I also had to take them out of school because I could not buy school books. I can now boast

Farmer at Watro:  
Mr Stephen Kabeaa

I am a farmer in Watro and I have four children. The help which I get from the processing is that I have been able to send my children to school. People come and buy my product, the market is

that my children are progressing in school, and my children have three square meals. At the age of twelve I started growing cassava, and we even used to give excess cassava to the animals. Now we just need more efficient equipment so that I can process more, because I have seen that the market has been linked, and I have a ready market. Previously, we would feel stressed because of an inability to sell the cassava, and we were hard up. We now feel more relieved that we will be able to find money. We did doubt at first whether this would work; but with encouragement we tried it and we have seen that there is some benefit in it. We doubted because this method is very tedious compared to the traditional method of processing. But we saw benefit, because this way we have a ready market. We have now started advertising for new farmers to join the community. When there are more of us, the work will be faster.

available. Cassava flour is a 'cash and carry' market. In the past, women would buy cassava from us on credit. We did not know them, and if they were dishonest, then we would never see the money again! I was handicapped, and I had no money on me. At least now I know



Child carrying cassava in Amanfro near Accro

Farmer from outside Kumasi: Mr Kweku Owusu

I am a farmer, and I live near Kumasi. I process cassava in a traditional method by smoking it, and then we fill it into bags. **Market women come and dictate a price to me, and I have no power to price it myself. When she gives me a price, that is final and I cannot bargain.** If we refuse, we know that no one else will come and we cannot store it. I come to Watro often, and that is how I heard about the new process of producing cassava. Other people from my community have also expressed interest, and we are waiting to hear more so that we can get some machines. We have already started forming a group.

that I will get my money. We used to use the local method of cassava production. This method is much faster and more reliable. From about four years back until now, I think there has been an improvement in the prices that I am able to get. Other people often come to watch what we

do, but we have to expand what we can do before we can recruit others. What I think can be improved is that we have storage facilities. From where I harvest my cassava to the community is a very long way. I think some transport would be very beneficial.



Leader of Watro  
Community:  
**Mr Joseph Obiri Yuboah**

I am a farmer producing yam, ground nuts and cassava. I have been farming for twenty years in Watro community. Yam is my main crop. We cannot use the yams through the whole year. When yam is short, we have cassava as a backup, which is why I plant it. At first, I would sell fresh cassava for *fufu*, and dry for *kokonte*. There is a time when both of these products will not sell. With the cassava flour, we can get a market for it all the time. I would leave my cassava in the field for a spell of time, because I can't waste my time harvesting if I know that I will not sell it. Now we can store the

flour until a market comes. We can see that now we can use cassava at any time, and it will not go to waste. If you dry the cassava well, then we can even store it for years. I even keep it in my bedroom! We treat it well so that it does not get destroyed. We were taught how to store the flour by the research project. If we have cassava as our main crop, then the future is good, because it is doing more things than the other crops that we have. A seminar that we went to showed us that this flour can be used for plywood, biscuits, and other things. With yams, it is only a small market that we have. Higher knowledge is being shown with cassava, and if we put our mind to it, then the future will be better.

*Bakers' Association at Atebubu*



Director of Feed and Flour  
Limited:  
**Mr David Pessey**

We provide the drying mats. The idea of the covers for the drying process we explored on another project with polythene sheets, but they only lasted a maximum of two weeks. Any other material that is clear enough to allow the sun through is too expensive. Using these mats allows us to add one or two drying mats at a time, which is a manageable cost. We can also involve the community, bringing them into the processing chain, creating jobs. Previously farmers

Atebubu Bakers'  
Association:  
**Mrs Gladys Wilson**

I am a baker. We are now using cassava flour in our products, and I can say that people are getting very excited about using cassava flour. I started using it because I was intrigued by using such a local product in my baking. People come to ask me how they can use it. We were given some training, and inputs so that we could start using it on our own. Gradually we improved on it, and there are now fifteen to twenty of us using cassava flour in our baking. I have been training others to use the flour, and anyone who is interested can come along to us. Some of our products are fifty percent cassava flour, and some

would not do this activity. They would grow cassava and sell it. Now they are processing it into at least grits. The farmers have requested that milling takes place in the morning. Traditionally it happens in the evening. There is no problem with getting up early here- it is a sign of a good citizen. But millers need to be guaranteed a regular supply before they will agree to work in the morning and in the afternoon. The problem is having a mill at the times when we require it, and having presses so that we have everything out on the mats before nine. In the past, we would harvest, peel and grate, then dry the cake

are one hundred percent. With the cassava flour, you have to put in more ingredients to make products of a high standard. If you want to use cassava, you put in more ingredients, but you get your returns at the end because it is cheaper. Most people want to go back to the normal way of baking. There is a ready market for this flour; we have been offered more of a market. In some towns, people have never heard of this before. They come to see you preparing it and they get excited. I have also been going outside to hold workshops, so that people can know about it. At first, we were only working in Atebubu. Now we work in other places as well. If you can make bread and cakes out of cassava, then it is a real

from the wet state and mill in the afternoon. But we have had problems with selling this, because the quality is not good. The community have agreed to mill in the morning, and they have asked that we provide them with a mill. We are in the process of doing this. We are at the beginning of a relationship. The first step is the buying. We can move on from that relationship and see what we can do; but this is how any relationship begins, by learning. In the light of what we are doing, farmers are wondering how far we can help them. Eventually, we will be able to do more.

improvement for the market place, because before no one knew about these things. Our local school has shown an interest in my baking, so now I provide cakes and bread for them, as well as the market places. I think that, in the future, the flour should be produced more, because it is much cheaper. Going to the village to get the flour is a problem because of transport. They are in a group, and we collect from them. We are able to get the amount that we want at the moment, although in the rainy season it varies. Some people are afraid because cassava has cyanide in it. But we assure them that the grating process removes any harmful materials in the end product.



*Peeling Cassava at Watro*

Production Manager, Food and Flour Limited:  
**Mr John Mensa**

**I** control workers in the field. Sometimes when you go to the market, the cassava is abundant. When there is more in the market, you just sell it. When we introduced this new production method for cassava, farmers were happier. Our prices have been good, and although we have not been as regular as we have to be with

payments, there are improvements. When the farmers have processed the grits, we weigh it and transport it. But to get the produce to the farm so that it can be processed in the first place, requires input from the farmers themselves- which is why they need money immediately, and cannot wait around for payments.

Farmer at Otareso Community in Accra:  
**Mrs Eunice**

**I** grow my own cassava. I have ten children. I was previously harvesting cassava and processing into local food products. I now produce the grits, and I think that this is better. There has been a break, when we have not been able to process, because the machine has broken. But we have been assured that it will be fixed, and so I see a brighter future

because the markets are bigger for this new product. The mode of operation in this way of business is attractive. Prices will not be so unstable for us. I am not sure of all the different products that can be made from cassava flour; but I have seen cakes which were bought to us, made from the flour. I am willing to stay with the business, because I think

that there are more opportunities. I think that the relationship with Feed and Flour is a good one. Sometimes, with traditional traders, the prices go way down and we know that we are taken advantage of. We think that the business tries to maintain a level price. We look forward to the future support that we might be able to get from the business.



Managing Director of  
Amasa Agro-Processing  
Company Limited:  
**Mr Kwasi Oware**

**A**masa Agro-Processing Company Ltd deals with the processing of the fresh cassava into various end uses. We are a member of the coalition of the Sustainable Uptake of Cassava as an Industrial Commodity. We were approached to multiply improved varieties of cassava. I was convinced that the potential for marketing cassava is not only in its production, but in processing as well. I decided to set up this factory. We were visited by the Food Research Institute, and the Natural Resources Institute, and made part of the process. The situation now is fantastic. I normally would not do anything without research. When I read a research report by the Food Research Institute on the utilisation of cassava flour and other things, I was really happy. My vision is the promotion of a linkage from the farm, to the factory, to the market. Where a link breaks, the whole edification breaks down. Our main preoccupation has been to see to it that we sustain the farm-gate business, to promote the factory business, and then to promote the consumers. If we buy cassava from the

farmers, we are putting money into their pockets, and we are reducing poverty. Attitudes towards cassava production have changed tremendously. We are shouting: “Cassava production is next to coca!” *Kokonte* is a staple poor man’s food made from cassava. The saying is that if you eat *kokonte*, you must face the wall. Through the research, we have come up with a product that is acceptable to the middle-income group. No one will face the wall again. We are going to face the people! The sky is the limit. We need people like us to apply this research for industrial use. There are improvements that we need. Firstly, the method of harvesting cassava must be improved. It is labour-intensive and does not minimise cost. Secondly, the peeling process is another drain on production costs. Thirdly, machines are needed to produce in large quantities. Transportation and working capital also need to be improved. We have contracts from primary processors to produce grits for us to mill, but there is a transportation problem. We would go there to collect the grits. We are grateful to the research groups for their tremendous support.

Quality Control Manager  
of Amasa Agro-Processing  
Company Limited, Accra:  
Production:  
**Mr John Kofi Abure**

**I**nitially, we were interested in using HQCF for traditional foods. The market was saturated, because too many people were already producing traditional products. In 2002, we joined the project with the idea of moving from traditional products to more industrial products. As part of the project, we were to identify markets that we intended to produce for. The job was to produce to meet the demands of the market. We as a

private company are very happy, because now a new market has been found for us, where initially our market size was not that big. Our job is to sustain the market. This means delivering on time, and delivering the quantities required. We needed to widen the scope of our raw material base, and that is where the small-scale farmer groups came into operation. We needed to add value to the raw material to sell to the end users. In order to sustain the markets, we looked for local suppliers for the raw materials that we need. We wanted to set up processing units at locations where

there is a lot of cassava, to supply to the end users. For all of these users, we have a different product. The new markets are helping farmers to increase their production activities, because there is a need for us to buy more cassava. We are able to link up more buyers: it has a ripple effect. Farmers were sceptical at first, because they were not sure that they would have a market for cassava if they started producing it. We had to show them that we had a market. They took it up because they realised that those who had started growing were selling their produce.

*Peeling Cassava for processing*





Farmer near Accra:  
**William Aokai Yatey**

I farm with my father and brother. Together we have a large farm of about seventy-six acres. After harvesting we bring our cassava to Amasa Agro-Processing Company to process it. Last year, we started to supply to Amasa, and they collect our produce for us. They come and buy it in bulk, and we get our money in bulk. Before we started doing this, our produce was not weighed, and we did not know what price we would get for it. In our area, I organised a community to use this new method of processing. My father heard about this new system, and he wanted to try it. He said that we could not have doubts about it before we had tried it.

Cassava Peeler at Amasa Agro-Processing Company Limited:  
**Mrs Sarah Adi**

I harvest the cassava, and get it ready to be taken by trucks to the factory. When it gets to the factory, I peel it. I also grow cassava, and I sell some varieties to the factory, and others to the market for consumption. The money that I get from this work I use to support my family.

Marketing Manager at Amasa Agro-Processing Company Limited:  
**Nathaniel Kove**

We look for markets for our produce, and go and negotiate a price for it. We come to an agreement, and work out quantities. We talk to farmers about production methods, how they can get a large quantity, and the different varieties that we buy. The variety of cassava that we suggest is *Afisifi*, which means 'anywhere'. Cassava flour is now an industrial commodity, so it has value. We have to educate the farmers, so that they know all about the production.

Farmer near Accra:  
**Mr Ademond Ajecom**

I farm thirty-five acres, and I started farming about twenty years ago. Over the past years, I have noticed a dramatic change. Initially when we used to grow cassava, we did not have buyers, and I feel now as though I have regular buyers. We were selling to local market traders, who would make it into traditional products. I am comfortable with the system of pricing now, and I have regular

We have organised about sixty-eight farmers into the Ghana Rural Association of Cassava and Sweet Potato Enterprise, of which I am the Public Relations Manager, and Mr Oware is the President. We find it easier to talk to farmers here. The farmers normally find selling their produce difficult. We let them know that we have a ready market. I think that this has been a new project altogether. We need to give a lot of information, but attitudes are changing. People see wheat flour as the heavy-weight champion! We have to show that the cassava can do equally well.

buyers. Before, the few buyers that we got would monopolise the market, and prices would be low. We have a close relationship with Amasa Agro-Processing Company; they tell us what they want and we get our information, through talking. Motherwell farms and Amasa were in the business of growing a particular type of cassava, and people went there to buy it for processing. So we went to Motherwell Farms and Amasa for the planting materials. We



*Cassava farmer near Accra*

knew that if Amasa was getting money for what they were doing, then we also would as well for that product. Over the years, monetary issues have been resolved. I have a ready market for my cassava, and I get my money. It is a gradual process, but this starting point has been very encouraging. Now more people want to go into production, and they want to meet. I have mobilised many communities to deliver these raw materials. I feel that as an organised force, we are

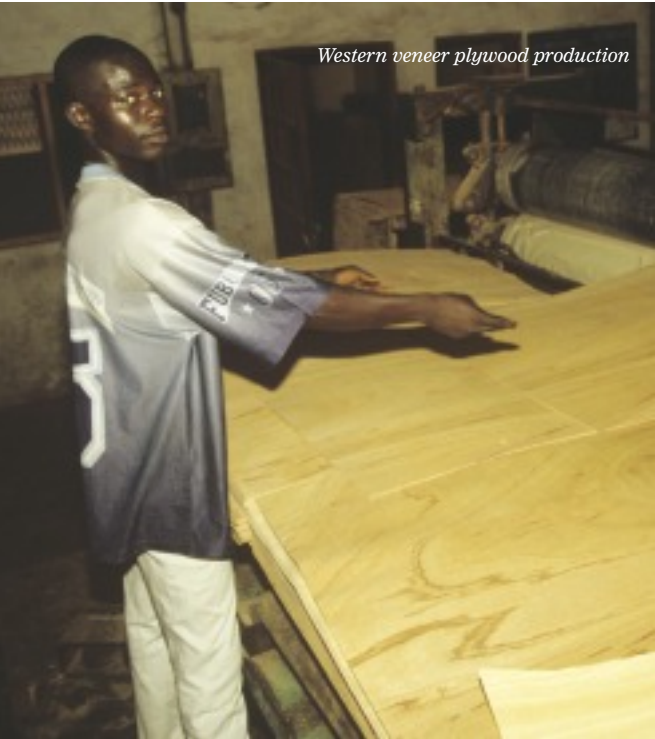
better conformed in terms of putting proposals forward, than working individually. I am now working on forming one community under one umbrella. This is the future. When I was doing my own thing, it was tough. Now that I have identified a regular market, my family is more comfortable, I have a regular source of income. Initially, I was afraid that things might not work out, and I would not be able to sell. I am now assured that it can work.

We knew that if Amasa was getting money for what they were doing, then we also would as well for that product.

Senior Production Manager  
at Western Veneer Plywood  
Production:  
**Mr Mozu Frances**

Our main concern with HQCF is plywood production. We have been using the cassava flour as an extender in the glue mix. We use the flour to improve the yield of the glue. In the past, we have used cassava flour for about ten years now, but the quality was very poor. We stopped using it, and went back to the traditional extender, which is wheat flour. Last year we reintroduced cassava flour. Initially we had a problem with viscosity. As we got more samples, the viscosity improved. At first we used twenty percent HQCF, and eighty percent wheat flour. A major reason for opting to use HQCF was the cost, as it is much

cheaper than wheat flour. In order to reduce our costs, we made the substitution when the price of wheat flour shot up. We are now able to use one hundred percent of the cassava flour, without any problems. We realised that we were able to reduce our costs by forty percent. The location of Amasa is a problem, but we are still able to save thirty percent, despite the transport constraint. The flour is locally produced, which means that we are able to aid the economy. In order to sustain the supply from small scale-farmers, there is need for more awareness of the benefits of growing cassava. Once the cassava product arrives in flour form, we store it. Now, with the advent of the HQCF, we have been able to make one hundred percent substitution.



*Western veneer plywood production*



*The community as a whole benefits from increased cassava production*

Farmer near Accra:  
**Mr Dan Juma**

I am a farmer, and I grow cassava. I have a community of about twenty people. The thing is that two or three years ago, we were encouraged to grow cassava by a new initiative in the area. The first year was fine, but the second year we were left with no where to sell. We did not have any money to pay for labourers to work on the farm. So, the first thing that we did was to find Amasa Agro-Processing Company who came to us, and encouraged us to sell the cassava to them. They gave us support, and we were happy to work with the Managing Director, Mr Oware. Before, any time that people promised to bring us a tractor, they would fail us and the cassava was still in the field. Now we work together, and

there are big improvements. When we are disappointed, we are made to feel weak. You can never be happy if you know that your crop is just wasting in the field. I wondered what to do with the cassava that I had before. Now, I know where I can take it to be processed and sold. We decided that if we work together, then we can work. We have already sold some, and we have decided that if they can help, then I can produce more. I am a real farmer, and I love farming, but if I am disappointed, then I don't know where to go. If there is help, then I can produce more than forty acres. I produce plantain, and cassava. At first, we were planting with low skill. When you have help, you can do it more with happiness. If you have no money to pay your labourers, then they

will go away. I work very hard, but we need support, and money to put inside the work. Before, we would wait, and that is a waste of time. When somebody comes to your farm, he is supposed to give you cash there and then. Not carry it away and take it to another place! That is the difference. We failed to get money. I even made my mind up that I would not work again, until we heard of Amasa. Then I thought we could try it. Now we earn more. We can't worry because when the crop is in the land, it is a waste. We need to sell it when it is harvested. We now grow different types of cassava for producing into cassava flour. I know that you cannot eat this type, but I have divided my farm into three parts, and I can do this because I have support. You farm to gain, not to lose.



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