

ICRISAT

Eastern and Southern Africa

2010 Highlights



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**International Crops Research Institute
for the Semi-Arid Tropics**

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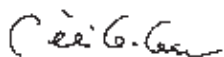
Preface

Although when we think of farmers we focus on men, almost half of the world's food is actually produced by women. A woman in sub-Saharan Africa, whether married or single, must manage to grow enough food to feed her children and enough extra to take to the market to buy what she cannot grow. She must pay for medical expenses, clothing, and school fees. Every day she faces and makes tough decisions in her attempts to navigate her family through poverty and into a better life. What can be done to help this woman? How can her choices be made easier?

Our collective aspirations to reduce hunger and alleviate poverty, captured by the Millennium Development Goals, require the participation of all countries and all people. No gains will be made if significant sections of the rural population are ignored or left behind. In recognition of this, the African Union has declared 2010–2020 the African Women's Decade with the theme of gender equality and women's empowerment. The ten main focus areas include entrepreneurship, agriculture, health, science and the environment.

ICRISAT's new strategic plan to 2020 encompasses this same decade. Women's empowerment is a necessary condition to achieving our mission to reduce poverty, hunger, malnutrition and environmental degradation in the dryland tropics. In acknowledgement of this there is for the first time in our research agenda an explicit focus on addressing the gender gap in agriculture and agricultural research.

This report illustrates our commitment to this endeavor and showcases some of the stories of women we are working with in the region. Even more than showing what we have achieved, it serves to highlight how much more needs to be done to ensure that we develop a systematic research approach to guarantee women's participation, empowerment and advancement through agriculture.



William D Dar

Director General



Said Silim

Regional Director for
Eastern and Southern Africa



2010 Highlights





Women in Agriculture: Bridging the Gender Divide

The population challenge

By the year 2050 it is estimated that the world's population will reach nine billion. Africa's population is expected to grow from 820 million to two billion. In order to feed this growing population, food production will need to increase by 70–100%. This additional production of food will need to come from the essentially finite resources available today: the same soil, the same groundwater, the same forests and rangelands. To meet this challenge today's farmers need to go beyond producing more food. They need to be more efficient in their production and find ways to produce more food without destroying the potential of their resources for tomorrow.

The urbanization and migration challenge: a double-edged sword

According to UN Habitat, by 2050 it is expected that almost 60% of all Africans will live in cities. At 3.4% Africa is the fastest urbanizing continent in the world. On the one hand, the urban consumer represents a potential market for the rural supplier. And as that urban consumer's preferences change, so does the possibilities of what the rural supplier can produce to meet that demand. On the other hand, there is a greater burden on farmers to feed the ever-growing cities.

Migration is a similar process. Life in the villages often pales in comparison to the possibilities open in the cities and men are tempted to leave

their homes in search for alternative employment in the mining sector, commercial farms, or other businesses in the cities. Again, on the one hand, this is beneficial to the family. The remittances the men send home ease the burden of the family still living in the village. Also, the constant travel back and forth can help to connect villages to the markets in the cities.

However, it also means an additional burden for rural women. In addition to their normal tasks, they are now solely responsible for the farming activities on a day-to-day basis.

Africa's woman farmer

These global and regional trends and drivers form the backdrop of the lives of many rural women. In many ways this is not a new situation. Africa's women have had a long history of working in their fields, of making sure their

families are well-fed. In Zimbabwe, for example, male migration can be viewed as a legacy of colonialism that required cheap labor for mines and large commercial farms, resulting in women dominating the farming sector. What is new is the confluence of challenges at this particular time in history that has resulted in a growing recognition of the unique needs of Africa's women farmers.

According to a study by the FAO, women farmers are 20–30% less productive on their farms than men. If women farmers can be supported to reduce this gap in performance, then 100–150 million more people would not live in hunger. The reasons for this difference in productivity are not because women are inherently less efficient at farming. It is mostly as a result of two things: access to resources and time constraints.

Women farmers often have less access to land, credit, financing, new technologies, and even



"A single woman will have problems obtaining seed. And who will help her harness the ox to the plow? Who will help her with fencing the field?"

We should give women more knowledge because of this issue concerning our children. They go to South Africa leaving us with their children. We are constant mothers. Our grandchildren who remain with us will become our burden unless we know how to farm so that we can provide them with clothes and school fees."

Evelina Mpofu, Woman farmer at Lucydale farm in Matopos, Zimbabwe

knowledge. Existing social divides between the two sexes such as lack of education for the girl child become compounded when women are now required to lead and make decisions on behalf of their family's welfare.

And women farmers rarely perform just one role. They multi-task, spending time in their fields and also managing their homes, feeding their children, caring for the sick and ailing. Even though they may work more hours in a day than their male counterparts they are less productive in the fields.

What can be done?

If we are to reduce hunger, malnutrition and poverty it is imperative that we help to increase the productivity of all farmers, and women in particular. This means finding ways to make farming on a small-scale more efficient.

A greater understanding of the situation-specific challenges for men and women farmers is needed in order to design the appropriate technologies that will not add to their responsibilities but instead make their lives easier. Strategies that reduce the amount of hours that women spend on certain farming-related tasks for example might free up more time for other pursuits.

Better bridges between rural suppliers and urban markets could mean the opening up of different pathways out of poverty for women to pursue. As incomes rise, women may also be able to pay for labor, turning them into employers and easing some of their challenges. These agriculture-related solutions, when paired with social changes that increase equality for women, are what will lead to real lasting change and help feed and house our growing numbers.

"When women finish studying they often don't choose to be extension officers because the job is difficult. During the growing season we've got to visit the farmers all at the same time and mobility is a huge issue. We have to use a bicycle for very long distances and it gets very tiring. We often don't meet our targets."

Mrs. Monica Chimpweteka, 16 years as Agricultural Extension Development Officer (AEDO), Malawi, (left)

"The biggest challenges for women are shortages in input and labor. A woman farmer is often tired. Women work around 12 hours a day, collecting firewood and water and managing the fields and livestock. They must also cook and take care of the children. This is not the case for men. A man will spend his money on luxuries. But women will spend on household issues. A woman's first priority is to make sure her family is fed."

Mrs. Cecilia Kasonga, 28 years as AEDO, Malawi (right)



Women Farmers: The Facts

- Food production will need to increase by 70–100% to feed the world's population.
- By 2050 almost 60% of Africans will live in cities.
- 43% of the world's farmers are women.
- In sub-Saharan Africa women provide 60–80% of the labor to produce food for household consumption and sale.
- In southern Africa female-headed households represent 42% of the total.
- Women in Africa work as much as 13 hours more per week than men.
- Women spend on average almost an hour every day gathering firewood and carrying water.
- 51% of all those with HIV are women. In sub-Saharan Africa 72% of those with HIV are young women.
- Women seem to use almost all they earn on their families. Men use at least 25% of their earnings for other purposes.
- Women farmers receive only 5% of agricultural extension services worldwide.
- Only 18% of agricultural scientists in Africa are women.

Sources: FAO, UNIFEM, World Development Report 2008





Making the Move from Tobacco to Groundnut

The tobacco roulette

"We used to invite hunger into our homes", Mwanja Mari of Mkandwe Village in Malawi's Kasungu District says of the days when she and her husband used to grow tobacco. "If we got any extra money we used to spend it on fertilizer for the tobacco. We didn't know how else to invest our money."

Tobacco is a demanding crop. Farmers spend a lot of hours tending to tobacco nurseries and when the plants are at the right stage of growth they must be transplanted. Throughout the growing season the crop requires specific amounts of water and fertilizer. Farmers must carefully harvest the leaves and cure them before packing the harvest and taking it to traders or the auction floors.

So why grow it? Because when the market is right, the profits are well worth a farmer's investment in time and labor. But after all that work, if the

market is unfavorable, the bottom can fall right out of a farmer's world.

Groundnut substitute

With thirty to forty thousand members to consider, the President of the Goldleaf Farmers Association, Mr William Kamlema Ngozo, has no choice but to be forward thinking. "We have to be ahead of the curve," he says. "Tobacco was doing well but for the last three seasons or so the industry is facing challenges. We want our farmers to have different options. We're not telling them to stop growing tobacco. We are encouraging them to grow other crops as well so that they are not completely dependent on tobacco."

One of the major problems with tobacco is the price fluctuations. "One day you can get two dollars and then the next day you can get 55 cents," Sanga Kamlopa, a trustee of Goldleaf says.

A finicky crop such as tobacco requires the farmers to invest heavily in production, which means that many of them take out loans from banks. Farmers can invest as much as USD 0.80–0.90 per kg in production costs. An auction floor price of USD 0.55 at the end of the season leaves them in a serious financial crisis. According to Kamlopa, these days fighting on auction floors has become more common and some traders have even committed suicide rather than face their creditors.

Goldleaf Farmers Association is assessing the possibility of their farmers diversifying into groundnut production. Groundnut prices these days are comparable to tobacco. For example, the average price of groundnut in 2009/2010 was MK 100 (USD 1.49), not too different from the average price for tobacco which was MK 110 (USD 1.36).

But the difference lies in the possibility of a take-home profit. The cost of producing 1 kg of groundnut is nowhere near the cost of producing 1 kg of tobacco. Growing groundnuts means that the amount of cash in the farmer's pocket at the end of the season is more.

Food crop to cash crop

Traditional division of labor in many African countries means that men invest their time and labor on cash crops and women tend to the crops that contribute to a household's food security. Malawi is no exception to this general rule.

"Because groundnuts were thought of as a food crop in Malawi they were left to the women," Moses Siambi, Senior Scientist at ICRISAT-Lilongwe, says. "This is slowly changing in Malawi and projects such as the SAFE project are showing farmers the potential of groundnuts as a cash crop."

The Support to Able-bodied Vulnerable Groups to Achieve Food Security Project (SAFE) started in 2008 with funding from the EU and Austrian Development Corporation. Executed by CARE and ICRISAT-Malawi, the project aimed to enhance food security through groundnut production by

improving crop productivity, diversifying income regimes, and strengthening local institutions.

The project used a farmer field school approach in Kasungu District in Malawi. A series of community-level meetings were held to introduce the concept of the farmer field school, develop action plans, and create the farmer field school. Each school had between 20 and 30 members, who were mostly women. A Community Facilitator was appointed to oversee the activities of five field schools.

"We have found that the farmer field school approach has worked quite well in Kasungu District," says Dr. Emmanuel Monyo, Groundnut Breeder, and SAFE Project Leader. "Since we knew that groundnuts are usually the responsibility of women we purposefully encouraged their participation in the project. Most women really appreciated being part of a group and the community facilitators will ensure that the knowledge that the farmers learned doesn't die out over time."

SAFE introduced farmers to a new variety of groundnut – Nsinjiro or ICGV-SM 90704. Nsinjiro is a high yielding medium-duration groundnut variety that is resistant to rosette disease and ready for harvest in 110–120 days. This is 30–40 days earlier than Chalimbana, the variety that farmers used to grow. "Nsinjiro is capable of yielding more than twice as much as Chalimbana," Monyo says. "And when combined with the right agronomic practices yields can be even better."

The project established 360 farmer field schools and showcased the new technologies and management practices on demonstration plots and field days. Farmers learned how to maximize groundnut production through the implementation of appropriate crop management practices including optimum plant population. "We emphasized the importance of weeding and correct post-harvest processing and handling of their crop," says Harvey Charlie, Senior Scientific Officer at ICRISAT. "These farmers had almost stopped believing in groundnut. And now they are even replacing tobacco with groundnuts with no loss in profits."



"I have been a Community Facilitator since 2008, advising farmers on the good practices on growing groundnuts. I am responsible for 100 farmers, 80 are women and 20 men. This approach of having farmer field schools and community facilitators is good. I am very close to my farmers. I work with them regularly and they trust me.

I think that there is a very big difference between male-headed households and female-headed households. These women are more independent. On the other hand, most women in male-headed households even if they try to argue their case often feel as though it just causes more problems and so they surrender. Women get absorbed into their husband's priorities. They are told to leave the groundnut fields and concentrate on tobacco and they follow what their husband says. In my opinion, there were more women at the field schools at the expense of the men. And so the men felt challenged. I think that we should make an effort to deliberately include men once in a while so that there are no tensions and issues are discussed together.

In terms of empowerment there is a lot that has been done. But what is now holding women back is that we have a sense of respect towards men and sometimes an element of fear. This is what becomes the stumbling block."

*Esther Chirwa
Community Facilitator
Chisazima Village, Kasungu District
Malawi*



Making the switch

Mwanja Mari and her husband decided to make the switch from tobacco to groundnuts in 2008. "I learned a lot of modern techniques to grow groundnut through the project," Mari says. "And I received 6 kg of Nsinjiro seed to start with."

Mari also appreciated that the SAFE project targeted women farmers in particular. "It has made us women realize that we have an important role to play and we can participate in farming. We are learning now," she says.

Inspired by her new knowledge, Mari worked hard on her groundnut field, implementing all the techniques she had learned. And she was rewarded. In the first season, Mari managed to produce 18 bags of Nsinjiro, each weighing approximately 25 kg, in the half acre she sowed to groundnut.

She saved four bags as seed and sold the rest all at once to buy a bicycle. "We needed to ease our transport situation," she says. "The clinic is far away if someone gets sick. We can also take our maize to the grinding mill with a bicycle."

The second season she sowed those four bags of seed she had saved on one and a half acres. This time she got a yield of 54 bags, which earned her MK 149,850 or about USD 986.00. With that money, Mari and her husband built a house and bought two pigs – a male and a female – to add to their farming activities.

With every season Mari has been increasing the size of the area she sows to groundnuts. The land that was once used for tobacco production and land that was once used to grow the old Chalimbana variety are now being used for producing Nsinjiro. In this third season Mari and her husband plan to grow groundnuts on two and a half acres and put in iron sheets for the roof of their new house.

"We stopped growing tobacco in 2008 and I have no regrets," Mari says. "I grew tobacco for so many years and never made any gains. But with groundnuts even in a short time of three seasons I can show you the difference it has made. I can tell you a completely different story."

Janet Tenganane – Tilimodze Farmer Field School

When ICRISAT, through the SAFE project, introduced Janet to Nsinjiro, a new groundnut variety, in 2008 she was skeptical. “I didn’t believe the difference in yield at first. I thought it was something by chance. So I kept growing both Nsinjiro and Chalimbana,” she says. “But I am now convinced that Nsinjiro has a greater yield. You can’t even compare them.”

Janet devotes one quarter of an acre to groundnut production on her farm, reserving the rest for maize. On that quarter acre she used to get 2–3 bags of Chalimbana groundnuts. She now gets 15 bags each weighing 25 kg of Nsinjiro.

Along with the 4 kg of Nsinjiro seed that Janet received through the project she also learned a lot by becoming a member of the newly formed FFS called Tilimodze, which means “We are together”. She learned about the importance of spacing between plants and between rows. “In the past, I didn’t know anything about spacing. That was something new to me. I also didn’t know there were important stages when the groundnut must be free of weeds,” she says.

Janet also learned about the importance of timely harvest and new ways of drying the harvested groundnut in ventilated stacks that prevent the groundnuts from shriveling up inside from exposure to the direct sun.

“Groundnut wasn’t a priority crop,” Janet says. “But that has changed.” Today Janet is even able to hire people to help her weed her maize field. She does not pay the laborers with cash; she pays them with groundnuts.

Janet lost her husband in 1994. “It was a shock. The first thing I realized was that I had to educate my children. I had to venture into business. I cut grass which I had never done before and sustained my family that way. I learned a lot in those years,” she says. Her four children are grown and have left the house, but Janet continues to support four grandchildren who live with her.

“The only time we women rest is at night,” Janet says. There are many crucial issues in farming and we have to also take care of the children. If we were two we could share that.” For example, with the first rains comes Janet’s trickiest time of the year. She has to sow her maize and also the groundnuts using the same rain. “It becomes a game of chance,” she says.

“It is very important to factor in gender the way this project has done,” she says. “Women are often ignored and sometimes even discouraged from attending meetings. They are sometimes inhibited to speak in the presence of men. It has been really good for this project to focus specifically on women farmers.”



Janet Tenganane (left) with her friend Grace Chilezi.



The number of women in agricultural research is on the rise.

The share of female professional staff in agricultural research and higher education increased from 18% in 2000/01 to 24% in 2007/08.

Source: ASTI initiative, CGIAR G&D Program, and AWARD

Women in Science

ICRISAT's women researchers in Eastern and Southern Africa share their views on the challenges, possibilities and joys of a scientific career.



Santie de Villiers, Biotechnologist, ICRISAT-Nairobi

"The number of women scientists in agriculture is increasing but there are still too few, especially in more influential and better paid positions, and the rate at which the numbers are increasing is still very slow. When you consider higher degrees, such as MSc and PhD, the number of women in agricultural science decreases rapidly. If you also consider the number of women in faculty positions at university and research institutions, they are definitely in the minority. I think that ICRISAT can benefit from more woman in upper management as men and women think differently and the approach to problems and the types of solutions offered by women are often different to that of men and this provides more options/angles to consider. Men tend to be strongly goal oriented while women bring a stronger focus on the people to the table and ICRISAT needs both to continue to be successful and relevant."



Christin Schipmann, Socioeconomist, ICRISAT-Nairobi

"We have a similar problem in Germany. But it starts at a higher level. At the PhD level we have more women than men, but at the post-doc level we immediately have more men than women and when it comes to the professor level we definitely have many more men than women. This trend starts earlier here, at the Masters level. I think this is partly because of family planning. It often happens that when women start their families they drop out of the labor market or the education system. What changes if there are more women as scientists or in management? I believe that the working atmosphere in an institute would change a lot. In general you can say that women have better soft skills when it comes to social responsibility or relationships. It's very important to have a positive atmosphere at the workplace and I think that women are more able to create this.



Mary Mgonja, Sorghum Breeder, ICRISAT-Nairobi

"I don't think that there are nearly enough women scientists in agriculture. As much as there are some good numbers of young women in biological sciences, they often end up elsewhere and not in agriculture. Women scientists are more sensitive to issues that affect women farmers and issues of food security in general because as a girl child at some stage, they have first hand experience of food security and women's roles in agriculture and food security. It is always perceived that women scientists are not as good as men scientists – that women scientists especially the young ones who are in reproductive stages may not be as productive as their men colleagues. For that reason a woman scientist always has a lag time in making progress because she may not be trusted to be as efficient and productive. As a mentor to many young women scientists in the CG AWARD program, I always remind them that they will see such lags and these should not discourage them. They have to work two times as hard in comparison to their fellow scientists because the measuring meter may not be the same."



Sabine Homann-Kee Tui, Socioeconomist, ICRISAT-Bulawayo

"Women really like agriculture because it is a nurturing and caring kind of topic that links environment, society, and production issues. I think generally at student level there are similar numbers of men and women. In higher scientific positions however there are drastically fewer women while at the level of scientific officers you find a lot of women. This is very similar to the corporate sector. As you go up there is a threshold that very few manage to cross. But there a number of very good scientists beyond that threshold so there must be something that sets them apart. When it comes to these higher positions I feel from my own experience that it is very hard to combine family life and science."



Patricia Masikati, Modeller, ICRISAT-Bulawayo

"There are not so many women who go up to the level of a PhD. Most of them stop after their first degree. Mainly this is because of the challenges that women face. For example, if I compare the western world and us here you'll find that women would go to school in the western world and then they do everything up to the PhD level without maybe thinking of getting married or having a family. But for us here you find that there is a certain age limit you get to by which time you should be married. This is what limits most women because when you have a family to start to go to school again and still take care of your family becomes a big challenge. Getting a PhD is intense. My supervisors were male and they really encouraged me. Most male scientists also really want women to be involved in agriculture and in this scientific world. They know the difficulties that women might face and that was really helpful. They played a very important role."

Small Stock and Large Incomes



Making a plan

Ndidzulafi Ndou from Kafusi Village, Ward 19, in Zimbabwe is a living example that there is truth in the old adage that necessity is the mother of invention. When she lost her husband seven years ago, Ndou had three daughters as well as two nephews and her own younger sister to take care of. She also had 11 goats.

"I had to sit down and think 'My husband died. What am I going to do?' The idea came to me out of necessity. I thought about it and found a solution," Ndou says. In true Zimbabwean fashion, showing remarkable resilience of spirit and fortitude to overcome the odds, Ndou made a plan.

She fenced her farm. "Three sides were already fenced. I sold three of my eleven goats and with that money I finished the fourth side," Ndou says.

While it might not seem like much, Ndou's plan was actually brilliant. Livestock keepers in Zimbabwe usually let their goats roam free

to graze whatever they find in the rangelands.

"During the dry-season months from September to November, the goats really struggle to find enough to eat," says Sabine Homann Kee-Tui, Socioeconomist at ICRISAT-Bulawayo. "Many households experience a 20% loss in their goat populations. This loss of animals to mortality rather than to a productive end such as sales or home consumption is a serious blow to farmers."

Ndou's solution to finish fencing her fields meant two things: she could keep her neighbors' goats out of her fields. And when her own goats needed extra feed during the dry season she could open up the fence and let them graze the crop residues or supplemental feed she collected. She could also keep an eye on their supply of water and make sure that all her animals came in to safety at night. Today Ndou has 120 goats, 14 donkeys and 22 cattle. By many standards in Zimbabwe she is a wealthy woman.



Goats and cash trade hands in this livestock market in Gwanda, Zimbabwe.

Goats = Cash

For many farmers in Zimbabwe goats mean cash. Money from the sale of goats is used for buying food, paying school fees and medical bills, and is also re-invested on the farm. “We have seen that the most important contributor to on-farm incomes is livestock,” says André van Rooyen, Senior Scientist at ICRISAT- Bulawayo. “Facilitating women’s endeavors in livestock production can generate a huge amount of income especially for single-headed households where crop production is an extremely risky and time consuming exercise. It also contributes to food security, education and social welfare.”

A baseline study conducted by ICRISAT-Bulawayo revealed that women were active players in the livestock sector. Both male- and female-headed households owned similar numbers of goats and the study showed that all family members contributed to decisions on animal health, slaughter, and sales.

“I often get the feeling that people think that women in Africa are a marginalized sector of the community. My own experiences are that women play a very strong role in agriculture,” says van Rooyen. “Women even contribute up to 45% of the decision making to sell cattle, which is primarily owned by men, so women do play a strong role and have a say in what happens.”

The Innovation Platform approach

If goats equal cash, then the tendency for most farmers is to bank their money. Most households seem to have between 10 and 14 goats. And in a span of 12 months they may sell only 1–3 goats as the need for cash arises. It is only a few farmers, like Ndou, who manage to build up their herds to big enough sizes to routinely sell their animals as part of their business strategies.

“What we are trying to do is commercialize the sector, not the farmer,” says van Rooyen. “Many farmers will only sell one goat every six months.



Cattle auction facilities existed in Gwanda. But goats were often sold in fields fenced with thorns and offering little or no shade. Today goats in Gwanda are auctioned in sale pens constructed specifically to accomodate small stock.

But it is even more critical that that farmer who has only a few animals and who sells in need gets the best possible price.”

ICRISAT, through the LiLi: Markets project, has tested an innovation platform approach to determine the effects of forging better markets in Zimbabwe. The innovation platform brings together all relevant stakeholders such as farmers, traders, transporters, processors, retailers as well as the research and development fraternity in a series of iterative meetings to identify bottlenecks in production and marketing. The innovation platform also tests the most possible feasible solutions for that particular context.

After a careful analysis of challenges and opportunities, the innovation platform in Gwanda decided to address their marketing constraints by holding/establishing goat auctions every month which required the construction of a sale pen. The more formal and routine sale opportunity has attracted the presence of buyers from Bulawayo, the closest large city where there is an unmet

and growing demand for goat meat. Other NGOs have taken up this idea and are constructing more sale pens in neighboring districts. The national smallholder farmer agriculture inputs extension and market support program now includes goats to enable farmers to generate income and meet their food requirements.

The innovation platform’s efforts to formalize the goat sector have enabled the local government structures such as the Rural District Council or RDC to fulfill their mandate of facilitating local livestock trade. Levies charged for animals sold are used to maintain sale facilities and organize auctions. The Gwanda RDC even managed to raise enough funds to build a new sale pen nearby. Goats are beginning to attract the attention of the private sector and national policy makers. Policies supporting the small stock sector could go a long way to benefitting rural women who are the customary owners of goats.

The regular auctions have benefitted Ndou who used to sell her goats at informal markets. “We



Ndidzulafi Ndou displays her goats at the Gwanda Agricultural Show.

used to have to just accept the price because we needed the cash. But with the auctions, the prices are not fluctuating as much. We can negotiate the price beforehand,” she says. At USD 45–50 per goat, Ndou often determines how much cash she needs and brings an equivalent number of goats to the market for sale.

The other benefit to the auctions is that Ndou is now encouraged to produce goats in top condition. “The buyers look at the condition of the goat. If it is fat and well-fed, then I can get a better price for it,” she says.

The better prices at the market place have created an incentive for Ndou and others like her to test and adopt new technologies to address production constraints. “By creating functional markets we have seen that there is a new context to the technologies that the research and development community has developed. Farmers now trust the markets and they can see

the returns. This makes them more willing to invest their time, energy and even money into ensuring that their goats are of high quality,” says Homann Kee-Tui.

Going the extra mile

Sometimes the difference between success and failure can lie, not in an individual’s gender, but in his/her willingness to go that extra mile. On stormy nights Ndou ventures out in the rain to check on her goats to make sure that they are safe. During a recent storm, she decided to bring her ten goat kids indoors to protect them from the rain and keep them warm. That one night’s work saved all of her animals while her neighbor lost all of his goat kids. “I’ve told young women farmers what to do, but many say it’s too difficult. There are many drop-outs from my school,” Ndou says.



More equal than not!

The research and development community usually believes that households headed by women are more vulnerable than those headed by men. While this may be true in many countries, a recent study conducted by Trinity Senda from Matopos Research Station, in collaboration with ICRISAT and the International Livestock Research Institute (ILRI), showed that, when it comes to livestock in Zimbabwe, the gender of the person in charge makes little difference.

The study took a close look at the impact of gender in mixed crop-livestock systems in Nkayi District in Zimbabwe. Households were classified as either male-headed households, *de-jure* female-headed households (women who are single, divorced or widowed) or *de-facto* female-headed households (where the husband is away but contributes actively to livelihood activities and decision making).

"The results show that all the households have a lot in common," says Senda who conducted this study as part of her Masters degree. "I was surprised by how much things have changed in the rural areas for women."

Women and men in Zimbabwe appear to have equal access to education, healthcare, cropland, finances, veterinary and extension services, transportation and markets. They keep and sell similar numbers of animals and they provide labor for livestock jointly. The households are also equally poor with incomes that are far below USD 1 per day.

One important area where women and men were different was when it came to participation in farmers' associations. In general, membership of farmers in associations was low, with only 28% of farmers engaged in crop associations and only 3% of farmers belonging to livestock associations. However, all the participants at livestock associations were men, usually because these are focused on cattle production. "By not involving the already developed capacities of women, communities lose out on significant opportunities to boost productivity and incomes," says Senda.



'HOPE' for Finger Millet

A crop rediscovered

While there may be advantages to going it alone, sometimes it pays to be part of the group. The 17 members of the Busibwabo Widows and Orphans HIV/AIDS Women's Group, based in Busia District in Western Kenya, have come to realize the power of collective action.

The group was formed in 2003 with the support of the World Food Programme and targeted widows, orphans and HIV infected persons. "We were growing orange-fleshed sweet potato at first and then we began to keep chickens for extra income," says Margaret Mugeni, Chairperson of the group.

Then in 2006 the Kenya Agricultural Research Institute (KARI) approached the group with some finger millet varieties such as U-15, Gulu-E, P-224 and Okhale-1 to test. "We had forgotten finger millet," Mugeni says. "We didn't know how to plant it, when to harvest. Today, of everything that our group does, finger millet makes us the most money. The price of finger millet is higher than the price of maize."

"The farmers thought of finger millet as their ancestor's crop," says Dr. Chrispus Oduori, Principal Scientist at KARI and National Project Coordinator for the Harnessing Opportunities for Productivity Enhancement (HOPE) of Sorghum and Millets project. "There were serious production constraints associated with finger millet. Labor requirements were high especially because the farmers used to broadcast the seed."

Oduori's team at KARI has been working with farmers to make seed of improved varieties available as well as passing on knowledge of the correct agronomic practices. The simple change from broadcasting seed to planting finger millet in rows with the correct spacing between plants has not only improved yields but also reduced labor. Weeding a row of finger millet is now easier as is fertilizing the crop and harvesting. In fact, Mugeni now believes that it is easier to weed her finger millet crop than her maize crop. "With finger millet you weed once. With maize you weed three times," she says.



Better yields, better futures

Mugeni's yields of finger millet have steadily increased from four bags to eight bags to more recently ten or more bags of 90 kg due to growing improved finger millet varieties and also her crop management practices. This is on her field of around 1 acre. The Busibwabo group also plants finger millet on a field together with the labor and profits divided between the members.

"Even our neighbors are now planting finger millet," Mugeni says. "And farmers from other districts are requesting to buy finger millet seed from us. We are very active and well known in the district."

The group sells finger millet to hospitals, orphanages and traders who come to their farms. They have also learned to make cakes, biscuits, and chapatis in addition to the traditional porridge. Mugeni says she sees a difference in her own health and in that of her children. Porridge made out of finger millet is highly nutritious with high levels of iron and fiber and 10 to 40 times the calcium levels of other cereal crops, making it particularly beneficial for weaning children and pregnant and nursing mothers. The crop is seeing a revival in urban consumer demand and is being used in therapeutic feeding programs for diabetics and those who cannot tolerate gluten.

From selling finger millet Mugeni says she earns KSh 25,000 or approximately USD 277 per year. She uses these funds towards school fees, household expenses and medical bills. While it is true that finger millet is Mugeni's biggest earner, the reality is that this money is not enough for her entire family. The average school fees in Kenya for one child is KSh 30,000 per year and Mugeni helps support seven children.

There are two ways to help Mugeni earn enough cash for her family. One is to increase the amount of finger millet she produces on her farm. And the other is to improve the price of her product.

The HOPE project, which started in 2009, is exploring both these avenues. Further trials conducted in partnership with KARI will yield the data that the Kenyan government needs to officially release U-15 which after a few seasons of testing with farmers appears to be the one that they prefer most for its early maturity, high yields, good grain color, resistance to lodging (i.e., the plant does not get too heavy and fall over making harvesting difficult) and tolerance to blast disease.

As the Busibwabo group has shown, using seed of the improved varieties and the right agronomic practices can boost yields on farmers' fields. For

the 2012 season the HOPE project estimates that about 1 ton of clean seed of U-15 and P-224 has been multiplied by selected farmers and then distributed to more than 1000 farmers for promotion in Busia District. (KARI acquired finger millet germplasm from Uganda with the facilitation of ICRISAT in the 1980s. The germplasm has since been evaluated by KARI with partners, including ICRISAT. P-224 was released in the early 1990s.)

In order to improve the price for finger millet and make sure that all the extra grain produced is marketed successfully, the project is also attempting to find ways to link the finger millet growers to major markets within Kenya. "Right now Kenya imports a lot of finger millet from right across the border in Uganda. In some ways this is a lost opportunity for Kenyan farmers," says Alastair Orr, Economist at ICRISAT-Nairobi. With the right links to markets and the associated price incentives, Kenyan farmers could soon be in a position to capture a share of the profits from finger millet.

The power of cooperation

Mugeni lists many benefits of being part of the Busibwabo group. In response to the need for credit, the group established a merry-go-round system that allows them to save money every month for the benefit of one recipient. They have also established a bank account at FOSA Bank where they save their profits from the field they plant together. "If any member needs to borrow money for a project, we sit together and discuss it and then that person can borrow the money and return it with interest," Mugeni says. The funds in the bank account also serve as an emergency source of cash in case any particular member goes through hard times.



Members of the Busibwabo Women's Group with Dr Chrispus Oduori, KARI.

Labor is usually one of the biggest challenges for women. And so during crunch times the women work in each other's fields and help to ensure that there is something harvested from everyone's efforts. "Working in a team is easier than working alone," Mugeni says. "Some of the members are HIV positive. We comfort them, we help them." Besides sharing the labor the women also contribute to educating, not just their own children, but also other AIDS orphans that are in their care.

"We exchange a lot of ideas when we get together," Mugeni says. One of these ideas is that the group determines a minimum price for their finger millet. That way when they are approached by traders no member inadvertently undercuts the other and traders will not be able to exploit the group.

One of more important and somewhat intangible benefits of being part of a well-run, democratic group is self-confidence and the will to achieve. "We don't want to depend on food aid," Mugeni says. "We should be somewhere on our own. Lights have come on to women. We can also do something. We can also contribute."

HOPE's gender strategy

The HOPE project has made a special commitment to introduce gender-responsive agricultural technologies that will reduce the workload of women farmers and increase their incomes through post-harvest value-addition. Working in six countries in ESA (Eritrea, Ethiopia, Kenya, Southern Sudan, Tanzania, and Uganda) as well as countries in West and Central Africa and Asia, the project will generate gender-specific data that will provide a deeper understanding of the different roles and benefits for women and men farmers. In order to do this successfully, it is important that HOPE staff fully understand the need for gender mainstreaming and the tools available to them. A recently held workshop in Nairobi began the first steps to raise awareness among project staff. An activity profile generated at the HOPE gender awareness workshop shows some of the activities men and women are usually responsible for during a given year.



A woman carrying water in Ethiopia.

Men		Women	
Activity	Hours spent	Activity	Hours spent
6am: Wake up	N/A	5am: Wake up	N/A
Field activities	2	5am: Fetching water	1
Eats breakfast	1	6am: Prepare breakfast (coffee) (including milking the cows)	1
Tends to animals	3	7am: Serving breakfast to family	1
Lunch	1	Preparing children for school	0.5
Goes to market for social gatherings	5	Cleaning house and utensils	2
Eats dinner	1	Feeding young children (where applicable)	
Rest (listening to the radio)	N/A	Field activities – plowing/weeding/harvesting etc.	3
Goes to bed		Preparing lunch	1.5
		Feed children and husband	0.5
		Cleaning up the dishes	0.5
		Market activities – purchase of foods	2
		Group meetings (including chatting at the marketplace)	2
		Wash clothes	1
		Get dinner started (including pounding and milling maize, pigeonpeas, etc.)	2
		Milking cows and milk churning in the evening	1
		Cooking dinner	1
		Spending time with the children	1
		Rest (leisure with husband)	



Appendixes

Publications list 2009

- Asfaw S, Shiferaw B, Simtowe F, Muricho G, Abate T and Ferede S. 2010. Socio-economic assessment of legume production, farmer technology choice, market linkages, institutions and poverty in rural Ethiopia. Research Report no.3. Nairobi 39063-00623, Kenya, International Crops Research Institute for the Semi Arid Tropics. 73pp.
- Homann Kee Tui S and van Rooyen A. 2010. Creating Partnerships for Change: Successes of Innovation Platforms in Southern Africa in SATrends http://www.icrisat.org/what-we-do/satrends/satrends2010/satrends_feb2010.htm
- Kassie M, Shiferaw B and Muricho G. 2010. Adoption and Impact of Improved Groundnut Varieties on Rural Poverty Evidence from Rural Uganda Environment for Development Discussion Paper Series May 2010. EFD DP 10-11.
- Kassie M, Shiferaw B, Asfaw S, Abate T, Muricho G, Teklewold H, Eshete M and Assefa K. 2010. Current situation and future outlooks of the chickpea sub-sector in Ethiopia. ICRISAT Working Paper, ICRISAT and EIAR, 39pp. http://www.icrisat.org/tropicallegumesll/pdfs/Current_Situation.pdf
- Kumara Charyulu D and Rao KPC. 2009. Risk Attitudes of farmers in Mahabubnagar district of Andhra Pradesh and their determinants. The Asian Economic Review 51(1):79-89.
- Kumara Charyulu D and Rao KPC. 2010. Drivers of crop diversification in Semi-Arid Tropics (SAT) of Andhra Pradesh. Journal of Agricultural Development and Policy. 20(1):38-46.
- Masvaya EN, Nyawasha RW, Zingore S, Nyamangara J, Delve RJ and Giller KE. 2010. Spatial soil fertility variability and plant nutrient uptake: A case of two smallholder farming areas in contrasting agro-ecological zones in Zimbabwe. Nutrient Cycling in Agroecosystems 88(1):111-120 (DOI: 10.1007/s10705-009-9262-y).
- Mausch K. 2010. Poverty, Inequality and the Non-farm Economy: The Case of Rural Vietnam. ISBN 978-3-8325-2461-6 Logos Publishing house, Berlin.
- Mazvimavi K, Minde IJ, Murendo C and Ndlovu P. 2010. Zimbabwe Emergency Agricultural Input Project (ZEAIP) Post Planting Impact Assessment Report. A report submitted to GRM International. ICRISAT Bulawayo. 21pp.
- Mazvimavi K, Minde IJ, Murendo C and Ndlovu P. 2010. Zimbabwe Emergency Agricultural Input Project (ZEAIP) Retail Vouchers Assessment Report. A report submitted to GRM International. ICRISAT Bulawayo. 22pp.
- Mazvimavi K, Minde IJ, Murendo C and Ndlovu P. 2010. Zimbabwe Emergency Agricultural Input Project (ZEAIP) Post Harvest Report. A report submitted to GRM International. ICRISAT Bulawayo. 22pp.
- Mazvimavi, K. 2010. Socio-Economic Analysis of Conservation Agriculture in Southern Africa. Network Paper 02. Food and Agricultural Organization of the United Nations (FAO), Regional Emergency Office for Southern Africa (REO-SA). Johannesburg, South Africa.
- Mgonja M, Oketayot C, Sheunda P, Ojulong H, Manyasa E and Audi P. 2010. Agricultural Research, Analysis, and Policy Partnerships. Pages 9-45 in New research and technologies that could increase crop yields, enhance soil fertility and future partnerships for growth of the agriculture sector across southern. Responding to Immediate Needs and Building a Foundation for Long-Term Agricultural Growth and Poverty Reduction. August 2010, Nairobi, Kenya.
- Mgonja M. 2010. Domesticating the Harmonized Seed Security Project (HASSP), Potential Challenges and Opportunities. Pages 1-16 in Key note paper prepared and submitted to the Food Agricultural and Natural Resources Policy Analysis Network (FANRPAN) May 2010, Kopanong-South Africa. 16 pp.
- Moses M, Muraya Hartwig, Geiger H, Sagnard F, Santie de Villiers and Parzies HK. 2010. Geographical patterns of phenotypic diversity and structure of Kenyan wild sorghum populations (*Sorghum* spp.) as an aid to germplasm collection and conservation strategy. Plant Genetic Resources doi:10.1017/S1479262110000225.
- Muraya MM, Geiger HH, Mutegi E, Kanyenji BM, Sagnard S, de Villiers S, Kiambi D and Parzies HK. 2010. Geographical patterns of phenotypic diversity and structure of Kenyan wild sorghum populations (*Sorghum* spp) as an aid to germplasm collection and conservation strategy. Plant Genetic Resources 8:217-224. Doi:10.1017/S1479262110000225.
- Mutegi E, Sagnard F, Muraya M, Kanyenji B, Rono B, Mwongera C, Marangu C, Kamau J, Parzies H, De Villiers S, Semagn K, Traoré PS, Labuschagne M. 2010. Ecogeographical distribution of wild, weedy and cultivated *Sorghum bicolor* (L.) Moench in Kenya: Implications for conservation and crop-to-wild gene flow. Genetic Resources and Crop Evolution 75:243-253.

- Mutegi E, Sagnard F, Semagn K, Deu M, Muraya M, Kanyenji B, de Villiers S, Kiambi D, Herselman L and Labuschagne M. 2010. Genetic structure and relationships within and between cultivated and wild sorghum (*Sorghum bicolor* (L.) Moench) in Kenya as revealed by microsatellite markers. *Theoretical and Applied Genetics* doi: 10.1007/s00122-010-1504-5.
- Mutegi E, Sagnard F, Semagn K, Deu M, Muraya M, Kanyenji B, de Villiers S, Kiambi D, Herselman L and Labuschagne M. 2010. Genetic structure and relationships within and between cultivated and wild sorghum (*Sorghum bicolor* (L.) Moench) in Kenya as revealed by microsatellite markers. *Theoretical and Applied Genetics* doi: 10.1007/s00122-010-1504-5.
- Muturi PW, Mwololo JK, Munyiri SW, Rubaihayo P, Munyua JK, Mgonja M, Manyasa E and Kiarie N. 2010. A perspective on proteomics: current applications, challenges and potential uses. *Agriculture and biology Journal of North America* 1:916-918. doi:10.5251/abjna.2010.1.5.916. 918. <http://scihub.org/ABJNA/PDF/2010/5/ABJNA-1-5-916-918.pdf>
- Nyamangara J and Makumire TB. 2010. Nitrogen mineralization from fresh and composted animal manures applied to a sandy soil. *Midlands Status University Journal of Science, Agriculture and Technology* 2(1):25-34. Midlands State University, Zimbabwe.
- Nyamangara J and Nyagumbo I. 2010. Interactive effects of selected nutrient resources and tied-ridging on plant performance in a semi-arid smallholder farming environment in central Zimbabwe. *Nutrient Cycling in Agroecosystems* 88(1):103-109 (DOI: 10.1007/s10705-009-9282-7).
- Rabbi I, Geiger HH, Haussmann BIG, Kiambi D, Folkertsma R and Parzies HK. 2010. Impact of farmers' practices and seed systems on the genetic structure of common sorghum cultivars in Kenya and Sudan. *Plant Genetic Resources - Characterization and Utilization* 8:116-126 DOI: 10.1017/S147926211000002X.
- Rabbi IY, Parzies HK, Kiambi D, Haussmann BIG, Folkertsma R and Geiger HH. 2010. Experimental studies on pollen-mediated gene flow in *Sorghum bicolor* (L.) Moench using male-sterile bait plants; *Plant Breeding, Early View*; S:1-8 DOI: 10.1111/j.1439-0523.2010.01775.x
- Rao KPC, Ndegwa WG, Kizito K and Oyoo A. 2010. Climate variability and change: Farmer perceptions and understanding of intra-seasonal variability in rainfall and associated risk in semi-arid Kenya. *Experimental Agriculture* 47: 1-25.
- Rao KPC. 2010. Climate change: What it means for agriculture in Eastern Africa. *Swara* 1:43-45.
- Senda TS, Peden D, Homann-Kee Tui S, Sisito G, Van Rooyen A, Sikosana JLN. 2010. Gendered livelihood implications for improvement of livestock water productivity in Zimbabwe. *Experimental Agriculture* 46:1-13 C_ Cambridge University Press 2010, doi:10.1017/S0014479710000943
- Sibanda A, Homann-Kee Tui S, Van Rooyen A, Dimes J, Nkomboni D and Sisito G. 2010. Understanding user communities perceptions of land use changes in the rangelands, Zimbabwe. *Experimental Agriculture* 46:1-16 C_ Cambridge University Press 2010, doi:10.1017/S001447971000092X
- Simtowe F, Shiferaw B, Asfaw S, Abate T, Monyo E, Siambi M and Muricho G. 2010. Socio-economic assessment of baseline pigeonpea and groundnut production conditions, farmer technology choice, market linkages, institutions and poverty in rural Malawi. ICRISAT. 127pp. <http://www.icrisat.org/what-we-do/impi/projects/tl2-publications/research-reports/rr-pp-gn-malawi.pdf>
- Simtowe F, Shiferaw B, Kassie M, Abate T, Silim S, Siambi M, Madzonga O, Muricho G and Kananji G. 2010. Assessment of the Current Situation and Future Outlooks for the Pigeonpea Sub-sector in Malawi. <http://www.icrisat.org/what-we-do/impi/projects/tl2-publications/regional-situation-outlook-reports/rso-pp-malawi.pdf>
- Susan MM, Quinata E, Sharma KK, Simon T, Gichuki MG and de Villiers, S. 2010. Surface sterilant effect on the regeneration efficiency from cotyledon explants of groundnut (*Arachis hypogaea* L.) varieties adapted to eastern and southern Africa. *African Journal of Biotechnology* 9(20):2866-2871.
- Upadhyaya HD, Ramesh S, Sharma S, Singh SK, Varshney SK, Sarma NDRK, Ravishankar CR, Narasimhudu Y, Reddy VG, Sahrawat KL, Dhanalakshmi TN, Mgonja MA, Parzies HK, Gowda CLL and Singh Sube. 2010. Genetic diversity for grain nutrients contents in a core collection of finger millet (*Eleusine coracana* (L.) Gaertn.) germplasm. *Field Crops Research* 121:42-52.
- Van Rooyen A and Homann Kee Tui S. 2010. New Agriculturist – Livestock and Livelihoods: A Partnership Approach. <http://www.new-ag.info/focus/focusItem.php?a=1617>

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Note:

*Staff member left during the year

**Staff member joined during the year

About ICRISAT



The International Crops Research Institute for the Semi-Arid-Tropics (ICRISAT) is a non-profit, non-political organization that conducts agricultural research for development in Asia and sub-Saharan Africa with a wide array of partners throughout the world. Covering 6.5 million square kilometers of land in 55 countries, the semi-arid tropics have over 2 billion people, and 644 million of these are the poorest of the poor. ICRISAT and its partners help empower these poor people to overcome poverty, hunger and a degraded environment through better agriculture.

ICRISAT is headquartered in Hyderabad, Andhra Pradesh, India, with two regional hubs and four country offices in sub-Saharan Africa. It belongs to the Consortium of Centers supported by the Consultative Group on International Agricultural Research (CGIAR).

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