Zimbabwe

tional attitudes towards women are still well entrenched.

Unofficial estimates put female-headed households at 25% of the total in the District. The local perception is that the death of men from Acquired Immune Deficiency Syndrome (AIDS) has been a major factor in increasing the roles being assumed by women. Women-headed households usually have to hire men to help with certain farm tasks, such as land clearing or ploughing.

Most rural women in the District are now organized into groups, or clubs as they are usually called in Zambia. In this respect, they are more advanced than the men. After initial suspicion of women's groupings, men in general now appreciate them and some of the women's clubs include a few men. The relatively high illiteracy levels among women makes it difficult for them to use modern farm inputs, such as pesticides, because they cannot read the instructions on the package.

The men generally take the responsibility for selling the family cash crops. Many women stated that their men stay on in the towns and squander much of the proceeds on high living, seriously prejudicing their family's financial capacity to meet school and other costs for the rest of the year. Women also accuse men of selling too much of the family's food resources, thereby jeopardizing their food security in return for some quick cash.

Some men, however, are well aware of the women's heavy workload and believe they should be given less to do in the fields. They recognize the efforts made by women in drawing and carrying water, collecting and transporting firewood, looking after the house and children, cooking and working in the fields, usually 'while the men sit under a tree'.

The Production Tools Encountered and Their Use

Photographs of the tools encountered are provided in Annex 6.

Animal-Traction Implements

There are ploughs, harrows, ridgers, cultivators, planters and ox-carts in the District, although by far the most common implements among these are ploughs and harrows. Many of these implements are not used now because of the death of so many animals.

The majority of the animal-draught ploughs are imported, for reasons that will be explained in the section below dealing with producers/importers of production tools. Most of the implements seen were very old, and all of them were for ox-power.

Hand Tools

The hoes encountered were all of the same traditional chop-down-and-pull type,

1. The introductory and descriptive opening sections of this report are based on information gathered during training sessions in qualitative research methods with the national staff who were to conduct the study (all of whom had a thorough knowledge of the rural situation), on information collected during individual interviews, and on available literature. Some general information has also been lifted from the results of the FGDs with rural people when it was considered that it would best fit in these sections.

many produced by local blacksmiths. The best had been made from the discs of scrapped tractor-drawn disc ploughs or harrows. Hoes imported from Malawi, the United Republic of Tanzania, South Africa, Zimbabwe and China were also seen or mentioned. The Chinese Cock brand hoes were much appreciated. In the past, they had been sold by a store connected to a Chinese rice development project in the area but, with the termination of the project, they were no longer available. People said they would like to be able to buy them again. In fact, Cock brand hoes are available in Lusaka, but it seems they are not being distributed to Chibombo District and the people think they are no longer being imported.

The locally-made hoes had a tang for fitting the blade to the handle. In most countries using tang fittings, this tang is burned completely through the handle which has been chosen because it has a natural thickening, such as a knob, at one end. In Zambia, however, there was a variation on this theme in that, when a handle is being cut from a tree, a side branch is chosen as the shaft but a small piece of the main trunk is left at the end to form a perpendicular appendix somewhat like a golf club. The tang is burned upwards into this appendix to fix the blade to the handle.

The locally-made hoes were of various sizes, with the smallest used as weeding hoes. The length of handles varied considerably.

Axes/Cutting Tools

Axes of various sizes are used for cutting shrubs and clearing fields before planting. The axes tend to be heavy and are mainly used by men. Some pick-axes, also used in land clearing, and slashers (pangas) were seen.

Harvesting Tools

A variety of knives and sickles was seen, some of the latter imported. The handles had often broken and been replaced with a rag wrapped around the steel.

"The women is the forefront person in the home because in homes where the husband is away, she does almost everything."

Comment during men's discussion group in Manicaland

"If a women starts to earn too much cash from her garden she will get into trouble with her husband."

Comment by member of field research team

Miscellaneous

Shovels with a D-shaped handle were quite common. Some were very old and had been imported from the United Kingdom. As in the case of the sickles, some of the handles were broken. A few of the groups had rakes, but they were not common.

"Where there is money, men are involved."
Comment by field research team

"For a women, having time left over is called 'laziness'."
Comment by field research team

"Some women are now teaching men how to handle a plough."
Comment during a women's discussion group in Chinamora

"Men worry that if women go to town alone they will spend money on petty or frivolous things, or elope with another man."
Comment by field research team

Cultural and Socio-Economic Considerations

Working Posture

The length of hoe handles is specific to different tribal groups. In Chibombo District, where there are many different tribes, a variety of handle lengths was found and there was a wide a range of different opinions on the subject.

In general, it was said that the people from the Eastern Province use long handles, and that those from the Southern Province use short ones. In Chibombo District, this translates into the Tongas using short handles and the Lenje using longer ones, and both are found in single communities.

For weeding, especially of groundnuts, most people agree that short-handled hoes, which can be used with one hand while the other hand picks up the weeds and shakes the soil off the roots, are faster and more effective. Long-handled hoes are considered to be slower for this work, and one group claimed that long handles were 'for lazy people'.

With regard to user fatigue and pain according to different handle lengths, most groups said that long handles caused less back pain, but this was not a unanimous opinion and a few groups said the opposite. These opinions seem to be deeply entrenched in the culture of particular tribes. Only one group said that, ideally, one should have hoes with different handle lengths for different tasks.

Land Tenure and Credit

Married women do not own land and, if a husband dies, it is quite normal for his land to be taken back by his family. The widow usually goes back to her own parents, although she may marry a brother-in-law. Only when a woman is middle-aged and has achieved a certain standard of respect is she allowed to stay on her husband's land, thereby becoming a female head of household.

Agricultural credit in Zambia is in crisis. The government institutions that were previously involved in the sector have folded or suspended their activities, and gov-

ernment policy is now to privatize credit for farmers. This is functioning in some outgrower schemes where the company contracting to buy the produce provides credit for inputs. However, at present more generalized agricultural credit is not available to either women or men. With women's lack of access to land as collateral for loans, they will be disadvantaged even if such credit becomes available.

Some Ministry of Agriculture staff concerned with women's and youth programmes felt that future credit schemes should be based on the household and not on women or men. These schemes should be properly explained to people from the beginning and accompanied by training, extension and monitoring.

Draught Animals for Women

In Chibombo, there is no taboo against women using draught oxen. In fact, many do, or did until the massive destruction of the bovine population by disease in recent years. According to verbal reports, such taboos exist in other parts of Zambia; but even in Chibombo, men are the main users of animal traction. The principal reasons for this are that oxen traditionally belong to men and the implements are seen as being designed for men, so that animal traction has generally gained the image of being a man's field of work. This image has been greatly reinforced by past policies that have neglected women in animal-traction training courses and have not invited them to field demonstrations.

One NGO, Women in Agriculture, is very active (and successful) in promoting women's groups. At the time of the interview with the head of this NGO, one of her groups had just succeeded, through lobbying at a very high political level, in obtaining a tractor as a gift. The tractor had still to be delivered, and the head of the NGO was very concerned about its economic and technical viability. She expressed her strong preference for the introduction of animal-draught traction using donkeys, but since there is no significant donkey population in Zambia she intends to import a batch of donkeys from Zimbabwe or Botswana.

Institutional Aspects

Despite the need to better exploit Zambia's agricultural potential and the fact that women do the lion's share of the work on the land, so far little has been done to cater to their needs in terms of production technology. Even in efforts to promote animal traction, little attention has been paid to women: some have attended training courses at the Palabana Farm Power and Mechanization Centre, but they have been very few compared to the men. The Palabana Centre, originally founded with assistance from The Netherlands, trains extensionists, NGO staff and a few farmers. It also undertakes field research and is currently developing a groundnut lifter and a donkey plough for women.

Until recently, the accepted wisdom was that women were not really interested in animal traction. The present study, as well as one on animal traction for The Netherlands-supported NGO programme, *Smallholder Agricultural Mechanization Promotions* (SAMeP), show the contrary: women are indeed very much interested in

using animal-draught power.

The serious reduction in the cattle population caused by Corridor Disease in many areas, and the concomitant reduction in animal traction, is blamed by some NGO spokesmen on an ineffectual government veterinary service.

With regard to the local manufacture of implements and tools, government policy on import duty has created many difficulties. Higher duty is payable on raw materials, e.g., steel, than on complete manufactured items imported from abroad. This has forced Zambian manufacturers of animal-draught implements out of business for they cannot compete with imported implements, especially from Zimplow in Zimbabwe. In addition, the Government of Zimbabwe subsidizes steel and exports, thus making it even more difficult for Zambian industry to compete. It is hardly surprising that, in these circumstances, two major producers of implements in Zambia, Northfront Engineering and Lusaka Engineering Company (LENCO), have closed down. Only SAMS (Smallholder Agricultural Services), which evolved from LENCO, has managed to continue but this is because it is receiving external support. In fact, it is basically a donor project and not yet a commercial operation. Its sustainability will be problematic once donor support comes to an end, especially in view of the tradition in Zambia of importing implements from Zimbabwe and given the import duties to be paid on raw materials.

"The short-handled hoe is for hard workers while the long-handled hoe is for workers on white commercial farms. They don't shake the soil off the weeds, so after a week they will be there again and the workers can go back and weed again and get money for it."

"And long-handled hoes are for prisoners, too, because they are lazy and they want to work slowly."

"We women want short handles so that, when we weed, we can shake the soil off the weeds with the other hand and heap them somewhere."

"A woman who cannot bend her back to weed is lazy."

Comments during discussion group in Manicaland

"Standing up is lazy. The social issues are stronger than the engineering issues!"

Interviewee in Agricultural Engineering and Soils Department, University of Zimbabwe

Government Programmes for Women

The Government's extension services have a women's and youth section. People working in this section say that men extension workers are now concerned about women farmers. Each District Agricultural Office has a committee on which women farmers are supposedly represented, but quite often they are not; and there are still few women extension staff in the field compared to the number of men.

Producers/Importers of Agricultural Production Tools

Local Producers of Hand Tools

The area of Lusaka where most farm tools are sold is in Cha Cha Road. Hoes from China, South Africa, Zimbabwe and Malawi are on display, together with locally-made ones. The price range, including handles, is from ZMK 5 500 (about US$ 4.25) for locally-made hoes and up to ZMK 10 500

(about US$ 8) for hoes imported from Zimbabwe and South Africa.

Information obtained during an interview with a blacksmith making hoes in Lusaka was that, in all, there were three such artisans in the town. The materials they use are mainly offcuts from industrial steel companies. The handle-makers are a separate group and they come together with the hoe sellers in the market, where they fix and adjust the handles to the steel part.

The blacksmith interviewed stated that he made a standard hoe but had no direct contact with his customers. However, his son travelled widely to sell hand tools in the Provinces and he knew their customers well. This particular blacksmith's output was about 500-1 000 hoes a year. He felt he had a successful business because, even if the quality of his hoes was not comparable with the imported ones, there was a good market for cheaper goods. Blacksmiths are also present in rural areas and many people buy tools from them.

SARO AGRI Equipment Ltd

This company is one of the main importers of agricultural and other equipment in Zambia. It is the main importer of Zimplow animal-draught implements from Zimbabwe, and it produces items such as hammer mills, hullers and water tanks, but no hand-hoes, ploughs or cultivators. At the time of the study, the company had imported 350 ploughs for the next cropping season, which would sell for about the same price as 10 bags of maize or a bicycle. In addition to the ploughs, SARO AGRI had imported 48 Zimplow cultivators/weeders for the coming season, and a limited number of hand-hoes (350) from South Africa. According to the company's General Manager, Zimplow implements are much appreciated in Zambia but, as already noted, there is no real local competition. The company pays no particular attention to the needs of women farmers when importing tools.

"If you use donkeys, you are seen as the poorest of the poor. Even if you have 40 donkeys, you are still considered poor."
The Director, Development Technology Unit, University of Zimbabwe

"Donkeys cannot be eaten, so you can't use them as a food store. And when a donkey dies, you have to bury him like a human!"
Comment during interview with staff of Zimplow Ltd

"A team of four donkeys is easier to handle than a pair of oxen. They are easier to train than oxen and once you have established the first furrow in a field, donkeys will go it alone."
Donkey Researcher at Matapos Research Station

B. What Women and Men Farmers Say

The Practices and Perceptions of Rural People Regarding Production Technology

In addition to the foregoing general information, the FGDs produced the following specific information:

Time Spent by Women Working in the Field

This information was not easy to obtain in a standard format because while some groups still had ac-

cess to animal traction, others were using only hand-hoes. Most of the groups said they combined land preparation with planting, whether by walking behind the plough and dropping seed or hand-hoeing for part of the day and then spending the rest of the day seeding the area just cultivated. Therefore, land preparation and planting are taken as a single operation.

The groups mentioned that in the time they spent in the field depended on the crops being grown. They singled out cotton as the most demanding in terms of weeding and harvesting time.

Women's Hardest and Most Tiring Tasks in the Field

Almost every group said that weeding was by far the most tiring and tedious job, but a small minority claimed that land preparation was the hardest. Weeding was said to be particularly tiring because it required bending and concentration in order to do the job properly and thus caused backache. If there were frequent rains, weeding was a never-ending task. In cotton, particularly, one might have to go through the field as many as four times.

Differences in Tools Used by Women and Men

There were no significant differences in the tools used by women, men or children although women and children tended to use lighter hoes with shorter handles. The discussions in the women's groups showed that it was mainly – but far from exclusively – the men who used animal-traction implements. One group stated that women in their community used the animal-draught implements better than the men did.

Renewal of Tools

Almost all the groups mentioned breakage of tools as a common cause for replacement. For this reason, it was not easy to reach a conclusion about the normal life of tools. Nevertheless, it was often said that a hoe would last one-to-three years, depending on its quality and how it was used. Ploughshares were changed every one-to-two years.

Several groups mentioned that the loss or theft of tools was quite common, and this was another reason for replacement.

Where Tools are Purchased and at What Cost

Tools are usually purchased at the stores or markets in the nearest town, from itinerant vendors, or from local blacksmiths, with the latter predominating. Their costs are as set out in the following table.

Hand Tools

Animal Draught Implements

Preference for Industrially- or Blacksmith-Produced Tools

The majority of the groups said that industrially-produced tools were of much better quality than those produced by local blacksmiths. However, one group expressed the opposite opinion, perhaps because their local blacksmith worked better than most or had access to higher-quality scrap.

Without doubt, the shortage of cash is such that people will often choose the lowest priced tool they can find. However, in addition to the lower prices, tools made by blacksmith are attractive because usually they can be bought in exchange for chickens or groundnuts, whereas this does not apply to tools sold at commercial outlets. One big chicken or two smaller ones will buy one big hoe; one average sized chicken will buy an axe; one small chicken will buy a small weeding hoe, and so on.

There is seldom, if ever, any consultation between women and blacksmiths regarding the tools the women need or the modifications they would like.

Other Tools and Implements Known by Groups but Seldom Owned by Group Members

Apart from the length of handles on hoes used by different tribes and in different parts of the country, and the different weights and sizes of hoes, no other tools were mentioned by the groups. Nor had there been any changes in living memory in their own tools.

Who Decides What Tools to Buy

Behaviour patterns with regard to decision-making about the tools to be bought are not uniform. In most cases, the man and wife consult each other. In a small number of cases, men take the decisions without consulting their wives, or wives take the decisions without consulting their husbands. When the women do this, they usually barter chickens for their tools.

In a female-headed household, the woman takes the decision alone or consults with her eldest children. In a very few groups, the women said their husbands were too busy drinking beer or fishing to become involved or that they had no interest in farming, so they were forced to take the decisions alone.

"We don't normally bring gender issues into our business. We just look at the farmer as such."

"We are just manufacturers. We do not have animals or our own farms."

Comments by members of Zimplow management team

Improvements that Women Would Like for Their Tools

Zambian women and men farmers are fully aware of the limitations on production imposed by the hand-hoe. Alone among people in the countries covered by the study, Zambian women and men expressed the opinion that the only real solution to their problems was to replace the hand-hoe with different production technology, particularly animal traction. This might well be the case because previously, at least in the Chibombo District, the farmers previously used animal traction quite extensively. Now, following the death of so many oxen, people have been forced to revert to the hand-hoe and to the smaller cultivated area per family that this implies. This has made a deep impression on the people. Several groups mentioned the potential advantages of using donkeys as opposed to oxen. With regard to the animal-draught implements now available, women's and men's groups said that they were too heavy for women to use properly. Opinions in this regard were quite forcibly expressed.

"If implements are going to be made lighter and smaller, and with less parts, they should be cheaper."

Comment during a women's group discussion

With regard to hand tools, there was widespread discontent with the fragility and generally low quality of those made by blacksmiths. Stronger and more durable hoes were wanted and the interviewees said they would like to take broken hoes back to their makers to complain. They remembered with nostalgia the Chinese Cock brand hoe that used to be available in the area. The groups expressed their willingness to cooperate with blacksmiths and manufacturers to improve tools and implements.

Willingness to Pay More for Better Tools

There was a general willingness by groups to pay more for better tools, provided they in fact performed better.

C. Conclusions

Constraints and Opportunities

The determining factors governing improved production technology for women in Zambia fall under two main categories: socio-economic and technical.

Socio-Economic Factors

As elsewhere in Africa, women's lack of access to land and the fact that most of their work is not remunerated gives them very limited access to cash or credit. Fortunately, women are now beginning to assume leadership functions in rural communities, at least in Chibombo District, and this may help to bring about change.

The expanding women's group movement is another positive aspect, but it still has far to go. The generally rigid gender segregation into women's and men's groups (farmers clubs) may not be in the best long-term interests: having a few men in a women's group, but not enough to dominate the situation, can be useful, as has been shown in some other countries. Men were found to be in favour of seeking improvements in the production technology available to women, so any attempts to do so would be working in a favourable environment. However, when and if women were truly enabled to work with oxen, the question of men's real willingness to relinquish that role would be tested. It is difficult to predict the outcome although, in all probability, any residual cultural reluctance would vanish once men were faced with the reality of increased production through opening more land and through

Crop/Operation	Time per Person per Acre
Maize	
Ploughing	1-2 days
Cultivating	1 day
Planting	1-2 days
Weeding (after inter-row cultivation with animal traction)	2-4 days
Weeding (by hand-hoe only)	2-4 weeks
Harvesting – cutting and stooping	2-3 days
Groundnuts	
Planting	1-2 weeks
Weeding (only by hand because groundnuts are broadcast)	3-4 weeks
Harvesting: pulling and cocking	3 days
Plucking	3 weeks
Rapoke/Finger Millet	
Cultivating	1 day
Planting (broadcast)	1 day
Weeding and thinning	1-2 months
Harvesting – cutting heads	1 month

timeliness in mechanized ploughing and weeding. The risk for women would be that men would retire almost completely from farming, except at the moment when the produce was to be sold! Ideally, men's role in ploughing with oxen would continue – when the men are available – but women's work in weeding and transportation could be reduced enormously with appropriate animal-traction technology.

Technical

There would be few cultural problems with donkeys in Zambia. No prestige is attached to them, and they cannot be eaten. The main constraint is that Zambia, as already mentioned, has very few donkeys (an estimated 2 000 only). A number have already been brought in from Zimbabwe or Botswana and the NGO, Women in Agriculture, is planning to import more. The extension services in Chibombo District have been talking about doing the same, but if donkey traction is ever to take off for women in Zambia, lightweight implements will be needed. Such implements are being developed in Zambia and Zimbabwe but, so far, they are not generally available in Zambia.

With regard to hand tools, there is little scope for improvements in the tools themselves except in terms of their strength and durability, especially those made by blacksmiths. Better distribution systems for imported tools are needed, including local sales points, because buying in town is often difficult, even for men, and for women it is nearly impossible. Furthermore, as in other countries, market research and information about the availability of tools and implements would also improve the situation.

"We really overwork ourselves when we are weeding."

"Without weeding do not expect any harvest. The back has to ache to conquer the weeds."

"Oh, weeding is the most taxing job, both in energy and time, because you have to bend down and work carefully not to damage the crop, pull out the weeds and shake them, while at the same time you want to finish the operation before the weeds outgrow the crop."

"If you finish weeding all your fields, then you know you will harvest something."

"Weeding shows your ability to grow a crop and it's the hardest task which takes the longest time to finish."

"Hunger will reign in your home if you don't weed properly."

"If you do not weed, then you are feeding all your fertilizer to the weeds and you may as well harvest those weeds!"

"To win a crop, you have to disregard the backache!"

A selection of comments during discussion groups with women

Appendix

Members of Field Research Team

Mr Martin Bwalya
Palabana Farm Power and Mechanization Centre (study coordinator)

Ms Lwiza Chimba
Department of Marketing and Trade, Kabwe

Ms Edna Kabwe

Keembe Farm Institute, Department of Agriculture

Ms Benita Miyoba
Keembe Community Development Service

Ms Rhoda Mofya
Palabana Farm Power and Mechanization Centre

Ms Rabecca Mombe
National Mulungushi Company, Kabwe

Ms Hilda Mulumbi
Department Field Services, Chibombo District

Ms Maureen Mumba
Muswishi Health Centre

Mr Levy Phiri
Farm Power and Mechanization, Chibombo District

Ms Eles Tembo
Shimukuni Primary School, Chibombo

"The water pump they showed us costs ZWD 1 300. Where on earth can I get such an amount? Yet it is a good piece of equipment that would increase my production."
Woman during discussion group in Chinamora

A. The Scenario[1]

Context of the Study, Its Scope and Methods

Tool	ZWD[2]	Tool	ZWD
Blacksmith hoe (with handle) – depending on size	6-30	Industrial hoe – without handle (depending on size)	25-50
Axe – blacksmith (with handle)	10-30	Axe – industrial (no handle)	30-35
Adze – blacksmith	6	Sickle – industrial	15-25
Shovel – industrial	70	Watering can – industrial	100
Rake – industrial	70	Pickaxe – industrial	70
Wheelbarrow	400	Knapsack sprayer	900
Wheeled push-hoe (ConTill)	70		

The field work for the study was coordinated by Agritex, the Ministry of Agriculture's Department of Agricultural Technical and Extension Services. Agritex is also the Government's facilitating unit for the FAO/SIDA FARMESA programme.

Type	Source	ZWD
Ox-ploughs	BST/Zimplow and others	750-1 000
Ox-cultivators	-ditto-	1 000-1 300
Diamond spike harrow	-ditto-, with price according to size	550-1 000
Ox-cart	Various	1 500-2 500
Single donkey toolbar/cultivator	ConTill Project/Auto and Engineering Services, Masvingo	175

The field work for the study in Zimbabwe was conducted in two different zones: first, the Chinamora Communal Area, sometimes known as Domboshawa, in Goromonzi District, about 30km north-east of Harare; and secondly in Manicaland Province, where work was conducted in Communal Areas in the Districts of Makoni North and Makoni South which are situated some 200 km to the south-east of Harare.

The farming conditions in the two areas are quite distinct. In Chinamora, they are more favourable, with about 900 mm of rainfall in most years, although in the drought years of 1991/92 and 1994/95 there were rainfalls of only 405 mm and 481 mm, respectively. Temperatures range from 22º to 30ºC in the summer months, although some frosts occur in winter. In dry years, particularly, these frosts can be severe and cause major damage to the vegetable crops that are quite widely grown. In addition to vegetables under irrigation, maize, sunflower and groundnuts are the

> "A house where there are no disagreements is dead, because disagreements help progress towards reaching the right compromise, rather than saying yes all the time."
>
> Comment during a women's discussion group in Chinamora

2. US$ 1 = ZWD 12 approximately (October 1998).

main crops grown in the area. The terrain is rugged and rocky and the soils are of the paraferralitic group or generally coarse-grained sands or sandy loams, and are inherently poor in the principal plant nutrients.

"Most tools for farming were originally meant for men, but circumstances now force women to use them."
Comment during men's discussion group in Manicaland

The average family cultivates about 1 ha for field crops and between one quarter and half a hectare of 'garden' for vegetables. Many men are away from their homes, mostly working in Harare, but – given its proximity – they can return often.

Conditions in Manicaland Province are drier and hotter. Rainfall in the Districts covered by the study ranges from 450 mm to 850 mm, but there are periodic seasonal droughts and severe dry spells, even during the rainy season. Temperatures reach 30ºC. and beyond in the summer, and frosts in winter are almost unknown. The soils are mainly sandy loams or sandy clay loams. In such conditions, the farming system must, of necessity, be semi-extensive with livestock as its backbone. Some intensification is possible by growing drought-resistant fodder crops. There are, however, certain pockets with more favourable conditions in which maize, groundnuts, bambara nuts, sunflowers, millet, sorghum, cow peas, tobacco and vegetables can be grown; and, where water is available, vegetables are grown the whole year round. The average family cultivates between 1 and 3 ha per year. The phenomenon of absent menfolk seems to be even more accentuated than in Chinamora and, since Manicaland is more remote from urban places of work, the men return home less often and leave the more traditional male farm work (e.g., animal traction) to the women.

The field research for the study was conducted with a team of seven people – four women and three men. Some of them were extension staff of Agritex; others were from the Institute of Agricultural Engineering or the University of Zimbabwe (see the list of researchers at the end of this annex).

In all, 30 FGDs were conducted and, of these, 24 were with women and six with men, for a total of about 325 people. The participants in the group discussions were always asked to bring their production tools to the meeting.

The Agricultural Production System and Women's Role Within It

Four different categories of farmers are recognized in Zimbabwe:

- **Communal farmers**, who make up about 75% of the farming population, who live and produce on State land, and whose agriculture is mainly at the subsistence level. The majority of women farmers are in this category.
- **Resettled farmers** are on better land, with higher output and, usually, an increasing involvement in the cash crops.
- **Small-scale farmers** have formal land title and, as a result, greater access to credit. These farmers usually produce cash crops. Nowadays, land title

3. Perhaps these implements were imported from Australia. Massey-Harris, later Massey-Ferguson, once had a subsidiary in Australia that used the brand name 'Sunshine'.

is also assigned to women small-scale farmers, especially if they are heads of family.

- **Commercial farmers**, usually Asian or European, operate on a very large scale and may employ as many as 200 farm workers.

"If they are easy to discuss with we are willing to work with them." Comment about working with researchers and designers to improve implements during women's discussion in Chinamora

The present study was conducted among communal farmers only, for it is in this sector that the role of women predominates and where the production technology currently available to them is the poorest.

In many communal farming areas, it is the women who hold the main responsibility for farm production, for the agricultural economy is at such a low level that their men have had to seek work in urban areas. Nevertheless, even when the man has gone to work in a town, he generally retains the responsibility for decision-making with regard to the crops to be grown, the seeds to be bought, and so on. In such cases, it is said that the household is 'temporarily woman-headed'. Permanently woman-headed households happen when the husband has died or abandoned the family.

As elsewhere in sub-Saharan Africa, the land is allocated to the whole household. The man's plot is the largest and is mainly used for cash crops, while a smaller plot, predominantly for food production, is allocated to the wife or wives. The family's work priority is for the cash crops on the man's plot. Only when this work has been completed each day can the women tend to their individual plots, or 'gardens' as they are called.

Men's prime farming responsibility is for land opening and ploughing. When they have animal traction, the men normally plough all the family plot, including the women's garden. If they are polygamous, they plough the favourite wife's plot first.

After land opening and/or ploughing, the men normally take a back seat and leave the rest of the production process to the women, although the building of mounds for sweet potatoes and trellising of tomato plants is normally done by men. In addition, men will step in and help if there is a special need. The main difference in this pattern is with important cash crops, such as tobacco, for which the men keep a constant and watchful eye on things and direct the family labour accordingly. Other traditional men's activities in rural areas are building houses, re-thatching roofs, and the digging of latrines and graves (sadly, with the spread of AIDS, this last task occurs more and more frequently).

Given the growing absence of men on the land, women are assuming more and more of the tasks that were traditionally men's. Men now recognize women's expanding role and their ability to do almost everything they can: they sometimes even admit that women do men's tasks better than they do, for example, ploughing with oxen. With regard to livestock, when men are available, they deal with the cattle, although milking is done by women. Women also look after small ruminants and poultry.

Women's work in the fields is facilitated in Zimbabwe by a traditional form of voluntary collective work, known as *Nhimbe* in the Shona language. On a rotational basis, beer and food are prepared by the person needing assistance, and the villagers do the work and eat and drink beer together. This, and the extended family approach, are of great assistance to women-headed households.

Women's groups for farming (or women's clubs, as they are known in Zimbabwe) have been actively promoted. They often have a man as their 'chairman' or 'spokesman', who goes to town to market or buy for the group since there is a reluctance on the part of men to allow women to go to town on their own. Women's clubs are not usually allowed to cultivate a particular plot for more than one season, and thus there is no incentive for them to build up its fertility.

Men market the family crops and take them to town for sale. It was stated that they often remain in the town for a period of time, leading a high life before returning home almost penniless. This is said to have led a number of women – faced with no cash until the next harvest – to commit suicide.

The Production Tools Encountered and Their Use

Photographs of the tools encountered are provided in Annex 6.

Animal-Traction Implements

One of Africa's major manufacturers of animal-draught implements is based in Zimbabwe (Zimplow Ltd.), so it was hardly surprising that ploughs, cultivators and harrows were widely encountered. Even though Zimplow also makes ridgers and planters, almost no groups possessed them.

The lack of planters was probably due to the fact that they are generally thought to be complex and expensive, and it is common practice to plant by following the plough and dropping the seed into the furrow bottom. Alternatively, lines are marked with a wire, a shallow furrow is scraped along them with a plough or cultivator, and the planting and covering of the seed is then done by hand.

When ridgers were mentioned, it was commented that inter-row work with them reduced the hand weeding required more than a cultivator.

Ox-drawn carts, known as 'Scotch carts' in Zimbabwe, were commonplace in most communities.

Hand Tools

A wide variety of hand tools was brought to the discussion groups. These included hoes, forked hoes, pickaxes, shovels, rakes, watering cans, wheelbarrows, slashers and sprayers. The main use for the forked hoes and pickaxes is to dig compacted manure out of animal compounds. Rakes are used mainly to prepare fine seedbeds in the vegetable plots.

Many hoes were made by blacksmiths from old ploughshares. In fact, it is common practice for farmers to take a worn-out plough share to the local blacksmith, thereby obtaining a hoe of high-quality material but only having to pay for the labour to make it. Some hoes are also made from old discs from tractor-operated implements.

The blacksmiths normally produce tools with a tang fitting, and they usually make the handles as well. For these, they use small trunks of the *munhondo* tree which have a naturally bulbous end through which the tang can be burned. Thus, tools made by blacksmiths are usually sold in complete form. Handles for ring-fitting hoes are either bought with the hoe or made by the farmers. The handles are usually of medium length, although shorter handles are fitted to smaller hoes for planting and weeding. Some large hoes with handles made of steel tube were seen. These are mainly used for the heavy work of building the mounds needed for growing sweet potatoes.

The shovels were mainly of the D-handled type commonly used in Great Britain. Some very old ones that had actually been made in Britain were seen; the D-shaped part of their handles had not stood the test of time.

Axes/Cutting Tools

Axes and adzes in varying sizes were found. Most of them were made by local blacksmiths, but industrially-produced versions also exist and can be bought in shops. Blacksmiths often use very basic production methods but turn out effective tools provided they can find the right type of scrap steel, such as vehicle leaf-springs.

One blacksmith-cum-farmer visited had no forge as such; he merely built a small fire on the ground, and his 'bellows' for blowing on the embers consisted of a plastic fertilizer bag with a piece of steel pipe connected hermetically through the bottom. Sitting with the bag between his legs, the blacksmith raised it and lowered it, opening the mouth on the upstroke so that it filled with air, and closing it on the downstroke to expel the air through the pipe.

Various types of sickle were seen: some were made locally but others were very old imported examples. The wooden handles on the latter usually had been broken and were replaced with a piece of rag wrapped around the tang. Slashers or pangas were commonly found, too.

Cultural and Socio-Economic Considerations

Working Posture

Zimbabwe has the same cultural conditioning as that found in most other African countries with regard to handle length and working posture: as elsewhere, working upright with a long-handled hoe is seen as laziness. However, this was rationalized more in Zimbabwe than in other countries, with people specifically mentioning the need, during hoeing, to shake the soil from the weeds of roots. They stated that this could only be done if people were working bent over and using a short-handled hoe.

Land Tenure and Credit

State land in the communal areas is normally assigned to men; and if a man with such land assigned to him dies, male members of his family, rather than his widow, take control of it. Only if a widow is already of a certain age and status, and with at least adolescent children, will she be allowed to assume her dead husband's land-use rights.

In the 1980s, there were major efforts to promote credit schemes for women. In those same years, a government ministry was created to attend to women's affairs but the concentration on women by government and donors backfired, in the sense that men became widely resentful. The ministry was disbanded, and today the policy is to concentrate development efforts on a family approach, to emphasize gender issues, and to integrate rather than separate.

Some women's clubs have formed savings groups and manage to obtain seasonal credit for farm inputs. It was reported that a women's bank is being founded to give credit for women's projects but, at the time of the field work for this study, it was not yet operating. In addition to the legislative problems surrounding credit in communal areas, there are psychological barriers to credit for women: the women themselves are often reluctant to take on obligations they might not be able to meet, and their men are reluctant to let them take on obligations.

Draught Animals for Women

There are no taboos in Zimbabwe against women using draught oxen and they do