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Gender Again—Views of Female Agricultural Extension Officers by Smallholder Farmers in Tanzania

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Summary. — Tanzania attempts to have a village extension officer (VEO) in every village; until recent years most of the VEOs were male. Research indicated that male VEOs did not often visit female farmers and male farmers frequently did not bring extension information home to their wives. Since women contribute more of the agricultural labor than men, it was recommended that female VEOs be hired. Now one-third of the VEOs are female and males and females have the same training.

What are farmers' (male and female) views of the female VEOs? Which gender do they prefer and why? Is the modified training and visit (T and V) extension system working? Since privatization is underway in the country, do farmers want information other than on crops and livestock, which is the current emphasis? The researchers interviewed 240 male and female farmers in one region of Tanzania in October 1995 to ascertain their responses to these and other questions on agricultural extension. © 1997 Elsevier Science Ltd

Key words — Africa, Tanzania, agricultural extension officers, gender

1. INTRODUCTION

Fifteen years ago sub-Saharan Africa had male extension officers relating primarily to male farmers. As documentation increased proving that women contributed more of the agricultural labor than men and that women farmers were not being visited by extension agents, due to custom and some religious practices, Ministries of Agriculture were encouraged to hire female extension officers to increase agricultural production. One-third of the extension officers in Tanzania are now female. What is the attitude of male and female smallholder farmers toward them? Do they find female officers equally effective in providing information? Rutachokozibwa (1993) interviewed 330 female farmers and found that 70% of them preferred female village extension officers (VEOs). To find both male and female farmers' perceptions of extension officers by gender, reasons for those perceptions, and other views of extension, Magayane and Due interviewed 240 male and female farmers in October 1995. Results of this research are the topic of this article.

2. AGRICULTURAL EXTENSION

Agricultural extension is as old as food production as farmers assisted one another with ideas to increase output. In more recent times governments have also become involved in educating farmers on improved farming practices, as agricultural extension bridges the gap between technical knowledge and current practices. Several studies show that extension is cost-effective and has a significant and positive impact on farmers' knowledge, adoption of new technologies and productivity (Birkhaeuser, Evenson and Feder, 1991). In sub-Saharan Africa, where women do more of the labor in smallholder farming than men, choose the seeds, and are increasingly making production decisions, extension information has been tradition-

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ally disseminated by male extension officers to male farmers. It has been documented that male extension agents visit female farmers much less often than male farmers as custom often restrains or reduces communication between genders, and husbands do not bring information home to their wives (Spring, 1988). Hence, it has been argued, especially in the last 15 years, that more female extension agents should be hired (Due, Mollel and Malone, 1987; Chenoweth, 1987; Spring, 1988; Due and Magayane, 1990; Saito and Weidemann, 1990; Due, Sikaponde and Magayane, 1991; Gladwin, 1991; and Saito, 1994, to mention only a few). It has been documented also that female-headed households (with no able-bodied male present), which now account for almost 30% of smallholder farm households, are particularly omitted from extension visits.

(a) *Background*

The Training and Visit (T and V) System, encouraged by the World Bank, was designed to improve extension programs and to be gender blind, but this has not happened (Due, Mollel and Malone, 1987; Due, Sikaponde and Magayane, 1991, Gladwin, 1991). In Kenya it was found that extension positively affected the gross value of output of male farmers but not of female farmers, all other variables being held constant (Saito, 1994, p. 74). Yet women still wanted extension services. In Zambia contact with extension positively affected the adoption of new technologies but, in a country with large numbers of female-headed households, 82% had not been visited in the last year (Due, Sikaponde and Magayane, 1991). Thus the arguments to hire more women extension agents became stronger; it was also documented that male extension agents lacked sensitivity to women farmers' time and credit constraints; they also often thought women's crops were not important.

Tanzania's extension program has been partially funded by the World Bank and the African Development Bank since 1987 (United Republic of Tanzania, 1993, 1995). Initiated as a pilot project in five districts of Dodoma, Singida, and Tabora regions, the project expanded by incorporating three regions annually starting in 1988. By 1992 the project had expanded into 13 regions with 57 districts. It was the T and V system in which VEOs received instruction each fortnight and disseminated the information to contact farmers who, in turn, were supposed to transmit the information to a dozen or so non-contact farmers, male and female (Benor and Baxter, 1984). During the 1993 Mid-term Review of Phase 1 of the Extension Project, it was recommended that VEOs visit groups of farmers rather than contact farmers so as to increase the number of farmers contacted by the VEOs. This recommended was, however, not widely adopted by some regions. Accordingly VEOs' visits to groups rather than to contact farmers was emphasized effective from 1994 (United Republic of Tanzania, 1995). Visits of VEOs to specialists for "impact points" (the information to disseminate to the farmers) are now made once a month to reduce costs; 1995 was the first year that groups were being formed to receive VEO instructions. It was after harvest in 1995 that our survey was undertaken. (For the longer report see Due, Magayane and Temu, 1996.)

(b) *The sample and sample areas*

Permission was obtained from the Morogoro Regional Development Director to undertake the research in the area. (Funds limited our research to one region.) The sample is drawn from six villages which were selected from three different agroecological areas, low, medium and high potential farm lands in Morogoro region. The villages chosen were in close proximity with similar soils, rainfall and crops, one with a male and one with a female extension officer with the same training and experience. Twenty male and 20 female farmers were interviewed in each village. Female farmers were wives of male farmers or single females. The sampling frame was constructed to ensure that it covered all farmer age groups.

(c) *Sampled villages*

Table 1 shows characteristics of the sampled villages and the classification by the potential. The low potential villages were on light sandy soils with low rainfall. Farm families could not produce enough to feed the family all year; many reported having two or less meals available per day. But in contrast with the socialist era when only cooperative shops were allowed, now there are kiosks (small shops) everywhere with many selling the same items when they are in surplus supply. Production is still labor intensive with few farmers able to afford fertilizer or other crop enhancing inputs. The medium potential villages were in the Kilosa district which was a large sisal estate area after independence. Sisal prices make the crop less attractive now but much of the land still belongs to the estates or the government and private farmers complained of land shortages for their crops. Here too farming is labor intensive with few purchased inputs. The high potential areas are in a fertile valley between two mountains with good soils and high rainfall; there are small areas of irrigated rice and sugarcane. A large government-owned, rainfed sugarcane estate in the valley also provides day

Table 1. *The main characteristics of villages in the sample*

Village	Population*	Soils and rainfall	Crops grown	Category
Gwata Ujembe	330 (**24**) (18)	Light soils	Sorghum, millet, cowpeas	Low potential
Fulwe	800 (**23**) (17)	Low rainfall	Beans, maize, banana, fruits and vegetables	
Rudewa Batini	651 (19) (20)	Light brown soils	Maize, paddy, cotton, sunflower, coconuts, other fruits, vegetables	Medium potential
Madoto	472 (**21**) (19)	Medium rainfall		
Manyinga	472 (**17**) (24)	High rainfall, dark soils	Tobacco, coffee, cardamom, bananas, fruits and vegetables	High potential
Kilimanjaro	770 (**20**) (20)		Sugarcane, rice, coconut, cotton	

*First number is total # of families in the village. The numbers in brackets are number of male (**bold**) and female households in the sample.
Source: Tanzania agricultural extension survey, 1995 (Due, Magayane and Temu, 1996).

employment to large numbers of persons. The sampled families were not estate employees except for occasional employment. A much greater variety of crops was grown (Table 1) and much greater opportunities for non-farm income generation were also present in the high potential areas.

(d) *Dependency and education*

As shown in Table 2, the mean number of persons per household is 5.5 for the total sample. This included 2.2 children under 12, one child 12–18, parents and 0.3 other adults, male and female. Thus the dependency ratio — number of children under 14 (18 in our sample) plus population over 65 divided by the population aged between 14 (18) and 65 — is 1.39 per household. Tanzania's dependency ratio as computed from Table 25 of the *World Development Report* is 1.0 (World Bank, 1995). Computed from the 1988 census, the Morogoro Region dependency ratio is 0.96 (United Republic of Tanzania, 1990, Bureau of Statistics, 1990, Table 3, p. 30). The dependency ratio of 1.39 for the study villages is clearly above the national and regional figure. Every individual in the labor force in the study area must, therefore, produce for 0.39 more individuals, while countrywise and regionwise the individual has to produce for only one more.

Levels of formal education of the household head varied by village; the average for female household heads was 2.8 years and for male 4.2 years. Spouses of the female household heads had 2.4 years of formal education on average while spouses of the male household heads averaged 3.4 years. In general male levels of education were higher than females and male household heads, with higher levels of education, married females with more formal education. The low potential areas (Gwata Ujembe and Fulwe) had the lowest levels of education (Table 3). Fifty-five percent of female household heads and 43% of male household heads had no formal education.

(e) *Agricultural extension*

Farmers interviewed knew the value of agricultural extension and wanted a VEO in the village whether they visited the VEO or not. A small number thought that if they visited the VEO they would have to pay him or her. Since the government is now requiring payments for school fees, clinic visits and prescriptions in the public medical

Table 2. *Average household size by village by age of members*

Village	Parents	Children		Other adults	Total sample
		under 12	12–18		
Gwata Ujembe	1.7	2.2	1.6	0.4	5.9
Fulwe	1.9	1.9	0.7	0.2	4.7
Madoto	2.0	2.4	0.9	0.3	5.6
Rudewa Batini	2.0	1.7	0.8	0.4	4.9
Manyinga	2.0	2.8	1.1	0.2	6.1
Kilimanjaro	2.0	2.2	0.9	0.4	5.5
Whole sample	2.0	2.2	1.0	0.3	5.5

Source: Tanzania agricultural extension survey, 1995 (Due, Magayane and Temu, 1996).

Table 3. *Average years of formal education of male and female farmers and their spouses by village*

Village	Male farmers		Female farmers	
	farmer	spouse	farmer	spouse
Gwata Ujemba	3.2	1.5	1.9	1.5
Fulwe	3.2	2.7	1.7	2.7
Medoto	4.7	4.4	3.5	3.3
Rudewa Batini	5.1	3.3	2.4	1.0
Manyinga	4.9	4.5	4.0	3.7
Kilimanjaro	4.8	4.2	3.1	1.8
Whole sample	4.2	3.4	2.8	2.4

Source: Tanzania agricultural extension survey, 1995 (Due, Magayane and Temu, 1996).

facilities in district, regional, and national headquarters, some farmers thought that payments would also be required for VEO advice. This was not true. Farmers preferred to have the VEO live in the village; they also thought demonstration plots should be available in each village and field days held to let farmers see the advantages of demonstrations being made.

Morogoro Region has over 311 VEOs in 458 villages (United Republic of Tanzania, 1995, Table 3, p. 17). Farmers were asked the name of their VEO and the distance to the office. Thirty-six (15%) of the sampled farmers knew the name of the VEO; many others knew the VEO but not the name. The average time to walk to the VEO office was nine minutes. (It must be remembered that in Tanzania almost all farmers live in villages and go out from their homes to their farms.)

(f) *Is it useful to have a VEO?*

When asked if it was useful to have a VEO almost 90% responded in the affirmative. There was little variation between gender of the farmers responding affirmatively or among villages (Table 4). What were the reasons given for having a VEO? Of the total sample reporting, 46% reported that they learned new things or obtained new information, 32% stated they obtained good information about agriculture, 11% believed they obtained good advice generally, 4% learned to increase production and 7% either did not participate in VEO programs or found the VEO did not visit. Contrasts between male and female farmers' responses to the usefulness of a VEO are interesting. Female farmers found VEOs more useful in giving information on agriculture than male farmers and less useful in learning new things or obtaining new information than male farmers. In the "other" category, more female (8%) than male farmers (5%) said they did not participate in VEO programs.

(g) *Preference for a male or female VEO*

When asked their preference for a male or female VEO, of the 119 male farmers who had VEOs 35% preferred a male, 30% a female, and 35% were neutral as to the gender. Of the 114 female farmers who had VEOs, 26% preferred a male, 40% a female, and 34% were neutral. Of the total sample reporting, 31% preferred males, 35% preferred females and 34% were neutral (Table 5). These

Table 4. *Reasons that an agricultural extension officer was considered useful by gender of farmer*

Reasons	Farmers(%)		All(%)
	male	female	
Learn new things/new information	52	41	46
Information on agriculture	28	37	32
Good advice	13	9	11
Increase production	2	5	4
Other	5	8	7
Whole sample	100	100	100

Source: Tanzania agricultural extension survey, 1995 (Due, Magayane and Temu, 1996).

Table 5. *Preference for extension officers by gender by male and female farmers*

Gender of the preferred extension officer	Male farmers		Female farmers		All farmers	
	No.	%	No.	%	No.	%
Male	42	35	30	26	72	31
Female	35	30	45	40	80	35
No preference	42	35	39	34	81	34
Total	119	100	114	100	233	100

Source: Tanzania agricultural extension survey, 1995 (Due, Magayane and Temu, 1996).

preferences for, or neutrality toward, female VEOs are surprising in a predominantly Moslem area. The null hypothesis of independence between farmers' choice of VEO by gender and farmers' gender was tested using Chi-square statistics. The hypothesis could not be rejected at the 5% significance level when farmers' choice of VEO (male/female/neutral) is tabulated against farmers' gender (male/female). The hypothesis is rejected, however, at the 10% significance level when farmers with a neutral preference are excluded from the analysis and a two by two table is used. It is therefore concluded that there is some evidence that farmers' preference of VEO by gender is dependent on farmers' gender but some other factors may be more important than gender of the farmer. Farmers often stated that what was important was an extension agent who would assist them and not the gender of the agent. A district extension officer stated (1991) "Character is more important than gender in assisting farmers."

When farmers were asked the reasons for their preferences, 22% of the men indicated their preference was because the VEO was active and responsive, 34% because there was no cultural bias (female agents visiting males, etc.), 21% because they gave better explanations regarding crops and livestock, and 17% stated that the VEOs had the same training and, therefore, they had no preference by gender. Female farmers gave similar reasons for their choices but the percentages varied. Twelve percent made their choice because the officers were active and responsive, 35% because there was no cultural bias, 23% because they gave better explanations on crops and agriculture, and 24% were neutral as the agents had the same training (Table 6). Female farmers stated that they preferred a female VEO as she was freer to discuss problems with them. Women also expressed different time preferences for meetings than male farmers.

The large emphasis on "no cultural bias" is surprising as it was the principal reason given by 35% of both male and female farmers. But these "no cultural bias" explanations were often followed by "and gives good explanations regarding vegetables," or "and is helpful when asked for assistance."

Farmers were further requested to respond as to whether a male or female VEO would provide better extension information on a number of factors—crops, livestock, credit, nutrition, health, marketing, crop prices, etc. Currently VEOs are expected to disseminate information primarily on crops and livestock. But as privatization of the economy proceeds and inputs, marketing, etc. shift to the private sector, the authors assumed that VEOs would be expected to provide more types of information to the farmers. Responses to farmers' judgment as to whether a male or female VEO would give better information on these factors are shown in Table 7.

It is interesting to note that, in general, farmers believed that a female VEO could provide the best information on the items selected (39.0%); either male or female could provide the next best informa-

Table 6. *Reasons for the preference of extension officers by gender*

Reasons	Male farmers		Female farmers		All farmers	
	No.	%	No.	%	No	%
More active and responsive	25	22	14	12	39	17
No cultural bias	39	34	38	35	77	34
Explains better	24	21	25	23	49	22
Same training and equal	20	17	26	24	46	21
Other	6	6	7	76	13	6
Total	114	100	110	100	224	100

Source: Tanzania agricultural extension survey, 1995 (Due, Magayane and Temu, 1996).

Table 7. *Farmers' judgement as to which gender of extension officer would provide better extension information to them*

Information type/presentation	Village extension officer			
	male (%)	female (%)	either (%)	never had female (%)
Present information better	29.3	35.6	30.8	4.3
Present better material	24.4	43.1	31.5	1.0
Visit groups more frequently	26.1	38.2	31.8	3.8
Comes better prepared	29.0	34.6	32.7	3.7
Presents:				
Useful information	24.8	38.6	35.6	1.0
Information on crops	25.6	38.5	34.4	1.5
Information on livestock	25.4	32.0	39.1	3.6
Information on credit	19.4	36.8	39.6	4.2
Information on nutrition	7.2	60.5	28.3	3.9
Information on health	9.5	53.4	33.8	3.4
Information on income earning	21.5	40.9	34.2	3.4
Information on school fees	24.1	29.2	42.3	4.4
Information on prices	28.3	32.4	35.9	3.4
Information about markets	33.3	28.7	34.7	3.3
Information on garden seeds	24.3	43.8	31.4	0.6
Information on crop seeds	30.4	37.4	31.6	0.6
Whole sample	23.9	39.0	34.2	2.9

Source: Tanzania agricultural extension survey, 1995 (Due, Magayane and Temu, 1996).

tion (34.2%) and male VEOs the best information on 23.9% of items selected (Table 7).

Female VEOs were thought to provide better or more information in total, present better material, visit groups more frequently, come better prepared, have more useful information and better information on crops, livestock, credit, nutrition, health, income earning and obtaining garden seed than male VEOs. Males were judged to be better informed than females on markets and neither gender judged superior on obtaining school fees, livestock, credit, prices, and markets. Three percent of the sample respondents had never had a female VEO and, therefore, could not respond. Female farmers, however, judged capacities of female VEOs to be even higher on these issues than males.

(h) *Most important sources of agricultural information*

In villages without daily newspapers, what do farmers believe are the most important sources of information? It was found that the three most important sources for the sampled farmers were neighbors (69%), radio (67%) and VEO (66%); the sources not important were extension publications, newspapers/magazines, personnel from Sokoine University or other extension offices, and demonstration plots. Radio was slightly more important to the male than the female farmers (as males control the radio); however, extension personnel stated that good radio programs were often not available. VEOs too were judged slightly more important to male than female farmers. Several farmers mentioned the importance of their parents in providing agricultural information; they also said field days/demonstrations would be important but were not being held.

(i) *Crop acreage, farm expenses, and net annual incomes*

Average acreage in crops for the sampled farmers was 4.7. The variation in mean acreage per village is less than one acre, but land productivity among villages differed because of differences in rainfall and soil conditions.

Major farm expenditures varied significantly among villages; these farm expenditures were highest in Manyinga and Kilimanjaro where tractor hire was more frequent and improved seed and some fertilizer was used. In other villages expenditures included little beyond hired labor and small amounts of improved seed; in the low-potential areas farmers could not afford fertilizer. Twenty-three percent of the households reported no farm expenses! For the sample as a whole, only 28% of the farmers used improved seeds. Household labor is not included as an expense in the above.

As expected, farm income was highest in the high potential areas of Manyinga and Kilimanjaro. Total farm cash income per sampled farmer averaged Tsh.119,200 (Tanzanian shillings) in 1995 or approximately $199. This excludes the value of farm production consumed by the household. Farm

Table 8. *Average non-farm cash income of male and female farmers and their spouses by village (Tshs. 1,000)*

Village	Male farmers		Female farmer		Sample household	
	farmer	spouse	farmer	spouse	male	female
Gwata Ujembe	24.4	8.0	24.2	16.2	72.8	40.4
Fulwe	40.7	26.4	124.0	69.5	67.1	193.5
Madoto	45.7	40.5	28.3	158.4	86.2	186.7
Rudewa Batini	64.5	21.1	63.9	28.4	78.0	92.3
Manyinga	78.7	43.1	101.6	59.0	121.8	160.6
Kilimanjaro	84.8	16.9	70.3	63.5	101.7	133.8
Whole sample	54.6	24.2	69.5	65.6	78.8	135.1

Source: Tanzania agricultural extension survey, 1995 (Due, Magayane and Temu, 1996).

expenses per household averaged only Tsh. 24,000 or $40. Net farm cash income per household averaged Tsh. 95,100 or $159 (Table 9). Fourteen percent of the sampled households had zero farm income—that is they consumed all they produced and had nothing for sale. Some of these families received support from relatives. As mentioned earlier, in the low potential villages many families had no more than two meals a day and illness was often reported.

(j) *Non-farm income*

Families also reported non-farm income—that is income which arose from members undertaking non-crop or livestock enterprises. This non-farm income averaged Tsh.106,400 per family or approximately $177(Table 10); average non-farm income per household was 89% of farm cash income. Sampled female farmers and their spouses generated more non-farm income (Tsh.135,100 or $225) than male farmers and their spouses (Tsh.78,800 or $131). Thirty-two percent of the sampled heads of households generated no non-farm income compared with 60% of spouses of sampled households (see Table 8).

In male farmer households males earned Tsh. 54,600 of non-farm income on average compared to Tsh. 24,200 earned by their spouses; in female farmer households female operators earned Tsh. 69,500 compared to Tsh. 65,600 by their spouses. On average female farmers' households earned 58% more than male farmers' households (Table 8). Thus the heads of households earned more off-farm income than their spouses, in general.

The sources of non-farm income varied by district. In the low-potential areas non-farm income came mainly from selling fruits and vegetables, poultry, charcoal, working for other farmers as farm laborers, trading, making and selling crafts and from traditional healing. Little opportunity existed for wage earnings in the surrounding villages. In the medium-potential areas non-farm income came primarily from selling coconuts in the shells or as beer, brewing beer from other sources, making and selling bricks, and charcoal. In the high-potential areas the major sources were making and selling bricks, and charcoal, selling thatch for roofs, carpentry, oil extraction, food vending, operating a small shop (kiosk), repairing bicycles, and occasional wage labor from working in the sugar estates. The presence of non-farm income allowed farmers to diversify as they could purchase farm inputs and family needs at the appropriate times.

In the low-potential areas, especially, 14 families (6%) received gifts from relatives to increase their incomes. Households in Fulwe village received the highest total amount from gifts whereas Kilimanjaro, Madoto and Rudewa Batini did not report any gifts. On average households received Tsh. 1,100 in gifts (or the equivalent of $2.67).

Table 9. *Total household cash income by source by village*

Village	Net farm	Non-farm	Gifts	Total cash income
Gwata Ujembe	25.2	35.9	1.1	62.2
Fulwe	48.0	120.8	7.1	168.9
Madoto	78.2	134.0	0.0	112.2
Rudewa Batini	42.5	85.3	0.0	127.8
Manyinga	186.0	144.6	1.5	332.1
Kilimanjaro	188.6	117.8	0.0	306.4
Whole sample	95.1	106.4	1.6	203.1

Source: Tanzania agricultural extension survey, 1995 (Due, Magayane and Temu, 1996).

(k) *Total cash income by source*

Total cash income per household sampled is made up of cash sales of crops and livestock (farm cash income) minus farm expenses which gives net farm cash income. Then non-farm income and gifts are added to obtain total household cash income. Average total household cash income for 1995 was Tsh. 203,100 or approximately $338. Per capita total cash income averaged Tsh. 36,927 or $62 (Table 9). Average household incomes in high potential areas were almost three times higher than in the low potential villages.

Because of the large variation in non-farm income per village, total cash income also varied materially with the highest average household cash income earned in Manyinga and Kilimanjaro villages. Male-headed households earned greater net cash income than females (Tsh. 221,200 compared to Tsh. 201,500).

Cash income by the sampled families was used primarily for food and medicine, clothing and household utensils and housing improvements, school fees and agricultural inputs. There was no noticeable difference between male and female farmers in use of cash income. There were major differences by village with Fulwe and Madoto listing no agricultural inputs and a much larger percentage for school fees.

(l) *Credit*

Very few of the farmers reported obtaining formal or informal credit except a few in the high-potential area to obtain fertilizer and tractor hire for sugarcane. Two women farmers obtained credit under a special women's credit program; otherwise farmers reported no credit at all.

(m) *Agricultural extension information this past year*

As mentioned earlier, 1995 was a year of transition for the VEOs from disseminating information primarily through contact farmers to reporting through groups of farmers, male, female or mixed. In each of the villages visited the VEOs had only formed two groups of approximately 10–12 persons each. Thus the number of farmers who were being provided "impact points" directly was very low. Of course, a number of others were obtaining information from the VEO on a one-to-one basis. That number is hard to estimate.

It was mentioned earlier that farmers indicated they knew the value of extension and wanted an agent in their village. But when asked "Did you feel you obtained good agricultural information this past season?" only 34% of the farmers (82) responded positively; 66% or 152 farmers said (1991) "No." There was also a marked difference between male and female farmers; 46% of the male farmers believed they had obtained good advice this past season whereas 76% of the women did not. Further, when sampled farmers were asked if that information this past season was obtained primarily from their VEO, only 35% responded positively! Again, more male than female farmers obtained useful information from the VEO this past season—44% compared to 25%.

(n) *Sources of agricultural information if needed quickly*

The sampled farmers were asked where they would go if they needed agricultural information quickly. These responses were VEO (60%), neighbor (65%), and experienced farmer (65%). Male farmers would go first to the VEO; female farmers would go first to another female farmer or a neighbor.

(o) *Additional advice which would be beneficial*

With privatization being emphasized, input supplies are moving from state owned enterprises to privately owned ones; for example, seeds are available in many small shops and in the markets where agricultural products are sold; fertilizer is available in many shops as are hoes and other small agricultural implements. Marketing also has been privatized to a large extent. Does this mean that VEOs will be expected to give farmers information about sources of agricultural inputs, current prices, markets, etc. in the near future?

On the basis of this assumption, farmers were asked what additional information would be beneficial to them. Responses and number of farmers responding are given in Table 10. The additional information which farmers believed would be most beneficial to them, with percentages of those responding were: more information on crop storage (94%), new seed varieties (93%), crop diversification to increase income (90%), new crop varieties, drought varieties, health and ways to increase income (87%), information as to where garden seeds were available (86%), and information on nutrition (82%) and credit (82%). Other items questioned are shown in Table 10. The lowest response of interest came from information on division of labor between males and females (56%)!

Differences in choices of new information requested between male and female farmers were not great except that female farmers put more emphasis on health, increasing income, drought management and nutrition.

Table 10. *Percentage of farmers who responded positively that additional information would be beneficial to them*

Type	Percent (%)	Number respond
New type of crops	87	237
Crops for drought	87	239
New types of seeds	93	240
Obtaining garden seeds	86	239
Fertilizer use	81	235
Weeding	83	232
Crops diversification to increase income	90	220
Crop marketing	69	234
Crop prices	71	234
Credit availability and terms	82	240
Increasing income	87	240
Earning school fees	58	223
Managing income:family versus farm	66	218
Crop storage methods	94	232
Division of tasks between men and women	56	222
Nutrition	83	232
Health	87	237
Family planning	69	231
AIDS	76	233
Environmental concerns	73	205

Source: Tanzania agricultural extension survey, 1995 (Due, Magayane and Temu, 1996).

3. THE VEOS SPEAK

A separate questionnaire was developed for the six VEOs but only four interviews were obtained due to VEOs being away at the time of the farmer interviews. Thus this information is suggestive only of all the VEOs' opinions.

Of the four VEOs interviewed, only one did not live in the village she served; she lived in a larger village 5 km. away. Two of the VEOs had certificate training and two had diplomas. VEOs are required to attend training sessions once a month to acquire "impact points" to transmit to farmers. All four VEOs said that they attended once per month if funds were available; this year funds ran out before the end of the year; on average they attended 10 times each. Distances to training sessions varied from 3 to 50 kms. for an average of 24 kms. Each VEO traveled by bicycle except for the 50 km. distance which was by bus.

(a) *Do VEOs find training sessions helpful?*

VEOs stated that they found the training sessions helpful to both male and female farmers. What would make them more helpful? Meeting the farmers in groups, visiting them in their fields or at the adoption plots (of which there were none in 1995) to avoid cultural bias, providing adoption/demonstration plots, availability of credit, inputs available at a closer distance, and labor saving techniques (especially for women). Except for the last entry, the helpful items mentioned were the same for both male and female farmers.

(b) *What would make the training more helpful to the VEOs?*

When first asked this question the VEOs would answer plant spacing, row spacing, etc. When the question was rephrased, however, emphasizing "impact point" changes which would be more helpful to them, replies were; availability of inputs, more supervisor visits, allowances paid on time, learning more things, information on insecticide application, information on fertilizer availability and price, and higher bicycle allowances. The VEOs are supposed to take information they need for their work and farmer requests to the training sessions so that it can be included in the training. It would appear that this is not being done or items such as location and price of fertilizer would have been given much earlier in the growing season. It was also apparent that formerly the VEOs had insecticides, animal pharmaceuticals, and other items in their offices for sale to farmers; that was not possible this year, making it more difficult for both the farmers and the VEOs.

(c) *Meeting farmers in this transitional year*

Three of these four VEOs had formed groups of farmers this year; all three had only two groups. Two had two women's groups and the other a man's and a mixed group. Each had 10–12 members. These groups preferred to meet at the adoption plot or the VEO office once a week. The VEOs also met farmers on an individual basis but it was difficult for them to estimate the number visited or the percentage of farmers served. On average, the VEOs estimated they met 115 male farmers a year and 30 female farmers on an individual basis; one VEO did not meet with any female farmers. Thus the percentage of total farmers in the village who meet with the VEO at least once a year is very low.

Although farmers thought the ideal number of meetings with the VEO would be once a week, three of the VEOs thought it most ideal to meet with farmers twice a week for 12 months and one of the three months from May to October. One of the VEOs thought it ideal to meet farmers four times a week! This would mean that they could not meet with many farmers' groups.

How do the VEOs recruit groups of farmers under this new emphasis? The farmers were recruited by the VEO in three of the four cases; they came on their own in one case. All three who had groups said that men and women were recruited in the same manner. One supervisor informed me that some of the women's groups were already meeting and the VEO invited them to meet with her/him on agriculture.

(d) *What kinds of technical information would be most helpful to VEOs?*

The questionnaire asked the VEOs to rank the kinds of technical information which would be most helpful to them. The monthly training was number one, field days was number two (no field days are held currently), experienced male and female farmers tied with research bulletins as number three, and Sokoine University personnel number four. Other less important items were friends, experienced farmers (male and female), newspapers and radio (there are not many radio programs), and field demonstrations in that order.

(e) *Are the VEOs comfortable working with farmers of the opposite sex?*

The VEOs were asked if they were comfortable working with male and female farmers. One female and one male VEO were very comfortable working with male farmers; one of each was uncomfortable because the men were "too grumpy" (stated by the male VEO) or they did not pay attention to information given (stated by the female VEO). Both female VEOs and one male VEO were comfortable working with female farmers as they were said "to pay attention and follow instructions." One male VEO was very uncomfortable working with female farmers; he did not give a reason. So three VEOs were comfortable working with female farmers and two with male farmers in this small sample. It would appear that the comfort level was determined more by the personality of the VEO than by gender. More training may be necessary to improve dissemination to farmers of both genders.

(f) *What could be done to improve extension to smallholder farmers?*

At the end of the interview with the VEOs, the question was again raised as to what could be done to improve agricultural extension to smallholder farmers, both male and female. Responses were the same regardless of gender, to provide: more information on credit (reported by two VEOs), training opportunities (two), visit other villages to obtain new ideas (one), new technology (one), ideas to increase income (one), have more inputs available in the village (one), obtain assistance of government leaders (one), and improve health by overcoming food shortages (one).

(g) *What do you recommend to make your extension work more effective?*

Again there were many responses which were quite different from answers when the question was raised at the beginning of the interview. It may be that the VEOs had more confidence in the interview process by this time and realized the information was confidential. Responses, with the number of times mentioned in brackets, were: Allowances paid on time (three), more reliable transport, including a motorcycle (three), more training (two), being able to attend an annual workshop at Sokoine University (two), develop more groups (one), have better information (one), have researchers come to the village and talk to farmers (one), and more training on livestock (one).

(h) *Topics covered now and in the future?*

Under the modified T and V extension system used in Tanzania, VEOs are primarily responsible for informing farmers about crops and livestock. In the past the government parastatals were supposed to

provide seeds (but not necessarily at places easy for farmers to access), marketing, credit (through the village coops), inputs (through village coops), etc. Farmers complained that inputs were often not available at the coops or were late arriving as were payments for grain sold at the coops. In addition the seed obtained from the parastatal Tanseed was not available in locations convenient for smallholder farmers, especially female farmers who had no method of transport except local buses.

As privatization progresses and more of the marketing and inputs are provided by the private sector in a multitude of ways, are the VEOs being informed of new information which the farmers will require? The VEOs confirmed that their current responsibility was primarily to provide information on crops and livestock; they also stated that livestock was becoming increasingly important, especially goats. In order to ascertain what the VEOs perceived in terms of the influence of privatization and the future, questions were asked as to whether current meetings with farmers normally covered a number of items. Their responses are as follows: (the numbers in brackets are the number of positive responses from the four VEOs): information on where to obtain crop seeds (three); where to obtain garden seeds (three); suggestions for crop diversification (three); information on dairying/goats (three); information on other livestock (four); and information on budgeting decisions regarding, for example, input purchases versus school fees (three). Only two VEOs gave any information on methods of increasing income and only one on agricultural product prices, methods of obtaining credit, and methods of earning school fees. None of the VEOs gave information on agricultural marketing! When these data are compared with additional information which farmers desired, it is obvious that increased training is needed in this regard.

4. SUMMARY AND CONCLUSIONS

In Tanzania there is an attempt to have a village extension officer (VEO) located in every village. Until recent years most of the VEOS were male. Research indicated that male VEOS did not often visit female farmers due to cultural mores and that male farmers frequently did not bring information home to their wives. Since women contribute more of the agricultural labor than men, it was recommended that more female VEOs be hired. Now one-third of the VEOs are female and males and females receive the same training (either a diploma or a certificate in agriculture).

Although one-third of the VEOs are female, by 1995 only one person had returned to the farmers to enquire as to their preference for VEOs by gender. That researcher interviewed only female farmers as to how they evaluated female VEOs. In this study a sample of 240 farmers, male and female, in six villages in Morogoro Region were interviewed to ascertain their preferences for a male or female VEO, the reasons for their preferences, and a great deal of additional data from the farmers and the VEOs.

The study suggested farmers knew the kinds of information agricultural extension officers should provide and wanted VEOs in their villages. Thirty-five percent of male farmers preferred a male VEO, 30% a female VEO and 35% were neutral as to gender. Forty percent of female farmers preferred a female VEO, 26% a male, and 34% were neutral. In each case 34% of the farmers' stated preference was because of "no cultural bias" (women VEOs working with men, etc.), 22% because they gave good agricultural advice, 17% because the officer was active and responsive, 21% were neutral with 6% gave other reasons. Women farmers often stated they preferred women VEOs because they felt freer to discuss their problems with other women. The predominance of preferences based on "no cultural bias" was surprising but this is a predominantly Moslem area where cultural norms are still quite strong.

Data are provided on average crop acreages per household (4.7), average farm income from sales of farm products (Tsh. 119,200 or $119 at current exchange rates of Tsh. 600 per $1.00), and average net farm income per household (Tsh. 95,100 or $159).

Non-farm or off-farm income generated by members of these households from working for other farmers, crafts, trading, making bricks, brewing beer, selling fruits and vegetables, etc. averaged Tsh. 106,400 (or approximately $177). Female farmers' households generated a greater amount of non-farm income than male farmers' households and heads of households in each case earned more than spouses and other members. Thus average non-farm income per household was an important income source for the sampled households and provided 12% more income than farm produce sales minus farm expenses.

With the current government policy and economic privatization and with many farming factors—marketing, pricing, input supply and availability, agricultural implements, availability of credit, etc.—being transferred to private rather than government sources, it would appear that VEOs need to place more emphasis on crops and livestock. Farmers agreed with this supposition and the following are the responses the question about priorities for additional information: crop storage (94% of respondents), new seed varieties (93%), health, means of increasing income, drought management and new crop varieties (87% each).

VEOs were also asked a number of questions; only four of the six VEOs were available for interview. VEOs believed the monthly training sessions were helpful; they could attend more often if transport and other costs were paid on time.

Only three of the four VEOs had formed groups, as required, this year. Are the VEOs comfortable working with farmers of the opposite sex? One male and two female VEOs said they were comfortable working with female farmers as they were said to "pay attention and follow instructions". One of each was uncomfortable working with male farmers as they were "too grumpy" or did not pay attention to information given. One male VEO was uncomfortable working with female farmers but did not give a reason; thus three VEOs were comfortable working with female farmers and two with male farmers in this small sample. It would appear that the comfort level has more to do with personality than with gender. It also appears apparent that more sensitivity training is needed to assist VEOs to be comfortable working with either gender of farmers.

VEOs had several suggestions as to what would improve their extension to smallholder farmers: more information on credit, better training of the VEOs, have the farmers visit a more progressive village to learn new ideas, new technology, more inputs available, and improve health by overcoming food shortages. In the low potential villages, especially, food production did not meet family needs and families often ate only two meals a day. VEOs should receive training in ways to increase production and income in those areas.

VEOS appeared to have thought very little about the new demands privatization would place on them; they appeared to have thought about it less than the farmers.

With the new emphasis on meeting farmers in groups rather than through contact farmers, little progress was made forming groups this first year with an average of only two groups of 10–12 farmers each being formed per VEO. Sixty-six percent of the farmers stated they did not obtain good advice from the VEO this past year; the percentage was even higher (76%) for female farmers.

The questionaire responses suggest that the VEO work could be made more effective by advances paid on time, more reliable transport, including a motor cycle; more training; being able to attend an annual workshop at Sokoine University; development of more groups and better information. In addition, VEOs do not receive sufficient salary to support their families. Thus they have to do other types of work to survive which drains their time, energy, and incentives from their primary employment. Yet the government must reduce expenditures to assist in balancing the budget. Supervisors have a real challenge in increasing the productivity of the VEOs.

5. POLICY RECOMMENDATIONS

(a) More female VEOs should be hired as the female farmers prefer them and the male farmers do not object to them. Farmers believed female VEOs provide better information in many cases.
(b) More training of male VEOs as to why and how they should work with both female and male farmers.
(c) VEOs should be assisted in group formation and should be sympathetic to preferred times of meetings of female and male farmers.
(d) VEOs should receive additional training in provision of dry season food crops and income earning possibilities—income both for family and farm expenses. Impact points should be tailored to specific areas rather than being blanket recommendations.
(e) VEOs should receive more training in the challenges to farmers brought about by privatization. VEOs seemed less prepared than farmers to deal with the changes which are and will occur with this government policy. It is apparent that as the market economy continues to develop, many farmers will start accruing more income from non-farm activities. These activities are important in providing the needed cash for purchasing farm inputs and family expenditures. Extension officers should be equipped with the marketing knowledge and advice that incorporates forward linkages in agriculture in addition to the knowledge they have in production agriculture.
(f) More field days should be held and demonstration plots developed, as requested by farmers.

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